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EDITORIAL

On the Occasion of Publishing "Megatrend Review", Vol. 6, No. 2, 2009

This issue of "Megatrend Review" is a result of long term strategy of its Editorial Board aiming to open pages of our scientific journal for applied economics to boarder states, region of South East Europe, Europe and the world. In that way, "Megatrend Review" becomes a place for intensive gathering and interaction of opinions and views on current events in national, regional and international economics with all challenges emerging in the field of global economy, economic policy and development, financial markets and business in present crisis period.

We would particularly like to stress that this issue of "Megatrend review" is the second one in the series that will be devoted to certain states – in this case to Romania and complex aspects of its present economic situation. The authors of contributions are distinguished scientists and professors mainly on *West University of Timişoara*, from Timişoara, Romania. Previous issue of "Megatrend Review" has been dedicated to the economy of Italy.

Our guest editor, professor Ioan Talpoş, whom we have the honour to introduce to our readers, has appointed the authors of contributions from Romania. Professor Talpoş teaches Public Finance, Enterprise Financial Management, Taxation and Public Financial Economy at Faculty of Economics, West University of Timişoara. Since December 2006, professor Talpoş has been Rector of West University of Timişoara and before that, he was Dean of Faculty of Economics. He is project manager, research coordinator and project member in various international projects in the field of economic development and financial systems. He is licensed Expert Accountant and Financial Auditor. He published large number of scientific articles in prestigious international journals. He is the author of books: *Finances of Romania* (3rd edition, Sedona Publishing House, Timişoara, 1997) i *Public Credit* (Editura Sedona, Timişoara, 1999); he is co-author of books: *Applied Taxation* (Orizonturi Universitare Publishing House, Timişoara, 2001), *Financial Management of Businesses* (Mirton Publishing House, Timişoara, 1998), *Financial Management of Trade Companies* (Mirton Publishing House, Timişoara, 2001, 2002).

We are very grateful to professor Talpoş for his professional effort he made as guest editor and an author of an excellent contribution for our journal. We also thank to all authors from Romania and Serbia for their excellent contributions.

Professor Mića Jovananović, PhD
President of Editorial Board
Rector of Megatrend University

GUEST EDITOR'S WORD

Professor Ioan Talpoş, PhD
Rector of The West University of Timişoara, Romania

THE WEST UNIVERSITY OF TIMISOARA, WITHIN THE SYSTEM OF ROMANIAN AND EUROPEAN ACADEMIC EDUCATION

Higher education, accounted for by its instructive and educational mission, with high civilizing values, has always been in the service of mankind, national and world spirituality.

During its 65 years of existence, The West University of Timisoara has continually met these aspirations, stimulating the social and cultural development of Romanian society, in its capacity of factor of powerful assertion of national science and culture.

Aspiration and achievement are two factors that have supported the efforts of several generations of Banat intellectuals directed at the setting up of The West University of Timisoara. The attainment of this goal – which had to wait several centuries – has its roots in the Enlightenment philosophy, the militancy of the 19-th century scholars, and the wisdom of the inter-war intellectuals. The higher education in Timisoara had its origins in the fifth decade of the 19-th century, when the Faculties of Philosophy and Law existed, for a short while, to be closed down in 1848. Repeated efforts were made before World War I, with a view to founding an institution of academic standing in Timisoara. The European cultural tradition, very important in this city, was the fertile soil in which the idea of setting up a University, upheld by the entire community, sprung its roots.

The setting up of the Polytechnic School on November 15, 1920, was to encourage the Banat intellectuals in their endeavours to found a classic type University, including humanities but also science and art faculties. The carrying out of this project triggered an ample cultural movement, meant to raise Timisoara to the standards of prestigious academic centres. Several exceptional personalities distinguished themselves capitally: Traian Lalescu, Sever Bocu, Emil Pocreanu, Traian Biraescu, Dimitrie Nistor, Meletie Sora, Constantin Grofsoreanu, Vichentie Ardelean, Alexandru Marta, Emil Botis, Nicolae Belu, Gheorghe Sbarcea, Vasile Danila, etc. The Banat Intellectuals Convention, held on August 5, 1934, in the presence of Romania's Prime Minister, proclaimed the setting up of the University of Timisoara, a stringent necessity in the western part of Romania. The meeting of this necessity

had been asked for in public meetings, through Memorandums addressed to the officials. The arguments set forth were documented with the economic and cultural achievements in the Banat area, the intellectual potential of the city of Timisoara and the latter's capacity to ensure the good operation of the University.

The necessary conditions required by Romanian realities were met towards the end of 1944. In November of that year, an Initiative Committee was created – with Sever Bocu as President – with a view to setting up The West University. His Majesty Michael I of Romania received a delegation of the Banat intellectuals' elite, who had come to document the need for such an institution, and on December 31, 1944, His Majesty the King signed the Decree-Law no. 660, stipulating the setting up of The West University. Thus the efforts of the Banat people seemed to materialize... but reality proved totally different! The Decree-Law no. 660 was ignored, following the dissensions and the pressures of those who opposed cultural progress in the Banat. The Faculty of Medicine alone was set up. During 1947-1948, the idea of a University was abandoned. The educational reform carried out starting in 1948 led to the setting up of the Pedagogical Institute and of the Faculty of Mathematics and Physics (3-year courses).

The University along the years. The academic institution founded in 1948 went through several stages in the evolution and structure of its faculties, disciplines, departments/chairs, as well as in the teaching staff and student figures areas. Up until 1956, there was just the Faculty of Mathematics-Physics-3-year courses, between 1948-1952, and 4-year courses, between 1952-1957, and then 5-year courses. During the 1956/1957 academic year, the Faculty of Philology wad set up, with 5-year courses, and was to become, starting with the next academic year (1957-1958), The Pedagogical Institute of Timisoara, with 5-year courses, having a profile identical with that of the traditional academic institutions.

The Resolution of the Council of Ministers, no. 999/27, of September 1962 established a new institutional status of what was named "The University of Timisoara". This important moment stimulated the activity of our institution. It included, starting with the academic year 1965/1966, also the 3-year course faculties of the Pedagogical institute, then, in the 1967/1968 academic year, the Faculty of Economics was set up. At that moment, the University already had 8 faculties – 4- and 3-year courses – and 30 important study programs. Towards the end of the 1980s, the University knew a decline in the structure of its faculties, study programs and number of students. The 3-year course study programs were done away with, and so were three departments of the Faculty of Philology. At the beginning of the 1988/1989 academic year, only three faculties – The Faculty of Exact Sciences, that of Philology and that of Economics – and 9 study programs had survived. The most affected was the domain of the humanistic sciences, reduced to 5 study programs and a minimum number of students.

The activity of the University was carried out, until 1989, in accordance with the orders and dispositions of the Ministry of Education, under the control of the

state authorities. Thus, the University suffered the fluctuations of the official policy regarding higher education. Despite the difficulties they had to face, the teaching staff showed a constant interest improving the training process and in the students' standards of knowledge.

In 1990, the institution changed its name into "The West University", as it was named in the Decree-Law no. 660/1944, and since that year it has known an outstanding development, under the sign of democracy.

The new leadership directed its attention towards the development of material resources (extension of space for training, endowment of laboratories and offices, technical improvement...).

The institutional framework was enlarged due to the setting up of new faculties, to diversification and increase in the number of disciplines and profiles. During 2001-2003, the University had 11 faculties (6, 4-year course and 5, 3-year course study programs), 13 elementary school teacher colleges, 1/2–year post-graduate studies, advanced studies and master's programs. A wide opening out towards international academic activity occurred. In 2000, the University concluded 39 bilateral cooperation agreements with European partners within the SOCRATES/ ERASMUS Project. Its ample development allowed its participation in international academic life and scientific research. The high standard of the activities under way places the University of the West among the reputed European universities.

- The West University of Timisoara has 11 faculties: Arts and Design, Chemistry-Biology-Geography, Law and Administrative Sciences, Economics and Business Administration, Physical Education and Sports, Physics, Letters, History and Theology, Mathematics and Computer Science, Music, Sociology and Psychology, Political Sciences, Philosophy and Communication.
- The teaching/learning process is now structured, in agreemnet with the Bologna Process, into 3 cycles: License (3 years), Master's Studies (2 years) and Doctoral Studies (3 years). There are two types of doctoral programs (full -time and part-time), and the basic domains are: Exact Sciences, Humanities, Economic Studies, Visual Arts.
- The number of the students enrolled for the three cycles of academic studies is of almost 24,000 (22,856 in the License and Master's Studies cycles and 1080 in the Doctoral Studies cycle).
- The European "Lifelong Learning Programme (Erasmus)" offers the students in the over 200 partner universities the possibility to sudy at The West university of Timisoara for 1 or 2 terms. The courses attended here are recognized by the universities the students come from, owing to application of the European Credit Transfer System-ECTS). The West University of Timisoara grants them a free course in Romanian as a foreign language, which Erasmus students may attend for a full academic year.
- The West University of Timisoara has 9 research centers.

Material base and documentation resources. At the start, the Pedagogical Institute was housed in an improper building for education, the Lloyd Palace, previously used for administrative activities. A lecture hall, a library room and some offices for the administration had been provided. Following long insistence, the Institute managed to erect an adequate building, with lecture rooms, laboratories, etc., which started being used in January, 1951. Because of the austere budget, the endowment of the laboratories was partially achieved with the contribution of the teaching staff. The development of new faculties required increase in material base. New buildings were acquired for the training process.

Following insistence with the central authorities, for a proper building for academic activities, funds were allocated that allowed erecting, between 1961 and 1965, a monumental structure for theoretical and practical training, an Astronomical Observatory, the Timisoara Seismologic Station, the Central Academic Library, the Campus(with canteen).Concurrently, the Planetarium, the Susara Seismologic Station and the Computation Office were set up. During the 1989-1990 academic year, the University owned an area of 7,494 m2, used as follows an Aula Magna, 10 amphitheatre halls,14 lecture rooms, 67 seminar rooms,88 laboratories, 5 specialism libraries, plus 720 rooms in 6 dormitories on the Campus, the 500 chair canteen, the Printing House. The small budget did not, however, allow high standard technical endowment.

The explosive development of the University since the 1990s has made necessary the extension of available space, in a modern milieu. The university has purchased new public space, adapting it to teaching activities. In 1999, The Faculty of Economics moved into a new building. The former canteen on the Campus was made into the elegant seat of the Faculty of Law. Important funds were allocated for the premises of the faculties of Music, Arts and the Theology Department. In 2002, the University of the West owned an area of about 27,000 m2 for teaching activities (260% more than in 19890), distributed as follows: an Aula Magna, 15 amphitheatre halls, 51 lecture rooms, 126 seminar rooms, 59 laboratories, 25 special rooms for the Faculty of Music, 32 workshop rooms for the faculty of Arts, sports halls, 11 specialism libraries, 254 rooms for teachers. These adequate conditions are due to the significant increase in extra-budgetary resources. In 2002, this income accounted for 50.8 % of the total income of our University. Equipment of laboratories, of teachers' rooms and of administrative offices could thus be achieved at European standards. The documentary patrimony of the Central academic Library has also increased, reaching 854,014 volumes, accompanied by an impressive number of journals and specialized publications, to the benefit of 16,000 readers.

The teaching/learning process has always been the basic component of our activity. At the ouset, the teaching staff came from the Polytechnic School of Timisoara. Around that nucleus, over a decade, academic departments grew gradually. The teachers' dynamic reflects the stages the University went through, the progress or regression determined by the policy of the central authorities. The

two distinct stages (1948-1989 and 1989-2003) were defined by the organization of posts and by the social condition of the teaching staff. In 1949-1950, there were about 15 teachers; in 1972-1973 their number grew to 318, then followed a decrease to 138(1988-1989). Since 1989 there was a constant increase, the number of teachers being 731 in 2002-2003.The" pyramidal" system hindered promotion before 1990, generating abuses and discontents. The injustices of the totalitarian system were eliminated and, in 2002-2003, associate professors and professors accounted for 1/3 of the teaching staff.

Several stages have been gone trough by the teaching activity at our University over its 65 years of existence. The political order and the goals of governance had a defining influence upon the structure and execution of the didactic activity. But competent teachers often by-passed the Ministry's requests, and students enjoyed quality training. The syllabi were constantly updated, the training act itself was modernized, dialog was stimulated and, concurrently, the need for individual study was inoculated- all these based on universal values. The need for original scientific research, results being published, for teaching materials (lectures, seminar books) building, for the use of modern technology that facilitates access to information, have been increasingly understood.

Over time, The West University has trained thousands of foreign students, coming from dozens of countries in all continents.

The good results of the students have come by the latter's turning to account of their high professional standards. About 97% of the total number of enrolled students manages to pass on, and the final average grades ranging between 7 and 10 (1-10 grading system) exceeds 80%. A more modest level is to be noticed with students attending evening courses or short-term education.

More than 50 graduate series of the West University of Timisoara include almost 50,000 specialists.

Since the 1990/19991 academic year, the studies at The West University have known a different orientation. Syllabi have been adapted to the new democratic structure and linked to the demands of genuine specialization. The ideological burden has been removed, the institution has joined the *Universitaria Consortium*, the system of Advanced and Master's Studies has been adopted, specialisms have diversified. A large number of students and teachers in the University have benefitted from basic study or doctoral scholarships at great universities in Western Europe, the USA, Canada, etc. There are 303 doctors of science in the academic year 2008/2009, and 150 young teachers have engaged in doctoral programs.

Scientific research, rather modest at the beginning, faced many difficulties, particularly during the first decade, in the absence of necessary technical support, mainly regarding experimental research. Nevertheless, little by little, research groups shaped up, and when the possibility appeared of application of the system of research project contracts with beneficiaries (between 1965 and 1985, 462 contracts were concluded), the horizons of research widened and its originality went up. Sci-

entific researchers wok individually or in teams, at department level or in national and international Associations, they participate in Symposiums, they publish articles in specialized journals or in volumes, at editorial houses at home or abroad.

The 2009 moment. The beginning of 2009 found The West University in a deep-going process of adaptation to national, European and global requirements. Romania's accession to the European Union has brought Romanian universities in direct competition with European universities of great tradition, the freedom of movement across the ample space of the EU has widened the range of options of candidates to higher education. Our University is being challenged to adapt itself, to make its structure flexible- the very adoption of the "Bologna system" has meant a successful test of flexibility and adaptability. The 2008/2009 academic year has triumphed in consolidation of the European and international academic relations of The West University of Timisoara.

The new managerial conception of the University is laying great stress on the trainer-student relationship; it has brought changes in the administrative structure, re-allocating competences function of the new exigencies that Romanian and European academic education are facing. Formulas of academic training in English have been adopted. Academic and diplomatic personalities visiting our University have shown interest in the training of the young students of their countries at the University of the West, Timisoara; new Departments have been requested, master's programs granting double diploma license (Romanian-French, Romanian-Italian, Romanian-English) have been initiated, a Romanian-American Doctoral School Project has been considered; the teaching staff has enjoyed an increased dynamic of exchanges-the number of teaching staff from other countries, periodically and temporarily teaching at our University has grown, with their Romanian counterparts teaching abroad. Student, teacher and researcher – and best practices – exchanges are becoming quite common.

Eminent academic and cultural personalities of Romania and from other countries have been conferred upon the title of Doctor Honoris Causa of our University. The University's material base has been growing exceptionally. The Central Academic Library is extending, electronic access to data bases shared with other libraries and universities has been facilitated. For the first time in the history of our university, the professional value is being recognized not only by paper diplomas but also by considerable sums of money-ISI publications are prized, scholarships of excellence are granted, the Elite Students' Club has been set up. The Rector's Office officially allows, from now on, a student-counsellor. The relations between leadership and students and employees have been galvanized. The excellent dialog with students' organizations and with the employee's Union representatives is based on the adoption of the new managerial team of an open, positive attitude towards students' and employees' claims; amiable solutions are sought, cooperative constructive attitudes are encouraged, the professional relations of a *win-lose* type are being replaced by those of a *win-win* type. The new managers are aware that a contract

through which both sides are contented brings more commitment and the success is more likely. Stress is being laid on the University as a living structure in which change of leadership ensures increasingly higher quality standards.

The inter-generational relationship has been stimulated, the memory of the past re-activated, founders have been paid homage to, while the future horizons are kept in sight-new strategies are being developed for new coordinates. The increasing pressure of competition, on one hand, and the less numerous generations of candidates in the near future, as well as the newly developed world financial and economic crisis require raising the quality standards, more attractive offers and their maximum publicity. Good collaboration with the mass media lends transparency and popularity to our University's image.

As new products and services appear, new technologies and processes are adopted, in a globalized and effervescent economy, industrial and institutional sectors are confronted with increase in environmental diversity, environmental information and knowledge boom. Organizations must, therefore, adapt to the environment, in which change is normal, and competences are continually sought after.

By virtue of the Lisbon Strategy for Growth and Job Opportunities, universities play a crucial role in attaining the objectives concerning the development of the human resources, with a view to acquiring competences that should allow meeting the requirements of a knowledge-based economy. Continuing education and training become key-factors in fulfilling this need, centering upon the long-term development of the potential for competitiveness and also for social cohesion. The West University of Timisoara is meeting these needs by having set up a Department for Continuing and Open Distance Education (DCODE), with financial assistance from the World Bank.

The complex activity and the institution's progress along its 65 years of existence are illustrated by the faculties that have been set up, each with its own specificity, but working for the prosperity of the same entity: The West University of Timisoara.

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THE VOTER AND THE SOCIAL WELFARE: THE ROMANIAN CASE

Abstract: *This article analyses the impact of the public choice on social welfare, in Romania, at regional level. The paper represents an extension of MUTASCU's (2008) and MUTASCU & DIMA's (2005) studies, where is demonstrated the "abnormal" behavior that local authority from Romania is manifesting regarding the subventions received from the central budget.*

According to public choice theory, there is an "affinity" of a social group - the regional communities in this case - for a certain political party or coalition. In consequence, the distribution function of the state is impregnated with a considerable "political color".

This paper is trying to establish the modality of distributing the social welfare under the political impact, into a representative democratic system, quantitative and qualitative, in Romania.

Key words: *voter, public choice, social welfare*
JEL classification: H53, C30, D72

1. Introduction

According to Joseph Kwok[1], the social welfare generally refers to states' services designed to protect citizens from the economic risks and insecurities of life. More than that, the social welfare function, formulated by Bergson[2] and Samule-

[1] J. Kwok, „Social welfare, social capital and social work: personal reflection of a Hong Kong Social Worker", *Journal of Social Policy and Social Work*, Japan College of Social Work, 2003

[2] A. Bergson, „A Reformulation of Certain Aspects of Welfare Economics", *Quarterly Journal of Economics*, Vol. 52, 1938

son[3], represents the preferences of society over all economic magnitudes, including the distribution of income and propriety between the members of the society.

Later, to this function, Atkinson[4] added an additive function represented by the sum of individuals' utilities.

2. Theoretical fundaments

According with public choice theory, there is an "affinity" of a social group - the regional communities in this case - for a certain political party or coalition. In consequence, the distribution function of the state is impregnated with a considerable "political color".

As a result, the state's distribution function comports mutations also at the regional level, one of the disturbing facts being the way how electors vote.

If we presume that exists such a relation between the state's distribution function and politics, results an interesting question as – how can be identified, characterized and quantified this kind of connection.

As well as in Romania's case, it had been observed that in the period before the elections, together with the fiscal policy there are huge mutations into the distribution of the public founds (tax reductions and especially the increase of social public expenditures).

This article is trying to establish, in Romania, quantitative and qualitative, at regional level, the modality of distributing the social welfare (gross domestic product per capita) between the electors, under the political impact. For determining the "affinity" of the regional electors for the political party or political coalition that holds the power, we propose the construction of an "index of proximity to power", obtained on the base of number of votes received by that party in a regional community.

The indicator is:

$$I = \frac{\text{Number of favorable votes}}{\text{Total number of votes}} \qquad (1)$$

where:

- "Number of favorable votes" represents the number of the favorable obtained votes in considered regional collectivity by the political party or coalition who is governing;
- "Total number of votes" illustrates the total number of the valid votes in the considered regional collectivity.

[3] P. Samuelson, *Foundations of Economic Analysis*, Cambridge, Harvard University Press, 1947

[4] A. B. Atkinson, *Social Justice and Public Policy*, MIT Press, Massachusetts, 1983

We can notice that the index takes values between 0 and 1. If the index value is 1, we can conclude that there's a maxim affinity, and if the index is 0, we have a null affinity. So, the proximity to power is greater if it is closer to 1.

In Romania's case, there have been picked and treated two annual statistical series, on the interval between 1994 and 2005, corresponding to the eight regions of development (R1 - North - east, R2 - South - east, R3 - South, R4 - South - west, R5 - West, R6 - North - west, R7 - Center, R8 - Bucharest), representing the "index of proximity to power" (I) and the level of the gross domestic product per capita (GP).

To establish the level of the "index of proximity to power" we used the results of the Parliament elections from the 27th of September 1992, the 3rd of November 1996, the 3rd, 26th November 2000 and 28th November 2004, putting accent on the percent obtained, at the level of each county, by the winning party in elections. Because the Parliament of Romania is bicameral, to obtain the final global value for the entire Parliament, we used an arithmetical average of the two indexes corresponding to the two chambers of the Parliament.

Even if the Chamber of Deputies and the Senate have slightly different attributions, so we can't consider them equals from this point of view, we have used the arithmetical average for the index, because the majority of the people don't notice the difference between the two chambers, and for them they have approximately the same importance. For obtaining statistical series, that can be correlated whit the regional level of subventions, we have gather around the counties from the eight regions of development from Romania, establishing for each region a value of the "index of proximity to power" as a arithmetical average of the values of the index corresponding to each county from the considered region. Further on, this value is considered to be constant for each of the four years afferent to the period.

3. Methods and results

For the study of the linkage "social welfare - politics", we have chosen the method of the econometrical analysis, elaborated a "Pool Date"[5] regressive model (the data are illustrated in the Table 1), with this shape:

$$Y_{it} = \alpha + \beta x X_{it} + \varepsilon_{it} \quad (2)$$

where Y_{it} represents the dependent variable - GP, α free term coefficient, β independent variable coefficient, X_{it} independent variable - I, ε_{it} error terms, *i* cross-sectional units observed for dated periods - 8 sections (the number of regions) and *t* the period of time (years 1994-2005).

$$GP_{it} = \alpha + \beta x I_{it} + \varepsilon_{it} \quad (3)$$

[5] For econometric model we used the econometric software Eviews 5.0.

Table 1: *Indexes of proximity to power and gross domestic product per capita, in Romania, annual regional dates, years 1994-2005*

Ani/

Regiune	IR1	IR2	IR3	IR4	IR5	IR6	IR7	IR8	GP1	GP2	GP3	GP4	GP5	GP6	GP7	GP8
U.M	IR∈(0,1).								lei/loc							
1994	0,428	0,395	0,413	0,408	0,267	0,159	0,139	0,280	166	208	213	215	234	200	226	327
1995	0,428	0,395	0,413	0,408	0,267	0,159	0,139	0,280	253	313	301	303	345	298	340	437
1996	0,428	0,395	0,413	0,408	0,267	0,159	0,139	0,280	385	486	441	431	509	447	541	687
1997	0,286	0,342	0,332	0,324	0,347	0,293	0,229	0,472	867	1.133	1.006	1.057	1.264	1.030	1.260	1.576
1998	0,286	0,342	0,332	0,324	0,347	0,293	0,229	0,472	1.797	2.253	2.024	2.182	2.806	2.334	2.598	4,148
1999	0,286	0,342	0,332	0,324	0,347	0,293	0,229	0,472	2.506	3.185	2.920	3.000	3.676	3.331	3.838	7.408
2000	0,286	0,342	0,332	0,324	0,347	0,293	0,229	0,472	2.520	3.165	2.830	3.121	3.688	3.341	3.852	7.388
2001	0,527	0,463	0,493	0,527	0,387	0,248	0,234	0,401	3.737	4.490	4.138	4.378	5.521	4.811	5.465	11.029
2002	0,527	0,463	0,493	0,527	0,387	0,248	0,234	0,401	4.971	5.967	5.563	5.553	7.527	6.538	7.505	14,467
2003	0,527	0,463	0,493	0,527	0,387	0,248	0,234	0,401	6.576	7.788	7.377	7.698	10.265	8.784	9.748	17,639
2004	0,527	0,463	0,493	0,527	0,387	0,248	0,234	0,401	7.884	10.323	9.507	9.494	13.045	11.068	11.858	21,673
2005	0,238	0,327	0,299	0,261	0,317	0,234	0,215	0,476	9.114	11.628	10.908	10.460	14.960	12.647	13.549	28,326

The econometric analysis has two steps:

a) a. The "unit root test" of the "panel data";
b) b. The econometric tests of the "pool data" model.

a. The "unit root test" of the "panel data" (Table 2). For verifying the stationarity of the cross-sections group are used the "unit root tests" proposes by Levin, Lin & Chu, Breitung t-stat, Im, Pesaran & Shin W-stat , ADF, PP and Hadri Z-stat.

Table 2: *The "unit root test" of the "panel data"*

Group unit root test: Summary Date: 01/02/09 Time: 22:08 Sample: 1994 2005 Series: IR1, IR2, IR3, IR4, IR5, IR6, IR7, IR8, GP1, GP2, GP3, GP4, GP5, GP6, GP7, GP8 Exogenous variables: Individual effects Automatic selection of maximum lags Automatic selection of lags based on SIC: 0 to 1 Newey-West bandwidth selection using Bartlett kernel				
Method	Statistic	Prob.**	Preseci	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-14.5697	0.0000	16	140
Breitung t-stat	-7.31859	0.0000	16	124
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-7,64516	0,0000	16	140
ADF - Fisher Chi-square	118,412	0,0000	16	140
PP - Fisher Chi-square	162,710	0,0000	16	144
Null: No unit root (assumes common unit root process)				
Hadri Z-stat	8,03727	0,0000	16	160
** Probabilities for Fisher tests are computed using an asympotic Chi -square distribution. All other tests assume asymptotic normality.				

The tests Levin, Lin & Chu, Breitung t-stat, Im, Pesaran & Shin W-stat, ADF and PP indicate that the null hypothesis is rejected (except the Hadri Z-stat test), meaning that the "panel" data group is stationary.

b. The econometric tests of the "pool data" model are (Table 3):

Table 3: *The econometric tests of the "pool data" model "IR-GP"*

Dependent Variable: GP? Method: Pooled EGLS (Cross-section SUR) Date: 12/19/08 Time: 15:38 Sample: 1994 2005 Included observations: 12 Cross-sections included: 8 Total pool (balanced) observations: 96 Linear estimation after one-step weighting matrix				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
1--IR1	6898.885	913.9583	7.548359	0.0000
2--IR2	8859.240	1123.137	7.887940	0.0000
3--IR3	7947.913	1036.344	7.669182	0.0000
4--IR4	8013.224	1008.873	7.942744	0.0000
5--IR5	13233.52	1619.489	8.171418	0.0000
6--IR6	16212.96	2106.881	7.695245	0.0000
7--IR7	21149.42	2366.118	8.938448	0.0000
8--IR8	20468.29	2608.613	7.846427	0.0000
Weighted Statistics				
R-squared	0.752922	Mean dependent var		0.319226
Adjusted R-squared	0.733268	S.D. dependent var		1.867199
S.E. of regression	0.964335	Sum squared resid		81.83493
F-statistic	38.30900	Durbin-Watson stat		1.728209
Prob(F- statistic)	0.000000			
Unweighted Statistics				
R-squared	0.188951	Mean dependent var		5014.469
Sum squared resid	2.07E+09	Durbin-Watson stat		0.149716

The data shows the following:

- the absolute values of the standard errors corresponding to the coefficients of the function are lower than the values of the coefficients, which sustains the correct estimation of these coefficients (a conclusion reinforced by the low values of the probabilities);
- the value of the correlation coefficient (75,29%), shows a significant statistical correlation between the dependent variable - GP and the independent variable – I (the change in the index of proximity to power is reflected considerably in the changes of the volume of the gross domestic product per capita);

- the value of F-statistic is bigger then the F-critical value (the probability is almost 0), showing that the model is relevant;
- the Durbin-Watson test (with a resulting value under the critical point of 2) shows that the residual variables are not auto correlated.

In conclusion, the model may be considered as representative to describe, at regional level, the connection between the index of proximity to power and the volume of gross domestic product per capita.

Therefore, the model may be generally written:

$$GPR_1 = \alpha_1 \times IR_1 \quad (4)$$
$$GPR_2 = \alpha_2 \times IR_2 \quad (5)$$
$$GPR_3 = \alpha_3 \times IR_3 \quad (6)$$
$$GPR_4 = \alpha_4 \times IR_4 \quad (7)$$
$$GPR_5 = \alpha_5 \times IR_5 \quad (8)$$
$$GPR_6 = \alpha_6 \times IR_6 \quad (9)$$
$$GPR_7 = \alpha_7 \times IR_7 \quad (10)$$
$$GPR_8 = \alpha_8 \times IR_8 \quad (11)$$

4. Discussions

By replacing the coefficients, the model becomes:

$$GPR_1 = 6.898{,}8 \times IR_1 \quad (12)$$
$$GPR_2 = 8.859{,}2 \times IR_2 \quad (13)$$
$$GPR_3 = 7.947{,}9 \times IR_3 \quad (14)$$
$$GPR_4 = 8.013{,}2 \times IR_4 \quad (15)$$
$$GPR_5 = 13.233{,}5 \times IR_5 \quad (16)$$
$$GPR_6 = 16.212{,}9 \times IR_6 \quad (17)$$
$$GPR_7 = 21.149{,}4 \times IR_7 \quad (18)$$
$$GPR_8 = 20.468{,}2 \times IR_8 \quad (19)$$

Of course, there are a lot of limitations derived from the small size of data used, from the absence of other explicative variables and from some statistical properties of the residuals errors. Despite these limitations, one can conclude that the model is able to enlighten at least partially the correlations between the political "affinity" and the level of social welfare and to provide an empirical support for the mentioned theoretical framework.

This survey revealed the fact that between the two elements exists a linkage strong enough and the interfering effects of the politics on the distribution of the

social welfare vary from one region to another, and this fact arise the problem of the justness of the repartition mechanism of the distribution of the income and the propriety. The greatest distortion effects can be noticed in regions R8 - Bucharest, R7 – Center and R6 – North - West and we can assume that electorate from that regions is very flexible and sensitive on the aspect of given the vote to the forces that hold the power. On contrary, on the other regions, the electorate remains political faithful, even if the party or the coalition will or will not de power. We can observe in this case, that the "social welfare recompense" through the public policy is equivalences.

5. Conclusions

We can conclude that the purpose of our scientific demarche is not to propose a new "model of the social welfare under the political impact", but only to reveal that the actual repartition system of social welfare is not working right, mostly due to the political factor and it's needed to reshape it on new coordinates.

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CHANGING PERCEPTIONS IN PRODUCTIVITY MODELS - A MAIN GROWTH CASE

Abstract: *This article is a pleading for changing perceptions in productivity analysing models. It aims to be a challenge for abandoning the simplistic method of taking into account economic realities by their place of appearance or of formal recording, considering it obsolete (from the period of industrialization) and a proposition to avoid ignoring the contribution of the environment (consistently with modern knowledge society).*

Underlying the role of knowledge performance in the efficiency of industry and of all the other economic activities that are inputting more intellectual elements, paper uses a clear distinction between material and such immaterial factors. The frame for improving understanding the really determinants in productivity and growth is exactly the core contribution of research and of other intellect-intensive services and their passing from their organization inside the industrial units of manufacturing, to their externalisation. On this ground, paper is a proposal to look for generating actors or complex creating phenomena. Methodologically, paper abandons the assumption of assigning activity returns by usual bookkeeping criterion (by the place of formal registering), accepting the only criterion of genuine true creation.

By such principia, the second part of the paper analysis a practical case, the case of technology: technology is used in industry, but is created and suited by specialized research and other intellect-intensive services. This is an analysis step by step on an important page in economic literature, providing new interpretations and developments and giving a new direction to the main assumption: the diminishing returns of technology.

Assumptions and indicators consistent with manufacturing industry are declared no longer appropriate to modern service economy: modern economics in the knowledge society is consistent with intellect-intensive services. Focusing on them - and no longer on classical industry - can develop economic analysis, enabling economics to accurate findings.

Main conclusion is that mankind and especially enterprisers should much more invest in (buy and use more) intellect-intensive factors.

Key words: *productivity models, intellect-intensive services, externalities*
JEL classification: D24, D62, L80

1. Short introduction

Realities can be presented or expressed in different ways. Scientists make reasoning and value judgements, usually resulting their mode or model of understanding, approaching or presenting the reality. Modelling means to simplify the expression of concerned realities, in a logic course, frequently by using symbols. But this special manner of description contains the risk of making it simplistic. Therefore most attention must be paid to the criteria of abstraction and/or synthesizing: for its pertinence, it is decisive what details are declared most important and what are ignored or hushed (the whole reality is too complex for being compressed in that what is supposed to be a synthesis, an abstract or, more and more often, just a (smaller and smaller) part of the reality, even if minutely detailing presented.

The routine in setting up the importance of different aspects of reality can show disagreements or inconsistency or simply disuse: using approaches that are not consistent with the moment, with the place or even with the nature of the analysed phenomenon; approaches, elements approached or features pointed out can be sometimes just *linked with*, but not central, *essential* or cardinal for that phenomenon. Such modelling should be avoided: simplicity should not mean maiming; the result should not be simplistic, truncated or distorted.

We are especially interested in the matter of productivity: the person or place of **registration** of the results (formal spotlighting economic results, from the point of view of individual interests) on one hand, and the authors and/or places of their **generating** on the other hand are not always superposed; there can be an important difference between those two. That is why it is becoming of capital importance to distinguish the criterion of registration (of the results) to the Cartesian (causative) criterion.

In modelling, the accuracy of the facts must be kept, by preoccupation for revealing their deep essences, and not rather the forms: forms can be easily seen, by any rational being; just essence is more difficult to find out: this is the task for scientists.

2. The need to gain insight into the causative core of the phenomena

Economic modelling of market functioning rather ignores the dimensions of the actors competing, either in the ideal pure and perfect competition, or if some "imperfections" are taken into account: the financial force rather does not take place between the assumptions and determinants, the results of the market functioning are not enough "directly" correlated with that capital "factor". But they appear like (result or are preconceived) being *mediated* by some mechanisms and in those mechanisms exactly the determinant role of capital is forgotten

or incomplete. They are just *declared like being effects of capital* (directly, automatically, mechanically), although in fact they are the results of the mode or manner of using capital factor, including management services, scientific research and other intellectual services that are valorised by this capital. That is they are generally the result of the al intellect-intensity of the economic work. Moreover, all those are mediated by the "market-god"; therefore the final results belong to the market mechanisms in the conditions of owning a certain capital, thus relative to a certain capital. Or mechanisms depend on the force on the market, this determining their nature and, subsequently, being once more involved in the results obtained with those mechanisms, by the fact that they are calculated on the capital owned by any economic agent or put-in. In traditional theory just this last part of the question is considered: the calculation of the effects is made function of proportions of capital, with some mechanisms considered like aprioristic, given "by definition" (by the invisible hand), without putting under question that, by the force differences themselves, the mechanisms change.

The fact is not because of ignoring the financial force (its capital impact is too obvious), but the way of approach itself: in usual perception/assumption, financial force is exactly the way of differentiation *in* (and *by*) market mechanisms, meaning that results are earmarked well proportioned with everyone's "contribution", especially with the proportion of capital; in other words, competition would mean, in this perception, the value differentiation itself, expressed in money.

The economic science has basically built its hypothesis and analysis starting with perceiving the reality through the angle of the wealth of some individuals or groups (family, organizational, national) directly, that is, *the way it appears*, respectively the way it exists (as a result), the way it is *registered* from an individual point of view at given moments (mostly at the end of more important movements of things, at the end of actions with stake or economic impact or, simply, at the end of certain yearly periods). The wealth and the economic effects have therefore been *directly correlated with the work* of those people or nations, but without always analysing the profound determinants, the generators. This happened especially in the Anglo-Saxon thinking, which is best suited (as well as the defining pragmatic character) by the focus on (future) *effects*, on results (correlated with the big returns of those nations, comparatively to the rest of the world.), and not on the issue of (past) *causes*: the past of the matter is often perceived as history, having an "outdated" aspect that is no longer of interest. This perception built on wealth and property was deepened in the XIXth century, when the big step was made to the "consume society", when economic analyses passed from focussing on the physical (technical) matter of production (*classicism*) to the commercial (strictly economic) matter of market (trade) that was already generalized (in the period of *neo-classicism*). It can be relevant that this style– that abandoned the profound *productive* causes of economic realities for passing to the focus on market results - was called "the vulgarisation of science"

(the late classic named Marx used this term for this method put into practice by neoclassic researchers of his time von Wieser and von Böhm-Bawerk.)

Based on the effect of juxtaposition – turned into habit – between the individual and certain goods ("of his own"), under the conditions of insufficient strictness (given the nature of some quite ambiguous utterance and the derogation from the Cartesian character), it came to be implied that wealth – however expressed (mercantilist – in gold, money; physiocrat – in goods, wheat standard; classic – in labour; neoclassic – in utilities) it really *would be* a consequence of those (economic) activities, *outcome of the person's work*. So, the wealth and the other economic effects have came to be practically unanimously interpreted (considered) as *results* not (only) following the processes in question (that is, from a *strictly* ***temporal*** point of view), but also of the processes themselves (from a ***causative*** point of view).

(A certain role has also played the English style of underlining the idea of proprietorship, reported to the reason's and things' own nature: for example, the *tannery* is not called "Tannery", but "Smith's" (by the name of its owner); a wording in "'s" suggests that it is more important that the shop *is owned by Smith* that the fact that *it is a tannery* (the dimension of the *property*, of the material or money appropriation is considered to be more important than the *content* itself, the characteristic of being entered or registered in front of a certain person or entity is considered to prevail to the nature itself of the thing recorded, taken into account or owned by the respective person or entity). This selfish approach is consistent with the attitude against the nature and with ignoring the costs of nature, the costs of the whole environment, by taking into account just the costs – and interests and profits – of "Smith".)

That is why the *productivity* is measured based on the *incomes of the person in question* (e.g. the case of Smith, incomes cashed by Smith, registered *in or on the accounts of Smith*), compared to his *efforts*, regardless of who really produced (created) the equivalent cashed by Smith and registered on him; so, "to produce" ended up by meaning to cash, to register (for himself) in his own accounts as incomes, *to appropriate to oneself*. By this method, the role of the environment is ignored, even if from a causative (generating) point of view this environment can be the *real producer*, or at least *co-producer*: that means that Smith himself did neither caused the out-put based on which his incomes are made, nor the cashing itself; but there were as well other contributions, "efforts", co-producers, co-productive elements, most often not being singled out (they are not specified like having cash in the matter) or having no benefit by anything, but only Smith registering the entire earning); the rest are at the most considered favourable or unfavourable "conditions" (not generators or causal determinants) or called "externalities" – to the degree to which someone pursues and/or distinguishes them. Destructions and other many costs and effects for the environment, including effects as *lucrum cessans* and *damnum emergens* are put on a second place,

less important than Smith's incomes and efforts, even if the hierarchy by the essential importance of the phenomena are exactly conversely.

The ways in which John Kay (the inventor of the "flying shuttle" in the English industrial revolution), John Hargreaves (the one who invented in the same period of time "spinning Jenny"), Samuel Crompton (the creator of the famous "Mule Machine"), John Cartwright (the inventor of the first mechanical weaving machine), J. Roebuck (the suporter of James Watt's experiments) etc., on one hand and Bill Gates on the other hand, were remunerated, are most important. That is because this "payments" for Kay, Hargreaves, Krompton and for the others prove *the way of declaring them productive or unproductive* by the market mechanisms; even if they can be considered as simple exceptions or as paradoxes, they are of great interest for revealing some aspects of reality not always sufficiently or correctly considered and analysed and almost not at all distinguished: they are revealing for some essences of the market economy's realities and they can have a capital contribution to complete – if not to correct – the perception about economy and society, in the scientific economic thought and analysis.

The issue is that some ones are not less producing (with the meaning of *creating*), but just less taking from their environment, including less money on that what they are producing, they are just less cashing or less collecting from the environment. In the same terms the IBP (PIB) of nations should be reanalysed.

That is, seeing that the same work done, the same produced asset, the same scientific contribution may bring *extremely different* retributions for the agent in question (from gaining wealth like Bill Gates, to dying poor like the ones mentioned above), result the fact that the economic analysis should not limit itself to what is important for the economic agent (exclusively) *from his point of view* (namely, what he cashes or collects, the profit or the productivity – the way it results from the math of the market's game). The scientific approach should find out, study and reveal his *real contribution*: it should not be ignored, as it (the real contribution) is not lost (the way the contributions of John Kay or John Hargreaves, and the one of Bill Gates did not simply disappear), but will be found in a *good* done (benefit, gains) for other economic agents or disseminated globally on a social level, without any possibility of a strict individualization on profiting persons (beneficiaries).

Modelling must eliminate routine by reinterpreting growth phenomena, often analysis criterion should be replaced and study should be more profound, for better understanding.

Obvious would be the tendency of every agent to increase what he "receives" (what he attracts or cashes in) and to reduce what the others are to get from him (what he transfers to others or induces to the environment – in the narrower sense – and, generally, what he himself creates, what he generates – in the broader sense).[1]

[1] A. Jivan, "Services and Servicity", *Services World Forum Bulletin*, no. 3,4/1993, Dublin, pp. 16-24; A. Jivan, *Servicity – more than Productivity in Service Economy*, Sedona Eds., Timişoara, 2000

It is also a matter of market negotiation: he wants to get the bigger price for the less own contribution and he wants to pay the less price for the bigger contributions of the others. This notice should be correlated with the previous notices we made about the formal (superficial) view of the market given the most profound research that economics is supposed to prove it capable to make scientifically.

The fact is valid if the economic agent is analysed given his environment, when industry is analysed given scientific research activities or any economic branch is analysed given another branch or given the whole economy, when a national economy or a nation is analysed given the world.

3. An analytical sample: Growing returns

After this principia and criteria reasoning, a sample of analysis can be shown, studying thoroughly and passing beyond the industrialization economics, coming to the modern service economy, by opposing the industry-centred economics to the service-centred economics: a demonstration in favour of the above principia can be given on the case of technology returns.

In the book *The Diminishing Returns of Technology* (Orio Giarini, Henri Lubergé,1978),[2] reference are made to the results induced by the incorporation of new and more and more expensive technologies in production (especially in the industrial "production"). Studying the matter, one can easily notice that the scientific research, generally the intellectual services which form the base of creation and introduction of new technologies use science as resource, besides other resources. Technology resulted is used in industry, but is *created* and suited by specialized high level services. "Diminishing returns" (decreasing results) are registered by the industry (manufacturing activity), and not by these intellect-intensive activities the growing efficiency of which we sustain. So, when speaking about the diminishing returns of technology, the discussion concerns **exclusively the decreasing efficiency of the industry**, and not the returns regarding intellectual services.

The decreasing results in the industry per unit of spending for technology comprises one of the market's main manifestations of the **intellectual activity's increasing returns** (growing efficiency): their "*growing more expensive*". A greater and greater "part" of the general result returns to these services, and the "production" is left with a smaller and smaller part. This fact is distinguished when the intellectual services are "external" to the industrial enterprise, service coming from outside industry; and it is camouflaged when they are "internal", the service coming from the inside of the industrial firms. In both cases, however, the income of the intellect is not registered as a surplus, but as an expense (spending), as an effort (for the industrial enterprise). That also happens when

[2] O. Giarini, Henri Lubergé, *The diminishing returns of Technology*, Dunod, 1978

we keep approaching the economy like in the classic period of industrialization: from the point of view of the industry branch, of the industrial enterprise.

The industrial enterprise appears as spender (for the process proceeding, for the development conditions and for progress), itself being considered as the factor of the activity destined to lead to the new technology (and this would be the frame of reference for the conception in the book that allowed us those remarks and observations). Given these conditions, to finance that (scientific) activity will charge the "production" costs, the incomes of the performances and the recovery of the expenses corresponding to those activities are dissolved in a salary mass and a series of other expenses of the industrial production. Even if these can be separately cumulated, they are considered (internal) costs giving diminishing returns (to the sector or branch in what they are internalised).

In reality they represent the payment done for a more and more expensive service, service that has – as a logical consequence – bigger incomes (returns), therefore greater "productivities".

Distinguished separately, as external (that is performed by other economic agents than the industrial enterprise), these services (research and other intellectual services externalised) allow better understanding the complex creating phenomena. They are more and more expensive on the market, correlated to the fact that they are – evidently – more and more necessary and demanded (the prices are growing also because of the bigger complexity and higher knowledge and scientific level); externalised, the service – from now on independent and distinct – can prove itself stronger and stronger: it earns more and more and this is the reason why the profits registered (on the bases of the service) by the industry are smaller; and if the profits of the industry would become smaller and smaller without external services becoming more expensive, this fact is put down to the diminishing returns *of the industry* (essential fact for the contemporary economy, mostly obvious in the context of maintaining the stakes and objectives of the industrialist-quantitatively-consuming-type of economy). There could be another differentiation between this ordinary industrial-productivity vision, which takes into consideration the micro-economic profit (especially subsistence), and a possible servicity approach, considering the entire society (including the social ensemble's angle): without this research, lacking this "product" of research (intellectual service) there would not be the other "product" (the new industrial one, the improved output of manufacturing).

The scientific research, the intellectual services have led and lead more and more to improved productions, with servicity effects: service is a principle indicator, more comprehensive than usual productivity; it refers to the whole effect, not just to the results gained by the analysed enterprising actor, but it also (and rather) does not ignore the effects on the environment (on other economic actors and including the nature: those last effects are expressly referred to). In our case, not just the effects for the industry are taken into account, but also those for

third parties and for the economy in general (including here the advantages for the industry's, as well as the advantages of the research itself, that of managing to reach a high qualitative "product", etc.) - the way we schematically presented in our former research [2, cap 3 and 4 - this diagram appears in the demonstration from this book on which background the present notices and developments are made]. This is to show that after a period of relative stagnation (stabilization) of results there follows their decrease: the investment in research and development becomes less and less profitable (of course, for the "productive" enterprise).

There are represented the expenses for the acquisition of intellect, intelligence, idea, innovation, knowledge etc. (what we called the ***I*** factor); the fact that they are produced by the industrial enterprise is just a matter of aspect: we make the difference between the formal aspect and the functional grounds of the economic process, between the organizational and juridical frame (image) and the causal (determinative) core of the output. Differences are just from the juridical point of view. From the point of view of the essences (of the creation of values), the phenomenon is the same, even if technology is generated by the researches from the outside of industrial enterprise (employees by the manufacturer employer), even if is generated by researches from the outside of the user of technology (manufacturer): by buying, on the market, specialized intellectual services (from distinct performing research economic entities.).

The performers of the intellectual service will perceive advantages throughout the entire period of the performance activity, or according to contract. A great advantage - although not directly of monetary expression – is the plus of intellect gained, the increase of intellectual-performing potential of those economic agents.

After acquiring the ***I*** factor, the beneficiary of this service *for industry* will benefit from advantages of servicity, at least for a period (especially its financial results will increase until t_3 and will not decrease at least).

Regarding the third parties ("the consumers" of industrial products), they will benefit either from the up dating of or the increase in quality, or from those product's personalization, or in the form of price effect (as a result of the improvement in the quality of production, the "producer's" performance, following the ***I*** factor "infusion") at least for a period. After that period, it will also be possible they to benefit from better productions and products.[3]

It is clear that, in this moment we arrived, the investment for the first moment of the analysis appears *outdated* regarding the ***I*** factor. The material element (the object, the technology) - in which the ***I*** factor (the intellectual factor from the initial moment) has turned into - already represents, for the final moment, only material (*M*) factor, which will bring about only decreasing returns.

The returns of science, which consist of the effects upon growing productivity, are increased; and they could increase even after the final analyzed

[3] For details please see some developments of the matter in: O. Giarini, H. Lubergé, *The diminishing returns of Technology*, Dunod, 1978

moment; but that what exactly is blocking the continuous rise is demand: the demand which addresses industry, and not the scientific research. In contrast, the demand for research increases; the scientific research will have to increase: the demand obstructs the growth of the industry exactly when the industry does not show an enough increase of the intellectual services. The demand for intellectual services is neither directly proportional with the demand for industrial goods, nor conversely proportional. It has to increase always, regardless of the increase of the demand of industrial goods. But all the lagging of the increase (or decrease) of the demand for industry output does not mean (and this is no paradox!) a decrease in the demand for ***I***, but even an increase! So, because of this, the demand for ***I*** turns out to be increasing – and so, its increasing returns are not blocked, not even by scale reasons.

From those evolutions of the demand for the output of the industrial (manufacturing) activities (in contrast with the evolutions of the demand for the scientific activities) results that the returns are decreasing just in the case of the industry, because the demand for its products is limited. Practically, the demand for quantity increases slower or even decreases, but the demand for quality is continually increasing.

As said before, the further increase of returns in manufacturing (after the t_4 time) does not refer in any kind to some decrease of the returns of the ***I*** factor. The decreasing returns belong to the material factors (*K*, *L*), which continue to grow or remain unchanged at the same ***I*** (out-of-date from now on). The outdated effect brings usually about a decrease in the usefulness of goods. But the service performing is not considered to be storable and used-reused in different periods of time: its effects are only occurring sooner or later. So, one cannot say that "the performance becomes out-dated, and so losing efficiency". It was consumed the moment it was performed, and *must be always remade (performed)*. The fact that the results of some performances can be kept (saved) on material supports (paper, film, magnetic band etc.) and used after some time may imply wrong views regarding the quality of being present-day (novelty) of something which can be new or old *only in the moment of its conception*; later, raising such an issue seems absurd (a nonsense from the logical point of view).

The ***I*** factor has to be continually up-to-date (at the scientific level of the times). Therefore **the performance of intellectual services has to be** not only renewed, up-dated, but also **permanent**; any decision taken today only has to prepare (not to substitute) tomorrow's decision.

For the example submitted in the cited book regarding "the life of the product" (and so, the necessity of introduction of new products, from time to time), the intellectual services have the very mission of tracing out the optimum moment for the new products being introduced (maybe somewhere in the t_3 - t_4 interval), or other measures to be taken by supply (contribution) of ***I*** factor,

so that the *ensemble*'s efficiency should be advantageous. If not, the decreasing returns are put down to the *K* factor.

In the purpose of better understanding this and also some other remarks we previously did, a distinction should be done between immaterial (***I***) and material (*M*) factors.[4]

4. Pointing out the immaterial factor

Productivity growth is usually seen like function of factor *K* (capital), but in fact it depends on novelty, knowledge etc. and, in a long run, mostly on true and creative innovations.

In the conditions of the knowledge based economy, an adequate qualitative presentation of economic factors should take into account some differences given the usual economic model: technical progress tempts to be distinctly shown given *labour* and *capital* factors, but it should not to be included neither in capital (as usual), nor in labour (see "human capital"). Such a distinct presentation of the intellect-intensity is useful for understanding: labour and capital as well, have a *qualitative* component part, besides the quantitative one; this should be outlined, even differently approached, by changing criterion, in a manner proper for the times we live.

Therefore two main economic factors are to be pointed out, that are different given the orthodox ones:

- the *material* factor (*M*), represented by the material component parts of *capital* and the pure energetic, physical aspects of *labour*;
- the *intellectual* factor (***I***): information, innovation, invention, knowledge, science, enterprising spirit, know-how.

"Factor ***I*** " is the most important immaterial component part of the economic life of mankind: it is about intellect, idea, initiative etc. (a detailed description on the subject in [4]). It means much more than the sum of human capital, data-banks, scientific and spiritual immaterial heritage of mankind and research as a whole. The "***I***" resource tends not only to *complete* and more and more *enlarge the valences* of the usual material resources *M* (*K*, *L*), but also to *reduce their quantities*, even to partially *substitute* (replace) them: more quality often means less quantity.

Qualitative growth itself can take place not just by material investment, like in traditional models (i.e. by extending activity), but merely by growing effects (production, profit etc. – in the benefit of the economic agent, but in the benefit

[4] A. Jivan, *Servicity – more than Productivity in Service Economy*, Sedona Eds., Timişoara, 2000, pp. 101 and next.

of the environment as well, including the nature) thanks to productivity gains given by this determinant factor.

By that distinction (using the criterion of materiality versus intellect-intensity), we can see that the (industrial) enterpriser (manufacturer) has diminishing returns if he bought some ***I*** factor and will no longer acquire such factor (***I***) again, but *M*. There is always the need for new ideas, extra-information; knowledge could give (again) increasing returns (implying a rise in efficiency).

Buying just factor *M* (and ignoring ***I*** - the new level of knowledge) will surely have diminishing returns, because the *equipment* bought or owned today – according to the old *idea* or knowledge, does not represent ***I*** factor, but *M*: it means spending capital on a mass of material or substance set (arranged or organized) in a certain way, a quantity of substance that has been given a certain shape following a conception from a previous given time; the ***I*** factor has basically the meaning of *the additional* ***I*** brought to (in the manufactured tools, equipment, technology, methods), *the plus* of idea, knowledge, intellect, innovation etc., so the most current (present-day) ***I***, not the inertness, maintaining some ancient, out-dated ideas (This wording is not meant to exclude re-actualisation, turning account of some older ideas, put in good use – or not – some other time, the re-actualisation of which would seem as *novelty*.)

The way the intellectual service submitted at the initial moment had favourable effects, the one subsequently submitted will also have.

If one wants to include in the effect curve (the way it is presented in fig.2) the price of these services as well (given the background of the investment character of the intellectual services – of delayed appearance of positive effects), the trend curve would have a shape which actually means a permanent "cohabitation" with the intellectual services – the ones with increasing returns – precisely for the "survival" of the industry and of every other material activities (based mainly on the *M* factors, so having defining decreasing returns – at least in our time), in order to maintain a general evolution of the shape. "Survival" is ensured by permanent investment and mankind will either stagnate or move forward, depending on the servicity of the ensemble of the activities and of the general intellectual character.

There is how, using practically the figures and even the wording of the quoted authors[5], and based on some of their ideas, we can arrive at some reinterpretations, sometimes even to opposite conclusions [4, 6]: by a change in perspective, which we consider completely justified and legitimated by the facts of the reality. Through the entire economic history of mankind, when some activity's returns (efficiency) became diminishing (decreasing), so that these couldn't be compensated (through scale increases or other methods), the respective activities entered in a relative decline given others (the latter having temporary increasing returns).

The very **survival** of mankind at a greater and greater scale (considering the increase in population) under more and more difficult conditions (the lessen-

[5] O. Giarini, H. Lubergé, *The diminishing returns of Technology*, Dunod, 1978

ing of natural resources), only demonstrates the rising efficiency (contribution) of the mankind's knowledge (***I*** factor). In this regard, *the issue of development should no longer be considered from a preponderant quantitative point of view*: we live in a complex qualitative world – knowledge society.

So, the ***I*** factor, the way we perceive it (meaning in a permanent additional and renewing view), has growing efficiency. O. Giarini[6] underlines the fact that a lessening of the effort to invest in research and development, as well as the prolongation in the duration necessary to ship-shape renewals – and other elements - are causes which can contribute to the lagging of technological renewal. The observation is made in the same book we cited. From this we can only conclude the fact that the consumption of ***I*** factor (especially in the case of industry) should not be diminished, and, moreover, the need for the ***I*** factor is higher and higher. (Readings from Orio Giarini's books and papers were a most important background for setting up and modelling our own conceptions on productivity, including the ideas of this paper; he always honoured us with his superior and comprehensive understanding of the complex realities, from a profoundly scientific perspective.)

The area sensitive to influences by the decisions taken in every moment increases (and will further more and more increase in accordance with the weight of the decisions taken previously: see Giarini's scheme and conclusions, quoted study, page 74). The human society is more and more dynamic and the information on which the economic agents' decisions are based (and the evolution of the society as a whole is based) have to be more and richer, more up-dated. The intellectual services become a permanence of the *rational-qualitative growth* (for this notion, please see).[7]

Consequently, the cause of the technology's diminishing returns should not be looked for in the intellectual services' returns (especially in those of technological research, or related to technology), but in the lagging of the ***I*** factor's growth: there is a need for more and more ***I*** factor, and the **remedy is a suitable speeding up of its growth**.

5. Epilogue

The market mechanisms of industrial-productivity origin not only affect the growth of the ensemble's returns (basically determined or brought about by intellectual services), but also hinder and curb their very manifestation, by the fact that industrialists diminish their spending for research and development, because of their hesitations towards transition from investment to renewal, because they simply refuse the new techniques and because other "techno-pho-

[6] O. Giarini, H. Lubergé, *The diminishing returns of Technology*, Dunod, 1978, p. 75

[7] A. Jivan, *Economics of Tertiary Sector*, Sedona Eds., Timişoara, 1998, cap. V

bia" phenomena[8]; even if there are also rightful fears of possible consequences of medical biology research or atomic research etc., related to negative environmental effects – experienced or only possible. (Such possible negative effects are also not *because of the science*, but because of the *use* on the line of increasing material consumption, due to the inadequate use of science and knowledge, and so, because of the industrialist-consuming-type character.) Market laws exempts us from underlying that the hesitation of business in making expenses on intellectual services, if exists, is not because of an elevated altruist care for the costs or benefits on the environment, but comes just from private profit reasons. Unfortunately the costs of business (resulted from this attitude concerning science and knowledge) exist and we just discussed about one of them: industry's diminishing returns. The matter of the costs for all the planet should also developed.

We declare that the "spirit" of the judgements of Orio Giarini actually suggests (we think) the most of the ideas shown in this paper, even if their "letter" is contradicted in some parts. We think that, in fact, by this paper we just developed that what perhaps Orio Giarini thought or had in mind when he made the respective descriptions.

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[8] For this, see: O. Giarini, H. Lubergé, *The diminishing returns of Technology*, Dunod, 1978, chapter 3 and the bibliographical references.

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PUBLIC SECTOR EFFICIENCY ACCORDING TO COFOG CLASSIFICATION IN THE EUROPEAN UNION

Abstract: *One of the biggest challenges of the extended European Union is to set up a harmonised financial policy in order to accommodate the needs of the older as well as the new member states. The challenges concern the collection of funds, the level of tax compliance, but foremost providing quality public goods under financial constraints. In addressing these issues, the main goal pursued should be the economic growth and the welfare of the citizens. Therefore these problems must be discussed within the framework of public sector governance, transparency and credibility as well as defining the public goods and their beneficiaries.*

Key words: *public goods, public expenses efficiency, European Union*
JEL classification: C20, H41

1. Theoretical background

The budgetary constraints governments have to deal with, on a daily basis, require a new approach of public spending, as well as the revision of public goods definition. Consequently, in order to comply with the *new management* approach requirements, the key words are *efficiency and effectiveness.*

Traditionally, public goods are considered as those whose consumption by an individual does not diminish another individual's consumption (meaning they are non-exclusive and non-rival). Under the new circumstances, these definitions should be extended by considering as public goods *the advantages the society is taken from the provision of utilities meant to satisfy certain particular wants, eradication of poverty, disease, environment protection, and social protec-*

tion. Moreover, it should be clearly stated that either they are referred to as public goods or public services they should bring advantages to the society as a whole, as well as individually. Though public goods are traditionally supplied by government bodies, their provision can be delegated to private entities under certain conditions: maintain the quality, the availability and the price of the provided goods and services. Moreover, public goods should be cost effective, should enhance productivity and diminish unemployment. All these aspects become more challenging because nowadays, public goods become global, range beyond national borders, and once public policies are put in place, the future generations can benefit of their advantage.

Given the high costs of public goods, either merchandises or services, and the limited funds available to finance them the question of expenditure effectiveness is raised. Therefore the public goods should complement private goods, and the intervention of the state should not trespass the line beyond which private incentives diminish. We consider that the provision of public goods and of other advantages to the society should support individual development, should sustain economic activity and the tax benefits toward contributors should be maximized.

Building performance indicators is not an easy task. Nevertheless, measuring is of an utmost importance because, eventually, what gets measured gets, presumably, done. In order to have a valid measurement, three rules are essential: a correct and accurate definition of what must be measured; the goods and services must be measured correctly; consequences put in place if tasks are not fulfilled. In the public sector these rules are quite difficult to apply, because often, the least measurable activities may be the most important ones. Moreover, the rules should be adjustable, entailing behavioural changes. It is also important to assess the long-term outcomes of measurements because the benefits or dysfunctions depend on the ways and fairness of the performance assessment system.

There is a long debate going on whether the public sector enhances economic performance. Most of the economists agree that there are circumstances under which lower levels of government spending are consistent with economic growth and other circumstances in which higher levels of government spending are desirable. If government spending is zero, presumably there will be very little economic growth because enforcing contracts, protecting property, and developing an infrastructure would be very difficult if there were no government at all. In other words, some government spending is necessary for the successful operation of the rule of law. But, economists also agree that government spending becomes a burden at some point, either because government becomes too large or because outlays are misallocated. In such cases, the cost of government exceeds the benefit. Generally, the public sector is not (or should not be) profit seeking and public spending requires costly financing choices. Since public spending requires public funds, collecting the necessary funds means that the public authorities are confronted with the taxpayers' reluctance to comply with the tax

laws, especially if taxes discourage productive and/or saving behaviour. If government spending displaces private-sector activity than it dampens growth, since market forces guide the allocation of resources in the private sector, whereas political forces dominate when politicians and bureaucrats decide how money is spent. Anyway, the impact of public spending on welfare and growth is not straightforward, and therefore the question that is raised concerns whether the problem should be addressed in an aggregate manner, considering the public spending as a whole, or by judging each type of spending individually. Obviously, economic spending differs as nature and characteristics from the social and administrative public spending. While the first category is regarded as having a direct, positive impact on growth, the latter (i.e. the administrative spending) is regarded as GDP consuming with a negative influence on growth. Amidst we find a third category of spending (social and welfare) considered as quasi public (or mixed spending) since they are financed partially by private funds.

One of the biggest challenges of the extended European Union is to set up a harmonised financial policy in order to accommodate the needs of the older as well as the new member states. The challenges concern the collection of funds, the level of tax compliance, but foremost providing quality public goods under financial constraints. In addressing these issues, the main goal pursued should be the economic growth and the welfare of the citizens. Therefore these problems must be discussed within the framework of public sector governance, transparency and credibility as well as defining the public goods and their beneficiaries.

In addressing these issues, the EU also faces cultural differences; customs and habits that define the financial behaviour of its citizens i.e. tax compliance and public funds spending. It further affects the efficiency and effectiveness of public expenditure. Of course, individuals and firms express their options for public goods according to the goods offered by the state. From the state's point of view, the individual preferences should be aggregated thus complying with the mutual interest of the community and stating an objective pursued by the community. The efficiency and effectiveness of public expenditure in the European Union are critical to outcomes, including growth. A country that spends resources in a way that does not complement private sector initiatives or in a cost-effective way will undermine its growth prospects. In the new member states, cost overruns, poor project management, and poor maintenance of new assets result in inefficient creation and maintenance of infrastructure assets. Leakages and waste may imply that increases in health and education spending do not necessarily translate into better outcomes. Typically these reflect underlying problems of capacity for budget management and, in some cases, of governance. If institutional weaknesses and problems of governance that cause poor outcomes are not addressed, even spending on potentially high return programs will have little impact on growth. The net impact will be to erode the government's solvency and reduce its fiscal space.

Country specific conditions are therefore important in the design of fiscal policy for long-term growth. Creating fiscal space will depend on initial conditions existing in a country and the strengths of its institutions as well as on the likely trend of ongoing reforms to improve their performance. Fiscal policy design, that emphasizes the deficit but ignores the composition of spending, ignores an important transmission channel for the growth impact of fiscal policy. There is a rich but not uncontroversial literature, for example, on the relationship between public investment and growth. The sustainability of a fiscal deficit itself depends on the productivity of the expenditure. By allowing a fuller consideration of the growth effects of fiscal decisions, an explicit focus on the composition of expenditure would allow both stabilization and growth objectives to be addressed in more sustainable ways.

Comparing the public sectors in EU countries, it could be easily stated that the dimension of this sector reaches different levels. There are several old member states, such as Sweden, Netherlands, Denmark, and Austria that have a large public sector. In opposition countries in Eastern European often have smaller public sectors. This situation is due to several factors. Firstly it is worth mentioning the specific financial behaviour. Scandinavian countries but also Austria and other western countries seem to assume a higher compliance to taxes and agree a larger public sector. Consequently, the benefits offered by the state in those countries to the citizens are much more important. On the other hand, Eastern European countries but also Ireland and other western countries tried to encourage private sector for growing their economies by reducing taxes. Anyway, this is also correlated to the lower trust, which people show towards public institutions in Eastern countries. Secondly, an important issue would be the composition of public expenditure and the percentage of productive *vs.* non-productive public expenditures. There are countries like Sweden, Denmark, Italy, but also Poland that spend important percent of their GDP for social security while others like Romania, Czech and Hungary spend less for social security. Evidence also show that Eastern European countries have small budgets assigned for health and education but do spend more than western countries on economical activities.

The issue of the impact of public spending on welfare and growth is even more acute for the emerging economies, since the authorities, in these countries, need as many a tool as possible in order to ensure a sustainable growth. It is well known that beside the taxation tool, public spending may be an important channel to boost the economy. Since these countries are *en route* to harmonise their economies and living standard with the more developed countries in Europe a well-proportioned mixture of private and public spending may be of valuable help. Above all, spending in education and health may be rewarding on medium and long term due to their positive impact induced on productivity.

Assessing the efficiency and performance of public expenses is a key item for analysing the quality of public expenses because it connects the entries as

public resources and their yield (efficiency) or the entries to the results obtained (performance). However, from an empirical point of view, this analysis has many difficulties to overcome. The main concerns are represented by the difficulty to obtain data and the weakness of statistical estimation methods, mainly in identifying the volume of public funds used for financing certain economic policies goals (for example, education, research-development, health expenses). While these data can be obtained individually for certain countries, most often they are either not made public or, comparing data among countries is hindered by the different statistical approach. Publishing the COFOG data (functional classification of public expenses adopted at the level of OECD member states) by the EU-27 member states represented a big step forward, but dividing these data in 10 groups of functional expenses may not be sufficient for allowing very detailed analysis.[1] Similarly, appropriate decisions should be taken concerning the choice of some relevant variables to determine the performance of the public sector (e.g. such as the results of the education system, the number of patients cured, the infant mortality rate and the number of professors, doctors, nurses and researches etc.). Moreover, these performances should be correlated with the objectives of financial policies as well as the final outcomes (such as higher labour productivity, higher life quality (welfare level) and a more rapid technical progress[2]).

2. Empirical data

2.1. Public expenses efficiency in education

Given the role the education system may play in stimulating the economic growth, it is important to determine whether the public resources used in education are efficiently used. Because the connection between the expenses in the education and the performances of students is relatively low,[3] the mere growth of expenses in public education seems to be insufficient, albeit it is usually stimulating the economic growth. Figure 1 shows that no connection between the level of public expenses in the primary and secondary education (during 2000-2004), and the results of the educational system measured in the last PISA values

1 For example, COFOG-I does not comprise the data concerning the research and development expenses or the public infrastructure expenses. Still, in the future this information will be included in COFOG-II.

2 Given the fact that benefits are difficult to be determined, the empirical studies focus usually on the efficiency and no on the efficacy. Consequently, in the remaining of this section we will use only the efficiency term although it is clear that a higher efficacy is the main goal.

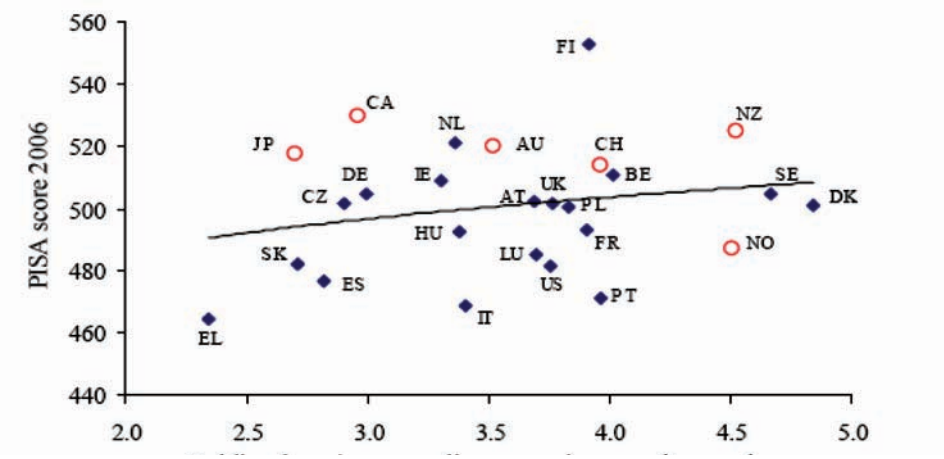
3 Verhoeven et al., 2007, Greenwald et al., 1996, Hanushek and Kimko, 2000, and Hanushek, 2002

for EU and OECD member states can be determined.[4] Consequently, a more efficient use of public resources in education became a key objective for public policy decision makers, their main goal being rather to improve the performances of the education system than to save money in this area.

2.2. Efficiency of public expenses in the health area

The second area that empirical studies on the efficiency of public expenses take into account is health. Its connection to the economic growth is two-dimensional. Firstly, fiscally sustainable health systems avoid creating additional burden on the public budgets, pressures that would lead to increasing the size of the administrative sector and / or that would hinder making other expenses. Secondly, a healthier population would have a positive effect on the labour force supply and on productivity. Moreover, the health insurance programs help levelling the consumption and fighting poverty by protection against the risk of illness. The public expenses in health in EU countries are higher than those in education the average percentage varying between 3% in Cyprus and 7.1% in Great Britain.

Figure 1: *Public expenses in education at primary and secondary level and the people's education level and PISA score in 2006*



Source: OECD PISA 2007 study and Eurostat

Still, calculating the efficiency of expenses in health is quite difficult. Empirical works have used the same approach as for estimating the efficiency of expenses in education. Nevertheless, while the PISA scores were universally accepted as representing yield indicators, as regards the results in health there

[4] The program for international student assessment (PISA) is a standardized assessment at international level in the literature, mathematics and science knowledge areas.

is no consensus concerning the indicators. The considered variables comprise, usually, the life expectancy or the infant mortality, but there were brought forward reasons according to which the best indicators would be the average life time expectancy adjusted to quality or the number of deaths that could have been prevented (these data are available for a small number of countries), or even the number of beds in public hospitals.[5]

2.3. Efficiency of public expenses for other functions

There is little research concerning the efficiency of other public expenses than those mentioned above. A recent study on the efficiency of expenses in the research-development area performed parametrical and non-parametrical estimations by using the private expenses employed in this area and by stating that the governmental expenses are efficient if they stimulate incentives for research and development in the private sector of economy. The authors reached the conclusion that developed countries that are not members of the European Union (Australia, Canada, Japan, New Zealand, Singapore, Switzerland and USA) have better results in this area than the EU member states.[6] By using a COFOG classification, Eugene (2007) estimates the efficiency of public expenses in the order and public safety and in supplying public services on a whole. He noticed that Austria, Denmark and Finland are the most efficient from the first point of view and that Denmark, Finland and Great Britain are the most efficient considering the second point of view. Still, these results are not accurate because the estimations were not rectified as regards the exogenous factors. Finally, a number of studies (Afonso et al. 2008) and (the European Commission, 2008) tried to measure the efficiency of social expenses not from the point of view of economic growth but in connection to other objectives such as fighting poverty, redistributing income and social security. While the first paper finds the Northern countries as the most efficient by using a DEA approach (data development analysis), the second suggests a broader usage of the indicators with similar results.

2.4. Efficiency of markets and of the business environment

Public finance, through budgetary and non-budgetary items, can influence the operating behaviour of the markets and the business environment. Although this influence can be regarded as another dimension of the public finance quality, there is significant overlapping with the dimensions mentioned above and

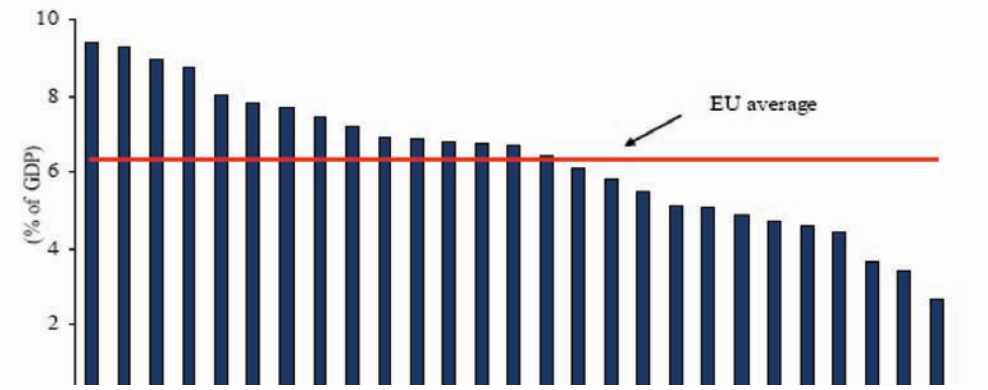
[5] The manners for performing the analysis of the public sector efficiency are discussed in Häkkinen and Joumard (2007). They offer 3 versions: analysis of the system level, analysis of the sickening level and analysis of the sub-sectors level (for example, walk in and pharmaceutical treatment).

[6] See also Mandl et al. (2008) for an analysis of the issues occurring at the time of assessing the research-development expenses.

with the governmental policy in general. Thus, next to the structure of taxes and benefits systems and next to offering a public infrastructure, the efficiency of public administrations can also be a determinant of economic growth. Therefore the European countries do not neglect this type of expenses: they represent, on average, 6.5% of the GDP (or 14% of the total governmental expenses), varying from 2.7% of the GDP in Estonia to 9.4% of the GDP in Hungary (Figure 2).

Consequently, several countries began reforms of the public administration system, to setting a tighter connection between the allocation of resources and the outcomes, changing the management methods and attaching a more important role to the information technologies (electronic governing) in order to increase the productivity of the public sector and the citizens' satisfaction.

Figure 2: *Public expenses in the general services, 2005*



Source: Services of the European Commission, according to the COFOG data

In several European Union member states, the margin of improvement of the public administration efficiency has a great importance as described by the following indicators.

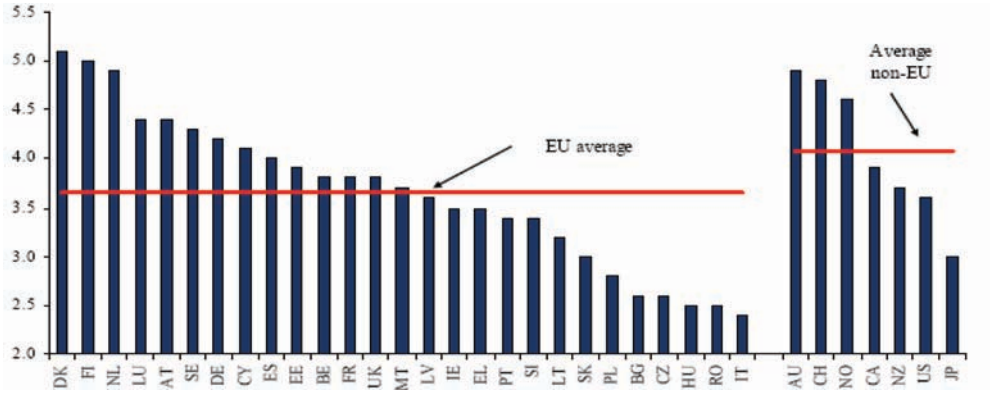
First, the indicators used by the World Bank concerning the commercial regulation degree (World Bank Doing Business indicator), can be seen as a method of analysing the quality of business regulation area and the efficiency for implementing and applying these regulations. The indicator includes aspects that are directly influenced by the public administrations, such as the easiness for obtaining necessary licenses, for closing and opening business, the manner for guaranteeing the observance of contracts, of registering the ownership, for paying taxes an the manner for regulating the international trade.[7] Statistics show that a number of European Union member states (Denmark, Estonia, Finland, Sweden and Great Britain) are among the first 10 countries in the world (out of 178 countries analysed).

[7] Other elements of the indicators that are connected just indirectly to the public finance quality are protecting investors, trade among countries, employing workers and obtaining credits.

Secondly, the governance indicator used by the World Bank (World Bank Governance Indicator) analyses four public administration areas, (i.e. the governmental efficiency, the quality of regulations, the manner laws and regulations are enforced and the control of corruption). According to governmental efficiency assessed by the polls among mangers, experts and citizens, the European Union member states are scoring less than non-member states, because of the deficiencies existing in states like Greece and Italy.

Finally, the indicator relying on a poll among managers, similar to those used by World Economic Forum concerning the often-embedded waste of governmental expenses is revealed in Figure 3.

Figure 3: *Waste level of governmental expenses, 2007*



Note: The index has values between 1 and 7 according to a poll developed among managers
Source: World Economic Forum (2007)

3. Econometrical studies concerning the influence of public expenses in different sectors on the representative performance indicators in the analysed sectors

3.1. Econometric study on the influence of education related expenses on the educational performance

3.1.1. Influence of education-related expense on the performance from a quantitative point of view

The analysis is pursued over 7 years, during 2000-2006 (given the availability of data) considering 26 European Union member states (25 old European Union member states and Romania). The economic model achieved is of pool data type.

The model is:

$$Y_t = \alpha + \beta_i \times X_{it} + \delta_{it} + \varepsilon_t \quad (1),$$

$$En = \alpha + \beta_i Exped_{it} + \delta_{it} + \varepsilon \quad (2),$$

Where:
En – registrations in the secondary education level (number of pupils)
Exed – public expenses for education (Euro)
α _ Global constant of the model
β – Independent variable coefficient
δ_{it} – Effect parameter (fix) specific to sections
ε – Estimation specific errors.

Analysing the data the following conclusions can be reached:

The standard errors values of the regression function coefficients are low in comparison to the values of coefficients, which emphasize the accuracy of their estimation.

The correlation coefficient R^2 is 0.97%, showing that the statistical connection between the resulting variable En and the endogenous one Exped is strong, the modifications of the education expenses being found largely in the modifications of the school registration degree in the secondary school level;

The Durbin-Watson is 1,81 bellow the threshold of 2, indicating that the residual variables are self-correlated to the left;

The stationarity tests for the residual variables suggest that, at the level of unitary roots, can be identified certain individual unit root type processes and, as consequence, that there are certain systemic variations in the assessments made according to this empirical model. The result of the stationarity test shows that the probability for the series to be non-stationary is very low (this was shown by the ADF and PP tests). On a whole, the model quality can be described as satisfactory and it allows reaching conclusions according to the model estimated.

To be noticed that the above model can be considered representative for describing, at macroeconomic level, the connection between public expenses in the education and the registration degree in the secondary level in the 26 countries European Union members undergoing the analysis.

The results concerning the significance of the coefficients corresponding to the independent variable taken into account (level of public expenses corresponding to the education in the European Union member states) show that for 8 of the 26 countries in the sample (Cyprus, Ireland, Italy, Malta, Poland, Slovenia, Sweden and Great Britain) they are not relevant from a statistical point of view. For the remaining 18 countries that can be a subject of the analysis, the following conclusions can be reached:

- in Greece and Spain the relation between increasing the education related expenses and the enrolment in the secondary school level is reversed, certifying a significant inefficiency of public money spending in the education from the point of view of the considered performance indicator.
- for 16 countries, the results show that between the evolution of the school enrolment in the secondary level and the evolution of education related expenses there is a direct correlation, meaning that an increase of education expenses leads, in time, to an increase of the school registration level. It is then obvious that the influence is strong in the Eastern Europe countries where the school enrolment degree grew considerably during the analysed interval (Romania, Hungary, Slovakia, Lithuania, and Latvia), while in highly- developed countries it is observed an increase of the school enrolment degree, but the effects of 1 EUR invested in the education are not as high as in the less developed states of the European Union. Such diminished effects can be noticed in countries such as Denmark, France, Germany or Netherlands.

3.1.2. The impact of the education related expenses on the evolution of number of pupils assigned to a teacher

The analysis is conducted over 7 years 2000-2006 (given the availability of data) and refers to 26 European Union member states (25 old European Union member states and Romania). The economic model achieved is a pool data type. The dependent variable (i.e. an indicator expressing the performance in the education) reveals both quantitatively and qualitatively the level of the education system.

The model is:

$$Npup = \alpha + \beta_i Exped_{it} + \delta_{it} + \varepsilon \qquad (3),$$

Where:
Npup – number of pupils assigned to a teacher
Exped – public expenses for education (Euro)
α _ Global constant of the model
β – Independent variable coefficient
δ_{it} – Effect parameter (fix) specific to sections
ε _ Estimation specific errors

The results obtained after modelling the statistical data series are the following:
The analysis of the data leads to the following conclusions:

The standard errors values of the regression function coefficients are low in comparison to the values of coefficients, emphasizing the accuracy of their estimation;

The correlation coefficient R^2 is 0.99%, showing that the statistical connection between the resulting variable number of pupils and the endogenous one Exped is strong, the changes of the education expenses being found largely in the changes of education quality degree;

The Durbin-Watson test is 2.1, surpassing the threshold (2), thus indicating that the residual variables are slightly self-correlated to the right;

The stationary (?) tests for the residual variables suggest that, at the level of unitary roots, certain individual unit root type processes can be identified and consequently there are certain systemic deviations in the assessments made according to this empirical model. The result of the stationarity test shows that the probability for the series to be non-stationary is very low (shown by the ADF and PP tests). Overall, the quality of the model can be described as satisfactory and it allows reaching the expected conclusions according to the estimated model.

Consequently, the model can be considered representative for describing, at macroeconomic level, the connection between public expenses in the education and the number of pupils assigned to a teacher in the 26 countries European Union members undergoing the analysis.

As regards the significance of the coefficients attached to the considered independent variable (level of public expenses corresponding to the education sector in the European Union member states) the results show that for 10 countries out of 26 taken in the sample (Cyprus, Ireland, Germany, Greece, Hungary, Malta, Poland, Romania, Slovenia and Slovakia) they are not relevant from a statistical point of view. For the 16 remaining countries that can be subject of the analysis, the following conclusions can be reached:

- in Denmark, Italy and Estonia, the relation between the increase the expenses for education and the number of pupils assigned to a teacher, reveals a significant inefficiency of public money spending in the education according to the considered performance indicator. Thus, although the education expenses increase, the number of pupils assigned to a teacher is also increases.
- for 13 countries, the results show that between the evolution of the number of pupils assigned to a teacher and the evolution of expenses in education is a reversed relation (given by the negative sign of the independent variable coefficients), meaning that, in time, increasing the education related expenses leads to fewer pupils assigned to a teacher. The influence is strong in Eastern Europe countries, but also in states where the public expenses policy was already reformed a smaller percentage of GDP being assigned for public expenses (Lithuania, Latvia, Czech Republic, Finland, and Portugal). The developed countries assign a smaller number of pupils to a teacher, but the effects of 1

Euro invested in the education system are not as high as regards this indicator compared to the less developed countries within the European Union. These lower effects can be seen in Austria, France, Belgium or Netherlands.

3.2. Econometric study concerning the influence of health related expenses on the healthcare sector performance

3.2.1. Influence of the public expenses on the number of beds in hospitals

The analysis is pursued over 2000-2006 (given the availability of data) and refers to 26 European Union member states (25 old European Union member states and Romania). The dependent variable measures indirectly the performance of the healthcare sector. Thus, diminishing the number of beds in hospitals leads to shorter admitting periods for patients and to a shorter time of healing of different illnesses requesting hospitalisation.

The economic model achieved is pool data type.

The model will be:

$$NBH = \alpha + \beta_i Exph_{it} + \delta_{it} + \varepsilon \qquad (4),$$

Where:
NBH – number of beds in hospitals
Exph – public expenses for health
α _ Global constant of the model
β – Independent variable coefficient
δ_{it} – Effect parameter (fix) specific to sections
ε – Estimation specific errors

The results obtained after modelling the statistical data series are the following:

The analysis of the data shows that:

The standard errors values of the regression function coefficients are low in comparison to the values of coefficients, which emphasize the accuracy of their estimation.

The correlation coefficient R^2, having a value of almost 1%, shows that the statistical connection between the resulting variable NBH and the endogenous one Exph is strong, the modifications of the health related expenses being found largely in the changes of number of beds in hospitals.

The Durbin-Watson test is 1.56, indicating that the residual variables are self-correlated to the left.

The stationary tests for the residual variables suggest that, at the level of unitary roots, a certain individual unit root type processes can be identified and consequently, that there are certain systemic deviations in the assessments made

according to this empirical model. The result of the stationary test shows that the probability for the series to be non-stationary is very low (this was shown by the ADF and PP tests). On a whole, the model quality can be described as satisfactory and it allows reaching conclusions according to the model estimated.

The significance level of the coefficients corresponding to the independent variable taken into account (level of public expenses corresponding to the healthcare sector in the European Union member state) shows that for 9 of the 26 countries included in the sample (Austria, Belgium, Cyprus, Estonia, Germany, Malta, Poland, Portugal, Spain) they are not relevant from a statistical point of view. For the 17 remaining countries that can be subject of the analysis, the following conclusions can be reached:

- in Slovakia, the correlation existing between increasing the health related expenses and the number of beds in hospitals is direct, certifying a significant inefficiency in the manner of spending the public money in the healthcare sector through the considered performance indicator. Thus, although the health related expenses increase, it is found that the number of beds in hospitals is also increasing.
- for 16 countries, the results show that between the evolution of the number of beds in hospitals and of health related expenses is a reversed relation (given by the negative sign of the independent variable coefficients), meaning that, in time, an increase of the health related expenses determines a smaller number of beds in hospitals. The influence is strong in the Eastern Europe countries, as well as in the countries where the health related public expenses policy was reformed (Lithuania, Latvia, Czech Republic, Slovakia, Romania, Hungary and France). The developed countries register a diminishing of the number of beds in hospitals, but the effects of 1 Euro invested in the healthcare system are not as high as regards this indicator as in the less developed countries within the European Union. Thus, lower effects are noticed in countries such as Great Britain, Sweden, Italy, Greece or Netherlands.

3.2.2 Influence of health related expenses on the infant mortality rate

The analysis considers 2003-2006 (given the availability of data) and it refers to 22 European Union member states (21 old European Union member states and Romania). The dependent variable directly measures the performance of the healthcare sector showing to which degree the infant mortality indicator evolves in the considered countries during the 3 year time interval.

The model is:

$$MR = \alpha + \beta_i Exph_{it} + \delta_{it} + \gamma_t + \varepsilon \qquad (5),$$

Where:
MR – infant mortality rate
Exph – public expenses for health (Euro)
α _ Global constant of the model
β – Independent variable coefficient
δ_i – Effect parameter (fix) specific to sections
ε _ Estimation specific errors
γ – Effect parameter specific to the periods

The results obtained after modelling the statistical data series are the following:

The standard errors values of the regression function coefficients are low in comparison to the values of coefficients, emphasizing the accuracy of their estimation;

The correlation coefficient R^2 is 1%, shows that the statistical connection between the resulting variable infant mortality rate and the endogenous one Exph is strong, the modifications of the health related expenses being found largely in the modifications of infant mortality rate;

The Durbin-Watson test, is 2.33, indicates that the residual variables are self-correlated to the right;

The stationary tests for the residual variables suggest that, at the level of unitary roots, certain individual unit root type processes can be identified and, consequently, there are certain systemic deviations in the assessments made according to this empirical model. The result of the stationary test shows that the probability for the series to be non-stationary is very low (this was shown by the ADF and PP tests). On a whole, the quality of the model can be described as satisfactory and it allows reaching conclusions according to the model estimated.

The significance level of the coefficients corresponding to the independent variable taken into account (level of public expenses corresponding to the healthcare sector in the European Union member states) show that for 11 of the 22 countries in the sample (Austria, Czech Republic, Denmark, Germany, Greece, Italy, Latvia, Romania, Slovakia, Sweden and Great Britain) they are not relevant from a statistical point of view. For the 11 countries remaining that are subject matter of the analysis, the following conclusions can be reached:

- in Belgium, France, Netherlands, Ireland, Spain, Slovakia and Hungary the existing correlation between increasing the health related expenses and the infant mortality rate is direct, emphasizing a significant inefficiency in the manner of spending public money in the healthcare system through the performance indicator taken into account. Thus, although the health related expenses grow, it is found that the infant mortality rate is also increasing. Still, this result can be explained through reaching an improvement limit of this indicator in the previous decades for the Euro-

pean Union's developed countries, limit that right now cannot be surpassed, given the available medical facilities and the qualification of the medical staff.

- for three countries (Estonia, Poland, Portugal), the results obtained show that between the infant mortality rate and the evolution of health related expenses is a reverse relation

4. Conclusions

The issue of the impact of public spending on welfare and growth is important especially for the emerging economies, since the authorities, in these countries, need the right tools to ensure a sustainable growth. It is well known that beside the taxation tool, public spending may be an important channel to boost the economy. Since these countries are *en route* to harmonise their economies and living standard with the more developed countries in Europe a well-proportioned mixture of private and public spending may be of valuable help.

Assessing the efficiency and performance of public expenses is a key item in analysing the quality of public expenses because it connects the revenues as public resources and their yield (efficiency) or the revenues to the results obtained (performance). Publishing the COFOG data (functional classification of public expenses adopted at the level of OECD member states) by the EU-27 member states represented a big step forward in judging and organising expenditures on multi-annual criteria. Similarly, right decisions should be taken concerning the choice of some relevant variables used to determine the performance of the public sector (e.g. such as the results of the education system, the number of patients cured, the infant mortality rate and the number of professors, doctors, nurses and researches etc.).

Regarding the results of our studies for the period 2000-2006, we could state that government expenditure proved different effects on economy and welfare by considering the member states of the European Union. We could make those remarks especially focusing on educational and healthcare sectors.

The influence of the public education expenses is strong in the Eastern Europe countries where the school enrolment degree grew considerably during the analysed interval (Romania, Hungary, Slovakia, Lithuania, and Latvia), while in developed countries an increase of the school enrolment degree is observed, but the effects of 1 EUR invested in the education are not as high as in the less developed states of the European Union. Such diminished effects can be noticed in countries such as Denmark, France, Germany or Netherlands. In Denmark and Italy, the relation between the increase of expenses for education and the number of pupils assigned to a teacher, reveals a significant inefficiency of public money spending according to the considered performance indicator.

Concerning the health sector, the differences between Eastern European countries and developed countries could also be emphasized. Anyway, it is interesting to observe rather different effects of public investment among developed countries which have or have not promoted public expenditures reforms. The influence of public funds on the reduction of the number of beds in hospitals (swift recovery of patients) is strong in Eastern European countries, as in states where the public expenses policy was already reformed. Such results could be noticed in countries like Lithuania, Latvia, Czech Republic but also Portugal and Finland.

In Belgium, France, Netherlands, Ireland, Spain, Slovakia and Hungary the existing correlation between increasing the health related expenses and the infant mortality rate is direct, emphasizing a significant inefficiency in the manner of spending public money in the healthcare system through the performance indicator taken into account. Thus, although the health related expenses grow, it is found that the infant mortality rate is also increasing. Still, this result can be explained through reaching an improvement limit of this indicator in the previous decades for the European Union's developed countries, limit that right now cannot be surpassed, given the available medical facilities and the qualification of the medical staff. For 3 countries (Estonia, Poland, Portugal), the results obtained show that between the child mortality rate and the evolution of health related expenses is a reverse relation.

Finally we could conclude that country specific conditions are therefore important in the design of fiscal policy for long-term growth.

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EXTERNAL AND INTERNAL ENVIRONMENT INFLUENCES ON SME COMPETITIVENESS FROM THE WESTERN AREA OF ROMANIA

Abstract: *The article represents final result of realized project CNCSIS 2006-2007, that has been focused on the competitiveness SME. Those results have shown that majority of tested firms is flexible in respect to changes in the environment, but without planned approach. Such flexibility is based on the abilities of employees, informal organization, teamwork, direct surveillance, personal engagement of entrepreneur, strong cohesion between the entrepreneur and employees. Also, personality and knowledge of the entrepreneur affect the style of management. Incomplete knowledge of managerial methods and time management has been noticed. In order to be successful, SME must obtain international competitiveness.*

Key words: *small and medium sized enterprises (SME), competitiveness, Romania*
JEL classification: L11, M21

1. Introduction

The purpose of this research is a better understanding of expectations and concerning of small and medium sized enterprises from the western region of Romania, in term of competitiveness.

2. Literature review

In the related literature there are many ways in which the firm competitiveness can be understood. There is not a universally accepted definition of competitiveness and there is a lack of precise definition of this concept, but we know that the terminology comes from business literature.

Firm competitiveness is the basic capability of perceiving changes in both external and internal environment and the capability of adapting to these changes in a way that the profit flow generated guarantees the long-term operation of the firm. There is an ongoing struggle for survival (Chikan, 2001).

Competitiveness should be understood as "the ability of companies, industries, regions, nations to generate, while being and remaining exposed to international competition, relatively high factor income and employment on a sustainable basis" (OECD 1998). Krugman[1] defines competitiveness as "is nothing but a different way of saying productivity, taking into account the rate of growth of one firm relative to others".

G. Johnson and K. Scholes[2] emphasize the importance of external environment in formulating competitive strategy in an uncertain environment. The competitive position of an enterprise in the industry in which competes depends on many factors: market share, the quality of used resources, answers flexibility to market pressure, financial performance.

A. Thompson and A. J. Strickland[3] argue that firms have great chances to became profitable and gain success in their industry if they obtain and keep durable competitive advantage.

Competitiveness is determined by productivity, depends on firms strategies, is, partially, the results of relationship between firms and local business environment, depends on social and economic objectives synergy and is influenced by factors from external environment (M. Porter).

A competitive firm knows how to use its strengths to exploite environmental opportunities and to reduce the negative influences of some external environment factors.[4]

3. Method

This study presents final results of a finished grant CNCSIS, 2006-2007, focused on SMEs competitiveness.

1 P. Krugman, "Competitiveness: A dangerous obsession", *Foreign Affaires*, 1994.

2 G. Johnson, K. Scholes, *Exploring corporate strategy,* Prentice-Hall International, Hertfordshire, 1993.

3 A. Thompson, A. J. Strickland, *Strategic Management,* Irwin McGraw Hill, 1998.

4 I. Danaiata, N. Bibu, M. Prediscan, *Management, Baze Teoretice*, Editura Mirton, 2006.

Our research is going on from the following assumption: the SME's evolution and SME's growing is a development and change process, influenced by external environment and by entrepreneur's profile and competency.

In order to meet our scientific objectives, research team, including presents authors, has identified 7 topics:

1) Firms and the their evolution during the last 5 years;
2) The entrepreneur profile;
3) The firm profile (resources);
4) The characteristics of the change management process;
5) The external environment analysis;
6) The EU integration effects on competitiveness;
7) The entrepreneur and ethic.

The research method included mail survey, telephone, and personal interviews of small business owners. Contact lists were received from official firm database, previous research of our colleagues. The sample included only firms with income statement, balance sheet. We have selected 1000 firms from our SMEs data based. We design a questionnaire, (we send them this questionnaire) with 4 pages, 6 sections and 26 questions. The first section contains information about founder, firm and field. The following sections contains information about: turnover evolution in the last 5 year; strengths and obstacles; the changing management process characteristics; the analysis and prognoses of external environment; the effect of EU integration on SMEs competitiveness.

The next step was to establish the sample of our research. We have started from Romanian definition of small and medium sized enterprise, in order with our legislation. The Law 346/2004 defined SMEs "an enterprise which have yearly medium number of employees, fewer than 250, with an yearly net turnover until 50 million euro or in RON equivalent or possessed total active fewer than the equivalent in RON of 43 million euro, and also is respecting the independent criteria.

Corresponding with this Law that was completed with governmental ordinance number 27/26 01 2006, Romanian SMEs are classified in three categories:

1) Microenterprises; with fewer than 9 employees and with an yearly net turnover of maximum 2 million euro.
2) Small enterprises; they have between 10-49 employees and posses total active or have a net turnover of maximum 10 million euro.
3) Medium enterprises; they have from 50 to 249 employees, a net yearly turnover of 50 million euro or possess total active until 43 million euro.

There were about 520228 enterprises in Romania, registered by the end of 2007, out of which only 518229 were SMEs.

Table 1: *The total number of enterprises in Romania*

Nr	Specification	2005	2006	2007
1.	Total enterprises	450666	480910	520228
2	SMEs	448691	478983	518299
3	Active SMEs	434847	463504	487628
4	High enterprises	1975	1927	1929

Source: Statistical Yearbook, 2008

The number of active SMEs in 2007 year was about 487628 enterprises. During 2004-2007 period, the number of active SMEs growth continuously.

Table 2: *The evolution of the number of Romanian SMEs*

	2001	2002	2003	2004	2005	2006	2007
Micro	374255	377499	417366	358787	386561	410763	431029
Small	30340	30231	33856	36392	39128	43419	47022
Medium-sized	7737	7761	8147	9121	9158	9322	9577
All SMEs	412332	415491	459369	404300	434847	463504	487628

Source: Romanian SMEs Report, 2008, NCSMPER

Most of SMEs were microenterprises, (88%), while 10% were small enterprises and 2% were medium-sized enterprises.

Sample structure by field of activity in 2007 shows us that are many SMEs in services, including trade (38,95%), different other services (17,28%), tourism (3,18%). In industry were 12,41% SMEs, in constructions 11,61% and 7,57% were in transportation.

Number of SMEs per 1000 habitants was about 25,98, to far from EU average, 50.

The average turnover per enterprises was in 2007 about 285.000 euros.

Entrepreneurs' assessments of the Romanian business environment were the following (according with White Charter of Romanian SMEs, 2007):

- 42,91% favorable for business;
- 35,11% neutral;
- 21,98% hindering for development.

Entrepreneurs' perceptions regarding the effects of Romania's integration in EU on economy and SMEs sector were the followings (according with White Charter of Romanian SMEs, 2007):

- 47,05%, major opportunity;
- 41,67% no significant influence;
- 11,28%, major threat

In Timiş County, one of the components of western Region in Romania were registered 22394 SMEs. Most of them were microenterprises.

Table 3: *The evolution of the number of Romanian SMEs*

	2002	2003	2004	2005	2006	2007
Total number of SMES	12318	14291	16525	18576	20380	22394
Micro	10536	12368	14476	16328	17999	19845
Small	1338	1448	1556	1737	1845	1993
Medium	370	395	409	430	461	474

Source: Timiş Statistical Regional Direction

Table 4: *Structure by fields of activity in Timiş County*

Sector	2002	2003	2004	2005	2006	2007
Agriculture and forestry	404	503	595	605	668	718
Industry, energy	1829	2035	2171	2320	2391	2443
Constructions	731	973	1190	1440	1748	2236
Services	9244	10672	12459	14101	15458	16883

Source: Timiş Statistical Regional Direction

As we see in this table, most of SMEs were in services. The number of SMEs per 1000 habitants, in Timiş, was about 32.5 in 2007.

Concerning our research, we have received and processed through SPSS program, 134 questionnaires with 125 valid responses. The answer rate was about 12,5%, an accepted limit for an explorative research.

The questioned firms were from *different fields*: production (30,1%), trade (39,3%), financial and other services (8,3%), construction (8,35%), communications and transports (3%), others (19.5%). The majorities of questioned enterprises are in front of *first 50% of competitors.*

The questioned firms were divided into *4 categories*, for statistical reasons (depending on three quartile of growth average rate) and we obtained ordinal variables (1. very low dynamic firms, 2: low dynamic firms, 3. high dynamic and

4. very high dynamic firms). For the 2000-2005 period we analyzed the influence of different environmental factors on two indicators: average rate of net profit and the average rate of turnover. We added to this questionnaire some case studies (60), which detailed the 7 topics. We have identified a group of growing companies, small and medium, that are achieving strong performance, better than the average of the group. We have focused our research on this group. We want to observe significant difference in profit and turnover dynamic between firms. We used Fisher test and Eta coefficient.

4. Results

Overall, 2005-2007 was a very good period for the Romanian economy. The economic recovery continued at a robust rate. The economic results achieved in 2005, as the gross domestic product growth by 4.1% and the average inflation rate of 11.9% proved a sustainable development stage of the Romanian economy. The Romanian economic growth was supported both by the domestic and external demand. In the year 2005 the domestic demand (investment and private consumption) represented the main factors, which have supported the economic growth.

In our sample, firm's turnover grew slowly in the last 5 years, and the average 5 years profitability rate was 18% (per all) with some sector differences: IT, (40%), industry service (18-20%), constructions (12,5%), trade (16%). It is important that we discuss about their growth process. The net profit grew continuously with an average rate of 9.55%/year. The main factors that we have identified for *continuous growth* were: improvement of managerial skills; improvement of distribution channels; cost reduction; modernization in technology, growth in production capacity; improvement in employees' motivation.

The products are sold especially in domestic market (70%). We are discussing here about firm competitiveness on Romanian market, especially, competitiveness in local markets.

The entrepreneur profile

Entrepreneurs are important in the growth firm process. Starting a new business requires more than just an idea. It requires also a person, an entrepreneur who uses his judgment and professional and managerial skills with his risk taking to ensure the success of his own business. Before presenting our findings, we must ask a simple question: who are entrepreneurs? Are they special people? "Entrepreneurs are those individuals who discover markets needs and launch new firms to meet those needs" (Longenecker, Moore, Petty, Palich, 2006).

Our data analysis began with the company, the entrepreneur and its activity. About the entrepreneur's position in company, 7,5% are owners, 53% are also managers and 39,6% have another position than manager. It is important that 92,5% entrepreneurs are also managers in their company; in more than 50% cases they are top managers.

From gender point of view, only 28,4% are women and 71,6% are men. This is an interesting situation in Romanian business environment, and, of course, in our region: in the last years, more women became entrepreneurs. We do not have relevant research study about this phenomenon in our region but we believe that there are some environmental factors including socio-cultural and economics factors (Timis County is a well developed county, local and urban culture favorable to gender equality, and location) which are influencing women decisions to become entrepreneur.

We are sure that there are some similarities and differences between the types of entrepreneurial features associated with different types of organizations. New firms were founded by entrepreneurs who are young that we have identified as a new trend, and also by middle-aged persons.

In our study, according to age of entrepreneurs, we have found the following:

- The average age for entrepreneur is 42,4 year.
- The younger age was 21 year and the oldest was 66 year.
- From 21 years to 55: 29,6%, 35 to 55 years: 62,8%; more than 55 years: 7,6%.

We don't have information concerning identification of entrepreneurial typologies.

Generally, there are many reasons to become an entrepreneur:

- to be your own boss;
- chance to fulfill oneself;
- will to succeed;
- chance to make better results;
- earn more money.

We think that these reasons were common for our local entrepreneurs. Our studies founds that the strongest motivation to start a business were *independence, earn more money and respect.*

Questions were asked about the education, training and business experience. The owner/managers have higher education (58,8%) and 33,6% have followed managerial training programs. There is a weakness for firms the fact that 2/3 from their entrepreneurs do not have a special degree in management field. A significant number of entrepreneurs may have had *previous entrepreneurial experience*.

Some entrepreneurs (30%) have some experience in the field, before starting a business. They worked in different state or private enterprises.

The average age for entrepreneur is 42,4 year, indicating that the average growth oriented entrepreneur has been living in a market economy for 17 years, representing most of his working life.

Environmental influences

The external environment, which is complex, unstable, is influencing the small and medium sized competitivitiveness, and of course, management decisions. Through our questionnaires, entrepreneurs-managers have identified some external factors with positive influences on business: growth demand for their products in local markets; growth demand for their products in foreign markets; infrastructure modernization; opportunity for investments financing; simplified access to loans; attractive interest rates; best quality of raw materials; production methods and modern technologies; growth in population buying power; positive modification in rules, governmental policies. For that, we have analyzed statistical significance and the relation between factors. We have analyzed the factors influences on two indicators: profit average rate and turnover rate.

45,5% from questioned firms recognized that growth demand for their products in local markets is a very strong positive factor for their business, especially for firms with low performance. For most performant firms, this factor is not so import. 78% from SMEs said that simplified access to loans is not so important for profit growth average rate. Infrastructure modernization is not important for 72,7% questioned SMEs, per all. The impact of infrastructure modernization is low, on these two indicators, (profit and turnover). For most dynamic firms, 84% of SMEs evaluates being important the influence of investment financing opportunities on profit and of course on development process. For very dynamic firms the influence of this factor in unimportant. Financing is also very important for business development and for profit growth average rate. Financing opportunity is also important for turnover average growth rate, for 80% of SMEs, including firms from the 4th categories.

In the same time we have identified factors, which may have a negative impact on business development. Raising prices on raw materials and utilities have a low influence on profit average growth rate (35,1% from all firms). For low performant firms the influence of this factor on profit and turnover is very strong. The growth of competition is a very important factor, with strong influences on turnover (39%) and profit rate (48,23% from all questioned firms). Against competitors the questioned firms have identified the following *strengths*: excellent organization (47%); good workers qualification (32,1%); modern technologies in their firms, (28,4%), marketing activities (50%), financial position (23,9%). The governmental and states institutions have an important role in firms' activities. Managers founds that government and non government organizations can be

more involved in consulting activities, training, create a favorable environment for small and medium business.

The integration in EU

Most of firms (60%) have appreciated that integration in EU is a positive factor (new markets, free circulation of goods, and a better access to raw materials). The influence of this factor on profit rate evolution is not so strong. Some negative effects of EU integration are increasing competition (53,7%), increasing wages (43,3%), and new environmental restrictions.

New EU regulations, including environmental protection, are important factors with strong influences on firm profit (48,1%).

Our 80% surveyed firms are competing in domestic markets with different Romanian and foreign firms. We considered these to have an internal competitiveness, being able to perform only on internal market.

The characteristics of change management process

Our research proposed the most internal and external factors, frequently generating organizational changes. The main internal factors generating organizational changes were the following: identifying new business opportunity by the top management (29,3%); some pressures due to financial difficulties (27,6%); workers ideas and creativity (23,3%); need to modernize the organizational structure (6%). The most important three external forces, which have generated the need for changes were: changes in to consumer preferences (36,7%); legislation instability (21,1%); growing competition (20,2%).

Success factors and obstacles

Our research reveals some success factors for enterprises. Some researchers argued that the overall competitiveness of an enterprise comes about by the performance in the following areas: economic productivity, quality, customer focus and social productivity. In related literature we find some *competitiveness performance indicators*: market share; growth in sales (our firms succeed in this); growth in exports (not for our firms); new product introduction; good image and reputation.

The managers of our research have identified some successfully factors for their business:

1) the quality of the products/services (62,7%);
2) good relationship with customers (52,6%),
3) the professional experience (45,5%);
4) managerial competencies (38,8%),

5) marketing politics (26,1%);
6) business financing (14%).

Of course, there are some *obstacles* for their business, as we found: the payment for delivering products; the workers qualification; the weakness financial power; access to financing.

There are some positive and negative factors in our research, which are influencing firms' competitiveness. Positive factors are: growth demand for their products; infrastructure modernization; more economic favorable conditions; small taxes; governmental regulation. Negative factors are: raw material price rising; utilities price rising; competition growth; new EU regulation.

Firms must have strengths to exploit opportunities from external environment. The identified strengths are the following: excellent organization; workers qualification; modern technologies; marketing activities.

Of course, there are some problems for managers concerning difficult access to know-how, and informational resources. The European Union integration bring some consequences for Romanian entrepreneurs:

- new markets access;
- free trade of products;
- legislative rules standardization;
- new financing source access;
- growing internal competition;
- pressure for wages growing;
- for some firms, profit reducing.

In a market economy, financial institutions are critical factors in entrepreneurial growth. The banking system is perceived as one of the main obstacles of small business development in the region.

The governmental and states institutions have an important role in firms' activities. Managers founds that governmental and non governmental organizations can be more involved in consulting activities, training, create a favorable environment for small and medium business. The most important communication channel between firms and government are county organizations for SME's, chambers for industry and trade (in Timiş, CCIT).

Government can influence the market mechanisms and make them to function efficiently, and can create a favorable environment, that enables entrepreneurs to seek profits.

5. Conclusion

This study confirms us our assumptions. The external environment influence on SMEs is very strong. The world is changing, the environment is more uncertain, the competition is strong, and the environment protection regulations are more restrictive. All this requires rapid, efficient and effectiveness answers. These results are also explained by the favorable context of Romanian economic evolution during 2001-2006.

Firm competitiveness must be shown like a part of territorial, local competitiveness. Economic development is a cooperation process between government, local administration, firms, research institutes and education.

After this research, including case studies, we are able to formulate some conclusions concerning the SMEs growth and competitiveness, from our questioned firms:

1) Forecasting time horizon is limited under two years;
2) The firm objectives are related with personal objectives;
3) Even if there are strong focalized on financial aspects business, we talk about permanent crisis state because of missing cash flow;
4) Most of firms have flexibility to environmental changes, but no more planning approach of changes and low anticipation of changes;
5) Flexibility is based on workers ability, informal organization, teamwork, direct supervisory, personal implication of entrepreneur, strong cohesion between entrepreneur and his workers;
6) Management style is influenced by entrepreneur's personality, his knowledge about management styles;
7) Many firms, especially small firms with lack of formal information system;
8) Very strong market oriented and very opened with clients;
9) Lack of functional workers and interest for consulting services;
10) SMEs are based more on creativity and experience in decisional process;
11) Entrepreneurs are very implied on day-to-day operations;
12) Insufficient knowledge of managerial methods;
13) Lack of knowledge of time management.

For a greater success, SMEs must have also an international competitiveness.

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IMPLICATIONS OF THE NATURAL FACTOR ON SUSTAINABLE ECONOMIC GROWTH

Abstract: *The energetic strategy of Romania is in concordance with the agreed elements at European level from an European energy politics, looking at: assuring the security of providing energy, competitiveness of the energy market and the durability of energetic consumption. As a member of the European Union, Romania supports the European efforts for designing and implementing a unique renewable energy politics. A major objective of European energetic politics, at which Romania has to take part in, is represented by environment protection. In March 2007, at European level there were agreed a few rules: promoting renewable sources of energy, domain in which Romania took important responsibilities by entering the EU, growing the bio-fuel consumption and the growth of energy efficiency.*

Key words: *European energy policy, energy efficiency, negative externalities, Romania*
JEL classification: Q32. Q55

1. Introduction

Economic growth can be observed as being one nations` capacity of supplying larger and larger quantities of goods and services, fad reflected by the increase (in a certain amount of time) of the macroeconomic indicators; and that is because the level of macroeconomic indicators as well as the population (which produces and consumes the goods and services) are variables over time.

Economic growth must take into consideration real macroeconomic results. From quantity point of view, the synthetic expression of economic growth is the rhythm of the GDP or GNP over capital. There are known, still, limits of this indicator which shows as a medium value, not generating information's with the effective allocation of incomes from different categories of population, it doesn't reflect ecologic costs, the band between the process of economic growth and social finality, that which ameliorates the quality of life for long term etc. So, if we take into consideration the fact that finality of the economic growth is the social wellbeing of each and one of us, normally we have to take into considera-

tion the net values of these indicators not the gross values. This way, they represent an inconvenient in evaluating the effects of the growths for these macroeconomic indicators.

Economic growth can be considered a move on a very long term. The behaviour of economy on long term represents the domain of economy in delivering goods and services. The study over long term focuses on gathering of capital and on technological improvements. On long term, offer for goods and services are equal to the potential output. Prices and inflation on this sector are determined by fluctuations of demand. On short term, fluctuations of demand determine how much of the total capacity is used, and, so the level of output and unemployment. Unlike the long term, in the case of short-term evolution, prices are relatively fixed, and the output is not constant. The area which involves the short term "model" is the one in which the major role of macroeconomic policies is found.

Taking into consideration social aspects of the economic growth process, and its analysis cannot made by the simple limitation to progress/regress of the aggregated macroeconomic indicators in value; it must be expanded over interdependence between indicators, which are determined at a national or an international level, and over the implications generated in the level of life over population, as well.

The implications of income distribution over economic growth are viewed in different visions same of then enlighten the immense scale between equity and economic growth and others enlighten the relation between then. After 1989, in Romania, an accent on economic policies was taken into consideration with the hope that their explicability will determine obtaining of good results on short term.

But, it was observed that implementing these policies upon production did not support a healthy economic development.

For the economic growth to be really effective and efficient, it has to be sustainable. Since it's in its essence a long-term process, sustainable growth needs corresponding structural adjusting. While the corresponding structural term adjustments can be related with the decrease of production, the positive part consists in that them will create all the 'ingredients" needed for a sustainable economic growth.

Economic improvement increases the level of aspiration for companies and generates conditions for the improvement of environment quality. The increase of income and life level means satisfying the fundamental material needs, and people can pay attention to the quality of their lives and to the environment they live in. Once the present seems to be characterized by safely, people can focus their thoughts to the future. The relation between income growth and ecological consideration in the same all over the world, but the industrialized countries who have strong economy and a high life level, tend to offer more time and larger volume of resources to the environmental problems resolving.

2. Natural Factor and Economic Growth

Goods and services offered by the environment to the society were always under-appreciated in economics. They were left outside the market mechanism, outside the price system or were connected to the economic system, from the dominant positions of economic politics, even if they proved their vital aspects everywhere continuously.

The dynamics of nature, as a production factor, is complemented by the waste of same resources, by destructive actions such as soil degradation, water and atmosphere pollution, irrational forest cut-down etc. With bad consequences on medium and long term, over weather, desert spreading a large surface of the globe etc. In general lines, the environment, besides the fact that it is a productive factor generate of primary inputs earned by the productive process, is, as well, the "recipient" of residual goods for the process of production and consumption, which would, or not be absorbed depending by the capacity of environmental assimilation. On the other hand, an actual function of the environment is that of service provider recreational character or others released to the concept of life quality, demand that is determined by the level of society development.

After World War II, the natural resources problem gave birth to a wide and complicated fight or an international scale. More and more, the ecologic problem transforms in global debates all the countries being interested by reading to an ecologic equilibration.

A fundamental preoccupation was the availability of exhaustible resources and the conclusions were optimistic, underlining the fact that science, technology and man in outer space will resolve the problem, when kept aside, saying that it is not the case to keep developing technologies capable of providing technologies capable of providing cheap energy; when pessimistic (like the conclusions in the report to "Club from Rome", entitled "Growth limits", paper published by Meadows D. H and Co. in 1972).

"Central point of conservation renewable resources is the concept of maximum sustainable growth, which means that using to its maximum a renewable resource. cannot be sustained without affecting or deteriorating the process or their renewal."

Such a *non-growth* situation needs a way to be expressed only in the terms of using the resource. Changes and advantages of science and technology can be useful as long as they do not depend of increasing quantities of limited resources that are to be used. There must not be any doubt that a slow transition is to be preferred over an economic downturn, but the problem of efforts needed to gain a slow transition to a non-growth level.

The analysis of the causes of a certain type of economic growth, which does not take into consideration the problem of renewing the environment and further consequences, over the individual and the society, is important for global

evolution, since human nature is in danger, which by negligence and indifference to determine life to be destroyed.

Becoming aware as a human being that the society we live in is not forever, that the fulfillment of normal life needs must be made by taking care of the others non-human life forms, it has a big importance, once with the creation of the natural-human crises of contemporary development[1].

Economy knows two phenomena: production and consumption. One product after it is absorbed by consumption, no one will preoccupy to know what the goods become after consumption; one product, which is sold, does not have economic importance anymore. Waste, non-monetary phenomena are not included in the economic area.

In the same way, economy knows only one production: that which changes for money. Either at the exist from the process of production, we find at least two types of products: the products that have needed to be sold and waste. The English literature refers to the general notion of "output" (exits), which mean everything that exits from the process of production, at "goods" knowledge and its' "bads", the last one widely meaning everything that is thrown away, including pollution.

Economic reality is not reduced only to a simple split between production-consumption, but it is written in a more complex relation, which links production, consumption and waste.

It is important that people don't create anything, but transforms the resources into economic assets and in waste at the same time. Likewise, consumption is not limited to using or destroying assets, but also their transformation into waste. Pollution shows up from destroying matter, waste which has to be controlled twice: as a waste and pollution factor.

At this level, we must understand that, since the moment when economy ignores a phenomenon, there are obvious managing errors. Waste, not having any economical value does not concern anyone. Natural resources like air and water are considered free assets, available without any restrictions, and are not the object of a rational administration from the same reason that economic goods to which a monetary value is attached. If, on the contrary, a monetary value is affected, overall, by the environmental resources (problems for resource taxing), these enter in the economical area for the same reason as the other resources and production factors, capital, labor, land and all the other intermediary consumptions (inputs), which are included in the production process. If the water and the atmospheric services, which absorb pollution, are free, we are tempted to limit our water consumption level and the pollution in the environment. Above that, if these practices are not daunting for other economic agents (these damages are not transformed in monetary transactions), these phenomena, which still affect the wealth, remain ignored.

[1] C. Popescu, "Cresterea care saraceste", *Tribuna Economica*, Bucureti, 2003, p. 263.

An essential point is reached this way: the phenomenon that has not a monetary resemblance, on a certain market, it is ignored by the economic system.

3. Energetic resources in Romania

The activity at a local level in the energy domain and the action of overriding the climate changes are considered interdependent, context in which three objectives are important to achieve: supply safety, internal market competitiveness and environment protection – the main base of the future of common politics in the energetic domain. Romania supports the compulsory character of the 20% target proposed for renewable energy, as well as consolidating the internal energy market for producing clean energy and reducing the bad influences of energetic sector over climate change.

The process of economic growth, as a process that takes place on a long term, generates the need for resources. One of the biggest pressures is on the energy resources. Taking into consideration the pessimistic future aspects of national reserves, we must take into in consideration the import resources as well, In table 1. we show the import dynamics of total resources on one hand and of coal and natural gas on the other hand.

Table 1: *The dynamics of natural energetic resources import for national level (Romania) - Thousands of tones for petrol equivalent1)*

	1999[2)]	**2000[2)]**	**2001[2)]**	**2002[2)]**	**2003[2)]**	**2004[2)]**	**2005**	**2006**	**2007**
Resources	10186	10925	12771	13949	14639	16672	17072	17605	17399
Resources (previous year =100)	100	107.25	116.89	109.22	104.94	113.88	102.39	103.12	98.82
Coal	1584	1706	1911	2394	2066	2367	2500	2359	3021
Coal (previous year = 100)	100	107.70	112.01	125.27	86.29	114.56	105.61	94.36	128.06
Natural Gas[3)]	2538	2712	2332	3043	4723	4127	4233	4839	3904
Natural Gas (previous year = 100)	100	106.85	85.98	130.48	155.20	87.38	102.56	114.31	80.67

1) Equivalent petrol (10000 kcal/kg);**2)** Including energetic products obtained and consumed in the population's houses; **3)** Excluding gasoline and ethane from the extraction points included for brute oil.

Source: Own calculations based on data provided by the National Institute of Statistics

We observe that, overall, the resources imports did increase by 2006, and in 2007 dropped compared to last year. We conclude that, over all, the resource import

grew in the analyzed period of time. For coal, where the Minister prognosis is better, the imports, overall knew a slow grow. We observe that these imports, except the year 2003, when they fell comparatively with the year 2002, they grew yearly compared to the year before, their growth level was a different one (in the year 2003 was the highest, while in the last year analyzed year, 2005, was the lowest). In 2007, over the drop of resource imports, the import of natural gas dropped as well.

For natural gas, on which the future is not bright, we observe important oscillations from year to year. In 2001, the imports fell compared to 2000, after which two years with important growths, and then, in 2004, another decrease, after which a small increase, not important over the previous year, and all these even if the future opinions of the Minister are very bad. This way we can explain the high price accepted by the Romanian authorities (being forced by the environment) for natural gas import from Russia.

Table 2: *Internal gross energy consumption*

- *Thousands of tones petrol equivalent* [1)]

	1999	2000.	2001.	2002.	2003.	2004.	2005.	2006.	2007.
Total 2) from which:	36567	36374	37971	36480	39032	39018	37932	39381	39159
Electric energy	1503	1212	1172	1136	962	1320	1489	1212	1195
Share of electric energy in total resources (%)	4.11	3.33	3.08	3.11	2.46	3.38	3.92	3.07	3.05
Coal (including brute coal)	6853	7475	8169	8813	9509	9172	8742	9540	10064
Share of coal (including brute coal) in total resources (%)	18.74	20.55	21.68	24.15	24.36	23.50	23.04	24.22	25.7
Brute oil and petrol products	10246	9808	10805	9369	9087	10092	9163	9651	9658
Share of brute oil and petrol products in total resources (%)	28.01	26.96	28.45	25.68	23.28	25.86	24.15	24.50	24.66
Natural gas 3)	13730	13679	13315	13326	15317	13766	13820	14308	12862
Share of natural gases in total resources (%)	37.54	37.60	35.06	36.52	39.24	35.28	36.43	36.33	32.84

[1)] Equivalent petrol (10000 kcal/kg); [2)] Including energetic products obtained and consumed in population's households; [3)] Excluding gasoline and ethane from extraction points which are included at brute oil.

Source: National institute of Statistics

Analyzing the energy consumption (table 2), we observe, that overall, in the analyzed period of time, no major fluctuations existed, and recorded a slow growth in 2005 compared to 1999 with spikes in 2003 and 2004. Natural gas consumption modified very little it's share in the total energy consumption, being over 35% at all time, and as such, has the biggest share of all resources taken into consideration. As such, this situation, of little fluctuations of types of shares

in total resources can be observed at all types of resources being analyzed: at coal, a small increase was recorded, but constant until 2003, after which a small decrease took place; at brute oil and petrol products, the shares fluctuated from one year to another, but in small proportions: the biggest share in 2001 (28.45%), and the smallest in 2003 (23.28%).

The main resources of primary energy, in the year 2008, are about 40414.9 thousands of tons petrol equivalent (from which 24296.9 thousands of tons equivalent petrol from internal production), with a drop of 2.4% over 2007, as a direct response to the decrease of import by 6.1%. Production increased by 0.2%.

In 2005, the primary energy consumption for each inhabitant was 1.91 tones equivalent petrol (tep) at a population of 21.65 million inhabitants. According to the national strategy in the domain, in 2010, the energy consumption will be 2.24 tep, even if the population will be only 21.26 million inhabitants. The prognosis goes up to 2015, when the total primary energy consumption will be 2.47 tep/inhabitant, at a population of 20.90 million inhabitants. In the years 2006 and 2007 we observe that the proportions are the same overall. But we notice the low proportion of electric energy, while the proportion of natural gas is relatively high over the entire analyzed time span. Only in 2007, we notice a slow reduction of proportion for these in all the resources.

Total electric energy consumed in 2008 was 53030.8 millions of kWh. with 4.2% more than 2007; public lightning increased by 10.6% and the population electric energy consumption by 7.1%.

Table 3: *Level of energetic independence*

	1999.	**2000.**	**2001.**	**2002.**	**2003.**	**2004.**	**2005.**	**2006.**	**2007.**
Tota[1)]	75.9	77.3	73.7	75.8	72.2	72.0	71.6	68.7	69.7
Coal (including cocs)	69.0	74.9	76.4	69.4	68.7	67.5	66.3	67.9	68.1
Brute oil	59.4	57.0	52.2	48.5	52.0	43.4	37.8	35.9	35.4
Natural gas [2)]	81.5	80.2	81.8	77.9	68.7	74.1	69.0	65.7	70.6

1) Including energetic products obtained and consumed in the population's households;

2) Excluding gasoline and ethane from the extraction points that are included for brute oil.

Source: National Institute of Statistics

Taking into consideration the pessimistic previsions, we must keep under observation the level of energetic independence for the main categories of energetic resources. As it was to expected, this level dropped constantly. We can see from table 3 that this level dropped, as it was expected, from coal which had the smallest drop, and, more there were years when this even increased, while for brute oil and natural gas this dropped continuously in the analyzed period of time, dropping from 59.4% to 37.8% in 2005 for brute oil and from 81.5% to 69% in the same amount of time for natural gas (in both aspects well over 20%).

Regarding the accessibility of energetic services in Romania, electrification for all the cities needs a program sustained by investments, with a strong economical and social impact. In this program it is mentioned that 287 cities with 15433 households to be connected to the electric grid. Concerning access to heating provided by the centralized public system, less than 30% of entire country population benefits from these services. The share of cities which are connected to the natural gas grid from all cities that are counted shows that in 2005, about only 22% (742 from 3170) were connected to the natural gas grid.

The problem of national natural resources is a major one for national economy. In the domain of energy sources we must take into consideration the continuity of diversifying the energetic mix, by promoting more the renewable energy sources (even if this means for a start larger production costs, but in this case the differences between the well-developed countries are not big) and intensifying the preoccupation for energetic efficiency increase over the entire chain of production – transport – distribution – end user.

The energetic strategy of Romania is in concordance with the agreed elements at European level from an European energy politics, looking at: assuring the security of providing energy, competitiveness of the energy market and the durability of energetic consumption. As a member of the European Union. Romania supports the European efforts for designing and implementing a unique renewable energy politics.

A major objective of European energetic politics, at which Romania has to take part in, is represented by environment protection. At an European level there were agreed, with the chance of European Council from march 2007 a few rules: promoting renewable sources of energy, domain in which Romania took important responsibilities by entering the EU, growing the bio-fuel consumption, the growth of energy efficiency. For these domains. Romania will benefit by important amounts of money from the Sectorial Operational Programs.

For Romania, a series of strategic directions are important. For assuring the security of supply. Romania has to act as well as on an internal plan – by rational use and growing the efficiency of existent resources, exploiting new extraction points, securing strategic stocks, and as well as for an external plan – by consolidating the partnerships with other producing countries (from the area of Caspian Sea and Central Asia, and as well as other regions like the North Africa), active in developing the transit potential of the Black Sea and assuring a sustained activity of Constanta marine harbour in this context, promoting the transit projects of hydrocarbons which will transit Romania (Nabucco, PEOP).

4. Negative impact of IT over natural resources

Toxic components used to produce semiconductors; circuit boards and monitors can generate pollution. Because computers are rapidly dropping in value, repairing is costly compared to the price of new products. When the computers are thrown away, the mercury and chrome form the central units; organic halogen substances from the devices are transformed into dangers for the health. For example, producing a 25Kg computer generates 63Kg of waste, from which 22 are toxic. [2]

The ecologic effect of using IT is not clear at all. Computers need electricity and consume paper, and the Internet sends ads and programs that may determine people to buy resource-consuming products. But there are numerous ways in which using IT instruments can bring uses to the environment (for example replacing the materials and energy with data, or the transport with communication).

Producing computers needs water and energy. For producing semiconductors of silicon, which form the "chips", there are large quantities of water and energy consumed. Only one factory producer of semiconductors, which produces 5000 boards of 20 cm each, every week can consume as much electric energy and water as a small city[3].

Cleaner processes of production and incipients efforts to reuse and recycle the IT, can reduce many ecological dangers which are related to production and elimination, but the most important ecological effects of IT will result probably from its' use. There is enough data to estimate a few of the ecological effects tied up to the functioning of IT equipment as an example, electric power consumption and paper for computers. Still, it is less known the level in which the way the fuel can be stored when people replace by information exchange activities that would generate natural resources.

Paper is a resource of which consumption is tied to using computer. Between 1988 and 1998, average paper consumption for each inhabitant for printing and writing increased in the industrial countries by 24%[4].

Another important request for IT instruments – although one relatively modest – is electricity. A typical desktop computer consumes 120 – 180 Watts, just the amount of energy two light bulbs consume. Along the efforts to make the computers more efficient, we enumerate the introduction of automatic logoff, by which the computer consumes fewer than 30 Watts, or full logoff when it is not used. Energy Star Campaign of The Environmental Protection Agency helped stimulating the production of computers and other desktop efficient equipment – this efficient equipment consumes per year only half the energy a common one

[2] "Exploatation of IT in favour of enviroment in World Health 2001". Worldwatch Institute Report over the progress to a durable society. *Tehnica*, Bucuresti, 2000. p. 151.

[3] Ibidem

[4] Ibid.

consumes. A report from 1998 of the Worldwide Resources Institute underlines the electronic products "Sharp" and "computers available instantaneously" of "Intel" Corporation, which bring the electric power consumption under the one which Energy Star managed to obtain[5].

More, energy consumption increase was in many industrial countries slower than the economic growth, but this gap seemed to be determined by IT, which transforms production and commerce. Computers and other desktop equipments represent the energy request with the fastest growth.

Another issue concerning energy is that if IT will become so efficient that it will reduce the need for transport. Electronic data sending can substitute more and more fuel consumption, search engines will become more important and well known that internal combustion ones. Teleportation and videoconference are in full growth in the industrial countries, but it is not clear at all if they produce a general reduction of traffic.

Although telecommunications can substitute in many cases the transportation, they can even stimulate transport in various ways – allowing people to live farther one from another, keeping people up-to-date with conferences, events and shops they can reach to by travelling and making travel time more productive, by mobile phones and pagers. No IT of telecommunications was related in history with a net reduction of travelling. Between 1880 and 1910. phones evolved first in parallel with trains and subways, between 1920 and 1940, radios evolved in parallel with automobiles and airplanes, and between 1950 and 1970, television, highways and commercial airplanes. New technologies of IT, which allow people to work easier from home, can play an important role in reducing traffic congestions, but they can't eliminate the need of an integrated and planning the use of means of transport.

Likewise, so much as ecologic opportunities and the dangers around ecommerce, as long as more and more people and companies buy and sell products on the Internet. For example, online companies can avoid the waste by having a limited stock. Products like the books; music, photographs and video images can be bought electronically and transmitted directly through the Internet, by sparing prime mater and energy. And the popularity of some auction houses like the electronic one "E-bay" shows that the Internet can help people which have used products to get in touch with the ones that they can use them, transforming waste into resources. Still, such ecological advantages could be easily cancelled if the spread of IT could harm the environment or human nature.

[5] J. B. Horringan, F. H. Irwin, E. Cook, *Taking a Byte Out of Carbon*, World Resources Institute, Washington, DC. 1998.

5. The negative externalities over environment in the process of economic growth

Still, the negative externalities over environment can stimulate the process of economic growth, from the role of social cost; the externalities become the local economic growth engine[6]. For example, the main industrial waste burn factory from the west side of the country, with a starting activity in this domain for Romania, developed its burn capacity every year. The major issue was and still is the lack of applicability resources (although the law exists since the beginning of the last decade) of such measures for burning industrial waste and some correcting measures of industrial economic agents. As we can observe from table 4, until 2004. the quantity of waste increased, since it was the only one waste burner in the country and was collecting waste from all around the country. In 2005, started to drop because similar burners started to appear in Suceava. Bucharest, Cluj Napoca, Constanta and Craiova.

In the last two years we observe an increasing quantity of waste being processed.

Table 4: *Industrial waste processed in Timis County (west of country)*

Year	Industrial waste (kg)	From which medical waste (kg)
2003	540.943,71	10.648,9
2004	1.167.506,69	73.496,65
2005	887.216,21	130.073,90
2006	718.716,95	157.441,14
2007	1.957.352,11	374.687,61
2008	3.727.365,97	424.472,35

Source: County Environment Protection Agency Timis

The change in ideas (the positive externalities were the "engine" of growth/decrease of economics takes into consideration not only the waste distribution, territorial organization of industrial units until creating eco-parks, industrial ecosystems, but also another mentality of decedents and populations to look at the externalities/level of life report at a personal level and eventually at a company/institution level. We must not understand that the environment protection means only losses for national economy; it can generate benefits (eco-business, eco-industry, and creating new jobs).

[6] A. Antoci, S. Bartolini, "Negative externalities as the engine of growth in an evolutionary context", in: *FEEM Newsletter*, nr. 1. 2000. p. 47.

Transforming negative environment externalities in an economic assets means:

- Using waste in a profit-generating way (by burning inflammable waste and obtaining thermo energy, compost from organic waste);
- Ecologic reconstructions of sites and using them economically or transforming them in public interest assets;
- Promoting some production and consumption patterns closer to the quality requests of environment factors;
- Integrating large industrial platforms over the criteria of minimizing the waste and energy flow, applying some administrative instruments – on a territory that would ease functional integration of industrial units;
- Creating waste stock exchange, which present a positive market value, and underline the waste market, named in these transactions "primary and secondary materials" [7]. Their market also means administering the cost with information, collecting and depositing waste, sell prices, competition and risk management;
- Developing programs, politics and strategy of development and managing waste, negative environment externalities, we call in for "dynamic efficiency" and "generation equity". In this respect, dynamic efficiency concentrates over maximizing social wealth, considered on long term, by analyzing the future impact of decisions that are made now. On long term, the life level must not drop, which imposes a certain management of resources, considered in the perspective of many human generations. The resources must be considered also reversed: the waste being collected in the environment and the cost paid by future human generations for their management.

[7] F. Coda Canati, "Secundary Raw Materials market creation: Waste Stok Exchange", in: *FEEM Newsletter*, nr. 4/2000. p. 71.

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FOREIGN DIRECT INVESTMENT IN ROMANIA: THE IMPACTS ON LOCAL WORKFORCE EMPLOYMENT

Abstract: *The foreign direct investment (FDI) liberalization represents one of the most important reforms of the systemic process of transformation of different former communist economies, an action, which stimulates changing towards a functional market economy and their integration into the global economy. The inflows of foreign capital in these countries are perceived as bearing potential beneficial effects, as an instrument capable to introduce specific market economy behaviour, while improving the specialized local production factors- carriers of competitive advantages. In the early 1990s it was believed that FDI could play the role of a new Marshall Plan for the Central and Eastern Europe countries (CEECs).*

In *this paper we will focus on the effects of FDI on the host country, namely the role of FDI in Romanian employment. This issue is important because, starting with the political change of regime, Romania has gone through a transformation of its productive structures. These changes were often accompanied by the reorganizing of the large state enterprises, which were old and oversized. In these conditions we can ask to what extent FDI has played a role in creating new jobs in Romania? To answer this question, in a first stage, we have created an analysis based on available statistical data. This analysis was then completed with the results of our survey, which had as subjects the French company established in Romania.*

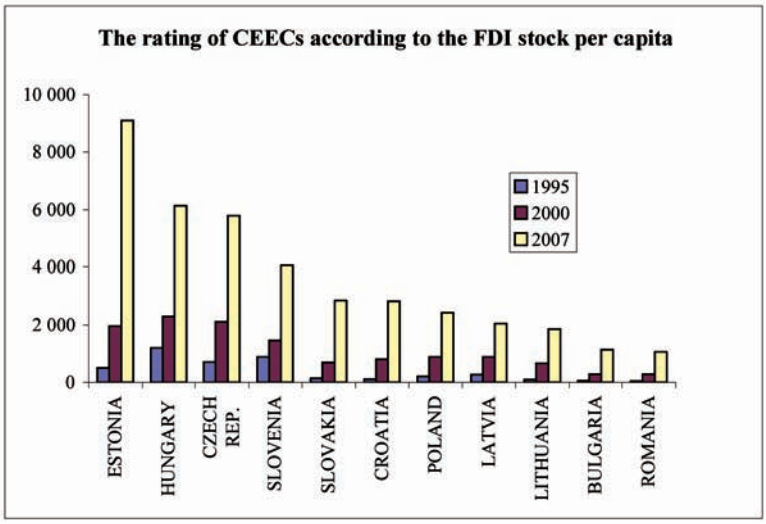
Key words: *Foreign Direct Investment, effects, employment, Central and Eastern Europe Countries, Romania, French companies*

JEL classification: F21, F23, L60, P33

1. Introduction

It is often recognized that in the transition countries, the authorities endeavour to stimulate the entries of foreign direct investments (FDI) in their granting advantages and reinforcing the liberal character of their environment. The principal motivation, which lies in these measurements, is the idea that the FDI are carrying beneficial effects for the host economy. The liberalization of the FDI is seen like *"an enormous opportunity for the growth and prosperity, both for the developing countries the developed countries"*.[1] The governments are more and more convinced to encourage the FDI entries because they bring benefits to the national and global levels. In the current context of globalisation, the FDI are seen like the most dynamic international flow of resources towards the developing countries,[2] likely to contribute to their catching-up.

Exhibit 1.



**This rating is realized according the FDI inputs in 2007*

Source: Our calculations based on WIR statistics.

1 L. Brittan, "Investment liberalization: The next great boost to the world economy", *Transnational Corporation*, Vol. 4, No. 1, 1995.

2 UNCTAD: *World Investment Report 1999: Foreign Direct Investment and the Challenge of Development*, United Nations, 1999.

Romania had opened to FDI inputs after December 1989. However, compared to other countries of the former communist bloc, the Romanian FDI entries started slowly and continued in a relatively low rate until around 2000. Indeed, in spite of the fast growth of FDI inflows in the CEECs, is important to notice that the FDI stock received by these countries knew an uneven distribution. The observation of the more complex indicators, who take into account the economic weight of the host country, like the FDI stock per capita (according to Exhibit 1), testifies that countries as Hungary, Czech Republic or Baltic States (which knew how to attract significant amounts of FDI) appear other countries like Romania or Bulgaria, marked by relatively weak performances[3].

Although the empirical studies often lead to contradictory results, the role of the FDI in the local performance and growth, particularly for the developing economies, is the subject of an abundant literature. Also, if they are, in certain cases, difficult even impossible to measure, the beneficial impacts of the FDI are often mentioned. However, it is difficult to conclude which are the impacts exerted on the developing countries, particularly on the case of Central and Eastern European Countries (CEECs), knows like transitional countries. Nevertheless, it is possible to say, "if the value-added created by the foreign investment is higher than the share which is allocated to the investor, the social profit is higher than the private profit".4 This part, which generates incomes for the residents, contributes to the growth of the national income, by increasing the employment of national workforce and national capital (the main factors of production of the country).

Because Romania is not one of the great receivers of FDI in the region, it is natural to wonder which is the role, played by the FDI inputs in the local economy. The purpose of this paper is to offer a relevant analyse of the FDI effect on Romanian employment. For this reason, we start with a short preview of the FDI impact in the host economy (1st paragraph), which will be followed by an analysis of the FDI impact on the Romanian employment (2nd paragraph). Finally this paper will close whit the presentation of our survey on the case of French companies in Romania.

Before moving on, it is necessary to mention that the field of the empirical analysis on the impacts of the FDI in the CEECs, and particularly on Romania is less abundant. This is probably explained by the scarcity of the statistical sources relating to these countries. The data relating to the FDI impacts are not always available for Romania. Our various attempts near the institutions as the Central Bank, the National Institute of Statistics, the Commercial Register, the Chamber of Commerce, the Agency of the Foreign Investors, etc. did not give access to the necessary data for the analysis, which we would have wished to carry out. For example, neither the amount of exports of the multinational enterprise (MNE)

[3] For a more detailed presentation, see Brancu (2008).

[4] G. Meier, *Leading Issues in Economic Development*, Oxford University Press, New York, 1995.

nor their imports of inputs are available, necessary to carry out a macroeconomic analysis of the effects on the trade balance; neither the employment nor the wages paid by the MNE, necessary for a microeconomic analysis. This lack of data determined us to choose a solution *second best*, in so far as we delivered analyses using of the indirect data. The step is undoubtedly far from being perfect, but it has nevertheless the merit to offer a coherent explanation within the framework of the restrictive assumptions, which is essential.

2. Short preview of the theoretical aspects related to FDI effects on host economy

The theoretical aspects related to FDI effects on host economy are subject of an abundant literature. In this literature, the FDI represent not only a capital flow, but also a whole of the tangible and intangible goods. The specialists underline their role in the development. Thus, the FDI supplements the local investment and transfers in the host economy news technologies and knowledge. The entry of FDI is perceived like an essential factor supporting the economic growth. The FDI are supposed to stimulate the growth by a more effective use of productions factors and by the externalities generated on the local enterprises. However, as the effectiveness of the FDI depends on the level of development of the host country, the impacts differs much from one country to another. Since the entries of FDI, especially in the manufacturing sector, are justified by the will of the investor to implement flexible production networks, integrated into the international level. Beside the influence of the strategic orientations of the multinational enterprise (MNE), their impacts also depend on the capacity of absorption of the host country. Under these conditions, the FDI influence the local growth and the local economic development, by the following channels (table 1.):

- by capital entries;
- by ensuring the diffusion of technology and thus stimulating the productivity;
- by increasing employment and the wages;
- by offering the access to the export markets.

Table 1: *Principal effects of the FDI flows*

Type of contribution	Description	Potential impact
Capital	Long-term financial resources.	Complement with the national saving; stable financing of the current account deficit; stimulating for the domestic investment; risk to crowding-out the domestic investment.
Technology	Creation of new technologies; new capacities of R & D; new standards of quality.	Increase in the total factors productivity; capacity of more powerful innovation; indirect effects on the partners and the competitors (productivity, crowding-in / crowding-out).
Employment and formation	Arrival of specialists, knowledge and techniques of organization spill-over.	Workforce formation; increase in the total factors productivity; employment effects (increase/reduction).
Access to the markets	Opening for new markets of export; access to marketing networks; contacts with the customers and the distributors; imports substitution/ imports creation.	Increase in exports; impact on the imports (reduction/increase).

Source: Adapted from the UNCTAD (1999) and Lall (2000).

The central impact of the FDI is their contribution to the host country growth. Because the FDI inputs represent an external contribution to the local capital, which comes to increase the level of investment of the receiving country and because the investment is an engine of the growth, the FDI contributes to the performances of the host country in terms of growth. In a closed economy, the level of national investment is constrained by the level of the local saving. With the entry of the foreign capital flows, this constraint is released and the domestic investment can exceed the level of the national saving. The results of a significant number of empirical studies, carried out in developing countries, tend to confirm, indeed, that a high rate of growth is associated with a strong level of FDI inputs.[5]

Within the framework of our subject, it should be stressed out that the entry of the foreign saving could be done through several ways. It is recognized that the portfolio investments and the credits can generate problems to the macro-economic and financial stability of the host country. Meanwhile the FDI repre-

[5] E. Borensztein, J. de Gregorio, J. Lee, "How Does Foreign Direct Investment Affect Economic Growth?", *Journal of International Economics*, 45, 1998, pp. 115-135; UNCTAD: *World Investment Report 2000: Cross-border Mergers and Acquisitions and Development,* United Nations, 2000; H. Reisen, M. Soto, "Witch Types of Capital Inflows Foster Developing-Country Growth", *International Finance*, Vol. 4, No. 1, 2001; N. Campos, Y. Kinoshita, "Foreign Direct Investment as Technology Transferred: Some Panel Evidence from the Transition Economies", *William Davidson Working Paper* No. 438, 2002, p. 35.

sent a more stable source of financing than the portfolio investments[6], because they show a long-term interest for the host economy. In the same time, the FDI are the capital flows not-generators of debts, which will involve transfers of benefits, in connection with the profitability of the project.

It is important to say that the presence of foreign investors involves, by other mechanisms, the risk to decrease the local investment. It is about the *crowding out - effect* which can appear on the financial markets but also on the products markets. Thus, if the foreign investor borrows on a local market low in resources, the increasing of the interest rate can discourage a part of the local investors. On the products markets, the arrival of foreign investors in a sector with local producers may decrease their investment. If the resources of the competitor are used in other sectors, where the host country has comparative advantages, the total impact remains favourable. If the FDI is carried out in one activity where there is no local producer, the impact on the national investment is positive. But in the long term, the foreign presence can discourage the entry of the local investors in a certain sector. The role of an adequate institutional framework, in order to support the fair competition and to prevent expensive abuses it is very important.

Because the affiliates of a MNE have access to more important sources of financing, they are more sensitive to local opportunities and do not hesitate to engage in projects considered to be risky by the local investors. In this case, the presence of foreign investors pushes the border of the investment and stimulates the arrival of new competitors in some fields before far from their concerns. It acts in this case like a simulative effect, a *crowding-in* effect. The stimulating effect on the domestic investment can be related to several factors, like:

- the appearance of new local suppliers for the FDI;
- the diffusion of new technology towards the local companies;
- the creation of different links in production.

The positive impact of the FDI on the host country growth is not limited only to capital contributions. Those exert a positive influence by the means of: new technologies, new capacities of innovation and new organization or marketing know-how etc. The access to foreign knowledge influences the economic development, by contributing to the human capital formation. It directly and indirectly stimulates the total productivity of production factors, by increasing the local enterprises productivity due to the vertical and horizontal linkages. So, the FDI lead the local enterprises thus to improve their effectiveness.

The rise of productivity thus carried out, contribute to the increase in the standard of living in the host country. For the host developing countries, the technology transfer, that participates in the rise of the labour productivity, influences employment and wages. The FDI are directly creators of employment if

[6] UNCTAD: *World Investment Report 1999: Foreign Direct Investment and the Challenge of Development,* United Nations, 1999.

they come like a *Greenfield investment*. The impact on employment is however less obvious when it is about an *acquisition* of an existing company. In this case, the effects differ from one country to another and form one enterprise to another. The analysis of the beneficial effects must be done on a sufficiently long-term horizon. Because, usually the acquisition is followed by dismissals, and just later is follow by the employment growth.

As for the wages, if the FDI destroys employment by introducing new technologies, meant to substitute work through capital, the maintained employment is, on the other hand more productive, and thus is remunerated better. Beside a higher productivity, other factors make that the MNE pay higher wages than those of the local enterprises, these in developing and developed countries. These factors are:

- the training programs carried out by the MNE which results in more qualified employees than local employees;
- the MNE pay higher wages because they wish to retain their qualified employees and to void any possibility of employment migration to competition;
- the effect of selection, according to which the MNE are established in the sectors which pay already higher wages. But in this last case, the impact of the FDI on the wages is less obvious.

The influence of the FDI on the local growth is also exerted, as we already evoked, by the means of diminishing the external pressure. In effect, the immediately tangible impact of the FDI is to improve the balance of the capital. However, this influence does not write-off to the only entries of a non-generating debt capital. From the dynamic point of view, the FDI act on different section of the current accounts balance. They influence at the same time the trade balance and the income balance.

The impacts generated by the FDI on the trade balance can be classified in three categories:

- by the imports substituting (positive effect);
- by exports (positive effect);
- by imports of intermediate goods and equipments generated by the new production (negative effect).

If the product offered by the MNE were not ensured by a local producer, the arrival of the FDI decrease the imports and improves the trade balance. If the local production substitutes the imports, by increasing the use of the factors of production (in particular work) it contributes to the product growth. This growth can be also involved by the external request, when the production of the MNE is exported. The intensity of this impact will depend on the strategy followed by the MNE; it will be much higher if the MNE follows a strategy of "resources-seeking".[7]

[7] J. Dunning, *Multinational Enterprise and the Global Economy*, Addison-Wesley Company, New York, 1993.

The width of these two positive effects is however related to the degree of insertion of the FDI in local productive network. This degree of insertion is given at the same time by the productive structure of the host country and by the strategy of the MNE. Because the FDI, beside its direct impact on the production, also influences the productions located in particular in the backward sectors. For example the positive impact of the FDI is reduced, when the MNE imports intermediate goods to carry out the new production. In the absence of local suppliers, this effect opposite on trade balance reaches its maximum level. The total effect on the imports will depend on the proportion of imported inputs and on the elasticity of the local demand of the goods produced by the MNE. If the latter is high, it generates an addition of imports of inputs, which would reduce the positive impact on trade balance. But it is also allowed to think that meanwhile the MNE advances in the production, the new local suppliers will appear. This effect upstream of the production depends on the entrepreneurial spirit and on the quality of the institutional framework in the host country. However, the integration of the FDI in local productive networks is related to the strategy of the MNE, which can be forced to import the intermediate goods produced by other subsidiary companies of the group because the importation of the intermediate goods can also belong to an intra-group trade.

On the level of the incomes balance, the impact of the FDI is negative, because the establishment of the MNE involves the transfers of benefits and transfers of wages of the foreign employees. When the reinvested earnings do not correspond to any flow, they do not influence the balance directly. They are recorded in the same time on credit, like a new investment, but also on the debit; thus the balance of the balance is not modified. It is advisable, nevertheless to think that in the long term, these reinvested benefits will increase the profit, which will also increase the transfers abroad. According to the UNCTAD[8], in the case of developing countries, the repatriated earnings were accompanied by an entry by FDI three times larger, during the period 1991-1997. Especially in the case of CEECs, the figures are even larger (for 1 dollar of the repatriated earnings, 25 dollars on average of FDI inputs). One can nevertheless wonder about the relevance of such an indicator, insofar as it compares a flow (the FDI inputs) with another flow whose value strongly depends on the stock of FDI accumulated in the receiving country (the repatriated benefits). The values recorded for the CEECs will be not so relevant, because the FDI stock is incontestably weaker than that of other developing countries, and so the transfer of benefits is also reduced.

The measurement of the FDI effects on the current balance, already described, is complex. Beside the MNE strategy, dictated by the productive effectiveness, the existence of intra-group transactions led to take account of the taxation, which makes more complex the measurement of the FDI impact on the trade balance.

[8] UNCTAD: *World Investment Report 1999: Foreign Direct Investment and the Challenge of Development,* United Nations, 1999.

Because the MNC have considerable freedom to fixing the transfer prices, those are not transparent and not easy to check. For example, those can be on or under-evaluated, according for example to the local fiscality. The overcharged imports deteriorate the trade balance because of an artificial increase in the costs of the MNE, thus decreasing its benefit and thus its taxes. Of the same manner, the exports to other affiliates companies can be done at the internal prices, dictated by the local tax rate. These prices can be very different from the export prices of identical products of rest of the world, or carried out by other companies. Lastly, the payment of interests of the obtained loans from the headquarters, as well as the royalties for the technology transfer, also affects the balance of incomes. The transfer prices play in this case an important part, as well as the conditions of imposition of the host country, compared to the origin country. When the headquarter can determine the rate of interest, this varies according to conditions of imposition of the host country. These practices, which influence the amounts of commercial flows and incomes, make complex the appreciation of the impacts on the current accounts balance.

This short outline of the literature relating to the impacts of the FDI, shows that they are numerous and that they appear as well at the macroeconomic level as microeconomic. The field of analysis is thus vast. It is all the more vast as the impacts combine and are in interactions. The phenomenon becomes even more complex when a multitude of factors, related to specificities of the host country, influence the type of impact as well as its effectiveness. Under these conditions, the effects exerted by the FDI differ according to the level of development of the receiving country. The complexity of the phenomenon generates the appearance of a great diversity of opinions about FDI role, especially when the receiving countries are in the process of development. Also the taking into account of the level of development of the receiving country becomes important when the review of the literature is done. This distinction makes it possible to isolate the particularities of some countries that interested us: CEECs and Romania.

3. FDI effects on Romanian employment

The role of the FDI in the employment creation proves to be important especially for the developing and transition countries. For those, the increase of employment appears among the top priority of the economic policy, because of the unemployment generated by the moral depreciation of their productive capacity. The MNE are important employers, so they are attractive because they are perceived as a way to diminish the existing unemployment. According to the UNCTAD,[9] the number of jobs created by the subsidiary of the MNE knew a growth during the

[9] UNCTAD: *World Investment Report 2002: Transnational Corporations and Export Competitiveness,* United Nations, 2002.

last years, as well in the industrialized countries as in the developing countries. For this last group of country this growth was even more considerable.

However, there are great disparities between the receiving countries. Thus, in the case of the developing countries, the participation of the MNE in total employment differs from one area to another.[10] This one is very important in Singapore, where the affiliates employ more than half of the labour in the manufacturing sector. The same is true for Malaysia and in Sri Lanka, where the MNE employs 40% of the labour. On the other hand in Latin America the share of the MNE in employment is weaker and tends to decrease (13,4% in Brazil). As for the CEECs, founded data testify important disparities (Table 2). Thus, Hungary is by far in top of the list, with a foreign participation on the local employment of more than 45%. But for the whole of the CEECS, the tendency is ascending. This proves that the FDI played an important role in the CEECS. In the Romanian case, the contribution of the FDI to total employment, passing from 14 to 25%, knew a fast progression at the end of 1990.

Table 2: *The share of the MNE in the local employment in CEECs (% of the total employment)*

	Year	**Employment of foreign affiliates /total employment**
Czech republic	1998	19.6
Hungary	1999	26.9
Poland	1998	44.9
Romania	1999	46.5
Slovenia	2000	47.1
	1998	26
	1999	29.4
	1998	13.7
	1999	21
	2000	25.2
	1998	13.1
	1999	13

Source: Base data of *The Vienna Institute for International Economic Studies* (WIIW) quoted by Dumitriu and Hunya (2002).

[10] UNCTAD: *World Investment Report 1999: Foreign Direct Investment and the Challenge of Development,* United Nations, 1999.

Nevertheless. these statistics do not give additional information, which could be used in order to understand, for example, if the employment provided by the MNE is a complement or a substitute for the domestic employment. To answer this question, one should know if these jobs are added to those already existing, and how much is due to the acquisition of the existing companies.

The MNE act on the local employment in various manners, according the implantation form: Greenfield or acquisition. They also influence the level of employment by the technology transfers and diffusion, which improve, certainly the productivity and the labour remuneration, but destroy less qualified employment. If the FDI came in the form of new investment, the impact is positive: the affiliates company is generating employment. Of course, the width of the quantitative impact depends on several factors, as the size of the subsidiary company and the sectoral characteristics (more or less labour intensive, the level of technology, the intensity of competition). The MNE are often larger than the national enterprises. Because of their size, they already become more significant employers. However, when the MNE have a strong technological intensity and are more productive than the local enterprises, the created employment can be lower if one compares it with that of a similar local enterprise.

When the entry of FDI is carried out in the form of acquisition, often dependent on a privatisation of a public company, the impact on employment is not also obvious. The acquisition of an existing company does not create job, at least initially. Most of the time, the acquisition is accompanied by an employment reduction. The lay-offs which are related to acquisition are the result of reshaping the bought units, but also due to headquarter strategy of avoiding the replicate certain activities in two different places (headquarter & affiliates). In long run, this negative impact can be counter-balanced by the increase of competitiveness as a result of the improvement of effectiveness of the bought production units, and thereafter, by later recruiting. In the same time, the acquisition of a company in difficulty, which is then reorganised and which preserves also its employees, exerts a positive impact on the economy. In this case, the positive impact of the FDI is positive, because thus consist with the maintenance of a part of employment already existing.

In the case of the industrialized countries, the fusion-acquisitions represent the principal method of the FDI, being invariably accompanied by employment suppressions, after their establishment, or in time.[11] At the same tie, the impacts of fusion-acquisitions on the developing countries are not so well shaped. The acquisition of a local company in bankruptcy, which brings its reorganization, helps to preserve employment. However, its process of reorganization is often accompanied by lay-offs. Nevertheless, it is advisable to specify that this impact is not specifi-

[11] UNCTAD: *World Investment Report 1999: Foreign Direct Investment and the Challenge of Development,* United Nations, 1999; S. Lall, "The Employment Impact of Globalisation in Developing Countries", *QEH Working Paper*, No. 93, 2002, p. 22.

cally related to the FDI. The local investors would have proceeded in all probabilities of the same manner, to make profitable their investment. Here the difficulty is related to distinction between the employment destruction due to the elimination of an oversize manpower, inherited from the old regime, and those related to unit reshaping in a framework imposed by functional market economy.

In the case of the CEECs, a great part of the FDI arrived by privatisations.[12] For this group of country, the launching of the program of privatisation was, at least at the beginning of the years 1990, a strong motivation for the FDI. The State-run assets were, at that time, large not-profitable and obsolete colossi, characterized by over-staffing.[13] Being unable to increase their profit, these companies increased their size. After 1990 and also by the arrival of the FDI, their reorganization was started, accompanied by important lay-offs. It is stressed that the impact on the CEECS is even stronger than that recorded in other developing countries. In the CEECS, the sectors, which would be restructured, were more numerous and their very advanced delay. So, while in the case of East Asian and South American developing countries the private sector held already part of the economy, in the CEECS the private sector were almost non-existent. In this case, the employment destruction was more important in CEECs than in other developing countries.

Data on Romania employment (cf. table 3) illustrate, indeed, the reorganization of industry by a strong employment reduction in the industrial sector, after the end of the communist regime. Thus, during the period 1994-2007, employment increases only in the "Clothes" sector. Three other sectors ("Leather and shoes", "Edition and printing works" and "Machines and office devices") succeed in maintaining the level of employment. All the other industrial sectors are confronted with strong employment reductions. In 2007 the employment in the industrial sector accounted for only 65% of those observed in 1994.

[12] UNCTAD: *World Investment Report 2000: Cross-border Mergers and Acquisitions and Development,* United Nations, 2000.

[13] T. Mickiewicz, S. Radosevic, U. Varblane, "The Value of Diversity: Foreign Direct Investment and Employment in Central Europe During Recovery", ESRC Programme: *One Europe or Several*, University of Sussex, Working paper 05/00, 2000; J. Gomez-Ibanez, "Private infrastructure in developing countries: lessons from experience", Paper presented to the Commission on Growth and Development at the workshop: *Global Trends and Challenges*, New Haven, CT, 28-29 September, 2007.

Table 3: *The FDI-employment correlation*

Code NACE	Sectors	Multiplier employment (1994-2007)	FDI/GFCF* (%) (2007)
34	Motor vehicles	0.89	85.9
35	Other transport vehicles	0.87	84.3
27	Mining	0.5	75.6
23	Coke. petroleum and nuclear fuel	0.48	76.3
30	Office equipment	1.00	65.6
11	Extraction of hydrocarbons	0.79	48.9
32	Radio operator equipment - TV and communications	0.73	30.7
31	Electric and electronic components	0.72	30.1
25	Rubber and plastics	0.67	27.6
28	Steel constructions and metal products	0.61	24.3
26	Manufacture of other non-metal mineral products	0.58	22.6
29	Manufacture of machines and equipment	0.47	22.2
36	Production of furniture	0.9	19.2
21	Paper and the paperboard	0.5	19.0
24	Chemical industry	0.42	18.8
19	Leather and shoes	1.24	15.3
15	Agricultural and food industries	0.70	14.1
20	Work of wood and manufacture of articles out of wooden	0.99	13.3
18	Clothes	1.49	12.7
17	Textile articles	0.32	12.6
22	Edition and printing works	1.00	10.5
33	Medical instruments, precision instruments, optics	0.58	0.8
10	Extraction of coal	0.32	0.03

* Gross fixed capital formation

Note: the lines in bold correspond to the sectors which knew an increase in employment.
Source: Author's calculations, from Statistical Directory of Romania, various numbers.

Which is the role of the FDI in this evolution? The knowledge of the manpower employed by the MNE would have allowed us a relevant analysis. But these

data are not available; Romanian statistics do not make the distinction according to the origin of the capital. Nevertheless we tried to analyse this impact based on the following reasoning: to assess the impact of FDI on the employment dynamics, we chose a second best solution, which is to compare (1) the relative share of FDI stock in a total sector investment and (2) the performance in terms of employment this sector, over the analysed period. According to this reasoning, it should exist a positive correlation between the share of the FDI in the stock of investment in each sector and the employment dynamic. A positive impact of the FDI will be observed if the growth in employment increases with the ratio of FDI / GFCF (considering that the impact of local firms is neutral).

In table 3, who crosses the evolution of employment over the period 1994-2007 with FDI part in the stock of capital in 2007, we note that the most important FDI receiving sectors in Romania are in the same time those, which strongly decreased their employment. Only in the sector "Office equipment" where the ratio of FDI/GFCF reaches 65,6%, the employment was maintained. On the other hand, in the "Clothes" sector where employment increased by 49% during the concerned period, only 12,7% of the GFCF is ascribable with the FDI. However, the rang correlation suggest a very weak bond between the destruction of employment and the presence of FDI in the investment of the sector concerned[14].

The analysis of the FDI impact on Romanian employment proves to be a complex task, because of the interference of other factors in the evolution of this variable. First of all, the extent of the reorganization scrambles the analysis, because it is impossible to distinguish between the destruction of employment related to reorganization generated by the political regime change and those generated by the FDI presence. Then, the impact of the FDI on employment is influenced by the headquarter strategy and by the advantages of localization offered by the receiving economy. Thus, the created job is more important and more durable when the domestic market attracts the investor, therefore when it follows a "market seeking" strategy.[15] If FDI is motivated by the access to cheap resources, like an abundant workforce ("resource-seeking" strategy (Dunning, 1993)), the impact will be less long, because these resources could vanish in time. Thus, meanwhile the local workforce becomes increasingly qualified and more expensive, the FDI will prefer to delocalise towards other zones, more attractive from a cost point of view, if the fixed cost of localization is sufficiently low to allow the closing of the affiliate. Lastly, it is also advisable to integrate in reasoning the qualitative aspects. A negative balance in volume can hide a positive evolution on the plan of the labour qualifications, which determine the produc-

[14] The analysis of effectuated correlation does not lead either to a convincing result which makes it possible to confirm the presence of a relation between the ratio of FDI/GFCF and the multiplier of employment. The coefficient of Spearman obtained indicates an absence of correlation between the two variables.

[15] J. Dunning, *Multinational Enterprise and the Global Economy*, Addison-Wesley Company, New York, 1993.

tivity and the growth. The MNE rather seek the access to the complex resources, among which figures well educated and qualified labour. In this case appears a change: instead of producing good with low added value and strongly intensive in labour, MNE are interested to produce goods with strong added value, intensives in qualified labour. So, the MNE are the more and more attracted by the quality of the labour, its current competences but also it's potential of formation. The capacity of absorption of the host country plays now a very important part in jobs creation by the MNE. The job created thus is more important from the qualitative point of view, especially in the case developing countries, which often offer a non-expensive and highly qualified workforce.

4. The survey

Our empirical research it was effectuated over 62 French companies established in Romania. One of the major French groups is part of the sample. Thus, in the top "The Biggest 50 French groups", eight are part of the sample: Carrefour (2nd place 2), Renault (9), Veolia Environnement (11), Alcatel (25), Lafarge (27) Groupe Danone (30), Valeo (41) and Schneider Electric (42). To these companies is added BRD-Société Générale, from the banks insurance domain. Also, eight of the Top Ten French investors in Romania are presents in our survey. Given the large share of their total French investment in Romania, we consider that we have managed to closely surprise the reality of French investments in Romania.

By our survey, we will try to bring additional lightings to our analysis, by integrating some aspects of the French FDI, from static and dynamic point of view. Thus, the impact of the French FDI of our sample, on the volume of employment in Romania, will be analysed according to certain variables, like: the entering form, the strategic orientations and the size of the questioned companies. We will try to understand several aspects related to the role of the French affiliates on local employment: the net job creation by the greenfields, the employment reductions due to the reorganization, the impact of privatisations, and the evolution of the affiliate' employment (increase or reduction) after their establishment. Within a prospective framework, we will be interested, last time, in the potential destruction related to the future investment withdrawals, according to the investor's assumptions relating to the future evolution of attractively factors of the Romanian economy.

To check the impact of the FDI on employment from the dynamic point of view, we questioned the management of the French enterprises on the creations and the destruction of jobs, since their installations in Romania. Beside the net employment creation, realized by greenfields, FDI, influence the employment through a personalized workforce politics (hiring and lay-offs). Globally, the enterprises which had answered to our research, influenced positively the vol-

ume of employment - 67,7% of them state to have create jobs since their installations in Romania, against 14,5% indicated a destruction of employment (cf. Table 4). Several observations carried out by the research indicate a positive impact of the French enterprises on employment in Romania.

Table 4: *Variations of employment according to the FDI form (%)*

	Total sample	Greenfield	Acquisition	Privatisation
Employment creation	67.7	76.3	68.4	60.0
Employment destruction	14.5	7.9	31.5	40.0
Neither recruiting, nor lay-offs	9.7	2.6	-	-
Recruiting and lay-offs	8.1	13.2	-	-
Total	100.0	100.0	100.0	100.0

Source: our survey

The prevalence of the FDI carried out in the form of new investments (greenfields) may indicate us a positive impact. We had indeed underlined the influence of the implantation form on the FDI impact on employment: new investments having an impact higher than that of the FDI carried out in the form of acquisition. In effect, when the implantation form is taken into account, we realize that the acquisitions, in particular in the form of privatisations, are accompanied by important suppressions by personnel, at least initially, with the aim of restructuring the ineffective, old and often oversize units. Although there are some exceptions as Alcatel, which was established in Romania by an acquisition, where the number of employees passed from 50 to 1000[16]. Our survey confirms the idea according to which the positive impact of greenfields on the local employment is more important than the FDI carried out by acquisition. Since their installation, 76,3% of the French Greenfield enterprises declared that they created jobs against only 7,9% which removed some. These proportions are appreciably various in the case of acquisitions, in particular when the acquisition results from privatisation. In this last case, the proportion of enterprises having proceeded to destruction of employment is about 40%. This result is in all probabilities related to the extent of the reorganizations; destruction of employment representing may be explained by the reduction of the overstaffing units inher-

[16] Our research.

ited from the preceding system, but also by the introduction of a new and more intensive capital technology.

Contrary, in the case of greenfields, the proportion of enterprises having reduced their employment is less important and globally, their impact remains positive, since it is about destruction of part of the jobs created at the moment of their establishment. For a part of the questioned enterprises, the answers also testify certain flexibility in the human resources management, by recruiting and dismissals (8,1%). This flexibility of the affiliate indicates their level of adaptation to the economical situation. But, in the long run, the creations of jobs are more important.

Finally, the taking into account the size of the questioned enterprises indicates that the positive impact on employment is more important for those enterprises of more than 100 employees. This result announces a relevant contribution of the French enterprises to Romanian employment creation.

As we already mentioned, the strategy of the investor can also influence the evolution of employment. To check the role of the strategic orientation, we retained the following criterion of classification:

- the "market seeking" strategy relates to the enterprises which do not export at all or which exports a proportion lower than 25% of their production;
- the "resources seeking" strategy gathers the enterprises which export between 60 and 100% of their production.

The "resource seeking" strategy is characterised by a strong export intensity, with the result that the exporting affiliates are directly exposed to the international demand. Because of these characteristics, these affiliates, which follow this strategy, present an increased flexibility, which is expressed through important changes in terms of employment. While for the affiliates which follow a market seeking strategy, it is the local demand, which influences the changes in terms of employment. The answers provided by our research confirm this reasoning (cf. table 5): the proportion of enterprises having created jobs and following a resource seeking strategy (85,7%) is definitely higher than that observed for the total sample (67,7%). On the other hand this proportion decreases appreciably (62,5%) for the enterprises whit a market seeking strategy.

This result also goes in the direction of the observations that the enterprises pursuing a resource seeking strategy, turned towards exports, appear in the most dynamic sectors, based on the low costs of labour: textile, clothing or sport articles. This is the sector, which recorded better performances on growth and on employment.

Table 5: *Variations of employment according to the FDI strategic orientations (%)*

	Total sample	Market seeking strategy	Resources seeking strategy
Employment creation	67.7	62.5	85.7
Employment destruction	14.5	18.7	-
Neither recruiting, nor lay-offs	9.7	12.5	-
Recruiting and lay-offs	8.1	6.3	14.3
Total	100.0	100.0	100.0

Source: our research.

This configuration indicates a dynamics of job creation but, these creations refers to low or middle qualified level jobs. This may explain in a different way the observed quantitative impacts of such strategy. This difference can be understood through the level of qualifications of concerned employment. The affiliates from our sample, which follow the market seeking strategy, appear, mostly in the reorganization sectors. They create less jobs, but more qualified. Contrary the enterprises, which follow a resources seeking strategy, create more jobs, but relatively less qualified. We also found an indirect relation between the volume and the quality of the jobs created according to the strategic orientations of the investors.

Finally, this observation may lead us to question on the potentiality of the created jobs. The long-term intentions of the French investors can exert a quantitative impact on employment; it is about the possibility of investment withdrawal, if the local conditions (cost or demand) would change into Romania. We know that 25,8% of the enterprises of our sample did not exclude the possibility of a delocalisation. The possibility of destruction of employment in corollary to a delocalisation is relatively higher in the case of the affiliates which follow a resources seeking strategy, than in that case of those which pursue a market seeking strategy. All this happens because the advantages in terms of costs are geographically interchangeable, whereas the markets cannot be. We can admit that the foreign investors, which plan to delocalise, are mostly those, which follow a resource-seeking category. But no, in our sample, 3 quarters from the interrogated enterprises, which are planning to delocalise, followed a market seeking strategy. This distribution leads us to note that the potential impact of these last, on the volume of employment, is neutral. In this case, the potential negative impact on employment is far from being negligible, as much less negligible than

75% of the enterprises, which do not exclude the possibility of a delocalisation, are greenfields. Once again we discover the role of high quality long-term general conditions available in the host country.

5. Conclusions

The aim of this paper was to analyse the FDI role on the host country employment. After we reviewed the main macro-economic effects of FDI, we then focused our attention on Romania. Based on available statistical data, we analysed the impact of foreign investment on the sectoral dynamics of Romanian employment. For this, we compared the two variables: the share of FDI in GFCF stock in a sector on one hand, and the dynamics of sectoral employment, measured by a multiplier, on the other hand. The results indicate the absence of any correlation between the two analysed variables.

In order to complete this analysis, we conducted a survey on 62 French companies installed in Romania. To check the impact of the FDI on employment from the dynamic point of view, we questioned the management of the French enterprises on the creations and the destruction of jobs, since their installations in Romania. In interpreting the results we kept in mind the implantation form: Greenfield, acquisition or privatisation, but also the strategy followed by investors: market seeking and resource seeking. In this way we were able to obtain more detailed and relevant results and regarding the analysed topic. So, globally, the enterprises, which had answered to our research, influenced positively the volume of employment - 67,7% of them state to have create jobs since their installations in Romania, against 14,5% indicated a destruction of employment. When the implantation form is taken into account, we realize that the acquisitions, in particular in the form of privatisations, are accompanied by important suppressions by personnel, at least initially, with the aim of restructuring the ineffective, old and often oversize units. Our survey shows that, since their installation, 76,3% of the French Greenfield enterprises declared that they created jobs against only 7,9% which removed some. These proportions are appreciably various in the case of acquisitions, in particular when the acquisition results from privatisation. In this last case, the proportion of enterprises having proceeded to destruction of employment is about 40%. This result is in all probabilities related to the extent of the reorganizations; destruction of employment representing may be explained by the reduction of the overstaffing units inherited from the preceding system, but also by the introduction of a new and more intensive capital technology.

When the FDI strategy is taken into account, we found that the proportion of enterprises having created jobs and following a resource seeking strategy (85,7%) is definitely higher than that observed for the total sample (67,7%). On the other

hand this proportion decreases appreciably (62,5%) for the enterprises whit a market seeking strategy. This result also goes in the direction of the observations that the enterprises pursuing a resource seeking strategy, turned towards exports, appear in the most dynamic sectors, based on the low costs of labour. A qualitative indication is now necessary: the French enterprises from our sample, which follow the market seeking strategy, appear, mostly in the reorganization sectors. They create less jobs, but more qualified. Contrary, the enterprises, which follow a resources seeking strategy, create more jobs, but relatively less qualified. We also found an indirect relation between the volume and the quality of the jobs created according to the strategic orientations of the investors.

The analysis of the FDI impact on Romanian employment proves to be a complex task, because of the interference of other factors in the evolution of this variable. First of all, the extent of the reorganization scrambles the analysis, because it is impossible to distinguish between the destruction of employment related to reorganization generated by the political regime change and those generated by the FDI presence. Then, the impact of the FDI on employment is influenced by the headquarter strategy and by the advantages of localization offered by the receiving economy. Thus, the created job is more important and more durable when the domestic market attracts the investor, therefore when it follows a "market seeking" strategy. If FDI is motivated by the access to cheap resources, like an abundant workforce ("resource-seeking"), the impact will be less long, because these resources could vanish in time.

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ABOUT PORTAL-BASED COLLABORATIVE ENVIRONMENTS

Abstract: *Collaboration involves a different approach to business – focused on managing business relationships between people, within or without groups, and within and between organizations. Collaborative enterprises differ from other business in a number of ways and collaborative working needs to be simultaneously a business philosophy, strategy and operational working. Effective collaboration unlocks the potential of the collective knowledge and intellectual capital of the organization and its networks of business partners, suppliers and customers. At the core of true collaboration is the ability to share and catalog knowledge, ideas, standards, best practices, and lessons learned and to be able to retrieve that knowledge from anywhere at any time. Integrating all kind of collaboration capabilities into an enterprise portal, we can build a powerful IT infrastructure for the collaborative enterprise. Choosing the franchise community as an example of collaborative environment, the paper proposes a portal-based solution to build up the "family" relationship between franchiser and the franchise units.*

Key words: *collaborative enterprise, enterprise portal, franchise community*
JEL classification: L41, L86

1. Introduction

To collaborate effectively, people work in large virtual teams, created quickly, spread around the world, and comprising colleagues, customers and partners. Working in these global team-based environments, people establish relationships that may be short-term project-focused or long-term and evolving over time. With each new relationship, companies invest in selecting the right people, learning how to work together, and determining how to extract the most value in terms of revenues and profits.[1] Integrating collaborative services with business functions allows companies to gain a significant competitive advantage. Information is shared more effectively, communication is more efficient, and compa-

[1] Th. Schaek, St. Hepper, *Portal Standard*, 2002: http://www.theserver side.com/articles/article.tss?l=Portlet_API

nies can make quicker, more informed decisions. More specifically, companies can shorten sales cycles, accelerate product development, generate more transactions, increase partner/customer retention, and expedite problem resolution.[2]

Effective collaboration requires actions on multiple fronts: early involvement and the availability of resources to effectively collaborate; a culture that encourages teamwork, cooperation and collaboration; effective teamwork and team member cooperation; defined team member responsibilities based on collaboration; a defined product development process based on early sharing of information and knowledge; collocation or virtual collocation; collaboration technology.

2. Collaborative enterprises

The "collaborative enterprise" is today's reality. Collaborative business automates interactions among suppliers, partners, and customers in order to lower costs and improve customer satisfaction. It also includes efficient knowledge sharing among domain experts within the enterprise. Collaboration with capital 'C' represents a strategic alternative to the monolithic approach to business development and competition. It involves a different approach to business – focused on managing business relationships between people, within or without groups, and within and between organizations.[3]

One of the consequences of migrating to a collaborative approach to business is that companies must see themselves as part of a larger eco-system linked to customers and suppliers, rather than as self-contained units. The business needs to be organized around processes that enable the company to interact more effectively with customers, suppliers and the marketplace.

Collaborative enterprises differ from other businesses in a number of ways and collaborative working needs to be simultaneously a business philosophy, strategy and operational working. Resuming, collaborative enterprises are:[4] networked and collaborative; core-competence focused and virtual; transparent to customer and partners; customer and partners centric; multi-disciplinary, community and team-based; strategically agile; change resilient and risk taking; knowledge creating and sharing; web-enabled; empowered and responsive. At the core of true collaboration is the ability to share and catalog knowledge, ideas, standards, best practices, and lessons learned and to be able to retrieve that knowledge from anywhere at any time. The more collaborative the environment

[2] J. Pflaging, *Enterprise Collaboration: The Big Payoff*, KMWorld, 2001: http://www.kmworld.com/publications /whitepapers

[3] M. Muntean, "Kowledge Portals and the Franchise Community", Proceedings of the 1th International Conference on Economics and Management of Networks, Vienna, 2003

[4] D. Skyrme, *Knowledge Networking: Creating the Collaborative Enterprise*, Linacre House, 2003

is, the more knowledge will be available to make right decisions the first time.[5] In non-collaborative environment, a large knowledge/decision gap exists early on. Using enterprise collaborative techniques, it is possible to make better use of a group's core understanding, thereby raising the starting level of knowledge available on an initiative and closing the gap.

2.1. Portal-Based Collaborative Environments

Technology plays a critical role in terms of how organizations collaborate today, being an enabler of interpersonal interactions that comprise collaboration. The web can support the introduction of collaborative practices in all areas and the web-based enterprise portal is biding to become the common information highway for the management of the enterprise. A corporate portal can effectively create a shared community across the enterprise (B2E portal)/extended enterprise (B2C or B2B portal).[6] Collaboration tools such as e-mail, discussion forums, online meetings, video conferencing and chat are now integral components of a corporate portal, all these collaborative capabilities are included on a horizontal basis across the entire portal.

A successfully enterprise portal represents a single entry point for collaboration, information dissemination and communication, application functionality and interactive capabilities within and without the corporate entity – all provided in an efficient and centralized manner. The portal must enable the creation of knowledge through collaboration tools, such as chat, threaded discussions and workflow. The created knowledge needs to be captured and stored for future use. In addition, outside knowledge needs to be brought into organization, and users need to be able to easily place their knowledge into the portal. All the knowledge, both structured data and unstructured content, must be easily retrievable. The portal must be configured to push relevant knowledge directly to the users. The level of support for each of these objectives defines the effectiveness of any enterprise portal solution.

The next generation of portal technology is seeing improvements in key features necessary for maximizing the value of enterprise information and knowledge, such as real-time collaboration, delivery of information and knowledge via wireless devices, robust security facilities, increased application and data integration capabilities, and simplified and centralized management and administration – all these necessary to support the enterprise's business.

[5] J. B. Brent, "Building Knowledge Management Systems", *Information Systems Journal*, 2002

[6] M. Muntean, ibidem.

3. Collaboration & Knowledge Management

Collaboration facilities improve decisions, increase knowledge. They facilitate better distribution of knowledge, improve planning and development cycles and create more functional and productive relationships within teams. This in turn increases productivity and company understanding of internal and external environments. Overall, employees will begin to have a better view of corporate information and the power to make informed decisions more effectively. A collaborative enterprise organization is a more agile organization. The ability of employees to quickly share their insights contributes to an organization's collective knowledge, and has a direct impact on its success. Successful companies continually seek and refine ways to make effective use of their employees' collective knowledge and experience. Information technologies that contribute to knowledge management solutions, such as enterprise portals, improve the enterprise's business intelligence and its collaboration capabilities. Collaboration is becoming an enterprise's business strategy sustained by IT technology.[7] Integrating collaborative services with business functions allows companies to gain a significant competitive advantage. The benefits of collaboration within a portal are clear. It will continually facilitate and enrich the knowledge management process.

There are many different approaches toward knowledge management. Many concepts focus on social and cultural aspects only and ignore the role of technology. There are other approaches that are very technology-minded but provide no solutions to cultural challenges of knowledge management. Therefore, many companies have sophisticated concepts on how to manage knowledge, but have little understanding of how to implement and deploy them. The implementation of efficient knowledge management solution often proves to be very challenging. Complex organizations, such as networked group of firms or multi-national firms can be viewed as "constellations" of organizational units – knowledge nodes (KN). In this approach the collaborative community becomes an environment that must support two different processes: (1) the autonomous management of the knowledge that is produced locally within a single knowledge node and (2) the coordination of the different knowledge nodes without a centrally defined semantics.[8] Special intelligent agents are used to implement the distributed knowledge management strategy. The use of intelligent agents for knowledge network management has just begun to be explored. Each knowledge node represents a knowledge owner within the network, an entity that has the capability of managing its own knowledge both from a conceptual and a technological point

[7] M. Muntean, "Knowledge Management in Collaborative Environments", Proceedings of The 2th International Conference on Economics on Management of Networks, Corvinus University of Budapest, 2005

[8] M. Bonifacio, P. Bouquet, "Knowledge Nodes: The Building Blocks of a Distributed Approach to Knowledge Management", *Journal of Universal Computer Sciences*, 8(6), 2002

of view. In the proposed architecture, a software agent, that "knows" the context of the knowledge node is associated to each KN. These agents have two functions: supporting the users of a KN to compose outgoing queries, and answering incoming queries from other KNs.[9]

Knowledge management demands cultural flexibility, strong management of knowledge management project CSFs and an adequate technical collaborative foundation. If done right, knowledge management is supposed to create a collaborative environment.

4. Intercultural Aspects in Collaborative Enterprises

Members from different cultures form teams in multinational companies and collaboration must overcome all intercultural differences.[10] Virtual teams continue to gain popularity as organizations are becoming more engaged in global business operations, and as technology for facilitating collaborative work is becoming more readily available.[11] An interesting aspect of the increased globalization of the business world is the cultural diversity of the workforce involved in collaborative virtual work. As a result, the performance of a global virtual team may be contingent not only upon technology and task factors, but also upon a virtual group's cultural homogeneity or heterogeneity. A culturally heterogeneous group is expected to display types of behavior and interactions that are different from those displayed by a culturally homogeneous group. In a virtual setting, the impact of cultural heterogeneity on group performance might ultimately result in performance outcomes that are different from those generated by a culturally homogeneous group.

Managers may reduce the influence of national cultures and cultural differences in collaborative enterprises by developing a strong organizational culture. Internalization of a strong organizational culture is done through training, knowledge management, developing appropriate infomation systems, using integrating practices such as enforcing quality, superordinate goals, promoting linking between different cultural groups.

Establishing business processes and strategies for collaborative environments supposes: (1)-defining virtual collaboration and what it means for an organization; (2)-assessing the activities, tasks and initiatives that would benefit from virtual collaboration or virtual team work; (3)-examining work practices and

[9] L. Kerschberg, *Knowledge Management in Heterogeneous Data Warehouse Environment*, 2001: http://eceb.gmu.edu/pubs/KerschbergDa Wak2001.pdf

[10] N. A. Bibu, "Building highly performing Intercultural Teams for collaborative knowledge creation, knowledge sharing and organizational learning", Paper presented at InterKnow - EuroWorkshop II, Regensburg, Germany, 2003

[11] N. Holden, "Cross-Cultural Management: A Knowledge Management Perspective", *Financial Times Management*, 2001

the cultural implications of working within collaborative environments; understanding the role of trust among virtual team members for better awareness of group dynamics and social interactions; (4)-exploring with senior management the benefits of collaborative environments and teamwork, and their impacts on business models; (5)-developing a set of guidelines and a framework for a clearer definition of the changing nature of current work practices; and (6)-incorporating the performance metrics and the success of virtual collaborative environments.

5. Franchise communities – A Collaborative Enterprise Example

5.1. Fundamentals

The working knowledge is the base of the franchise "family" relationship. The relationship is developed while franchisee learns from the franchiser how the business operates. In order to franchise knowledge effectively and continually, the franchiser must have a way of managing the company's knowledge base. The fast growth of franchising combined with the youth of the sector means that successful franchise companies must concentrate on developing new knowledge-specific skills: retaining the knowledge learned by the 'older' heads; getting new franchisees up to speed quickly; discovering and standardizing things that work (products, markets, procedures and processes); learning to do new things quicker than anyone else (new product/service development, new location set-ups, adopting new technologies).[12]

The franchise companies must develop a suitable knowledge management strategy in order to create superior value for their customer: (1) to identify and locate existing knowledge in the franchise; (2) to promote actions that create new knowledge innovation and creativity, brainstorming and problem solving; (3) to develop a repository for the franchise knowledge; (4) to analyze, communicate and use the knowledge in order to create competitive advantage.[13]

A portal environment can be a proper framework for franchise learning and knowledge management, which enables the franchise to develop dynamic capabilities and value-creating strategies.

5.2. Portal-Based Infrastructure

The "family" relationship between the franchiser and the franchisee units is generally based on intra-enterprise collaboration through Intranet. Also, the collaboration with suppliers is possible through Extranet, which enables the fran-

[12] J. Windsperger, "Organization of Knowledge in Franchising Firms", DRUID Summer Conference, Copenhagen/Elsinore, 6-8 June, 2002

[13] http://www.2-small-business.com/franchising.html

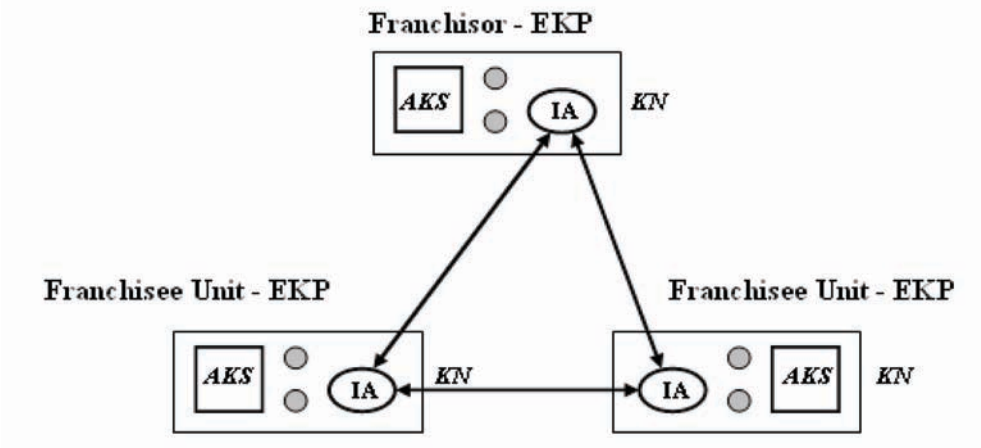
chiser and the franchisees to build up relationships with goods distributors, real estate agents, marketing agents, information systems consultants.14 Instead, we propose an enterprise knowledge portal (EKP) environment. The suggested distributed portal model enables the franchise to develop dynamic capabilities and value-creating strategies to enrich the franchiser/franchisee relationship. The proposed EKPs extend the franchise community to its suppliers and are designed to support B2E processes and B2B activities and their knowledge repository will leverage the working knowledge within the franchise system. The distributed knowledge repository contains the franchise package that is maintained by the franchiser and the specific/local knowledge of the market stored in the franchisee units. Recording to the distributed knowledge management (DKM) strategy the networked franchise community can be viewed as a "constellation" of organizational units (franchiser, franchisees) – knowledge nodes. This strategy is based on two general principles:15 (1) Principle of Autonomy – each unit manages its own knowledge; through their EKP Web-based interface they provide an unique access point to their knowledge (franchise package or specific/local knowledge of the market); (2) Principle of Coordination – each unit must be enabled to exchange knowledge with other units not by imposing the adoption of a single, common interpretative schema, but through a mechanism of mapping other units' context onto its context from its own perspective.

Each knowledge node (franchiser/ franchisee unit) represents a knowledge owner within the network, an entity that has the capability of managing its own knowledge both from a conceptual and a technological point of view. In the proposed architecture (Figure 1), a software agent that "knows" the context of the knowledge node (KN) is associated to each KN.

14 J. Windsperger, "Organization of Knowledge in Franchising Firms", DRUID Summer Conference, Copenhagen/Elsinore, 6-8 June, 2002

15 M. Bonifacio, R. Cuel, G. Mameli, "A Peer-to-Peer Architecture for Distributed Knowledge Management": http://eprints.biblio.unitn.it/archive/; M. Bonifacio, P. Bouquet, "Knowledge Nodes: The Building Blocks of a Distributed Approach to Knowledge Management", *Journal of Universal Computer Sciences*, Vol. 8(6), 2002

Figure 1: *The DKM Architecture of the Franchise Community*



These agents have two functions: supporting the users of a KN to compose outgoing queries, and answering incoming queries from other KNs.[16]

The core of an EKP consists of an Artificial Knowledge Server (AKS), that manages the homogeneous knowledge repository, in which the knowledge is made explicit, collected, represented and organized, according to a single – supposedly shared – conceptual scheme – knowledge map, and intelligent mobile agents (IMA), that enables the connection to all organization application sources and data/content stores. Special intelligent agents (IA) are used to implement the distributed knowledge management strategy.[17]

EKPs represent a proper IT solution for the franchise community that can support a knowledge-based business. The high performent AKS together with IMAs build a strong knowledge manager. With the help of a special IA incorporated in the portal architecture, the EKP is also suitable for a distributed knowledge management approach considering the franchise community a knowledge network that contains KNs (franchise package and specific/local knowledge of the market).

When deploy together, portal and content management technologies can provide a strong company tool for today's knowledge workers in the networked franchise community and make the franchise system more efficient, productive and competitive in the new economy.

Portal servers enable organizations to deploy comprehensive solutions - that enable and foster collaboration and coordination across communities of

[16] L. Kerschberg, "Knowledge Management in Heterogeneous Data Warehouse Environment", 2001: http://eceb.gmu.edu/pubs/KerschbergDa Wak2001.pdf

[17] J. M. Firestone, "Enterprise Information Portals and Enterprise Knowledge Portals", *DKMS Brief 8*, 1999: http://www.dkms.com/White_ Papers.htm; J. M. Firestone, "The Metaprise - The AKMS and The Enterprise Knowledge Portal": http://www.dkms.com/White_Papers.htm.

employees, customers, and partners - by providing a framework to develop performing enterprise portals. On the other hand, now with consolidated corporate portals, knowledge management has become one of many value-added services available to selected users. The bottom line is that knowledge management, today, is already very sophisticated and is guaranteed to deliver handsome dividends in corporate portal environments. A portal can provide the infrastructure for KM applications, but it should not be a determinant factor as to how and why KM should be used within a company.

6. Conclusion

Collaboration became a strategic alternative to the monolithic approach to business development and competition. Collaboration facilities improve decisions, increase knowledge. They facilitate better distribution of knowledge, improve planning and development cycles and create more functional and productive relationships within teams. This in turn increases productivity and company understanding of internal and external environments. Overall, employees will begin to have a better view of corporate information and the power to make informed decisions more effectively.

A collaborative enterprise organization is a more agile organization. The ability of employees to quickly share their insights contributes to an organization's collective knowledge, and has a direct impact on its success. Successful companies continually seek and refine ways to make effective use of their employees' collective knowledge and experience. Information technologies that contribute to knowledge management solutions, such as enterprise portals, improve the enterprise's business intelligence and its collaboration capabilities.

But, paradoxically, the success of any portal-based collaborative environment (any new technology-enabled business model) relies, more than ever, on people's ability to build relationships based on mutual trust. Further research will refer how to manage business relationships between people, within or without groups, and within and between organizations. Future research streams will include work in intercultural communication and collaboration, temporal coordination, and trust in virtual teams.

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OPTIMIZATION MODELS FOR MANAGERIAL DECISIONS

Abstract: *Most of times, the companies are constrained to activate in an uncertain environment. The managerial decisions in such conditions depend on many factors that can be optimized with statistical methods. The manager's capacity to reduce the uncertainty degree is given by the ability to see the complete range of human behavior factors and the connections that can establish.*

The paper proposes a set of optimization models that helps the managers to take best decisions. The models are useful both in the uncertainty and risk conditions and can be used at operational level. The essence of these models is to enable the company to monitor the performance through the development of an effective vertical information system.

Key words: *optimization models, uncertainty, utility, managerial decisions*
JEL classification: C61, L23

1. Introduction

Making decisions is a fundamental function of the company's management. The people from the different management levels have to take decisions in a limited time and with maximum accuracy. These decisions cannot be taken blindly because the cost of a bad choice may be very high. A good decision needs a set of favorable circumstances given by the level and quality of information, ability and experience.

Some decisions have a known, pre-defined structure and predictable inputs. That kind of decisions can be solved using the previous experienced solutions. But a significant proportion of decisions are not programmable, with a unique nature and unpredictable information. The optimization models support that kind of managerial decision.

The modeling decision process contains some general and some specific elements that have to be considered to elaborate a functional optimization model. First fundamental feature of the decision process is the personal characteristics of

the manager, his decision style, the capacity and willingness to handle unknown situations. Another feature consists in the environmental stability given by the internal and external factors.

An important feature of decision process is the decision variables. It is essential for the optimization model to know or to estimate the number of relevant variables, the existent or potential connections between, the possible permutation and combination of variables. The decision process can be also constrained by the time factor or by the limited resources. The optimization model has to account all these conditions.

The main stages of a decision making process model are: the problem identification, the founding of initial model hypotheses, the structuring problem, the analysis of alternative solutions and consequences, the selection of solution, the effective decision and the implementation, monitor and control the results of the process.[1]

The research in this area is large developed and most of managers wish to improve the effectiveness of the decision process. Between the solution of the optimized decision and the initial target can appear a gap. The manager may decide that the gap is acceptable or not and to correct, if is necessary, the decision and the model.

2. An optimization model for decision process in uncertain conditions

Usually, a manager is facing with a limited number k of possible actions. These actions can be denoted $a_1, a_2, \ldots, a_k$. Then the decision-maker has to choose one of the possible actions he is in an uncertain condition because don't know the results of his action.

It is assumed that exist a number h of possible events that can appear after an action is chosen. The possible events are denoted $e_1, e_2, \ldots, e_h$. It is also assumed that the manager knows the result (effect) of each combination action – event. It is denoted R_{ij} the result of possible action a_i if appears the event e_j.

All the possible actions, the possible events and the results of the combination action – event establish the main framework of a decisional problem. That framework can be presented in the following three issues:[2]

- The manager have at his disposition a number of k possible actions, $a_1, a_2, \ldots, a_k$, also known like alternative actions;
- There exist a number of h unknown possible events, that can not be controlled by the decision-maker;
- For each combination possible action – event result a possible effect, R_{ij}, of possible action a_i if appears the event e_j. That result may be a profit or a loss.

[1] B. Ritchie, D. Marshal, *Business Risk Management*, Chapman & Hall, 1993

[2] C. Şipoş, C. Preda, *Statistică economică*, Editura Mirton, Timişoara, 2004

The table of those elements of a decisional problem in uncertain conditions is named *Payoff Table* and is given in Table 1:

Table 1: *Payoff Table*

Possible actions (alternatives)	Possible events			
	e_1	e_2	$\ldots e_j \ldots$	e_k
a_1	R_{11}	R_{12}	$\ldots R_{1j} \ldots$	R_{1k}
a_2	R_{21}	R_{22}	$\ldots R_{2j} \ldots$	R_{2k}
a_i	R_{i1}	R_{i2}	$\ldots R_{ij} \ldots$	R_{ik}
a_n	R_{n1}	R_{n2}	$\ldots R_{nj} \ldots$	R_{nk}

The best action can be chosen only in respect with a choosing criterion. It can be used at least three criteria related with the manager's objectives.[3] Those criteria are the optimist criterion, the pessimism criterion and regrets criterion.

The optimist criterion considers the most favorable alternative and determines to choose the action that gives the maximum possible result. That criterion assumes to establish the optimum result as the maximum result from all possible combinations action – event, after the relation 1:

$$R_{optimum} = \max_{ij} (R_{ij}) \qquad (1).$$

That criterion can be used when the company has a leading position on the market and the new product or service has great chances to be very well accepted by the consumers. If the market is not known, that criterion is very risky and can bring major losses. It is a criterion for courageous managers that have high level of information and experience.

The opposite criterion is the pessimism criterion that considers the maximization of the minimum effect. It assumes that will be materialized the most unfavorable event and must be chosen the action with maximum result in these conditions. The criterion follows two stages. In the first stage is determined the minimum effect for the each action:

$$R_i^{min} = \min_j (R_{i1}, R_{i2}, \ldots, R_{ij}, \ldots, R_{ik}) \qquad (2).$$

In the second stage the optimum action is selected to be the alternative with maximum result from the minimum results determined with relation 2:

[3] P. Newbold, W. L. Carlson, B. M. Thorne, *Statistics for Business and Economics*, Fifth Edition, Prentice Hall International, 2003

$$R_{optimum} = \max_i R_i^{min} \qquad (3).$$

That criterion is used then the manager's information or experience is low and the market is unknown. It assures a maximum effect from the minimum possible and it is a very secure option. The best results of this criterion occur in a decreasing market or if the product target is low. If that criterion is used in a growing market, the results may fall under the potential and the opportunity of a better benefit is lost.

The last criterion used in uncertain conditions is the regret criterion that proposes to minimize the possible regrets that can appear after the decision is taken. The criterion also functions in three stages. In the first stage is calculated the possible regret of the each action. It represents the difference between the maximum result for the each event e_j and the action result R_{ij}:

$$Regret_{ij} = \max_i (R_{1j}, R_{2j}, \ldots, R_{ij}, \ldots, R_{nj}) - R_{ij} \qquad (4)$$

In the second stage are determined the maximum regrets from the all possible actions a_i:

$$Regret_i^{max} = \max_j Regret_{ij} \qquad (5).$$

In the last stage of the criterion is chosen the minimum regret from the maximum regrets from the possible actions a_i:

$$R_{optimum} = \min_i Regret_i^{max} \qquad (6).$$

The regret criterion guarantees the minimum possible loss. It is an improved criterion for pessimism criterion, because don't sacrifice the potential gain. On the other hand, the difference between the optimist criterion result and regret criterion result is small. That third presented criterion combines the optimistic view of the first criterion with the pessimistic view of the second criterion. It represents the most equilibrated criterion and can be used in the normal market conditions.[4]

Each of criteria presented gives optimum results if is compatible with the manager's style and skills. The optimization models cannot be considered sepa-

[4] M. Ruth, B. Hannon, *Modelling Dynamic Economic Systems*, Springer Editions, 1997

rated by the manager personality and experience. Only a good combination can lead to the best results.

3. An optimization model for sample information decision-making process

Usually, before to take a decision the manager prospects the market and the environment in the respect of making an optimum decision. The experience resulted after introducing other new products may facilitate to estimate the initial probabilities of the events associated to the new product or service impact. These initial probabilities are the result of previous experience and may change in time.[5]

Thus, if is initiated a market research, it can modify the things known before that. In these conditions, the initial probabilities become new probabilities named final probabilities. The information that determines the probabilities changing for the possible events is considered to be sample information. The transformation of the initial probabilities in final probabilities is accomplished through Bayes' theorem for decision-making process.

This theorem assumes that e_1, e_2, …, e_h are independent events corresponding to h possible state of natures. There exists another exhaustive event, denoted A. The conditioned probability for the event e_i to appear if the A event occurs already is denoted $P(e_i/A)$. Similarly, the conditioned probability for the event A to appear if the e_i event occurs already is denoted $P(A/e_i)$. In that conditions the Bayes' theorem can be defined so:

$$P(e_i / A) = \frac{P(A/e_i)P(e_i)}{P(A)} = \frac{P(A/e_i)P(e_i)}{P(A/e_1)P(e_1)+P(A/e_2)P(e_2)+\ldots+P(A/e_h)P(e_h)} \quad (7),$$

where e_i is the ith event out of h mutually exclusive and collectively exhaustive events.[6]

In the making-decision terminology, the $P(e_i)$ is the initial probability for the event e_i to occur and the $P(e_i/A)$ is the final probability for the event e_i modified by the A event's appearance.

The potential value of statistical information in a decisional problem mainly consists in a pretty correct prediction of the appearance chances for a certain state nature. That information can be the base to start taking fundamental decision for the enterprise.

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5 G. D. Eppen, F. J. Gould, et al., *Introductory Management Science: Decision Modeling with Spreadsheets*, Fifth Edition, Prentice Hall, 1998

6 D. M. Levine, D. Stephan, T. C. Krehbiel, M. L. Berenson, Statistics for Managers Using Microsoft Excel, Third Edition, Prentice Hall International, 2002

The statistical approach involves, in many cases, significant costs that mean that the managers must calculate the balance between incomes and expenses generated. It may be situations in which the statistical methods cannot significantly influence the result of decision and, thus, the statistical research is not necessarily. Of course, the managers are interested in the situations in which the statistical approach brings major effects on the decision results.

A particular case of optimization model for sample information decision-making process is to obtain the perfect information.[7] That means to have information that leads to a certain result, one hundred percent guaranteed.

The value of this information can be estimated also with statistical methods, as follows:

- The manager have establish the action that will be choose based on the initial probabilities $P(e_i)$;
- For the each state of nature is calculated the difference between the best action effect and the chosen action effect, denoted D_i;
- The predicted value of perfect information (*Pvpi*) is the sum of products between initial probabilities $P(e_i)$ and the differences D_i, after the relation:

$$Pvpi = \sum_{i=1}^{h} P(e_i) \cdot D_i \qquad (8).$$

That value means the profit of the enterprise when the future state of nature is correct predicted and used. The value given by relation 8 is a gross value. The net value is obtained by subtracting from the gross value the expenses with the statistical research. The statistical approach is feasible only when the net value obtained is greater than the value obtained without statistical research. The experience shows that in the most of cases that situation is stated.

4. Risk conditions optimization model

The decision criterion presented in the above paragraph is based on the idea that the best action will give the greatest return. In the practice, not always the managers are looking for the greatest returns. It can be situations in that the security of the investment is more important than the profit. These situations appear in the long-term investments case, where the decision is made based on the report between profit and the risk associated.

The risk is the incertitude element that can or not generates a loss. The risk implies an unsecure state referring to the future results of a present decision. An

[7] B. Render, R. M. Stair Jr., *Quantitative Analysis for Management*, Seventh Edition, Prentice Hall, 2000

action is under risk conditions when is possible to obtain a range of results without knowing the probability associated to each possible result.[8]

Usually, a great amount of return obtained in short time is associated with a increased risk that can concretize in a big loss. The reverse situation is when a smaller returns obtained on long term are associated with very low risk. In those conditions, the expected return criterion is not functional because the decision maker can have inclination or aversion to risk and that character influences the decisions.

In the risk conditions, the most used analysis is based on the utility functions that start from the assumption that a decision maker is facing more alternatives that leads to different effects. The transformation of effects in utilities follows the next steps:

- It is assumed that the process *L* gives the minimum effect and the process *H* gives the maximum effect;
- The process *L* is assigned with utility 0 and the process *H* is assigned with utility 100;
- The process *P* is any process that gives an effect between processes *L* and *H;*
- Is determined the probability *p* for the manager to be indifferent between alternatives:
  - to obtain with certainty the effect of process *P*;
  - to obtain the maximum effect with *p* probability (that means that the minimum effect is assigned with *1 – p* probability);
- The probability to obtain maximum effect with *p* probability and to obtain the minimum effect with *1 – p* probability is $100 \cdot p + 0 \cdot (1 - p) = 100 \cdot p$;
- Results from the calculus that the probability to obtain with certainty the effect of process *P* is equal with $100 \cdot p$. The curve assigned to this effect is named the utility function.

The essential making decision issue is to choose between the process *P* that assures a known return with certainty and the processes *H* or *L* that can assures maximum return but, in some conditions, can give the minimum one. The indifference point is reached where the probabilities of these two choices become equal.[9]

The main goal of manager making decision is to obtain the maximum expected utility. It is assumed that the manager has *k* actions in the conditions of *h* possible state of natures. In those conditions, is denoted with u_{ij} the utility corresponding to action *i* while the state of nature *j* is manifesting. The expected utility of action *i,* denoted $eu(a_i)$ will be the following:

[8] C. Şipoş, C. Preda, *Statistică economică*, Editura Mirton, Timişoara, 2004

[9] P. Newbold, W. L. Carlson, B. M. Thorne, *Statistics for Business and Economics*, Fifth Edition, Prentice Hall International, 2003

$$eu(a_i) = \sum_{j=1}^{h} p_j \cdot u_{ij} \qquad (9).$$

A rational manager will choose the alternative assigned with maximum expected utility. For a neutral decision maker the effect criterion and the utility criterion have the same result. The significant differences appear for managers with risk inclination or risk aversion. The managers with risk inclination always choose the alternative assigned with maximum return, even the expected utility is lower. The managers with risk aversion will always choose the alternative assigned with maximum expected utility, even the return is lower then other alternatives.

The risk inclination or aversion can be determined by a lot of factors, by objective or subjective nature. A very important element that can determine the risk character of decision makers is the measure of knowing the market. A manager that knows very well the market in that operates will always be a risk inclination decision maker. A manager that is operating in a new market will always be a risk aversion decision maker.

5. Conclusion

Project manager is the person that adopts an evaluation method or methodology considered adequate to the specific and the objectives of the innovation project. The manager's experience and skills allows creating an ensemble vision about the value of the project. Thus, the quality of the evaluation process has at least the same importance as the evaluation method used for the project selection decisions.

The optimization models based on statistical methods can constitute some very useful tools for decision makers. That not means that the optimization models solve automatically all managers' problems but can be a helpful support in decision making process. The making decision theory and practice are very complex and the statistical methods and models give a scientific and operational contribution to sustain the decisions both at microeconomic and macroeconomic level.

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NEW LEGAL REQUIREMENTS FOR ROMANIAN STATUTORY AUDITORS IN A DOWNTURN

Abstract: *Since they have become European professionals as of 1 January 2007, Romanian auditors must adapt not only to the conditions of the European market, but also to the requests coming from the current unfavorable worldwide economic environment. The fact that we speak of a Romanian statutory audit market of EUR 30 million combined with the need for credible financial information makes us think on the status of Romanian auditors in a downturn. Emergency Ordinance no. 90/2008 regarding statutory audit of annual financial statements and annual consolidated financial statements transposes the provisions of Directive 2006/43 of the European Commission concerning statutory audit of annual financial statements, both stand-alone and consolidated. The new audit requirements in Romania refer to conceptual and institutional aspects, but also to transparency and organization of audit firms.*

Key words: *financial crisis, statutory audit, Chamber of Financial Auditors of Romania, governance*

JEL classification: M42, L22

1. Introduction

Through this article we proposed to perform the analysis of changes in regulations concerning the audit of Romania in the context of changes that took place at the European level. Coming against the backdrop of financial crisis, changes in existing regulations in the statutory audit should contribute to strengthening the profession of accounting and auditing in Romania, to increase the transparency of the financial information and adequate information to those interested.

2. Amendments to the 8th directive regarding legal control of accounts

2.1. Objectives of the amendments

In the audit field, the 8th Directive (84/253/EEC) establishes the basic rules regarding professional qualification of those providing statutory audit services. However, the Directive is ambiguous regarding auditor's independence, leading to endless discussions about establishing an audit framework in the European Union, based on the International Standards on Auditing.

In March 2004, the European Commission issued a proposal for a new 8th Directive (COM/2004/177) regarding statutory audits of annual financial statements and consolidated financial statements, in order to provide insurance to investors and stakeholders with respect to the audited financial statements. The proposal provides compliance with international standards on auditing ("ISA") for all statutory audits conducted within the European Union and creates the basis for effective and balanced cooperation in terms of rules with lawgivers in third countries, such as the U.S. Securities and Exchange Commission (SEC). EU states started implementation in June 2006, having two years for putting into practice its provisions, with some exceptions.

2.2. Using International standards on auditing in all legal controls carried out in the European Union since June 2008

Directive 2006/43/EC of the European Parliament and Council of 17 May 2006 regarding statutory audit of annual financial statements and consolidated financial statements (D8-2006/43/EC) required the use of common audit standards in order to ensure a high and uniform audit quality within the European Union. Since 1999, the (European) Audit Committee makes efforts for using international standards on auditing (ISA) in the European Union, by comparing the requirements of each member state. They stressed the need to improve international standards on auditing (ISA) in some particular aspects, such as preparation of

an audit rule for international groups, updating the audit risk model and refining the guidelines on international accounting standards. The International Auditing and Assurance Standard Board (IAASB), a body of the International Federation of Accountants, worked for improving the international standards on auditing.

2.3. Requirements of initial and lifelong learning according to obligations in terms of quality

The 8th Directive ("the Directive") requires an auditor operating in a member state, other than the one where he has obtained his qualification, to know perfectly the legislation of that state, useful in his audit engagement (corporate law, tax law, social security law, etc.). Under the Directive, theoretical global learning now includes expressly the international accounting standards (IAS) and the international standards on auditing (ISA). On the other hand, access to the profession of (legal) auditor requires graduation of professional qualification exams. Member States should ensure that legal auditors participate in appropriate training programs in order to acquire the required theoretical knowledge, professional skills and ethical orientation. Non-compliance with requirements relating to lifelong learning will result in sanctions foreseen in article 30 of the Directive.

Professional qualification exam

The exam ensures a level of theoretical knowledge required in particular specializations in which the legal audit of financial statements is conducted. It takes into account the ability to apply in practice the knowledge acquired. At least part of this exam must be in written form.

The theoretical knowledge test should cover the following areas:

a) theory and accounting principles;
b) legal requirements and rules regarding preparation of stand-alone and consolidated financial statements;
c) international accounting standards;
d) financial analysis;
e) management accounting;
f) risk management and internal control;
g) audit,
h) legal requirements and professional standards regarding audit of financial statements,
i) international standards on auditing,
j) professional qualifications,
k) professional ethics and independence.

The theoretical knowledge test also covers the following areas, to the extent that they are of importance in terms of accounts control:

a) corporate law and corporate governance,
b) insolvency law and similar procedures,
c) tax law,
d) civil law and commercial law,
e) labor law,
f) information technology and systems,
g) mathematics and statistics,
h) fundamental principles of company's financial management.

The European Commission may adapt the list of areas that will be included in the above-mentioned theoretical knowledge test.

In order for auditors to apply in practice all theoretical knowledge it is compulsory that they pass a traineeship of at least three years, after which they will sit another examination on professional skills. During this traineeship they have to study the audit of annual financial statements, of consolidated financial statements or similar. At least two thirds of this practical training should be conducted around an agreed auditor or audit firm.

Lifelong learning

Non-compliance with lifelong learning obligation may lead to sanctions of the kind foreseen in article 30: "Without prejudice to Member States' civil liability regimes, Member States shall provide for effective, proportionate and dissuasive penalties in respect of statutory auditors and audit firms, where statutory audits are not carried out in conformity with the provisions adopted in the implementation of the Directive.

Member States shall provide that measures taken and penalties imposed on statutory auditors and audit firms are appropriately disclosed to the public."

The system of public oversight shall have the ultimate responsibility for the oversight of adoption of standards on professional ethics and internal control of audit firms, lifelong learning, quality assurance, investigation and sanctioning systems.

3. Financial crisis: A crisis of corporate ethics and of governance

The financial crisis caused a loss of confidence in financial institutions, and especially in banks. Governments offered their support and saved the banks all over the world. In the end, it is a crisis of ethics, which has turned into a financial crisis. Greed and lack of honesty led to the current crisis, and the main causes are considered to be the following:

- failure in corporate governance of large banks,
- excessive trends towards short-term goals,
- ignoring risk factors.

A report issued by ACCA (Association of Chartered Certified Accountants), the largest international accountancy association, identifies five major causes that led to the break out of the financial crisis:

- corporate governance (lack of corporate governance – it should be acted in the interest of shareholders, otherwise it arises a conflict of interests, which means professionalism and ethics at company level);
- remuneration and bonuses granted to managers
- risk identification and management (it has been proved that AAA rating means the exact opposite of safety);
- accounting and financial reporting: the financial crisis and what happened in banks questioned the "true and fair view" provided by accounting information;
- insufficient regulation (especially for rating agencies).

Legislators should aim to separate the banks' retail activity from the investment activity, in order to protect individual clients from "wholesale" risks, or at least to warn them in respect to risks when choosing to make deposits in banks that combine the two activities.

3.1. History repeats itself

Anyone wishing to speak about ethics and professionalism today should undoubtedly do so in the context of the global downturn. The financial crisis may seem a unique and unprecedented event, but history shows that we should have learnt from history and that similar events took place in time. The listed examples were the following:

- *the Great Depression* of the 1930s and 1940s, which started in the USA;
- *the Savings & Loans Crisis* of the 1980s and 1990s in the United States;
- management scandals (Enron, WorldCom, etc.);
- dot.com bubble, in 2001, which marked all over Western Europe the decrease of shares of listed companies in internet and related sectors; and
- in recent years: the credit crisis and the first signs of the financial downturn.

But, as George Bernard Shaw used to say: "I learned from experience that people never learn anything from experience".

3.2. What caused the crisis?

Referring to the fact that from the United Stats to Asia various resonant titles are witnessing the extraordinary times that we live, the director of KPMG Romania, Laura Perrin, presented the trend of the main stock exchange indices as of December 2007 until now, pointing out decreases registered by the Dow Jones index of Wall Street Stock Exchange, FTSE index of London Stock Exchange – which includes the shares of the most important companies listed on the London Stock Exchange, Nasdaq index, Nikkei index, which registered spectacular decreases.

"All biblical sins were violated during the crisis - greed, envy, love for money, anger, laziness, immorality, pride - were all causes of the crisis", said Laura Perrin. "Greed has come from those who wanted loans, but knew they could not pay. Then, investment banks have created various complex instruments, such as CDOs (collateralized debt obligations), to pack and sell these exposures. Subsequently, they were grouped in "good", "not so good" and "very bad" and received AAA qualifications from rating agencies. The market has interpreted these investments as being relatively secure, although they started from the beginning without a basis. Temptation: something that does not belong to you, but generates huge revenues, has led from greed to crisis. Therefore, it became an ethical crisis, fed by a system that favours short-term gains."

Brendan Nelson – KPMG Romania, Global Chairman, Financial Services: "The crisis continues to spread chaos in the financial world globally, claiming more victims and leaving financial, monetary and capital markets in turmoil and agitation".

As Gary Hamel and Lisa Valikangas said in article "The Quest for Resilience" included in Harvard Business Review of September 2003: "To boost your corporate resilience, replace 'That can't be true' with 'We must face the world as it is'.

Therefore, we should act and not only contemplate, in order to learn quickly from this experience and to avoid an economic Pearl Harbor, as Warren Buffet said.

3.3. About the financial crisis in Romania

In Romania, several important persons show the foreseen effects of the crisis. Mr Mugur Isarescu, Governor of the National Bank of Romania, reaffirmed categorically the soundness of the banking system, declaring that "Solvency and liquidity of Romanian banks are among the best, not only in the region, but also in the world", but he also specified that "Romania's economy is not directly affected by the crisis. But there are indirect effects that could occur".

In the same context, the President of Romania, Mr Traian Băsescu, said: "The economic crisis will not forgive us if we are not prudent", and Mr Călin

Popescu Tăriceanu, ex-prime minister of Romania (2004-2008), pointed out that "We can not be the oasis of prosperity in an ocean of disaster".

Şerban Toader, Senior Partner, KMPG Romania, explained in a recent press interview KPMG's position regarding the effects that we anticipate to see in our country: "I think the Romanian economy will not be seriously affected by the crisis on short-term, but this does not mean that we should not learn the lessons of economies that were directly influenced. We do not live in a glass globe, but once we know that this will influence us, we enter into speculations, feeding fear of uncertainty. Irritability on stock exchange markets has also an emotional, irrational explanation – in real economy we do not see a decrease in our work, but even an increase. For example, we see an increased activity in the Romanian economy, also in other cities than Bucharest. I think it is important for companies to pay greater attention to cash-flows as loans are getting more expensive, to ask for professional advice on more complex transactions and to focus on corporate governance. In any case, I do not believe that Romanian economy will slow down.

We are so optimistic that we even opened two new local offices under the current market conditions. The office in Iaşi was inaugurated in mid-October and on 30 October we officially opened our branch in Constanţa."

4. Transposition and application of European Community's provisions on statutory audits

4.1. Legislative changes

It is well known that up to 30 June 2008 Romania has had a law on financial audits (Law no. 133/2002 approving Emergency Ordinance no. 75/1999). But, Romania's accession to the European Union determined continuous adaptation of rules regarding corporate law, accounting and accounts control to the provisions of the European Directives. "The main concern of the professional body –the Chamber of Financial Auditors of Romania ("CAFR") – was to create the conditions for Romanian financial auditors to be recognized as European auditors", stated Professor PhD. Ion Mihăilescu, president of CAFR, in the opening of the international seminar "Cross-border auditors: professionalism and independence", Bucharest, 11 April 2008.

The Chamber of Financial Auditors of Romania (CAFR) has acquired the status of full member of the International Federation of Accountants (IFAC), further to the favorable vote of the Federation's annual Council, held in Rome during 12-13 November 2008. "We are happy to be a full member of the prestigious international professional body. We apply strictly the international standards on auditing, as well as the principles and requirements of the IFAC Code

of Ethics, which we adopted in full. For this achievement we thank the International Federation of Accountants, which has carefully monitored us, the Institute of Chartered Accountants of Scotland, which has assisted and supported us in preparing for accession, as well as all institutions and professionals – Romanian and foreign – that helped us in this endeavor", said Prof. PhD. Ion Mihăilescu at the meeting in Rome. IFAC is the global organization for accountancy profession and includes members and associates from over 130 countries and jurisdictions, representing 2.5 million professionals employed in public firms, education, government services, industry and trade. Founded in 1999, CAFR has applied to become an IFAC member since 2004, and in the same year it became an associate member of IFAC. Currently, out of CAFR members, over 2,400 are natural persons and 770 are companies.

Government Emergency Ordinance no. 90 regarding statutory audit of annual financial statements and annual consolidated financial statements ("the regulation") was published in the Official Gazette no. 418/30 June 2008. This regulation transposes the provisions of Directive 2006/43 of the European Commission concerning statutory audit of annual stand-alone and consolidated financial statements.

The regulation's fundamental objectives are closely linked to the following topics:

- transparency, effective governance, quality and consistency – growing requirements for which audit and accounting firms must respond in front of various stakeholders - shareholders, credit institutions, trade partners, investors, as well as in front of local authorities;
- public trust in the audit process will increase as audit quality and professional standards will improve;
- rapid answer to the essential requirements of the 8th Directive of the European Commission regarding regulations for audit and accountancy professions.

The regulation is structured in two parts: the first part represents the actual transposition of Directive 2006/43 of the European Commission (Title I), and the second part refers to oversight of statutory audit activities (Title II).

4.1.1. Key-elements of the regulation

The need for statutory audits occurred when the users of financial reports, markets, and public interest demanded an increased credibility of annual financial statements.

The regulation contains a number of specific elements and expressions (statutory audit, statutory auditor, audit firm, audit entity, auditor from a third country, group auditor, audit report, responsible authorities, public interest entities,

non-practitioner auditor, etc.). Some of the issues of general concern refer to the criteria for authorization and approval of statutory auditors and audit firms, to the conditions under which an authorization is withdrawn from an audit firm, as well as to the conditions that a natural or legal person must meet in order to become a member of CAFR. CAFR is the competent authority for authorizing statutory auditors and for withdrawing their authorization, and the final responsibility for approving and withdrawing authorizations goes to the oversight body (Public Oversight Board for Statutory Audit Activities - CAPAAS).

Under the new regulation, only persons who have the qualification of statutory auditor and are registered in the public register conduct statutory audits.

To become a trainee in the field of statutory audits, an individual should have a good reputation, be a graduate of the Faculty of Economics, have an experience of minimum four years in financial accounting, pass the knowledge examination for access to the traineeship and meet the requirements dictated by the Code of Ethics. The skills test is taken at the end of the three years traineeship.

The regulation emphasizes the lifelong practical and professional training and also grants special importance to ethical problems.

According to the regulation, the professional requirements imposed to a statutory auditor / audit firm, as appropriate, include: independence and objectivity, professional competence, professional confidentiality, translated selectively, as following:

- maintenance of theoretical knowledge, skills and professional values at a level sufficiently high to secure lifelong professional learning, according to the standards issued by CAFR under acknowledgement of CAPAAS;
- there are clear rules on registration of statutory auditors and updating the information on them;
- CAPAAS, with CAFR, must ensure that all auditors/audit firms comply with the principles of professional ethics, according to the Code of Ethics issued by IFAC and adopted by CAFR;
- statutory auditors/audit firms must carry out statutory audits in accordance with ISA;

4.1.2. Audit supervised by a public authority

The regulation sets up the Public Oversight Board for Statutory Audit Activities ("the Board"). The Board will be the competent authority regarding public oversight of statutory audits, according to the principles of Directive 43/2006 of the European Commission on statutory audit of annual financial statements and consolidated financial statements.

Being responsible for public oversight of statutory audits and audit firms, the Board has following attributions:

- to oversee quality control in the field of statutory audit, according to the annual plan;
- to monitor how Romanian legislation corresponds to the measures adopted by the European Commission on independence of statutory audits;
- to sign cooperation agreements with corresponding bodies in other Member States of the European Union in the field of public oversight of audit activity;
- to provide government and state institutions with information on public oversight of statutory audits, as well as information on adoption and implementation in Romania of International Standards on Auditing (ISA);
- to permanently improve the general framework, to approve directions and methods on periodic inspections conducted within these systems and to ensure proper implementation by the Chamber of Financial Auditors of Romania, according to the requirements regarding quality systems;
- to ensure proper conduct of inspections and pursue their results;
- to monitor CAFR's activity regarding authorization of statutory auditors and audit firms, as well as the Public Register;
- to approve rules and regulations prepared by CAFR regarding statutory audit activities;
- to issue own rules and regulations regarding public oversight of statutory audit activities, under the conditions provided by the Board's internal rules for organization and functioning;
- to monitor the lifelong learning of statutory auditors;
- to conduct own investigations at statutory auditors and audit firms, and adopt appropriate measures based on its findings;
- to analyze the annual report prepared and transmitted by CAFR regarding quality control activities and, if necessary, to bind CAFR to undertake the necessary measures.

The Board is an independent institution with legal personality that operates around the Prime Minister's Cabinet. The Oversight Board is led by a Superior Council, composed of representatives appointed by institutions with attributions in accounting regulations, respectively Ministry of Economy and Finance, National Bank of Romania, Romanian National Securities Commission, Oversight Commission for Insurance, Oversight Commission for Private Pension System, Ministry of Justice, professional bodies in this field (Body of Chartered Certified Accountants and Authorized Accountants from Romania, Chamber of Financial Auditors of Romania), as well as representatives of university (Association of Economics Faculties from Romania) and business environments (11 members).

The Board is financed as following: 40% subsidies from the state budget and 60% contributions (regulatory authorities 17%, professional bodies 16%).

Currently (10 January 2009), representatives in the Superior Council are appointed (except for Romanian National Securities Commission), three meetings were held and decisions taken in respect to steps to be followed to ensure functionality (internal rules on organization and functioning are under preparation, set up of special committees, etc.).

In terms of available sanctions, the new regulations mention admonishment, written warning, suspension of the right to exercise the activity of statutory audit, withdrawal of authorization and, by default, loss of the quality of statutory auditor.

In terms of infringements, the regulation penalizes certain actions with high fines, as following:

- influence from the side of an associate, administrator or employee of an audit firm, who is not qualified as statutory auditor, violating independence of the auditor operating in the name of the audit firm, represents an infringement and is penalized with a fine of between RON 10,000 -20,000;
- use of the qualification of statutory auditor or the audit firm, without complying with the legal provisions, represents an infringement and is penalized with a fine of between RON 50,000-100,000;
- exertion of audit activities without annual license represents an infringement and is penalized with a fine of between RON 10,000 – 20,000.

4.2. Challenges for the profession of auditor

Adoption of Government Emergency Ordinance no. 90 regarding statutory audit of annual financial statements and annual consolidated financial statements by the Parliament and set up, in October 2008, of the Public Oversight Board for Statutory Audit Activities were important steps. "The rules established by this ordinance clarify and avoid any ambiguity on any interpretation regarding authority and responsibilities of the Chamber of Financial Auditors of Romania, as professional body invested by the lawgiver for the organization, coordination and authorization of this activity in Romania", said Prof. PhD. Ion Mihailescu, president of CAFR.

The new legal status of Romanian auditors, and the requirements arising from IFAC membership, binds Romanian auditors to win public credibility. "In particular, in the context of current international downturn, through their behavior, professionalism and objectivity shown in carrying out the undertaken engagements, auditors can contribute directly to economic improvement, to overcome some subjectivity states, to establish a climate of confidence and normality in daily life", added the head of the Romanian auditors.

5. Conclusions

Implementation of EC Directive no. 43/2006 regarding statutory audit is a challenge for the European Commission and Member States. This directive is the most important European document, which came into force in 2008, being unique in international law in this field. It is complete, covering all aspects of audit activities.

The Directive is the only piece of legislation, the most important one that accountancy profession in Europe ever had. But Europe is not isolated. We live in an international environment, where "parla pass" represents a practice that is becoming more and more used in connection with audit regulation in non-European countries. The Directive covers practically all-relevant aspects for audit profession. As any other European country, Romanian should focus on implementation of the Directive's provisions.

The then years of existence in terms of seriousness and transparency makes us believe that Romania is on the best way in respect to reforms in statutory audits and it has the background for a proper training for facing the economic phenomena that concern the current economic environment.

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- *Financial Audit Review* edited by Chamber of Financial Auditors of Romania
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MARKET VALUES OF COMPANIES ON BUCHAREST STOCK EXCHANGE

Abstract: *Nowadays there is a large debate on whether the financial information proves any relevance for the investors´ prediction of the securities market values/stock prices. The paper focuses, besides reviewing some important literature concerning this issue, on an empirical analysis taking into consideration 44 companies listed on Bucharest Stock Exchange based on pool data linear regressions. It is true that the most recent research state that there is an important evidence of a deterioration of the relationship between accounting information and stock prices. Although, the main findings of this paper consist in that there are certain aspects, which should be further examined for a more reliable conceptual approach. In addition, it concludes that - even in the case of an emergent capital market as Bucharest Stock Exchange - it can be found mixed evidences to support the importance of financial information in portfolio' management decisions. In a sense or another, the paper state overall that the financial information matter for market determination of financial assets' values.*

Key words: *capital markets, financial information, financial assets' valuation*
JEL classification: C32, D82, G14, M41

1. Introduction

There is a large debate in the international literature around the relevance of financial accounting information for financial assets' valuation. Beaver[1] states that the studies made about this issue are part of the largest empirical research made in the last years. These studies emphasize upon the connection between the stock prices, as dependent variable, and a set of accounting indicators, as explanatory variables. These indicators are considered relevant, if they are associated in a significant way with the dependent variable, therefore they have the capacity of reflecting the right information to the investors when evaluating the firm, influencing on their investment decisions.

This paper aims at finding new evidence on the relationship between accounting information, as this encompasses the financial performance of the financial assets' issuers, and stocks' valuation. Section 2 reviews a part of the relevant literature concerning this problem. Section 3 provides some empirical evidences from an emergent market, Bucharest Stock Exchange. Section 4 offers some conclusions and suggestions regarding potential further research.

2. Theoretical background

At the end of the '60, there were published two papers that can be considered the seminal papers in what concerns the proposed area of research based on the market (the accounting market-based theory). These studies were the ones of Ball and Brown[2] and Beaver[3]. They use their own methodology, the portfolio theory, as well as the capital asset pricing model (CAPM), to analyze the reaction in the market stock prices after a previous announcement of benefit for the company. During the following two decades, the line of research focused on the market efficiency hypothesis. Fama (1970) underline the theory of efficient market when talking about the connection between accounting information and stock prices. This theory supposes that the efficiency of the market will make the stock prices a good estimation of their intrinsic value, in other words, a new information provided to the capital market will be transmitted in a new value of the stock prices. Therefore, the market is a right indicator of accounting values, where "security prices reflect all available information". There are three pre-conditions in order for this hypothesis to accomplish, according to Fama (1970): i) there are

1 W. H. Beaver, "Perspectives on Recent Capital Market Research", *The Accounting Review*, Vol. 77, No. 2, 2002, pp. 453-474.

2 R. Ball, P. Brown, "An Empirical Evaluation of Accounting Income Numbers", *Journal of Accounting Research*, 6 (2), 1968, pp. 159-178.

3 W. H. Beaver, "The Information Content of Annual Earnings Announcements" *Journal of Accounting Research,* 6 (Supplement), 1968, pp. 67-92.

no transaction costs; ii) there are no information costs; iii) all the participants on the capital market agree with the influence of the accounting information upon the prices of the securities and their future earnings. Moreover, Fama differences three situations of market efficiency, having in consideration the information that will be reflected in the prices:

a) the strong-form efficient market hypothesis, that states the market is efficient only if all the information relevant to the value of a share, whether or not generally available to existing or potential investors, is quickly and accurately reflected in the market price. In other words, in case the share price is considered to be lower than the real value by some investors that held a privately information about the company, this will lead to an increase demand of those shares on the capital market, and consequently of the price of those shares on the market, until a maximum point where the investors do not have any more incentive to buy, knowing the real value of the shares. This will certainly bring a new equilibrium level in the share price.
b) the semi-strong form of efficient market hypothesis, that supposes that the market is efficient if all relevant publicly available information is quickly reflected in the market price, the market responding to any publication of relevant information through moving the price to a new equilibrium level.
c) the weak-form of efficiency market hypothesis, which assumes that there is no correlation between successive prices, in other words the current share price cannot be estimated using the historical information regarding the share price.

There are some authors that focus on how the market appears to evaluate *accounting disclosures*. For most of the time, they try to analyze the response of the market to data. Moreover, they look at whether the market sees through accounting manipulations, the role of analysts, inflation effects and so-called short termism. First of all, there are some opinions that state that the use of accounting data to find disvalued shares can be problematic. This is due, in their opinion, to the following factors: accounting data are poor indicators of economic value, doubt regarding predictive value of accounting data, and necessary skills of analysts, lags and not at least the semi strong form efficient market, that suggests that analysis of information is unlikely to be highly profitable.

Both accounting data and share prices have as purpose to reflect value (capital) and change in value (profit). One important issue arises when questioning about the existence of relationship between these two and timing (lags due to need for finishing reporting period). The studies performed by Ball and Brown[4],

[4] R. Ball, P. Brown, "An Empirical Evaluation of Accounting Income Numbers", *Journal of Accounting Research*, 6 (2), 1968, pp. 159-178.

as well as Firth[5] have in consideration four types of accounting release in UK (interims, preliminary announcement, annual report and AGM, assessed return relative to CAPM). They reach the conclusion that there is a positive reaction of prices to the direction of earnings surprise. Beaver et al[6] assessed whether the size of error is correlated with size of share price move, finding strong positive results in this respect, forecast errors being correlated to beta. Foster[7] helps explain small reaction to annual earnings, and as well high reaction to interims and reduction in reaction to annual report, once they are introduced.

Beginning with the '90, there have also been published a series of papers that analyze the relevance of financial information for the evaluation of the stock prices. The majority of them conclude that the financial information has lost in its importance in the formation of the stock prices. The most significant reasons given in these papers for this situation are: the asymmetric information, the lag of time necessary for the financial information in order to be reflected in the stock price and not at least, the accounting conservatism. Dechow[8] find that earnings have stronger association with stock returns than cash flows do. Overall results are consistent with semi strong form efficiency. The impact depends on the level of uncertainty surrounding announcement, reliability of data (market discounts if uncertain) and impact on future cash flows (hence focus on earnings).

Balachandran and Tanner[9] examine the share price reaction to announcement of bonus share issues of Australian companies. They found that price reaction to bonus issue announcements from the day of the announcements to the day after the announcements (day 0 to day 1) is statistically more significant for industrial non-financial companies and mining companies than financial companies. Abad et al.[10] investigated the value-relevance of consolidated versus unconsolidated accounting information in Spain. The results show that consolidated information presents a higher degree of correlation with the market value of the firm than unconsolidated information presented by the parent company.

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5 M. Firth, "The relative information content of the release of financial results data by firms", *Journal of Accounting Research* 19 (Autumn), 1981, pp. 521-529.

6 W. Beaver, R. Clarke, R. Wright, "The Association between Unsystematic Security Returns and the Magnitude of Earnings Forecast Errors", *Journal of Accounting Research*, Vol. l7, 1979.

7 G. Foster, "Accounting policy decisions and capital market research", *Journal of Accounting and Economics*, 1979.

8 P. M. Dechow, "Accounting Earnings and Cash Flows as Measures of Firm Performance. The Role of Accounting Accruals", *Journal of Accounting and Economics*, 18, 1994, pp. 3-42.

9 Balachadran – Tanner, "Bonus Share Issues and Announcement Effect: Australian Evidence", 2001: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=288743

10 C. Abad, A. Garcia-Borbolla, J. Laffarga, M. Larran, J. M. Pinero, "An Evaluation of the Value Relevance of Consolidated Versus Unconsolidated Accounting Information: Evidence from Quoted Spanish Firms", 21st Annual Congress of the European Accounting Association, Antwerp, 1998.

Moreover, the results show that the explanatory power is higher under the economic unit theory than under the parent company theory.

Harris, Lang and Möller[11] examined the perceived value-relevance of consolidated and unconsolidated accounting numbers using German data. They formulated hypotheses based on the expected quality and economic and legal importance of German consolidated and unconsolidated accounting data. Both the price and return regression were estimated. Most of their results support the hypothesis that consolidated financial statements are more value-relevant than unconsolidated financial statements and that the explanatory power depends on the quality of the GAAP for consolidated statements. Inoue[12] evaluated the value-relevance of consolidated and unconsolidated accounting information in Japan. He utilized the valuation model based on Ohlson[13] which models value as a function of the book value of equity and earnings. Their results provide evidence that consolidated information is more value-relevant than unconsolidated information after 1995.

Francis and Shipper[14] state that the lost of relevance of the accounting information and its consequences upon the investors, has challenged accountants, auditors, and people in charge with the accounting information to make some changes in the current models of accounting standards in order to improve them. Although, they doubt about the fact that the financial reports have lost their relevance for the capital markets. Without any doubt, the technological revolution, the economical growth have led to the necessity that the accounting information be more general, and to have into consideration a larger number of recipients. Not all the studies were channeled in the direction of proving the necessity of elaborating more complex accounting information, but also in the direction of proving the importance of accounting information in taking investment decisions. More recently, Chang et al.[15] "The phenomenon of the mean-reversion discussed from the literature explore whether the stock price followed random walk. If the stock prices violate the trend of random walk, one possibility is the stock prices followed mean-reversion process. If the stock prices followed mean reversion in the long run, the price movements should be predictable from the movements in firm fundamental values." In this sense, determining whether stock prices are mean-

[11] T. S. Harris, M. H. Lang, H. P. Möller, "Unconsolidated Versus Consolidated Accounting Measures: Empirical Evidence from Listed German Companies", 20th Annual Congress of the European Accounting Association, Graz, 1997.

[12] T. Inoue, "Empirical Study on Accounting-based Valuation in Japan *KAIKEI*", *Accounting*, Vol. CXXXXXIII, June 1998.

[13] J. A. Ohlson "Earnings, book values and dividends in security valuation", *Contemporary Accounting Research*, 11(2), 1995, pp. 661-688.

[14] J. Francis, K. Schipper, "Have Financial Statements Lost Their Relevance?", *Journal of Accounting Research*, 37, 1999, pp. 319-352.

[15] Chang, Hsu-Ling et al., "The Relationship between Stock Price and EPS: Evidence Based on Taiwan Panel Data", *Economics Bulletin*, 30 (3), 2008, pp. 1-12.

reversion is a very important issue for investors. Consequently, to analysis equity fundamentals, what is important is to verify whether the stock price moves with its firm's fundamental. But these mechanisms depend on the capital market's mechanisms, institutions, regulatory framework liquidity, capitalization, types of allowed transactions and so on. By consequence, the relationship between stock prices and their fundamentals critically depends on the market development stage. In our opinion, such argumentation logic is especially important for emerging capital markets with their structural and institutional transformation processes, which induce an intrinsic functional short-run volatility.

A more recent approach underlines the fact that the process by which the contemporaneous stock price reflects value relevant information (both accounting and non-accounting) remains unchanged over time. In our opinion, this is a critical hypothesis, since it is equivalent with the absence of any *learning process* in the investors' decisions. This process would be able to guide the adjustments in the construction and management of financial assets' portfolios. If such a process is presumed, then it is possible to take into account more sophisticated inter-linkages between the evolution of stocks and the financial performance of their issuers. A direct testable consequence for such inter-linkages could be the manifestation of non-linear connections between prices' dynamics and the content of the financial statements. In this sense, there are recent empirical evidence showing convexity in the relationship between prices and accounting information. Empirical tests, although exploratory, provide further evidence of a nonlinear relation between stock price and accounting measures of earnings and book value (see, for instance, Riffe and Thompson[16]).

3. Empirical evidences from an emergent capital market: The Bucharest Stock Exchange

The Romanian capital market had registered since its reopening in 1995, different development stages: the initial stage (1995-1996) of building the capital market; the second one starting from 1997 and ending in 2000, when the BSE experienced a generalized regression; the third stage starting from 2001 until 2004, when the falling stopped and the BSE started to develop with a sustainable pace. After 2004 the evolution of the BSE was relatively favorable with high peaks for 2004 – 2005, starting to become more mature and more correlated with the other capital markets.

The current global overview of the Romanian capital market indexes reflects:

[16] S. Riffe, R. Thompson, "The Relation between Stock Prices and Accounting Information", *Review of Accounting Studies*, 4(2), 1998, pp. 325-351(27)

- An "auto-sustainable" downward trend for the market prices starting with August 2007;
- An increasing trend in the market intrinsic volatility as an expression of the unbalanced bid/ask ratio due to the increase of uncertainty in the transactional environment;
- More detailed information could be provided by the general statistic properties of the indexes as they are captured by their histograms (Graphic 1).
- The analysis of these properties reveals:
- A non-normal distribution as a consequence of a non-informational efficient (at least in a "strong" sense) market evolution;
- An important level of volatility (measured for instance by the variance coefficient - the ratio between the standard deviation and the mean) higher for BET-FI and lower for BET-C;
- A relative reduced capacity to absorb the exogenous shocks (as these are captured by the "spikes" in distribution).

Since the issue of a "close to normal" distribution is a pre-critical condition for the "market efficiency" analysis, there are required more analytical empirical distribution tests (Table 1). For instance, for the BET index, it could be noticed the fact that these tests reject the null of a "normal" distribution. Or, since a larger "gap" between the empirical distribution and the "normal" one could be seen as a measure of the market' informational dysfunctions, it could be concluded that for the considered time span the Romanian capital market does not behave as an "efficient" one at least not in a "strong" sense. Still, there are some evidences for a sort of informational efficiency in a "week" sense.

For evaluating this statement, it is necessary to test if the *random walk* model is an accurate description of the market prices' evolution. In other words, is necessary to proceed with checking:

$$P_t = \alpha + P_{t-1} + \varepsilon_t \quad (1)$$

Where $\boldsymbol{P_{t,}}$ $\boldsymbol{\alpha}$, $\boldsymbol{\varepsilon_t}$ are the level of market index, an arbitrary drift parameter and, respectively, a "white noise shock".

It could be noticed from the Table 2 the fact that the *random walk* variables are statistically significant. Based on this, it could be preliminary concluded that the considered market displays some informational efficiency at least in a *weak* sense. Overall, there could be described the image of the Romanian capital market as a typical emergent one, with some differences between the market indexes as it concerns the timing of the reactions to different kinds of shocks, but with a strong base connection between them and it could be enlightened the fact that the effects of the international financial crisis have started to appear since the second part of 2007.

In this evolving framework, there could be advanced an analysis able to provide some empirical evidence in supporting or rejecting the thesis that the financial characteristics of the issuers are relevant for the stock' prices formation.

In order to account at least for some sectorial differences, the total set of 44 companies is conventionally delimited in two sectors: "1" and "2"; and separate investigations are reported. All the data are provided by Bucharest Stock Exchange website (www.bvb.ro) and the analysis time span covers the 2003-2007 periods. The shares are from first and second tier of the regular market.

Sector "1" includes 21 companies and is defined as "chemical industry, pharmaceutical products, equipments, telecommunications, transports, manufacture of agriculture products, tourism, and services".

Sector "2" with 23 companies is defined as "extraction and manufacture or refined of petroleum, including support services, manufacture of industrial machinery including manufacture of air and spacecraft and related machinery, private and industrial constructions, raw materials extraction and manufacture".

Certainly, it could be argued against the "too conventional" and non-homogenous separation of the sectors composed by companies with different sizes and activity sub-sectors. However, the delimitation was done in order to ensure at least a very general similitude areas and a sufficient data volume.

Three measures of prices / market values are employed:

1) A "short-run" perspective on prices' movements which are computed as annually averages for daily variations:

$$\Delta p_t = \frac{\sum_{i=2+k}^{N} \ln\left(\frac{zatvaranje_i}{zatvaranje_{i-1}}\right)}{\sigma^2{}_t} * 100 \qquad (2)$$

where N are the numbers of trading days in an year t and σ^2 is the standard deviation of the returns in current trading year;

2) A "long-run" definition based on the ratio between the last close of the current trading year and the last close of the previous one:

$$\Delta p_t = \frac{poslednje\ zatvaranje}{poslednje\ zatvaranje_{t-1}} * 100 \qquad (3)$$

3) A **VaR** measure of shares.

Estimating the **VaR** of a portfolio involves determining a probability distribution for the change in the value of the portfolio over the time period (known as the holding period). The value of financial instruments' portfolio, at time t

depends on the *k* risk factors (market variables). Thus, the estimation **VaR** is done via estimation of underlying risk factors' distribution.

For analysis purposes, we have chosen the nonparametric method with each individual stock's simulations over a time span of 10 days with a 10% confidence level. The short considered period was selected in order to reflect the high levels of market intrinsic volatility.

Also for financial ratios were selected as descriptors of the companies' financial status:

1. The economic profitability (**EP**) reflects the performance of "long-term resources" (total shareholder's equity and long-term liabilities) in terms of operating income, earnings before interest but after taxes (**EBI**):

$$ekonomska\ profitabilnost = \frac{EBI}{Ukupni\ akcionarski\ kapital + dugoročne\ obaveze} \quad (4)$$

2. The financial profitability (**FP**) reflects the efficiency in the use of shareholders' resources and it could be expressed as the ratio between the profit after interests and taxes and the total shareholder' equity:

$$finansijska\ profitabilnost = \frac{Neto\ dobit}{Ukupni\ akcionarski\ kapital} \quad (5)$$

3. Net profit margins (**NPM**) is the expression of the "net" results after taking into account the cost of sales, the administration costs, the selling and distribution costs and all other types indicating the potential source for dividend payments and auto-financing capacity formation:

$$Neto\ profitne\ marže = \frac{Neto\ dobit}{Obrt} \quad (6)$$

4. Liquidity ratios provide information about a firm's ability to meet its short-term financial obligations. They are of particular interest to those extending short-term credit to the firm. Two frequently used liquidity ratios are the *current ratio* (or "working capital ratio") (**WCR**) and the *quick ratio* (**QR**). Since the second one is more restrictive and provides a too narrow image, we are focusing only on the first one:

$$tekuća\ proporcija = \frac{tekuća\ sredstva}{tekuće\ obaveze} \quad (7)$$

5. The financial leverage represents the degree to which an investor or business is using borrowed money. Companies that are highly leveraged may be at risk of bankruptcy if the are unable to make payments on their debt; the theory reflects the fact that financial leverage affects the risk of the business, therefore

adding debt to the financial structure of a firm increases the standard deviation of the stock returns and increases the company's beta. Expected stock returns are a function of the corporate risk. Investors and creditors will price securities with higher amounts of financial risk so that investors and creditors can expect higher returns.

$$\text{Ukupan leveridž} \quad \frac{\text{Ukupan dug}}{\text{Ukupan kapital}} \qquad (8)$$

It could be argued that the investors are interested also in synthetically financial information. Thus, we have also build up two aggregate indicators, which combine the financial ratios:

$$IR_t = \sum_{i=1}^{3} \alpha_i r_{it} \qquad (9)$$

$$IG_t = \alpha IR_t + \beta WCR_t \qquad (10)$$

IR is an indicator of the profitability for the current time period *t*, *IG* is an global indicator of the financial status based on an linear combination between *IR* and the *working capital ratio* with the weights α, β and α_i are the weights of profitability ratios in the synthetic indicator.

It could be observed that the simplest way to attribute values to the weights is to adopt an equiponderate definition of the indicators ($\alpha_1=\alpha_2=\alpha_3=0.33$; $\alpha=\beta=0.5$) which confers the same relative importance to each structural component. Of course, this could appear as a severe simplification since there are not enough *ex ante* arguments for a uniform contribution to the synthetic information. Still, for the sake of the simplicity, we will further presume such a situation.

An increase in the profitability ratios is susceptible to increase the sources to cover a higher level of dividend inflows and, thus, to increase the rewards for shareholders. As a consequence, they will be more interested in buying and holding the company' shares and so the market values of these shares should increase (or, at least, remain stable a longer time period). The association between the profitability ratios and the prices should be a *direct* one. Similar, an increase in the liquidity ratio reflects an amelioration of the financial stability and equivalently a diminution of the current failure risks. If this stands, then the prices dynamics should also be directly correlated with the level of **WCR**.

In order to evaluate the connections between the prices dynamic and the chosen financial ratios / synthetic indicators, we have run several *pool data* regression inside each sectorial group.

The basic class of models that can be estimated using a pool object may be written as:

$$Y_{it=}\alpha + X'_{it}\beta_{it} + \delta_i + \gamma_t + \varepsilon_{it} \qquad (11)$$

where Y is the dependent variable, and X_{it} is a k - vector of regression, and ε_{it} are the error terms for $i=1,2,\ldots.M$ cross-sectional units observed for dated periods $t=1,2,\ldots T$. The parameter α represents the overall constant in the model, while the δ_i, γ_t represent cross-section or period specific effects (random or fixed). Identification obviously requires that the β coefficients have restrictions placed upon them. They may be divided into sets of common (across cross-section and periods), cross-section specific, and period specific regressor's parameters.

For testing, a simplified version without cross-section or period specific effects (random or fixed) or overall constant was considered:

$$Y_{it=}X'_{it}\beta+\varepsilon_{it} \quad (12)$$

This specification implies that:

- There is no common exogenous factor to determine the prices' evolution in each sector to be implicitly reflected by a constant term;
- The β parameters are common to all companies included in a sector and are constant over time. Thus, the estimations are reflecting a common situation at the level of each group and do not allow the discriminations between the individual companies which compose the group.

The *Generalized Least Squares* (GLS) estimation is straightforward. First, we performed preliminary estimation to obtain cross-section specific residual vectors, and then we used these residuals to form estimates of the cross-specific variances. The estimates of the variances were then used in a weighted least squares procedure to form the feasible GLS estimates.

After each regression, the stationarity and the possible existence of some autoregressive patterns at the level of empirical residuals were tested. These tests, not reported here, suggest that, despite some possible autocorrelations in the residuals, overall the quality of the regression models could be seen as satisfactory.

Analyzing the statistics for the specific financial ratios and prices dynamics, it could be observed that:

- There are some important inter-sectorial differences reflected by the levels and distributions of profitability ratios;
- Still, there are some important similarities in terms of non-normal distribution of all the involved variables (the *Skewness* and *Kurtosis* as well as the synthetic Jarque-Bera distribution parameters suggest the manifestation of some important *fat-tails* effects);
- In both sectors, the a-parametric *variation coefficient* (the ratio between standard deviation and average) is greater than 1 for prices' dynamics estimations, suggesting that there could be an important amplitude of volatility in this dynamics;

- The levels of the sum of squared deviations indicate that there could be some points of "structural breakdowns" in the variables' evolution, which does not conserve a uniform mechanism.

The regressions' results are reported in Table 3 and Table 4. According to these results:

- For sector "1" the most relevant explanatory variable appears to be the *financial leverage,* followed by *net profit margins* and *economic profitability* if the prices dynamic are computed as daily averages of close prices changes. In the same time, the *working capital ratio* seems to play in this case a less important role. The same explanatory importance hierarchy is preserved if the prices variation is computed by taking into account the last close price from the current year comparing with the last close from the previous year. This situation is changed if the **VaR** measure is involved. Now the *working capital ratio* seems to have the most important explanatory power. It is then followed in importance by the *financial leverage,* the *financial profitability* being associated with **VaR** only with a low degree of significance;
- Due to the low explicative importance of the liquidity ratio in sector "1" the synthetic *profitability equiponderate indicator* plays a more important role in explaining the prices' variations measured as daily averages / year to year comparative with *financial status global indicator.* This is reversed in the case of **VaR** estimation for prices' dynamics as a consequence of the increased importance of *working capital ratio* in this case;
- For sector "2" only the *net profit margins* and, at a certain degree, the *working capital ratio* appear to be associated with daily averages of close prices' movements. The *financial* and *economic profitability* ratios, as well as the *financial leverage* display lower explanatory importance (with the "wrong" sign for the coefficient of the last variable). The same situation appears if prices' dynamics is computed as current last yearly close / previous last yearly close with no explicative importance of the liquidity ratio. It appears that the potential dividend distributions are the major concern of the investors in this sector with less attention paid to the future companies' perspectives (with a low importance of economic and financial performance and liquidity' risks). Again this conclusion is reversed in the case of **VaR**: the *financial leverage* displays the highest degree of association with the **VaR** measure while *net profit margins* have a reduced importance. The *financial profitability* does not plays in this case any role in explaining the market values of the companies;
- The first two measures of prices' variations could be less explained by the synthetic indicators in the sector "2" since these variations are mainly affected by the net *profit margins* with less importance than the other

ratios. For the **VaR** case, the lower relevance of the profitability ratios affects the explanatory capacity of the *profitability equiponderate indicator* whereas *financial status global indicator* displays a greater importance under the impact of the key role of the liquidity ratio.

These results reflect some contradictory sectorial characteristics and an unclear impact of the involved ratios on stock prices evolutions. More exactly:

- The data display non-uniform and non-normal temporal distributions, which are not preserved over the analyzed period. The presence of *fat tails* effects reflects the market institutional, structural and functional imperfections;
- The *net profit margins* appear to be the main explanatory variable with a positive and statistic significant coefficient in the majority of cases. As a consequence, it could be considered that the dividend policy of a company is a major decisional determinant of trading;
- In an important number of situations, the *economic profitability* acts like the second explicative variable after the net profit. Still, there is a certain volatility of the connections between this ratio and prices' movements which diminish in certain situations the relevance of this ratio or leads to an "incorrect" association;
- For the largest number of cases, the *financial profitability* seems to be less important being seldom significantly correlated with prices;
- The explanatory importance of the liquidity ratio increases only if prices' evolutions are adjusted to risks: the investors on Bucharest Stock Exchange seem to take less into account the company's possibility to honor its current obligations;
- There do not appear to be major differences in the sensitivity to financial ratio changes in the short - and long - run methods to measure the stock prices' movements. *Contrary,* the **VaR** seems to be quite a distinctive endogenous variable in terms of reactions to the financial status' changes;
- The synthetic indicators seem to be relevant in explaining the trading decisions with direct impact on stocks' prices. Still, if the weights' selection is taken into consideration, it could be argued that this is more the effect of the individual ratios included in their structure and less the consequence of a true aggregation process;

These findings are puzzling. It appears that financial information matters in stocks' valuation, but its relative importance varies in a significant degree over the market sectors and among different modalities of measuring the market values. Only the *net profit margins*, which can be seen as, associated with dividend policies, tend to preserve its explanatory importance over different sectors and market values' estimators. It could be argued that this output should be

interpreted as the convergent result of a complex set of determinants such as the institutional and functional transformation processes attributable to an emergent capital market, the informational asymmetry, the financial fragility of some issuers, the market vulnerability to exogenous shocks, the *bounded rationality* framework for portfolio management' decisions or market increased volatility under the impact of international financial crisis in the last part of the analyzed time span.

4. Conclusions and further research

This study reviews the literature on financial information relevance in the securities' valuation and investigates the empirical evidences from an emergent capital market - the Bucharest Stock Exchange. The paper reveals that after an initial effervescence in the study of this relevance, a growing literature has suggested that financial statements have lost their value relevance for different reasons, such as the shifts in the economic activity structures and processes as well as the increasing importance of the so-called "driven by non-information-based trades" (as these are emphases in *Noisy Rational Expectations Equilibrium* model). However, recently it was argued that other aspects should be considered. Among them, the manifestation of non-linear connections between prices' dynamics and the content of financial statements and the *bounded rationality* models should be considered.

The emergent capital markets display some important characteristics such as a deep structural and functional transformation processes, increased volatility and fragility to external shocks that requires more detailed analyses in the field of financial information relevance. The empirical study on Bucharest Stock Exchange provides mixed evidences to support the thesis of the connections between the financial fundamentals and prices' dynamics. The most important is linked to the preeminent role played in market values' formation by the *net profit margins*, which could be seen as directly associated with the dividend policies. Of course, such a result is affected by the limits of the study. Among them: (1) the conventional definition of the sectors; (2) the reduced set of analyzed companies / the short time period observations; (3) the limits of the **VaR** methodology; (4) the linear relationships considered despite the fact that the study argues against them; (5) the econometrics' problems of pool data estimations etc.

Thus, further research directions should minimally deal with: (1) the construction of an integrated theoretical framework with the inclusion of different features such as the non-linear / co-integration relationships between the financial information and financial assets' valuation, *bounded rationality* models etc; (2) a discriminant *ex ante* analysis of the relative relevance of different components of companies' financial architecture; (3) the evaluation of the financial

information' impact on different risk measures alternatives to **VaR**; (4) the incorporation of "risk / uncertainty" distinction; (5) the identification of emergent capital markets' characteristics that are able to modulate the impact of financial current and new information; and others.

In spite all these *caveats* it cannot be concluded that financial information is irrelevant for capital markets' evolutions. More generally, despite the fact that nor the theoretical foundations nor the empirical evidences are conclusive, we argue that a "return to the fundamental soundness of economic and financial issuers' performances" is necessary in the analysis of markets' evolutions and that a refocus on the long-term viability of the companies should be a key concern in *passive* investments strategies.

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ANNEXES

Graphic 1: *General statistics for market indexes*

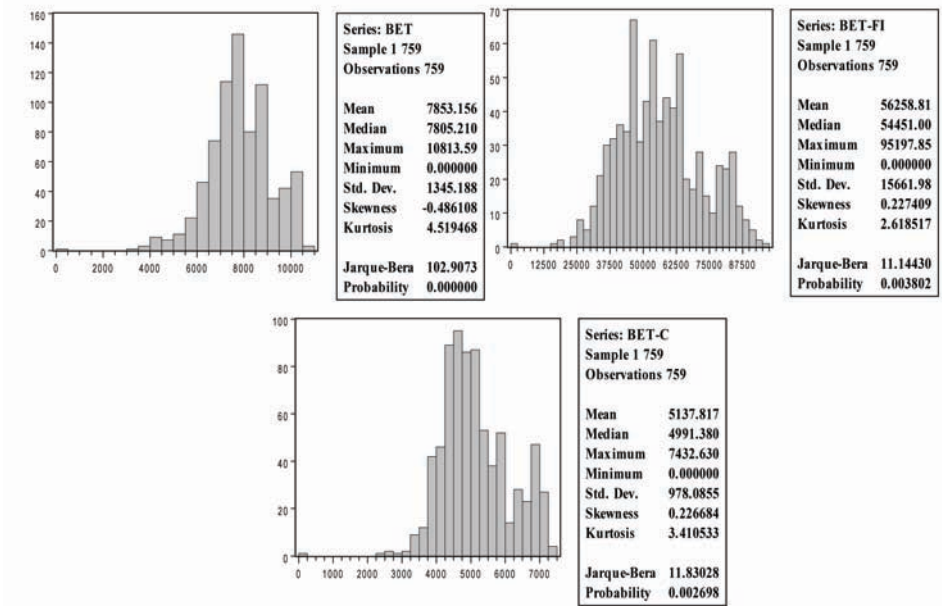

Table 1: *Empirical distribution tests for BET index*

Empirical Distribution Test for BET				
Hypothesis: Normal				
Sample: 1 759				
Included observations: 759				
Method	**Value**	**Adj. Value**	**Probability**	
Lilliefors (D)	0.046908	NA	0.0004	
Cramer-von Mises (W2)	0.347612	0.347841	0.0001	
Watson (U2)	0.330806	0.331023	0.0001	
Anderson-Darling (A2)	2.634030	2.636643	0.0000	
Method: Maximum Likelihood – degree of freedom corrected (Exact Solution)				
Parameter	**Value**	**Std. Error**	**z-Statistic**	**Prob.**
MU	7853.156	48.82721	160.8356	0.0000
SIGMA	1345.188	34.54882	38.93584	0.0000
Log likelihood	-6544.529	Mean dependent var.		7853.156
No. of Coefficients	2	S.D. dependent var.		1345.188

Table 2: *The random walk (with drift) index tests- the BET index*

Included observations: 4955				
Valid observations: 1496				
	Coefficient	**Std. Error**	**z-Statistic**	**Prob.**
C(2)	9.135677	0.018435	495.5734	0.0000
C(3)	4.820628	2.522866	1.910774	0.0560
	Final State	**Root MSE**	**z-Statistic**	**Prob.**
SV1	24625.57	5666.634	4.345715	0.0000
Log likelihood	-8963.136	**Akaike info criterion**		11.98548
Parameters	2	**Schwarz criterion**		11.99258
Diffuse priors	1	**Hannan-Quinn criter.**		11.98812

Table 3: *The connections between the financial ratios and prices dynamics- sector "1"*

Dependent variable: Average variation o f daily closing prices / Standard deviation (%)				
Method: Pooled EGLS (Cross-section weights)				
Included observations: 4 after adjustments				
Cross-sections included: 21				
Total pool (balanced) observations: 84				
Linear estimation after one-step weighting matrix				
Variable	**Koeficijent**	**Std. greška**	**t-Statistika**	**Verovatnoća**
Net profit margins	0.397562	0.051174	7.768860	0.0000
The financial profitability	0.006046	0.002813	2.149074	0.0345
The economic profitability	0.288249	0.056411	5.109829	0.0000
Working capital ratio	0.001183	0.000561	2.108623	0.0380
Financial leverage	10.62660	1.011740	10.50330	0.0000
Dependent variable: Price variation- last close (December/December) (%)				
Method: Pooled EGLS (Cross-section weights)				
Included observations: 4 after adjustments				
Cross-sections included: 21				
Total pool (balanced) observations: 84				
Linear estimation after one-step weighting matrix				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Probability**
Net profit margins	2.413434	0.485999	4.965926	0.0000
The financial profitability	0.068911	0.018668	3.691422	0.0004
The economic profitability	2.030884	0.434360	4.675582	0.0000
Working capital ratio	0.003569	0.003751	0.951617	0.3441
Financial leverage	52.86467	9.539594	5.541606	0.0000

Dependent variable: VaR- historical data, 10 days ,confidence interval 10%				
Method: Pooled EGLS (Cross-section weights)				
Included observations: 4 after adjustments				
Cross-sections included: 21				
Total pool (balanced) observations: 84				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Probability**
Variable	0.015898	0.003579	4.441893	0.0000
Net profit margins	2.75E-05	2.68E-05	1.024770	0.3084
The financial profitability	0.006784	0.001604	4.230020	0.0001
The economic profitability	5.36E-05	1.22E-05	4.399182	0.0000
Working capital ratio	0.147110	0.035818	4.107106	0.0001
Financial leverage				
Method: Pooled EGLS (Cross-section weights)				
Included observations: 4 after adjustments				
Cross-sections included: 21				
Total pool (balanced) observations: 84				
Linear estimation after one-step weighting matrix				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Probability**
Profitability equiponderate Indicator $\alpha_1 = \alpha_2 = \alpha_3 = 0.3$	0.023131	0.008628	2.681004	0.0089
Financial status global indicator $\alpha = \beta = 0.5$	0.002545	0.001171	2.174021	0.0326

Dependent variable: Price variation- last close (December/December) (%)				
Method: Pooled EGLS (Cross-section weights)				
Included observations: 4 after adjustments				
Cross-sections included: 21				
Total pool (balanced) observations: 84				
Linear estimation after one-step weighting matrix				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Probability**
Profitability equiponderate $\alpha_1 = \alpha_2 = \alpha_3 = 0.3$	0.234395	0.057398	4.083656	0.0001
Financial status global indicator $\alpha = \beta = 0.5$	0.008595	0.008194	1.049002	0.2972
Dependent variable: VaR- historical data, 10 days ,confidence interval 10%				
Method: Pooled EGLS (Cross-section weights)				
Included observations: 4 after adjustments				
Cross-sections included: 21				
Total pool (balanced) observations: 84				
Linear estimation after one-step weighting matrix				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Probability**
Profitability equiponderate Indicator $\alpha_1 = \alpha_2 = \alpha_3 = 0.3$	0.000238	8.91E-05	2.667664	0.0092
Financial status global indicator $\alpha = \beta = 0.5$	0.000100	2.53E-05	3.972042	0.0002

Table 4: *The connections between the financial ratios and prices dynamics- sector "2"*

Dependent variable: Average variation o f daily closing prices / Standard deviation (%)				
Method: Pooled EGLS (Cross-section weights)				
Included observations: 4 after adjustments				
Cross-sections included: 23				
Total pool (balanced) observations: 92				
Linear estimation after one-step weighting matrix				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Probability**
Net profit margins	0.330961	0.077572	4.266477	0.0000
The financial profitability	0.001250	0.002593	0.482169	0.6308
The economic profitability	-0.000803	0.006691	-0.119950	0.9048
Working capital ratio	0.001061	0.000557	1.903496	0.0601
Financial leverage	0.170838	0.170089	1.004404	0.3173
Dependent variable: Price variation- last close (December/December) (%)				
Method: Pooled EGLS (Cross-section weights)				
Included observations: 4 after adjustments				
Cross-sections included: 23				
Total pool (balanced) observations: 92				
Linear estimation after one-step weighting matrix				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Probability**
Net profit margins	2.995056	0.607989	4.926169	0.0000
The financial profitability	0.042128	0.039495	1.066660	0.2889
The economic profitability	0.032117	0.098073	0.327486	0.7441
Working capital ratio	0.003090	0.003788	0.815734	0.4168
Financial leverage	0.880530	1.289932	0.682617	0.4962

Dependent variable: VaR - historical data, 10 days ,confidence interval 10%				
Method: Pooled EGLS (Cross-section weights)				
Included observations: 4 after adjustments				
Cross-sections included: 23				
Total pool (balanced) observations: 92				
Linear estimation after one-step weighting matrix				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Probability**
Net profit margins	0.653848	0.258692	2.527513	0.0132
The financial profitability	0.001613	0.002858	0.564448	0.5738
The economic profitability	0.058570	0.028697	2.040994	0.0441
Working capital ratio	0.005199	0.001183	4.394181	0.0000
Financial leverage	3.205429	0.824231	3.888996	0.0002
Dependent variable: Average variation o f daily closing prices / Standard deviation (%)				
Method: Pooled EGLS (Cross-section weights)				
Included observations: 4 after adjustments				
Cross-sections included: 23				
Total pool (balanced) observations: 92				
Linear estimation after one-step weighting matrix				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Probability**
Profitability equiponderate Indicator $\alpha_1 = \alpha_2 = \alpha_3 = 0.3$	0.002959	0.006477	0.456869	0.6489
Financial status global indicator $\alpha = \beta = 0.5$	0.002183	0.001143	1.909909	0.0593

Dependent variable: Price variation- last close (December/December) (%)				
Method: Pooled EGLS (Cross-section weights)				
Included observations: 4 after adjustments				
Cross-sections included: 23				
Total pool (balanced) observations: 92				
Linear estimation after one-step weighting matrix				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Probability**
Profitability equiponderate Indicator $\alpha_1 = \alpha_2 = \alpha_3 = 0.3$	0.097709	0.098849	0.988466	0.3255
Financial status global indicator $\alpha = \beta = 0.5$	0.006777	0.007957	0.851706	0.3966
Dependent variable: VaR - historical data, 10 days ,confidence interval 10%				
Method: Pooled EGLS (Cross-section weights)				
Included observations: 4 after adjustments				
Cross-sections included: 23				
Total pool (balanced) observations: 92				
Linear estimation after one-step weighting matrix				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Probability**
Profitability equiponderate Indicator $\alpha_1 = \alpha_2 = \alpha_3 = 0.3$	0.013505	0.013095	1.031356	0.3051
Financial status global indicator $\alpha = \beta = 0.5$	0.012349	0.002565	4.814014	0.0000

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THE INFLUENCE OF STAKEHOLDER THEORY UPON THE CAPITAL STRUCTURE

Abstract: *The stakeholder theory is a new approach linked with the capital structure of the company. According to this theory, the companies must assume their financial decisions not only in front of the equity holders, but also in front of the other stakeholders (suppliers, customers, competition, managers and employees being only a part of them), that support the company in developing its activities. This paper aims at bringing an empirical support at the research made so far at the international level in this respect. Having in consideration 35 Romanian non-financial listed companies from 4 sectors of activity (energetical, chemical, equipments and materials), the authors analyse, through a set of econometrical models, the influence of stakeholder theory upon the capital structure of the considered sample.*

Key words: *capital structure, stakeholder theory, Romanian listed companies*
JEL classification: C21, D33

1. Introduction

Grinblat şi Titman[1] realized a first theoretical proposal about the influence that stakeholders might have, through a sintesis of the empirical work submitted in the last 20 years about this subject. This theory was analysed by three research directions, each one of them beginning in 1980. On one hand, Titman[2] begun to study the relationship between leverage and the relationship of the company

1 M. Grinblatt, S. Titman, *Mercados Financieros y Estrategia Empresarial*, McGraw-Hill, Madrid, 2003

2 S. Titman, "The effect of capital structure on a firm's liquidation decision", *Journal of Financial Economics*, Vol. 13, 1984, pp. 137-151

with the suppliers and customers; on the other hand, Brender și Lewis[3] begun their research in the field of how the leverage affects upon the relationship with the customers; and finally, the third line of investigation was marked by Stulz[4], who tried to emphasize upon the influence of the management of the company upon its leverage.

Despite the fact that this line of research is as antique as the pecking order theory, the paper of Myers and Majluf (1984) being published in the same year with the paper of Titman[5], the influence of stakeholder theory upon the capital structure is not so well investigated, both theoretically and empirically speaking. As far as concerns the Romanian companies, we can state that there hardly you can find any empirical analysis in this respect. This is the main reason why, on some theoretical approaches made so far in the international literature, we will try to quantify the influence of stakeholders upon the financing decision of Romanian companies. The pillar on which this theory is based on is represented by the measure in which the stakeholders can influence or can condition the financing decisions of a company. The choice between different sources of finance may result in an increased bankruptcy risk for the company, risk that the stakeholders will not easily assume. This is the reason why they will influence the financing decision.

2. Theoretical framework

Once with clarifying the main aspect on which the stakeholder theory is based on, there will be forward presented the theoretical fundaments and the main empirical papers that have explained along the time in which way different stakeholders may influence or can be influenced by the capital structure of a company.

2.1. The influence of customers and suppliers upon the capital structure of a company

As far as concerns the customers group, they will be less willing to aquire the products of those companies that have an increased leverage, given the fact that these companies are most likely to get to bankruptcy. In case this risk would become a reality, the customers would fiind themselves in the situation of not benefiting from after-sale service, of the access at the maintanance service. These

[3] J. A. Brander, T. R. Lewis, "Oligopoly and financial structure: the limited liability effect", *American Economic Review*, Vol. 76, 1986, pp. 956-970

[4] R. M. Stulz, "Managerial control of voting rights: financing policies and the market for corporate control", *Journal of Financial Economics*, Vol. 20, núm. 1-2, 1988, pp. 25-54

[5] S. Titman, ibidem

ideas were present in the papers of Titman[6], Titman and Wessels[7], Balakrishnan and Fox[8]. As Menendes[9] state in his paper, if the companies would like to transmit confidence and safety in their long term relationship with the customers, they would have to limit their leverage at a certain level. Nevertheless there are some categories of customers that are more interested in the capital structure of the companies to whom they relate. These are customers that aquire: products of long-term usage, where after sale service has an increased importance when taking the buying decision; products for which the quality factor is a critical factor when choosing the supplier; products for which the replacement of the supplier implies substantial costs for the customer; unique products or very specialized ones.

2.2. Influence of employees upon the capital structure of the entreprise

Grinblatt și Titman[10] emphasize upon the necessity of taking into account the group of employees at the moment of establishing the right capital structure for the company, arguing that companies with a high leverage are more willing to make reduction of personnel when it appears a decrease in the level of demand on the market. On the contrary, the companies with a limited leverage will keep constant the number of employees during the crisis periods, thus reducing the potential costs with the hiring and training of new employees in the period following the crisis.

In the empirical study realized in this paper, there wil be taken into consideration the group of employees from two different perspectives, presented so far in the literature. More precisely, there will be analysed the way the dynamics of *the number of the employees* influences upon the capital structure of the company, as well as the influence of the *salaries* upon the leverage of the company. As far as concerns the first variable (*the number of the employees*), some relevant papers that have considered this aspect were those of Sharpe[11] and Hanka[12]. As far as concerns the second variable, (*salaries*), Hanka, although expected a positive relationship

6 S. Titman, ibid.

7 S. Titman, R. Wessels, "The determinants of capital structure choice", *Journal of Finance*, Vol. 43, núm. 1, 1988, pp. 1-19

8 S. Balakrishnan, I. Fox, "Asset specificity, firm heterogeneity and capital structure", *Strategic Management Journal*, Vol. 14, 1993, pp. 3-16

9 S. Menéndez, "Interdependencia de las decisiones financieras en las empresas españolas", *Revista de Financiación y Contabilidad*, Vol. 25, núm. 87, 2001, pp. 315-342

10 M. Grinblatt, S. Titman, *Mercados Financieros y Estrategia Empresarial*, McGraw-Hill, Madrid, 2003

11 S. Sharpe, "Financial market imperfections, firm leverage and cyclicality of employment", *American Economic Review*, Vol. 84, 1994, pp. 1060-1074

12 G. Hanka, "Debt and the terms of employment", *Journal of Financial Economics*, Vol. 48, 1998, pp. 245-282

between this variable and leverage, given the necessity of compensation through salaries the higher risk of dismissal that is experienced by the more leveraged company, finds in his empirical study a negative correlation. The negative relationship can be explained, according to Michelaci şi Quadrini[13] to the need of the companies with financial insolvability problems due to high leverage to channel their resources towards investment projects, reducing therefore the level of salaries.

2.3. Influence of competition upon the capital structure of the company

Influence of competition upon the capital structure of the company has been approached from two perspectives in the economic literature. On one side, it has been studied the manner in which the capital structure of the company affects its competitivity on the market, and on the other hand, it has been studied the manner in which the leverage affects its market share. The first approach finds its roots in the signal theory. According to this theory, the capital structure of a company can become a useful tool for transmiting informational signals to the market. These signals can be seen as vulnerabilities or strengths. According to the papers of Brander şi Lewis[14], the companies may take advantage of their high leverages to transmit to their competion informational signals releated to their agressive policy. In the same time, a high leverage may be perceived by the competition as a signal of the high solvability of that company, taking into account the fact that, when a company decides to increase its level of leverage, this thing will lead automatically to an increase of the risk of bankruptcy, this meaning that the company will only do this if all the future project prove to be succesful.

The second approach that must be considered is related with the influence of capital structure upon the market share. Papers like the ones of Asgharuab[15], Opler and Titman[16] prove empirically that high leveraged companies will register a decrease of their market share. These authors have identifies also three possible reasons for this relation:

- The managerial decision: companies with high leverage and an excess of the liabilities will not invest so much, therefore, they will have to sell a part of their assets and/or reduce their sales;
- The customer decision: the signals transmitted to the market and the fear of bankruptcy affects the relationship with the customers;

[13] C. Michelacci, V. Quadrini, "Financial Markets and Wages", Working Paper No. 11050, National Bureau of Economic Research, 2005

[14] J. A. Brander, T. R. Lewis, "Oligopoly and financial structure: the limited liability effect", *American Economic Review*, Vol. 76, 1986, pp. 956-970

[15] H. Asgharuab, "Are highly leverage firm more sensitive to an economic downturn?", *The European Journal of Finance*, núm. 9, 2003, pp. 219-241

[16] T. Opler, S. Titman, "Financial distress and corporate performance", *Journal of Finance*, Vol. 49, 1984, pp. 1015-1040

- The competition decision: the companies that compose the competition will consider the high leveraged company less dangerous and could take advantage of this situation and try to take over its customers portfolio.

3. Methodology

3.1. Description of the variables

For realizing the econometrical model, we had in consideration as dependent variable the leverage rate (*G_ÎND*), computed as ratio between total debts of the company and its liabilities. In accordance with the theoretical and empirical work, mentioned so far in the previous paragraphs and with the available information, the independent variables of the econometrical model can be grouped in around three stakeholder gropus: the employees, the competition and the suppliers.

For analysing the influence of the employees of the company upon the capital structure we have chosen the following variables: the dynamics of the number of the employees (*dinmunc)* and the salaries (*sal)*. These variables permit the analysis of the relationship between the leverage and employees from the two perspectives mentioned in the previous paragraphs.

The last explanatory variable has been taken into consideration to underline the connection between leverage and the group of customers and suppliers. In the current literature there are suggested some indicators like the ratio between total fixed assets and total assets, research and development expenditures and publicity expenditures of the company, as well as the ratio between the market value and the book value of the company. In the realized empirical study we have considered as explanatory variable the ratio between fixed assets and total assets (*acttang*). In consonance with several papers[17], there should exist a positive connection between the tangible assets and the leverage of the company.

3.2. Data

For realizing this empirical analysis, there have been used the information available on the following sites (ktd.ro and bvb.ro,), as well as the financial reports of the companies available on vanguard.ro, considering 35 nonfinancial companies listed on the Romanian capital market, on the first and second tier, in

[17] S. Titman, R. Wessels, "The determinants of capital structure choice", *Journal of Finance*, Vol. 43, núm. 1, 1988, pp. 1-19; A. A. Bevan, J. Danbolt, "Testing for inconsistencies in the estimation of UK capital structure determinants", *Applied Financial Economics*, Vol. 14, núm.1, 2004, pp. 55-66

the period 2001-2007, grouped on activity sector : energy, chemistry, equipments and materials.[18]

3.3. Description of the econometrical methodology and the used method

As stated in the previous paragraph, the data is available for 35 nonfinancial companies, for the period 2001-2007, at a sectorial level. The analysis method is Eviews 5.0. This data structure permits the processing the data in a "pool data" system, that implies a mixture between time series and cross-sectional data. The used model, given the variables mentioned above and the general model of a pool data regression is the following one:

$$G\_\hat{I}ND_i = \beta_1 sal_i + \beta_2 din\_munc_i + \beta_3 mkshare_i + \beta_4 act\tan g_i + \gamma_i + \varepsilon_i \quad (1),$$

where:

$G\_\hat{I}ND$	– dependent variable, the leverage rate,
β	– independent variables coefficients,
sal	– independent variable, the salaries,
din_munc	– independent variable, the dynamics of number of employees,
mkshare	– independent variable, the dynamics of turnover,
act tang	– independent variable, the tangibility of assets,
γ_i	– fixed effects,
ε_{it}	– stochastic variable,
i,t	– the number of "section" used to run the regression, respectively time period.

3.4. Results

For each sector (energetical, chemical, equipments and materials), after the processing of the dates by the E-views 5.0 software, the authors have checked all the factors with a non-significant importance, if it was the case. In this way, there have been left only the factors which were significant. Afterwards, all the generated results were commented and it was also made a statistical analysis of the results (of the model coefficients, Durbin-Watson statistics, of the coefficient of determination R^2, of the adjusted coefficient of determination, of the F test for validation of the model and not at least of the stationarity of the model. Thus, on sectors the results were the following:

[18] See Apendix 1 for the companies taken into consideration in the econometrical analysis.

ENERGETIC SECTOR				
Dependent Variable: G_IND				
Method: Pooled EGLS (Period weights)				
Total pool (balanced) observations: 35				
Period weights (PCSE) standard errors & covariance (d.f. corrected)				
Variable	Coefficient	Coefficient	t-Statistic	Prob.
C	0.512420	0.512420	242.1018	0.0000
_SNP--SAL_SNP	-0.009566	-0.009566	-289.2919	0.0000
_ENP--SAL_ENP	-0.012909	-0.012909	-892.6189	0.0000
_OIL--SAL_OIL	0.004347	0.004347	33.48659	0.0000
_PEI--SAL_PEI	0.000221	0.000221	228.9991	0.0000
_PTR--SAL_PTR	-0.011501	-0.011501	-159.4406	0.0000
_SNP—DIN_MUNC_SNP	-0.375671	-0.375671	-75.38674	0.0000
_ENP—DIN_MUNC_ENP	-0.035762	-0.035762	-30.88950	0.0000
_OIL—DIN_MUNC_OIL	0.791480	0.791480	144.5034	0.0000
_PEI—DIN_MUNC_PEI	-0.549475	-0.549475	-212.4086	0.0000
_PTR—DIN_MUNC_PTR	0.569077	0.569077	186.7947	0.0000
_SNP--MKS_SNP	0.151150	0.151150	42.09765	0.0000
_ENP--MKS_ENP	-0.082754	-0.082754	-124.6482	0.0000
_OIL--MKS_OIL	-0.063440	-0.063440	-16.90416	0.0000
_PEI--MKS_PEI	0.009112	0.009112	36.42612	0.0000
_PTR--MKS_PTR	0.259547	0.259547	52.77923	0.0000
_SNP--ACTT_SNP	1.900600	1.900600	154.7325	0.0000
_ENP--ACTT_ENP	-1.696293	-1.696293	-903.5016	0.0000
_OIL--ACTT_OIL	-0.236708	-0.236708	-15.23718	0.0000
_PEI--ACTT_PEI	-1.162677	-1.162677	-704.8436	0.0000
_PTR--ACTT_PTR	-0.955622	-0.955622	-228.0707	0.0000
	Weighted Statistics			
R-squared	0.998465	0.998465		0.478534
Adjusted R-squared	0.994782	0.994782		0.465430
S.E. of regression	0.033620	0.033620		0.011303
F-statistic	271.0923	271.0923		3.184221

According to the obtained results, there can be stated the following conclusions:

a) The obtained results for level of significance of the coefficients of the independent variable ***sal (personnel costs/number of employees)*** state the fact that for all the 5 companies that compose the sector, the estimated coefficicients are relevant from a statistical point of view. The standard error values of the coefficients of the independent variable are small in comparison with the values of coeffcients, fact that confirms once more the truthfulness of their estimation.

More precisely, for the majority of the companies the obtained results emphasize a negative connection between the independent and the dependent variable, in other words an increase with a unit of the salaries will lead to a decrease of the leverage with a maximum of 0,012 percent (in the case of ENP) and a minimum of 0,009 percent (in the case of SNP). For the other companies, the results outline a direct connection, a growth by a unit of the salaries bringing a growth of the leverage of the company.

b) The obtained results for level of significance of the coefficients of the independent variable ***din_munc (dynamics of employees)*** state the fact that for all the 5 companies that compose the sector, the estimated coefficicients are relevant from a statistical point of view. The standard error values of the coefficients of the independent variable are small in comparison with the values of coeffcients, fact that confirms once more the truthfulness of their estimation.

More precisely, for 3 of the 5 considered companies, the obtained results emphasize a negative, but pretty weak connection between the independent and the dependent variable, in other words an increase with a unit of the number of employees will lead tot o a decrease of the leverage with a maximum of 0,054 percent (in the case of PEI). For the other companies, the results outline a direct connection, pretty weak as well, a growth by a unit of the number of employees bringing a growth with a maximum of 0,79 percent in the case of OIL.

c) The obtained results for level of significance of the coefficients of the independent variable ***mks (dynamics of turnover)*** state the fact that for all the 5 companies that compose the sector, the estimated coefficicients are relevant from a statistical point of view. The standard error values of the coefficients of the independent variable are small in comparison with the values of coeffcients, fact that confirms once more the truthfulness of their estimation.

For the majority of the considered companies, the obtained results emphasize a positive, but pretty weak connection between the independent and the dependent variable, with a coeffcient that varies between 0,25 (for PTR) and 0,009 (for PEI). For the other companies, the results outline a negative connection, but a very weak one, with coefficients that get to a maximum of 0,08 units (in the case of ENP).

d) The obtained results for the level of significance of the coefficients of the independent variable ***act_tang (tangibility of the assets)*** state the fact that for all the companies that compose the sector, the estimated coefficicients are relevant from a statistical point of view. The standard error values of the coefficients of the independent variable are small in comparison with the values of coeffcients, fact that confirms once more the truthfulness of their estimation.

More precisely, for the majority of the considered companies, the obtained results emphasize a negative connection between the independent and the dependent variable, connection that is very strong in the case of ENP (with a coeffcient of 1,69). Just in the case on only one company (SNP) the results outline a positive connection, a growth by a percent of the tangibility of the assets leading to a growth with 1,90 percent of the leverage of the company.

The coefficient of determination (R^2) of the model has a very high value (0,998), which proves once again the veracity of the considered model. The adjusted coeffcient of determination is lower than the coefficient of determination, thus confirms the analysis of the coefficient of determination. The Durbin-Watson statistics indicates the presence of some "right" pretty significant autocorellations in what regards the residuals. On the whole, however, the quality of the model can be considered satisfactory.

CHEMICAL SECTOR				
Dependent Variable: G_IND				
Method: Pooled EGLS (Period weights)				
Total pool (balanced) observations: 63				
Period weights (PCSE) standard errors & covariance (d.f. corrected)				
Variable	**Coefficient**	**Coefficient**	**t-Statistic**	**Prob.**
C	0.569549	0.569549	26.82478	0.0000
_CBC--SAL_CBC	-0.022925	-0.022925	-38.34828	0.0000
_OLT--SAL_OLT	0.011249	0.011249	15.54672	0.0000
_PCL--SAL_PCL	0.006779	0.006779	23.28106	0.0000
_PPL--SAL_PPL	-0.022164	-0.022164	-36.83891	0.0000
_STZ--SAL_STZ	-0.007011	-0.007011	-15.24256	0.0000
_ATB--SAL_ATB	-0.006464	-0.006464	-7.359665	0.0000
_SCD--SAL_SCD	-0.002317	-0.002317	-6.676609	0.0000
_AMO--SAL_AMO	-0.012509	-0.012509	-12.66969	0.0000
_AZO--SAL_AZO	-0.006569	-0.006569	-3.912484	0.0010
_CBC—DIN_MUNC_CBC	-12.95566	-12.95566	-73.60038	0.0000
_OLT—DIN_MUNC_OLT	1.933816	1.933816	29.08648	0.0000

_PCL—DIN_MUNC_PCL	-0.664294	-0.664294	-23.42153	0.0000
_PPL—DIN_MUNC_PPL	-1.822023	-1.822023	-36.71302	0.0000
_STZ—DIN_MUNC_STZ	0.455903	0.455903	7.345771	0.0000
_ATB—DIN_MUNC_ATB	0.757647	0.757647	6.324314	0.0000
_SCD—DIN_MUNC_SCD	-0.515492	-0.515492	-19.84810	0.0000
_AMO—DIN_MUNC_AMO	-1.189883	-1.189883	-15.79132	0.0000
_AZO—DIN_MUNC_AZO	-0.981951	-0.981951	-13.65279	0.0000
_CBC--MKS_CBC	0.214876	0.214876	16.72937	0.0000
_OLT--MKS_OLT	0.184957	0.184957	17.04383	0.0000
_PCL--MKS_PCL	-0.325148	-0.325148	-6.067970	0.0000
_PPL--MKS_PPL	0.134083	0.134083	2.153207	0.0451
_STZ--MKS_STZ	-0.553881	-0.553881	-8.511499	0.0000
_ATB--MKS_ATB	1.371233	1.371233	11.61074	0.0000
_SCD--MKS_SCD	0.309901	0.309901	11.86492	0.0000
_AMO--MKS_AMO	0.162652	0.162652	7.748671	0.0000
_AZO--MKS_AZO	0.148191	0.148191	4.549517	0.0002
_CBC--ACTT_CBC	1.287516	1.287516	13.70632	0.0000
_OLT--ACTT_OLT	-1.818234	-1.818234	-13.43439	0.0000
_PCL--ACTT_PCL	-0.355198	-0.355198	-9.926501	0.0000
_PPL--ACTT_PPL	-0.322915	-0.322915	-13.93168	0.0000
_STZ--ACTT_STZ	-0.734746	-0.734746	-25.78898	0.0000
_ATB--ACTT_ATB	-0.026654	-0.026654	-0.099956	0.9215
_SCD--ACTT_SCD	-0.366117	-0.366117	-9.249480	0.0000
_AMO--ACTT_AMO	-0.112050	-0.112050	-1.965178	0.0650
_AZO--ACTT_AZO	0.414964	0.414964	1.493752	0.1526
	Weighted Statistics			
R-squared	0.965887	0.965887		0.491759
Adjusted R-squared	0.882500	0.882500		0.339642
S.E. of regression	0.116423	0.116423		0.243979
F-statistic	11.58316	11.58316		2.851789

According to the obtained results, there can be stated the following conclusions:

a) The obtained results for level of significance of the coefficients of the independent variable ***sal (personnel costs/number of employees)*** state the fact that for all 9 companies that compose the sector, the estimated coefficicients are relevant from a statistical point of view. The standard error values of the coefficients of the independent variable are small in com-

parison with the values of coeffcients, fact that confirms once more the truthfulness of their estimation.

More precisely, for the majority of the companies the obtained results emphasize a negative connection between the independent and the dependent variable, in other words an increase with a unit of the salaries will lead to a decrease of the leverage with a maximum of 0,0229 percent (in the case of CBC) and a minimum of 0,002 percent (in the case of SCD). For the other companies, the results outline a direct connection, a growth by a unit of the salaries bringing a growth of the leverage of the company.

b) The obtained results for level of significance of the coefficients of the independent variable ***din_munc (dynamics of employees)*** state the fact that for all 9 companies that compose the sector, the estimated coefficicients are relevant from a statistical point of view. The standard error values of the coefficients of the independent variable are small in comparison with the values of coeffcients, fact that confirms once more the truthfulness of their estimation.

More precisely, for 5 of the 9 considered companies, the obtained results emphasize a negative connection between the independent and the dependent variable, in other words an increase with a unit of the number of employees will lead to a decrease of the leverage with a maximum of 12,95 percent (in the case of CBC). For the other companies, the results outline a direct connection, pretty weak as well, a growth by a unit of the number of employees bringing a growth with a maximum of 1,93 percent in the case of OLT.

c) The obtained results for level of significance of the coefficients of the independent variable ***mks (dynamics of turnover)*** state the fact that for all the companies that compose the sector, the estimated coefficicients are relevant from a statistical point of view. The standard error values of the coefficients of the independent variable are small in comparison with the values of coeffcients, fact that confirms once more the truthfulness of their estimation.

For the majority of the considered companies, the obtained results emphasize a positive, but pretty weak connection between the independent and the dependent variable, with a coefficient that varies between 0,134 (for PPL) and 1,371 (for ATB). For the other companies, the results outline a negative connection, but a very weak one, with coefficients that get to a maximum of 0,55 units (in the case of STZ).

d) The obtained results for the level of significance of the coefficients of the independent variable ***act_tang (tangibility of the assets)*** state the fact that not for all the companies that compose the sector, the estimated coefficicients are relevant from a statistical point of view. ATB is the exception. The standard error values of the coefficients of the independent

variable are small in comparison with the values of coeffcients, fact that confirms once more the truthfulness of their estimation.

More precisely, for the majority of the considered companies, the obtained results emphasize a negative connection between the independent and the dependent variable, connection that is very strong in the case of OLT (with a coefficient of 1,81).

The coefficient of determination (R^2) of the model has a very high value (0,965), which proves once again the veracity of the considered model. The adjusted coeffcient of determination is lower than the coefficient of determination, thus confirms the analysis of the coefficient of determination. The Durbin-Watson statistics indicates the presence of some "right" pretty significant autocorellations in what regards the residuals. On the whole, however, the quality of the model can be considered satisfactory.

EQUIPMENT SECTOR				
Dependent variable: G_ÎND				
Method: Pooled EGLS (Period weights)				
Total pool (balanced) included: 77				
Period weights (PCSE) standard errors & covariance (d.f. corrected)				
Variable	**Coefficient**	**Std. error**	**t-Statistic**	**Prob..**
C	0.605333	0.005025	120.4576	0.0000
_ARS--SAL_ARS	0.002939	0.000202	14.52811	0.0000
_ARM--SAL_ARM	0.002001	9.36E-05	21.38384	0.0000
_CMF--SAL_CMF	0.002708	0.000153	17.66605	0.0000
_CMP--SAL_CMP	0.010830	0.000141	76.71776	0.0000
_EPT--SAL_EPT	0.053474	0.000649	82.38778	0.0000
_IMP--SAL_IMP	-0.019390	0.000265	-73.13219	0.0000
_MEF--SAL_MEF	-0.013343	0.000663	-20.12139	0.0000
_SNO--SAL_SNO	-0.000850	8.53E-05	-9.967694	0.0000
_TBM--SAL_TBM	0.000944	5.96E-05	15.84827	0.0000
_UAM--SAL_UAM	0.003247	0.000404	8.041044	0.0000
_APC--SAL_APC	0.834397	0.109657	7.609146	0.0000
_ARS—DIN_MUNC_ARS	-0.476916	0.028729	-16.60070	0.0000
_ARM—DIN_MUNC_ARM	0.536868	0.016875	31.81412	0.0000
_CMF—DIN_MUNC_CMF	-0.062946	0.024909	-2.526985	0.0192
_CMP—DIN_MUNC_CMP	-0.842375	0.026672	-31.58248	0.0000
_EPT—DIN_MUNC_EPT	1.413060	0.042440	33.29583	0.0000
_IMP—DIN_MUNC_IMP	-0.034940	0.001916	-18.23978	0.0000
_MEF—DIN_MUNC_MEF	-0.122760	0.014320	-8.572496	0.0000

_SNO—DIN_MUNC_SNO	-0.587908	0.030261	-19.42778	0.0000
_TBM—DIN_MUNC_TBM	-0.004387	0.005190	-0.845263	0.4071
_UAM—DIN_MUNC_UAM	-0.372386	0.042295	-8.804562	0.0000
_APC—DIN_MUNC_APC	-0.246243	0.017746	-13.87586	0.0000
_ARS--MKS_ARS	-0.098386	0.005606	-17.55162	0.0000
_ARM--MKS_ARM	0.315392	0.009559	32.99525	0.0000
_CMF--MKS_CMF	-0.067562	0.005538	-12.19955	0.0000
_CMP--MKS_CMP	0.121658	0.008139	14.94753	0.0000
_EPT--MKS_EPT	-0.106360	0.001881	-56.54067	0.0000
_IMP--MKS_IMP	0.113221	0.001853	61.09356	0.0000
_MEF--MKS_MEF	0.232504	0.009051	25.68932	0.0000
_SNO--MKS_SNO	-0.242582	0.005267	-46.05501	0.0000
_TBM--MKS_TBM	-0.184391	0.006812	-27.06691	0.0000
_UAM--MKS_UAM	0.051227	0.005522	9.276393	0.0000
_APC--MKS_APC	0.127251	0.006975	18.24329	0.0000
_ARS--ACTT_ARS	0.696677	0.081033	8.597430	0.0000
_ARM--ACTT_ARM	0.384479	0.008923	43.08926	0.0000
_CMF--ACTT_CMF	-0.737418	0.017064	-43.21495	0.0000
_CMP--ACTT_CMP	-0.568391	0.012412	-45.79309	0.0000
_EPT--ACTT_EPT	-2.575469	0.018052	-142.6699	0.0000
_IMP--ACTT_IMP	-1.773937	0.014351	-123.6077	0.0000
_MEF--ACTT_MEF	0.278655	0.044666	6.238627	0.0000
_SNO--ACTT_SNO	-0.691346	0.013065	-52.91617	0.0000
_TBM--ACTT_TBM	0.149137	0.020632	7.228396	0.0000
_UAM--ACTT_UAM	-0.730424	0.017902	-40.80012	0.0000
_APC--ACTT_APC	-0.592379	0.012995	-45.58345	0.0000
Weighted statistics				
	0.958977	Prosečna zavisna var.		0.427146
Adjusted	0.858286	S.D. zavisna var.		0.181473
S. E. of regression	0.068315	Sum kvadratni rezid.		0.102674
F-statistic	9.523905	Durbin-Watson statistics		2.738019

According to the obtained results, there can be stated the following conclusions:

a) The obtained results for level of significance of the coefficients of the independent variable ***sal (personnel costs/number of employees)*** state the fact that for all 11 companies that compose the sector, the estimated coefficicients are relevant from a statistical point of view. The standard error values of the coefficients of the independent variable are small in com-

parison with the values of coeffcients, fact that confirms once more the truthfulness of their estimation.

More precisely, for the majority of the companies the obtained results emphasize a positive connection between the independent and the dependent variable, in other words an increase with a unit of the salaries will lead to an increase of the leverage with a maximum of 0,83 percent (in the case of APC) and a minimum of 0,001 percent (in the case of CMP). For the other companies, the results outline a negative connection, a growth by a unit of the salaries bringing a growth of the leverage of the company.

b) The obtained results for level of significance of the coefficients of the independent variable ***din_munc (dynamics of employees)*** state the fact that only for 10 companies of this sector, the estimated coefficicients are relevant from a statistical point of view (the exception is TBM). The standard error values of the coefficients of the independent variable are small in comparison with the values of coeffcients, fact that confirms once more the truthfulness of their estimation.

More precisely, for 9 of the 11 considered companies, the obtained results emphasize a negative connection between the independent and the dependent variable, in other words an increase with a unit of the number of employees will lead tot o a decrease of the leverage with a maximum of 0,84 percent (in the case of CMP). For the other companies, the results outline a direct connection, a growth by a unit of the number of employees bringing a growth with a maximum of 1,41 percent in the case of EPT.

c) The obtained results for level of significance of the coefficients of the independent variable ***mks (dynamics of turnover)*** state the fact that for all the 5 companies that compose the sector, the estimated coefficicients are relevant from a statistical point of view. The standard error values of the coefficients of the independent variable are small in comparison with the values of coeffcients, fact that confirms once more the truthfulness of their estimation.

For the majority of the considered companies, the obtained results emphasize a positive, but pretty weak connection between the independent and the dependent variable, with a coeffcient that varies between 0,05 (for UAM) and 0,31 (for ARM). For the other companies, the results outline a negative connection, but a very weak one, with coefficients that get to a maximum of 0,24 units (in the case of SNO).

d) The obtained results for the level of significance of the coefficients of the independent variable ***act_tang (tangibility of the assets)*** state the fact that for all the companies that compose the sector, the estimated coefficicients are relevant from a statistical point of view. The standard error values of the coefficients of the independent variable are small in comparison with

the values of coeffcients, fact that confirms once more the truthfulness of their estimation.

More precisely, for the majority of the considered companies, the obtained results emphasize a negative connection between the independent and the dependent variable, connection that is very strong in the case of EPT (with a coefficient of 2,57). For the other companies the results outline a positive connection, a growth by a percent of the tangibility of the assets leading to a growth of a maximum of 0,69 percent of the leverage in the case of ARS.

The coefficient of determination (R^2) of the model has a pretty high value (0,958), which proves once again the veracity of the considered model. The adjusted coeffcient of determination is lower than the coefficient of determination, thus confirms the analysis of the coefficient of determination. The Durbin-Watson statistics indicates the presence of some "right" pretty significant autocorellations in what regards the residuals. On the whole, however, the quality of the model can be considered satisfactory.

MATERIALS SECTOR				
Dependent Variable: G_IND				
Method: Pooled EGLS (Period weights)				
Total pool (balanced) observations: 70				
Period weights (PCSE) standard errors & covariance (d.f. corrected)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.708684	0.198318	3.573477	0.0019
_ALR--SAL_ALR	0.009566	0.002263	4.227226	0.0004
_COS--SAL_COS	0.001576	9.96E-05	15.81979	0.0000
_MJM--SAL_MJM	0.007821	0.000630	12.42394	0.0000
_ART--SAL_ART	0.030637	0.001949	15.71540	0.0000
_ZIM--SAL_ZIM	-0.026932	0.001188	-22.67744	0.0000
_BRM--SAL_BRM	-0.003054	0.004123	-0.740784	0.4674
_MPN--SAL_MPN	0.004714	0.000663	7.111310	0.0000
_ELJ--SAL_ELJ	0.004666	0.003034	1.537807	0.1398
_ECT--SAL_ECT	-0.020204	0.010006	-2.019200	0.0571
_SRT--SAL_SRT	-0.013874	0.003071	-4.517711	0.0002
_ALR—DIN_MUNC_ALR	0.085701	0.101953	0.840587	0.4105
_COS—DIN_MUNC_COS	6.349569	0.373069	17.01982	0.0000
_MJM—DIN_MUNC_MJM	0.323553	0.035136	9.208633	0.0000
_ART—DIN_MUNC_ART	-0.047953	0.026939	-1.780052	0.0903
_ZIM—DIN_MUNC_ZIM	-0.357967	0.038333	-9.338267	0.0000

_BRM—DIN_MUNC_BRM	0.080889	0.302425	0.267467	0.7918
_MPN—DIN_MUNC_MPN	0.089479	0.009544	9.375517	0.0000
_ELJ—DIN_MUNC_ELJ	0.449499	0.562679	0.798855	0.4338
_ECT—DIN_MUNC_ECT	0.122289	0.079838	1.531713	0.1413
_SRT—DIN_MUNC_SRT	0.083085	0.124273	0.668564	0.5114
_ALR--MKS_ALR	3.84E-05	1.21E-05	3.166341	0.0049
_COS--MKS_COS	0.521079	0.012209	42.68149	0.0000
_MJM--MKS_MJM	-0.800981	0.077164	-10.38030	0.0000
_ART--MKS_ART	0.290954	0.020650	14.09006	0.0000
_ZIM--MKS_ZIM	0.053748	0.020174	2.664139	0.0149
_BRM--MKS_BRM	0.374410	0.049275	7.598326	0.0000
_MPN--MKS_MPN	0.012909	0.012434	1.038239	0.3115
_ELJ--MKS_ELJ	0.355627	0.455026	0.781552	0.4436
_ECT--MKS_ECT	0.083843	0.028231	2.969891	0.0076
_SRT--MKS_SRT	-0.061998	0.128096	-0.483999	0.6336
_ALR--ACTT_ALR	-1.046274	0.215858	-4.847054	0.0001
_COS--ACTT_COS	-1.001359	0.097084	-10.31437	0.0000
_MJM--ACTT_MJM	-2.566036	0.177300	-14.47286	0.0000
_ART--ACTT_ART	0.795497	0.118790	6.696690	0.0000
_ZIM--ACTT_ZIM	-1.284911	0.098078	-13.10091	0.0000
_BRM--ACTT_BRM	0.475767	0.217762	2.184803	0.0410
_MPN--ACTT_MPN	-1.541333	0.047665	-32.33651	0.0000
_ELJ--ACTT_ELJ	0.653552	1.227056	0.532618	0.6002
_ECT--ACTT_ECT	-1.653087	2.920078	-0.566111	0.5776
_SRT--ACTT_SRT	0.108767	0.114083	0.953402	0.3518
R-squared	0.965739	Mean dependent var		0.609828
Adjusted R-squared	0.881799	S.D. dependent var		0.511339
S.E. of regression	0.175800	Sum squared resid		0.618112
F-statistic	11.50516	Durbin-Watson stat		2.363396

According to the obtained results, there can be stated the following conclusions:

a) The obtained results for level of significance of the coefficients of the independent variable ***sal (personnel costs/number of employees)*** state the fact that only for 8 of the 10 companies that compose the sector, the estimated coefficicients are relevant from a statistical point of view. The standard error values of the coefficients of the independent variable are small in comparison with the values of coeffcients, fact that confirms once more the truthfulness of their estimation.

More precisely, for the majority of the companies the obtained results emphasize a positive connection, but a very weak one between the independent and the dependent variable, in other words an increase with a unit of the salaries will lead to an increase of the leverage with a maximum of 0,03 percent (in the case of ART). For the other companies, the results outline a negative connection, a growth by a unit of the salaries bringing a decrease of the leverage of the company.

b) The obtained results for level of significance of the coefficients of the independent variable ***din_munc (dynamics of employees)*** state the fact that only for 6 companies of this sector, the estimated coefficicients are relevant from a statistical point of view. The standard error values of the coefficients of the independent variable are small in comparison with the values of coeffcients, fact that confirms once more the truthfulness of their estimation.

More precisely, for 2 from the 6 companies remained in the study, the obtained results emphasize a negative connection between the independent and the dependent variable, in other words an increase with a unit of the number of employees will lead to a decrease of the leverage with a maximum of 0,35 percent (in the case of ZIM). For the other companies, the results outline a direct connection, a growth by a unit of the number of employees bringing a growth with a maximum of 6,34 percent in the case of COS.

c) The obtained results for level of significance of the coefficients of the independent variable ***mks (dynamics of turnover)*** state the fact that only for 7 from the 10 companies that compose the sector, the estimated coefficicients are relevant from a statistical point of view. The standard error values of the coefficients of the independent variable are small in comparison with the values of coeffcients, fact that confirms once more the truthfulness of their estimation.

For the majority of the considered companies, the obtained results emphasize a positive, but pretty weak connection between the independent and the dependent variable, with a coeffcient that varies between 0,05 (for ZIM) and 0,52 (for COS). For the other companies, the results outline a negative connection, but a very weak one, with coefficients that get to a maximum of 0,80 percent (in the case of MJM).

d) The obtained results for the level of significance of the coefficients of the independent variable ***act_tang (tangibility of the assets)*** state the fact that for 7 from the 10 companies that compose the sector, the estimated coefficicients are relevant from a statistical point of view. The standard error values of the coefficients of the independent variable are small in comparison with the values of coeffcients, fact that confirms once more the truthfulness of their estimation.

More precisely, for the majority of the considered companies, the obtained results emphasize a negative connection between the independent and the dependent variable, connection that is very strong in the case of MJM (with a coefficient of 2,56). For the other companies the results outline a positive connection, a growth by a percent of the tangibility of the assets leading to a growth of a maximum of 0,79 percent of the leverage in the case of ART.

The coefficient of determination (R^2) of the model has a pretty high value (0,965), which proves once again the veracity of the considered model. The adjusted coeffcient of determination is lower than the coefficient of determination, thus confirms the analysis of the coefficient of determination. The Durbin-Watson statistics indicates the presence of some "right" pretty significant autocorellations in what regards the residuals. On the whole, however, the quality of the model can be considered satisfactory.

3.5. Testing the veracity of results

For testing the veracity of the model, it is recommended realizing some "Unit Root" stationarity tests for ordinary residuals, for all the sectorial models taken into consideration:

Exogenous variables: Individual effects				
Newey-West bandwidth selection using Quadratic Spectral kernel				
Method	**Statistic**	**Prob.****	**Cross-section**	**Obs.**
Null: Unit root (assumes common unit root process)				
Energetic sector				
Levin, Lin & Chu t*	-7.95348	0.0000	5	30
Breitung t-stat	-4.41466	0.0000	5	25
Chemical sector				
Levin, Lin & Chu t*	-8.69389	0.0000	9	52
Breitung t-stat	-3.71842	0.0001	9	43
Equipment sector				
Levin, Lin & Chu t*	-9.36035	0.0000	11	65
Breitung t-stat	-1.33224	0.0914	11	54
Materials sector				
Levin, Lin & Chu t*	-10.4725	0.0000	10	58
Breitung t-stat	-0.59562	0.2757	10	48
Null: Unit root (assumes individual unit root process)				
Energetic sector				

Im, Pesaran and Shin W-stat	-1.96487	0.0247	5	30
ADF - Fisher Chi-square	22.5452	0.0126	5	30
PP - Fisher Chi-square	41.8459	0.0000	5	30
Chemical sector				
Im, Pesaran and Shin W-stat	-1.84724	0.0324	9	52
ADF - Fisher Chi-square	33.9897	0.0126	9	52
PP - Fisher Chi-square	56.6458	0.0000	9	54
Equipment sector				
Im, Pesaran and Shin W-stat	-2.98152	0.0014	11	65
ADF - Fisher Chi-square	52.4706	0.0003	11	65
PP - Fisher Chi-square	132.312	0.0000	11	66
Materials sector				
Im, Pesaran and Shin W-stat	-3.28692	0.0005	10	58
ADF - Fisher Chi-square	53.0826	0.0001	10	58
PP - Fisher Chi-square	85.5947	0.0000	10	60
Null: No unit root (assumes common unit root process)				
Energetic sector				
Hadri Z-stat	24.5635	0.0000	5	35
Quemical sector				
Hadri Z-stat	3.68718	0.0001	9	63
Equipment sector				
Hadri Z-stat	11.2972	0.0000	11	77
Materials sector				
Hadri Z-stat	4.22767	0.0000	10	70
**Probabilities for Fisher tests are computed using an asympotic Chi-square distribution. All other tests assume asymptotic normality				

The results of stationarity tests suggest that at the level of the unit roots can be identified some processes of individual unit roots and consequently, there are some systematic deviations in the considerations made on the basis of these empirical models. This result is not surprising given the small volume of the used sample. The probability that the series is non-stationary is very small (this being showed also by the ADF Augmented Dickey-Fuller and PP - Phillips Perron tests), resulting therefore that the series is stationary. On the whole, the quality of the model can be considered satisfactory and permits drawing some conclusions on the basis of the estimated model.

4. Concluding remarks

This paper has brought an empirical support to the current research as far as concerns the influence of the stakeholders upon the capital structure of the Romanian companies taken into consideration in the study. The results of the econometrical studies at the sectorial level outline the ollowing aspects:

As far as concerns the **influence of the employees** of a company, the obtained results suggest that the dynamics of the employees affects the leverage of the company in a negative way, for all considered sectors, with the exception of "materials"; if we take into consideration the connection between salaries and the leverage, we can observe a positive connection for the majority of companies from the sector "equipments" and "materials" and for the other sectors there is a negative connection.

As far as concerns the influence of the **competition**, it has been concluded that the connection between the dynamics of the turnover and leverage is positive for all the sectors taken into consideration.

As far as concerns the potential influence of the **customers and suppliers**, the results have shown a negative connection for all the sectors taken into consideration.

APPENDIX 1.

Sector of Activity	*Companies listed on the capital market taken into consideration from each sector*	*Symbol*
I ENERGETICAL	Petrom	SNP
	Energopetrol Campina	ENP
	Oil Terminal Constanta	OIL
	Petrolexportimport Bucuresti	PEI
	Rompetrol Well Services	PTR
II. CHEMICAL	Carbochim Cluj Napoca	CBC
	Oltchim Rm. Valcea	OLT
	Policolor Bucuresti	PLC
	Prodplast Bucuresti	PPL
	Sinteza Oradea	STZ
	Antibiotice Iasi	ATB
	Zentiva SA	SCD
	Amonil Slobozia	AMO
	Azomures Tg. Mures	AZO
III. EQUIPMENTS	Aerostar Bacau	ARS
	Armatura Cluj-Napoca	ARM
	Comelf Bistrita	CMF
	Compa S. A. Sibiu	CMP
	Electroputere Craiova	EPT
	Impact Developer & Contractor S.A.	IMP
	Mefin Sinaia	MEF
	Santierul Naval Orsova	SNO
	Turbomecanica Bucuresti	TBM
	Uamt Oradea	UAM
	Vae Apcarom Buzau	APC
IV. MATERIALS	Bermas Suceava	BRM
	TITAN S.A.	MPN
	Alro Slatina	ALR
	Mechel Târgoviște	
	MJ Maillis Romania	MJM
	TMK Artrom	ART
	Zimtub Zimnicea	ZIM
	Electroaparataj Bucuresti	ELJ
	Electrocontact Botosani	ECT
	Siretul Pascani	SRT

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CENTRAL BANK OR SINGLE FINANCIAL SUPERVISION AUTHORITY: THE ROMANIAN CASE

Abstract: *The process of regulation and supervision of the financial system represents a pillar for the financial stability. A recent trend in the institutional framework for financial supervision is the creation of a Single Supervision Authority for the supervision of the banking sector, the insurances and the capital markets. In the financial supervision literature, a lot of arguments highlight the fact that such institutions are necessary, but there are also other valid arguments, which show that the banking supervision must be made by Central Banks. Taking into account these arguments we show that the institutional regulation and supervision framework reflects the structure of the Romanian financial system and the specialized supervision architecture in place in Romania is compatible with the European supervision framework. The National Bank of Romania has a solid experience in banking sector supervision and the activity of financial conglomerates is not yet a menace for the Romanian financial system stability. That is why the implementation of a unified supervision framework does not represent an optimal solution at the moment.*

Key words: *supervision framework, single supervision authority, Central Banks, financial conglomerates*

JEL classification: E58, F55, G28

1. Introduction

The process of regulation and supervision of the financial system represents a pillar for the financial stability. Many specialists consider that the establishment of a Single Supervision Authority (SSA) is necessary in order to preserve the financial system stability. Such authorities are independent from Central Banks and their role is the regulation and supervision of all financial sectors, including

the banks. The aim of the SSA implementation is the demarcation between the two goals of Central Banks, price stability and financial stability, and the elimination of the trade-off between these objectives. It is considered that a SSA is also specialized in financial conglomerates supervision, a new challenge for the financial stability.

The construction of a unique supervision authority does not represent an optimal solution in all the cases. These authorities do not have the necessary means of intervention to guarantee the financial stability and they can be subject to political pressure because they act as governmental agencies or agencies subordinated to the Parliament. It seems that the Central Banks are better placed to regulate and survey the banking sector, enjoying the required independence and credibility.

During the last period, intense debates were conducted regarding the possibility to reorganise the regulation and supervision framework, both at European and national level. *A priori* we cannot say that a certain supervision framework is performing better, even if there is an obvious trend among European countries to unify the regulation and the supervision of different financial sectors. The decision for a SSA implementation must take into consideration the characteristics of each national financial system.

In this study we intend to show that the Romanian supervision architecture in place is compatible with the financial system structure and that the National Bank of Romania (NBR) cannot successfully accomplish its financial stability objective without performing the regulation and supervision of the banking sector. Moreover, the actual supervision framework enables an efficient cooperation with the corresponding authorities in place at European level.

The structure of the study is the following: in the first section we analyse the characteristics required for a regulation and supervision authority to be efficient. In the next sections we present the arguments supporting the preservation of a fundamental role for Central Banks in banking supervision and we continue with the arguments in favour of a SSA in the third section. In the fourth section we analyse the European regulation and supervision framework. In the last section of this article we will present the status of unified supervision in several European countries and we will demonstrate that financial supervision architecture in Romania is compatible with the structure of the financial system and with the European arrangements. The implementation of a Mixed Supervision Committee by the members of the NBR and the members of the others supervision authorities, under the NBR coordination, represents at present a better solution than setting up a SSA in the Romanian case. Finally we conclude.

2. Requirements for the regulation and supervision authorities

Even if we do not implicitly embrace from the very beginning the assumption that the best solution is to keep the supervision of the banking sector within the Central Bank, we must say that this function should be complementary to other financial stability related functions, named "the safety nets":[1] deposit insurance, lender of last resort and payment systems administration.

The supervision authorities must analyse objectively the financial conditions of each financial institution and of the financial system as a whole. Their impartiality cannot be achieved without a high level of political and institutional independence. A supervision authority must also be credible because its regulations and decisions must be respected. The credibility and transparency of its actions ensure the independence, and, on the other hand, an independent supervision authority becomes more credible. The supervision authorities must be accountable for their actions and should not be exposed to moral hazard. The accountability must not interfere with their independence. The transparency, the accountability, the independence and the credibility characterise successful Central Banks in their effort to reduce inflation and, at the same time, represent the attributes of an efficient supervision authority.

Most of the literature focuses on analysing the transparency, the credibility and the independence of Central Banks in relation with the prices stability goal. We consider that these elements must also characterise the regulation and supervision authorities. An independent supervision authority can ensure the financial stability by offering adequate guarantees to the financial sector, especially under extreme conditions.

2.1. The transparency

In the economic literature, several forms of transparency necessary for a supervision authority are mentioned: political transparency (established objectives), economic transparency (data and models), procedural transparency (decisions and votes), operational transparency and transparency related to the results of applied policies.

The transparency is a condition necessary for the Central Banks' independence and also for the supervision authority's independence.[2] The authority engaged in financial regulation and supervision must continuously inform the government and the public, at least in the same manner the Central Banks provide information about the monetary policy programme.

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1 S. Cerna, L. Donath, V. Şeulean, M. Herbei, D. Bărglăzan, C. Albulescu, B. Boldea, *Financial Stability*, West University Edition, Timişoara, 2008, p. 68.

2 F. A. Ribeiro, "Central Bank: independence, governance and accountability", Institute of Brazilian Issues, 2002, p. 5.

Nevertheless, it is important to make a distinction between monetary policy transparency and financial supervision transparency. In the first case, a total transparency is not recommended.[3] The Central Banks are not always transparent in their monetary policy decisions. Cerna[4] speaks about Central Banks' secrecy, concept theorized for the first time by Goodfriend. By adopting this practice, the Central Bank reduces the transparency and obtains a decrease in the interest rate variability, making the economic agents less sensitive to changes in the monetary policy. Unlike monetary policy transparency, the transparency of supervision authorities' activity must be substantial.

The debates about transparency are meant to increase the efficiency of supervision authorities in achieving their objectives. The increase in transparency level is partially associated with the efforts undertaken to enhance the accountability. The transparency of established strategies and decisions can make the economic agents understand the present situation of the monetary policy and of the supervision framework. The transparency represents a pre-condition for the accountability.[5]

2.2. The accountability

Another requirement for a supervision authority to accomplish its objectives is the accountability of its actions. The accountability means the obligation to explain and justify the actions and decisions, in terms of certain criteria, and the obligation to assume the responsibility for making decisions. The supervision authority accountability contributes to the elimination of potential conflicts between this institution and the government.

Quintyn and Taylor[6] consider that "*the accountability of independent regulators and supervisors is the key for their effective independence*". These specialists enumerate several criteria to be taken into consideration in order to achieve a real accountability:

- a clear legal basis;
- a clear and public statement of the objectives, as for example, preserving the stability of the financial system and the soundness of individual banks;

[3] Eichengreen said, when he was asked about the optimal level of Central Banks transparency concerning the monetary policy in a Centre Cournot Conference in Paris, 2006: *somewhere fewer than 50 percent*. - B. Eichengreen, F. Dincer, "Central Bank Transparency: Where, Why, and to What Effect?", Conference *Central Banks as Economic Institutions*, Cournot Centre, Paris, 2006, p. 26.

[4] S. Cerna, *The Central Bank: Credibility and Independence,* Sedona Edition, Timişoara, 2002, p. 26.

[5] S. Schich, F. Seitz, *Changing the institutional design of Central Banks,* 1999, p. 9: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=173192

[6] M. Quintyn, M. W. Taylor, "Should Financial Sector Regulators Be Independent?", *IMF Economic issue*, No. 32/2004, pp. 15-16.

- the relationships with the executive, legislative and judicial bodies must be clearly defined;
- the appointment, replacement and dismissal of senior officials must respect a transparent procedure.

2.3. The independence

The independence of the supervision agencies represents a feature, which is intensely analysed in the economic literature. The successful results obtained by the Central Banks in their battle against inflation stimulated the interest for the supervision authority's independence.

The independence is essential to counteract the natural predilection of politicians to expansionist economic policies. The politicians make promises in the short-run for obtaining electoral benefits and at the same time they exacerbate the long-term financial situation. Thereby, the politicians can make pressure on the control authority to avoid the declaration of a bankruptcy. The independence of the supervision authorities represents for the financial stability what the independence of Central Bank means for the monetary stability, and the independence of these institutions allows them to strengthen each other. Both organisms provide a safety net – the financial stability. The independence of the supervision authority does not represent a target by itself, but it has an important contribution to achieving the statutory objectives.

In the economic literature several types of independence are approached. Schich and Seitz[7] identify the institutional independence, the staff and the functional independence. Lybek[8] prefers the term "autonomy" to the frequently used term "independence" of Central Banks. He makes a distinction between several types of autonomy: *goal autonomy* (the Central Bank authority may determine its primary objective among several objectives included in the Central Bank law); *target autonomy* (there is one clearly defined primary objective stipulated in the law); *instrument autonomy* (implies the fact that the government decides the monetary policy target, in agreement with the Central Bank) *and limited or no autonomy* (means that the Central Bank is almost a government agency).

A supervision agency decisions must not be influenced by the intervention of the ministers or of the Parliament. The agency must also have the necessary power and authority to act in its relation with the supervised firms.[9] These prerogatives refer at least to: the possibility to ask for pertinent information from the regulated institutions, the capacity to assess the competences of superior man-

[7] S. Schich, F. Seitz, op. cit., p. 6.

[8] T. Lybek, *Central Bank Autonomy, Accountability, and Governance: Conceptual Framework,* IMF, 2004, pp. 3-4.

[9] R. K. Abrams, M. W. Taylor, "Issues in the Unification of Financial Sector Supervision", *IMF WP*, 213/2000, p. 6.

agement and shareholders, the possibility to apply penalties in case of infringement of the rules or even the possibility to intervene in the activity of the regulated institutions, if the case may be.

An important weight is given to the financial independence of the supervision authority. The fulfilment of the financial stability goal can lead to a financial loss if this authority acts as a lender of last resort (LOLR). If the authority does not dispose of the necessary financial resources, it can become the target of political pressure.

Quintyn and Taylor[10] identify four levels of independence of the regulation and supervision authority:

1) The financial sector *regulation independence* means that the agencies accountable must have sufficient autonomy to design the prudential and regulation rules, characteristics for the financial intermediation activity.
2) The *control independence* is crucial in the financial system and it is very difficult to ensure it. The control authorities work in close relation with the financial firms both for the inspection and control of the last ones, and for setting the penalty.
3) The *institutional independence* refers to the supervision authority statute, outside the executive and legislative power and entails three critic elements. In the first place, the staff should benefit from the work place stability – the employment and especially the revocation must be done based on clear rules, with the implication of two different organisms. In the second place, the structure of the control authority management must include several specialist teams. In the third place, the decision must be taken in a transparent way, but keeping in the same time the commercial confidentiality.
4) The *budgetary independence* depends on the role of legislative and executive power in the construction of the authority's budget. The political pressures through budget must be avoided. Some control authorities finance their activity with the fees paid by the controlled institutions. This practice limits the political immixture but increases the financial dependence towards controlled institutions.

2.4. The credibility

The credibility has the same importance for the supervision agency and for the monetary authority. A credible supervision authority has a better resistance towards political pressures and its regulations are better implemented by the private sector. In case a financial crisis occurs, the LOLR function can be accomplish only by a credible Central Bank, if the intended result is to limit the moral hazard.

[10] M. Quintyn, M. W. Taylor, "Should Financial Sector Regulators Be Independent?", *IMF Economic issue*, No. 32/2004, pp. 8-9.

Waller and De Haan[11] present the result of an opinion survey made among several private sector economists, in relation with the Central Banks credibility and transparency. They reach the conclusion that a credible Central Bank: may reduce the inflation at a lower social cost and can easier maintain it at the desired level; can act as a LOLR without being threatened in case of unaccomplished goals; can find public support to ensure its independence. In the same way, the credibility of a supervision authority inhibits the decisions vulnerability. The financial institutions respect a trusty authority and wish to collaborate with it. The results obtained by the authors are influenced by the reputation of the analysed Central Banks.

In conclusion, the regulation and supervision authority's objectives must be clear and this authority must establish its own strategies and intervention instruments. The goals need to be extremely clear in order to avoid the tradeoff between its objectives. An independent authority may enjoy of the necessary credibility.

The transparency, the accountability, the independence and the credibility are necessary but they do not represent the only attributes, which must characterise a supervision authority. Other features must be taken into consideration, such as: the capacity to rapidly adapt to a changing environment, the agency efficiency and capability to avoid the regulation arbitration (in case the authority surveys more than one financial sector). In this case, the debate focuses on the arguments in favour of the integration of the regulation and supervision function within the Central Banks and on the arguments, which concur to the implementation of a SSA.

3. Arguments for the integration of the supervision function within Central Banks

Central Banks objectives related to price stability and to financial stability are correlated in our opinion, although a compromise between these two objectives may appear on short term.

According to some authors, the periods of banking fragility are not generally periods in which the inflationist pressures are important, fact that diminishes the importance of the argument stating that there is a synergy between the two objectives of Central Banks.[12] There are also authors sustaining the need to maintain the banking system supervision function within the Central Bank, an

[11] S. Waller, J. De Haan, "Credibility and transparency of Central Banks: new results on IFO's world economic survey", *CESifo WP*, 1199/2004, pp. 10-11.

[12] F. S. Mishkin, "The transmission mechanism and the role of asset prices in monetary policy", NBER, WP 8617/2001, p. 63.

opinion, which we also agree. Bieri[13], quoting Tinbergen, asserts that if the Central Bank has only one instrument available, namely the monetary policy, it can achieve only one purpose – the objective related to price stability. Therefore, if the objective related to financial stability stays with the Central Bank's responsibilities, the latter has to supervise the banking system. Any banking sector supervision regime has to make a connection between the supervision activity and the Central Bank, due to the liaisons between price stability and financial stability.[14]

The banking regulation was practically implemented by the Central Bank to ensure the financial sector stability.[15] For the non-banking financial sector (capital market, insurances, pensions funds), the regulation is usually ensured either by a ministry or by a specialized organism within the central administration. As we can observe, the achievement of both price and financial stability stands for a traditional duty of Central Banks and of other supervision agencies, but the fulfilment of these twin objectives is not possible without a close cooperation between these regulation and supervision bodies. Consequently, if one institution exercises both functions, the cooperation problem no longer exists. If the task related to financial stability maintenance was delegated to the Central Bank, the objectives of the stability function must be clearly stated and defined, stipulated in laws or other regulations.[16]

A combined monetary policy and banking control regime has specific advantages in terms of systemic stability: the information gathered by Central Banks from their supervision missions related to payment systems and monetary markets favours the detection of banks' treasury difficulties, while the availability of prudential information enables a quicker intervention and a better management of the moral hazard related to liquidity injections, in the framework of LOLR actions.

In our opinion there is an obvious synergy between the supervision function and the monetary policy function, because the information collected during the banks supervision process helps and leads to the increase of macroeconomic forecasts. The accuracy of the forecasts related to macroeconomic variables is essential for the monetary policy, as it is a prospective policy. Sinclair17 underlines the synergy between the Central Bank objectives, namely prices stability and financial stability. The author states that the transition to a more reliable

[13] D.S. Bieri, *The Basel Process and Financial Stability,* Virginia Polytechnic Institute & State University, 2004, p. 3.

[14] D. Masciandaro, *Central Banks or Single Financial Authorities? A political economy approach,* Bocconi University, Milan, 2004, p. 5.

[15] M. Quintyn, M. W. Taylor, op. cit., p. 2.

[16] S. Oosterloo, J. De Haan, "Central Banks and financial stability: a survey", *Journal of Financial Stability*, Vol. 1, 2004, pp. 257-273.

[17] P. Sinclair, "Central Banks and Financial Stability", *Bank of England Quarterly Bulletin*, November 2000, p. 388.

financial control regime will involve a lower level of the equilibrium prices, no matter the trajectory of the monetary aggregates.

The ECB (2001: pp. 4-6) study shows that in terms of prudential surveillance, the Central Bank analyses, apart from the soundness of individual institutions, the implications on systemic risk, while a SSA mainly carries out actions to protect the depositors and the investors. Comparisons are performed, in the same study, between the arguments in favour or against the integration of the banking supervision function within the Central Bank. The arguments in favour of this integration are:

a) *The synergy of the information between the supervision function and the Central Bank's fundamental missions*. This argument underlines the importance the confidential information gathered during the prudential control can have for the payment systems and for the good conduct of the monetary policy. Equally, the prudential information related to institutions susceptible to foster the systemic risk is crucial for macro-prudential surveillance. Moreover, if a crisis appears in the banking system and the Central Bank has to intervene, it can react based on prudential information being familiar with the particular status of a bank that needs liquidities. Getting this information indirectly, through a SSA, may lead to misinterpretations.

b) *The particular emphasis on systemic risk*. There is a close connection between the prudential control on each intermediary and the assessment of the systemic risk. Even in case a SSA exists, the Central Bank has a significant role in terms of systemic financial stability. The Central Bank can better assess not only the probability of potential incidents related to macroeconomic shocks, or the turbulences on the markets, but also other factors that affect financial stability, as for example, groups of intermediaries.

c) *The independence and technical expertise*. This argument underlines the quality of the contribution the Central Banks can bring to financial system stability. The independence of the supervision authority in relation with political interference is important for ensuring the efficiency of the surveillance activity.

The arguments in favour of keeping the banking sector supervision function within the Central Bank are often stated as arguments against the set up of a SSA. Taylor and Abraham[18] enumerate some arguments in this respect and speak about a so-called "Pandora's box"[19]. The author's explanations are rather

[18] R.K. Abrams, M. W. Taylor, "Issues in the Unification of Financial Sector Supervision", *IMF WP*, 213/2000, pp. 16-18.

[19] Within "Pandora's Box", four types of risks involved by the eventual set up of a SSA are presented. One of the risks comes from the political sector, some politicians considering

related to the risks involved by the set up of a SSA and to the fact that the reasons underlying such decisions are not well founded.

a) *The objectives may be unclear*. One of the strongest arguments advanced against the unification of supervision functions within a SSA is the difficulty to find the equilibrium between the different objectives of the regulation. Due to their diversity – from the protection against systemic risk to investors' protection – it is possible that a unique regulation authority cannot clearly focus on rational objectives and can not make the difference when it comes for the regulation of different types of institutions.
b) *Diseconomies of scale*. Economies of scale represent an important argument in favour of a Single Supervision Agency, but we have to admit that diseconomies can also occur. A source of inefficiency can appear due to the fact that a single agency is in a monopole position, and the new structure can be more rigid and more bureaucratic. Another source for scale diseconomies is the "*Christmas tree effect*". This happens because politicians can be tempted to assign them tasks connected to the main functions. For example, in Scandinavian countries, the agencies have been assigned tasks related to the supervision of the brokers on real estate markets.
c) *Limited synergies*. Some critics of the unification indicate a reduced gain caused by the unification, namely the economies of scope are probably less significant than the economies of scale. For example, the banks' risk source lies with the assets side of the balance sheet, while most of the insurance companies' risks are related to the balance sheet liabilities side. In addition, the supervision procedures for two financial sectors are different.
d) *Moral hazard*. Maybe the most alarming argument against the unification is the moral hazard. It is based on the assumption that the public will suppose that all the creditors of the supervised institutions will receive equal protection.

An element, which is not put forward in the cost-benefit analyses in the economic literature, is the fact that most of Central Banks are charged with financial stability. Financial stability has both a macroeconomic and a microeconomic dimension, closely correlated. In case the Central Bank will no longer ensure

this unification process as an opportunity to increase their influence. The second risk is a legislative one. The establishment of a single supervision agency will imply the need to change the legislation, but this situation can make possible the capture of the process by certain interest groups. Another disadvantage of the unification is the eventuality not to solve the discrepancies in the regulation. A third risk caused by the change is the possible reduction of the regulation capacity due to the loss of key personnel. Part of the employees will consider the unification process difficult and they prefer to avoid it. In this way, some of them, even if they are good experts, can feel threaten and look for other jobs or choose to retire. A fourth risk is the change of the management, which could slow down the regulation process. The unification of the surveillance supposes a need of human resources – management staff – exactly in environments were there is a lack of such personnel.

the microeconomic stability (stability achieved by means of the regulation and supervision functions) it is very difficult to manage the systemic stability.

Moreover, if the Central Bank will have price stability as its unique objective, this does not mean that its fulfilment will be easy to attain. Central Bank's actions would depend far too much on the fiscal policy as well as on the existence of an efficient supervision framework. That is why the cooperation with the political authorities and the Central Bank's involvement in the systemic financial stability will represent the key for achieving the purposes of this institution.

However, the integration of the banking sector supervision within the Central Bank does not represent always an optimal solution. There are also arguments according to which it is recommended that a SSA should perform the supervision of the entire financial system. Thus, in systems characterized by the existence of complex capital markets, where it is difficult to delimit the sectoral activities, the informational benefits gained by a Central Bank can be reduced. In addition, the presence of financial conglomerates together with the lack of Central Bank's experience in the supervision activity recommends the set up of a SSA.

4. Arguments for setting up a Single Supervision Agency

Apparently, the best way to ensure the independence of the regulation and banking control authority is to integrate this function within an independent Central Bank. Taking into account the independence of the Central Bank is widely accepted nowadays, the single control authority could enjoy, in its turn, from this independence. Therefore, an alternative to the integration within the Central Banks of the function related to the regulation and supervision of the banking sector is to set up a distinct single supervision authority, responsible for the supervision of banking, securities and insurance sectors. There is an increasing trend in respect of the creation of unique supervision bodies, fact that obliges the decision-making and legislative bodies to review the institutional provisions, in order to guarantee their independence.

Masciandaro[20] performs a cost-benefit analysis related to the constitution of a SSA and he reaches the conclusion that there is no superior supervision framework, even if a trend to concentrate the financial supervision regimes has been lately observed: Norway (1986), Island, Austria, Denmark (1988), Sweden (1991), England and Korea (1997), Latvia (1998), Estonia (1999), Hungary (2000), Japan (2001), Malta (2002), Germany (2002) and Belgium (2004). This cost-benefit analysis is described in Table 1:

[20] D. Masciandaro, *Central Banks or Single Financial Authorities? A political economy approach*, Bocconi University, Milan, 2004, pp. 2-3.

Table 1: *The traditional cost-benefit analysis applied to the constitution of a SSA*

	Expected benefits	**Expected costs**
Authority – Regulated firms relationships	Supervision costs and supervision arbitrage – decrease	Capture risks and innovation disincentives – increase
Authority – political system relationships	Independence gains – increase	Capture risks – increase
Authority – internal organization	Economies of scale – increase	Diseconomies of scale – increase
	Goal conflicts and internalisation benefits – increase	Goal conflicts and internalisation benefits – increase
Financial services customers	Confidence benefits – increase	Overconfidence costs – increase

Source: D. Masciandaro, *Central Banks or Single Financial Authorities? A political economy approach,* Bocconi University, Milan, 2004, p. 5.

Goodhart[21] promoting the supervision structure in England, shows that each institution (Central Bank, FSA[22] and Treasury) has clear established tasks in relation with the financial stability. The FSA is a supervision authority responsible for the supervision of individual financial institutions, while the central bank has the responsibility to ensure a good functioning of the payments system and, by extension, the responsibility for the supervision of the structure and soundness of the settlement and clearing system of the main financial markets: bonds market, foreign exchange market and, maybe to a smaller extent, the stock market. The author considers this function separation process a more complicated but maybe more "democratic" process.

The arguments in favour of the set up of a SSA are as numerous as those militating for the integration of the supervision function within the central banks. These arguments comprise a potential conflict between monetary policy objectives and financial stability objectives and the arguments in favour of the maintenance of a formal role for the Central Bank (the case of Bundesbank for example) refer to the synergy and circulation of information, in particular the maintenance of the appropriate functioning of the payment system.

[21] C.A.E. Goodhart, *Some New Directions for Financial Stability?, BIS α Per Jacobsson Foundation*, 2004, pp. 5-6.

[22] Financial Services Authority – represents the SSA for the United Kingdom.

Gulde and Wolf[23] sustain only a formal involvement of the Central Bank in the supervision activity. The authors consider that a number of factors argue for a gradualist approach initially focusing only on the small subset of banks that can be described as multinational:

- the case for a multi-lateral supervisor depends on the importance of cross-border activity, spillovers and externalities;
- the potential problems identified in theory refer however to the current system of national supervision, determined by the commercial bank headquarter location and to the extensive need of coordination in respect of additional information flow;
- in the near future European banking and insurance concerns will experience substantial change in the wake of Basel II, Solvency II, and revisions of International Accounting Standards (IAS).

ECB[24] also elaborated a list of arguments in favour of the segregation of the price stability function from the supervision function and they identified three main elements in this respect:

a) *The conflict of interests between supervision and monetary policy*. A prudential concern related to the fragility of the banking system can determine the Central Bank to adopt a more lax monetary policy and not to pay attention to the achievement of the inflation objective, in particular in case a crisis occurs. The fundamental argument in this respect is that through the maintenance of price stability, financial stability is *de facto* ensured. Consequently, financial instability is taken into account only if and to the extent that it affects the inflation objectives.

b) *The emergence of financial conglomerates*. This argument has often been analysed during recent debates. During the last years, the close connections between banks, insurances and capital market make hard to distinguish between the individual activities of each financial conglomerate. A sectoral control can prove less efficient in this situation due to arbitrage problems[25].

c) *The concentration of power within the Central Bank*. The assignment of the regulation and supervision tasks to an independent Central Bank can be considered prejudicial due to possible abuses. The Central Bank can become an excessively bureaucratic institution.

[23] A-M. Gulde, H. C. Wolf., "Financial Stability Arrangements in Europe: A Review", OeNB Workshops no. 4, *Constitutional Treaty for an Enlarged Europe: Institutional and Economic Implications for Economic and Monetary Union*, 2004, p. 60.

[24] ECB: *Le rôle des Banques Centrales en matière de contrôle prudentiel*, 2001, www.ecb.eu/pub/pdf/other/prudentialsupcbrole_fr.pdf, pp. 6-8.

[25] This refers to the possibility a company has to concentrate its activity in certain branches of the conglomerate with the purpose to get in or out of the supervision area of a certain regulation and supervision authority. The creation of a SSA would eliminate this possibility.

Researchers from countries where a SSA already exists carry out most of the studies pleading for the set up of a SSA. The study performed by HFSA (2000: pp. 1-17) joins the same direction. The strongest argument for the constitution of HFSA in 2000 was the improvement of the efficiency of consolidated supervision, and the improved management of the integrated agency was defined as an important task of the reforming reorganisation process. The management of HFSA contributed to the increase of financial actors' reliability and the merger of the regulation agencies highlighted the fact that certain provisions of the legislation specific for each supervised institution contradicted one another or they included unjustified discrepancies. The set up of a SSA remedied this situation.

Another argument in favour of the separation between the supervision and monetary function is the passage to universal banks which makes difficult for the Central Bank to separate or to make the distinction between the financial institutions which can or cannot benefit from the *safety nets* offered by the Central Bank.

Briault[26] advances a series of elements in favour of the unification: economies of scale, emergency of financial conglomerates, but also:

- *Neutralization of the arbitrage*. There are cases in which financial institutions supplying similar services or different authorities supervise products. This situation can involve the location of a certain financial service or product in that areas of the financial conglomerate that supposes lower supervision costs or where the supervision is less restrictive.
- *Flexibility of regulation*. A potential advantage of the unified supervision theory resides in a more flexible supervision system. Specialized (sectoral) authorities could be hindered from acting effectively in case the judicial status gives rise to doubts or they could encounter problems when they have to face particular situations, e.g. when a new type of product or institution, which is not covered by the legislation in force, appears.
- *Creation of a specialist team.* An essential requirement for an efficient regulation and supervision is that a regulation agency has to be capable to attract, maintain and develop a group of qualified specialists. The unification can bring its contribution to this process, a unified agency can be better situated within the definition of a human resources policy, and including carrier planning and staff related strategies.
- *Improvement of accountability.* The final argument in favour of the unification is that it improves the supervision related accountability. In a system with multiple supervision agencies, it may be more difficult to monitor if the regulation and supervision authorities are accountable for their performances, for the costs they determine, etc.

[26] C. Briault, "Revisiting the Rationale for a Single National Financial Services Regulator", *Financial Services Authority OP*, No. 16, 2002, pp. 6-7.

Mayes[27] also puts forward the idea of a SSA, which must take the responsibility of conducting the regulation and supervision activity and also make prompt decisions regarding the problems related to capital adequacy.

Another argument for the constitution of a SSA and which is not usually described in the economic literature is the creation of the framework required to facilitate the signature of the Memoranda of Understanding (MoU) between the supervision authorities. This argument is mainly related to the need of particular financial conglomerates supervision. It is often required to involve institutions from different countries, and the conclusion of a MoU between two SSA from different countries is more practical than the signature of three or more different MoU, between the sectoral supervision authorities in the two countries.

A key factor in order for a regulation structure to be efficient is to reflect, up to a certain point, the structure of the regulated industry. For example, when the universal banks are predominant in the financial system, having significant activities on the capital markets, a combined regulation and supervision of banks and securities is preferable. Another reason for combining the activities related to banking and capital markets regulation is the fact that the risk appears in the assets side of the balance sheet. The situation is different for the insurance companies because the main risks are related to the liabilities side. However, the synergy between the banking activity and the insurance activity ("*bancassurance*" phenomenon) determined the supervision of these two sectors by a joint supervision authority in certain countries – France for example.

The set up of a SSA has to be realized taking into account the characteristics of the financial system and the international context. The development of financial conglomerates is in our opinion the main argument that highlights the importance of the flexibility of a SSA[28]. The increase of the number of conglomerates, in which different categories of financial institutions, both national and international, are operating, determined the regulation authorities to look for efficient methods to supervise them. Fragmented supervision can cause problems in respect of risks assessment on a consolidated basis. The experience showed that the effective supervision of various financial conglomerates imposes certain requirements related to the supervision bodies, which are not usually presented in a simple organizational structure. As we will see further on, there are solutions both for financial conglomerates supervision at national level by means of setting up mixed supervision committees, as well as for the transnational conglomerates supervision through the conclusion of MoU.

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[27] D. G. Mayes, "Cross-border financial supervision in Europe: Goals and transition paths – Finland National Bank", *Valutapolitik*, No. 2, 2006, p. 61.

[28] Financial conglomerates are traditionally defined as groups of institutions which carry out activities at least in two out of the following sectors: banking, insurance, securities. They "*combine banking, insurance and investment services in a single corporation*" (Morrison, 2002: p.11).

The trade-off between banking supervision and monetary policy objectives and the excessive power concentration into Central Banks do not stand for solid arguments for setting up a SSA. The importance of the moral hazard is overestimated because the Central Banks can always find the way and the instruments to impose penalties upon the managers and the shareholders of an insolvent institution. The excessive power concentration can also appear in case of a SSA constitution.

5. The European regulation and supervision framework

There are some issues related to the European regulation and supervision framework which must be clarified. The first question that arises is related to the opportunity to have a single regulation and supervision authority at European level. Secondly, we have to analyse the possibility for the ECB to play this role. Finally, we have to establish what supervision framework we should have in place in order to ensure a better coordination between national and European supervision authorities.

The economic literature provides arguments for and against a centralized supervision function. One of the objectives of the Lisbon Strategy is the establishment of a common European financial system.[29] This author proposes the transfer of fiscal competences in the management of bank crisis and the transfer of banks' supervision function at central level. In his opinion, these two functions must not be separated.

At present, at European level, there are different committees monitoring the identification of systemic risk in each financial sector. These authorities have only a coordination role and they do not dispose of adequate intervention instruments. They constituted together a Joint Forum for the financial conglomerates supervision which recommended the creation of a Mixed Technical Group (MTG), where supervised financial sectors should be represented.

The European supervision framework is shortly described by Gulde and Wolf.[30] At European level, the regulation and supervision intervene at three levels: at the first level we have the Ecofin Council, at the second level the regulation committees vote the European Commission's (EC) proposals related to the technical measures for implementation and finally, at the third level, the committees advise the EC about the measures adopted at the second level and promote the implementation of the European Directives and of the convergence

[29] C.A.E. Goodhart, *Some New Directions for Financial Stability?* - BIS α Per Jacobsson Foundation, 2004, pp. 12-13.

[30] A-M. Gulde, H.C. Wolf, "Financial Stability Arrangements in Europe: A Review", OeNB Workshops no. 4, *Constitutional Treaty for an Enlarged Europe: Institutional and Economic Implications for Economic and Monetary Union*, 2004, pp. 56-57.

in the supervision practices. While the institutional structure includes a second level concerning the financial conglomerates (and, optionally, a third level), the strategy in place focuses on the individual supervision of each sector (Table 2).

Table 2: *The framework for Formalized European Co-operation in Banking and Insurance Supervision*

	Banking	**Insurance**	**Securities**	**Conglomerates**
Level 2 Regulatory Committees	EBC European Banking Committee	EIC European Insurance Committee (includes Pension Funds)	ESC European Securities Committee	FCC Financial Conglomerates Committee
Level 3: Supervisory Committees	CEBS Committee of European Banking Supervisors	CEIOPS Committee of European Insurance and Occupational Pensions Supervisors	CESR Committee of European Securities Regulators	

Source: A-M. Gulde, H. C. Wolf, "Financial Stability Arrangements in Europe: A Review", OeNB Workshops no. 4, *Constitutional Treaty for an Enlarged Europe: Institutional and Economic Implications for Economic and Monetary Union*, 2004, p. 56.

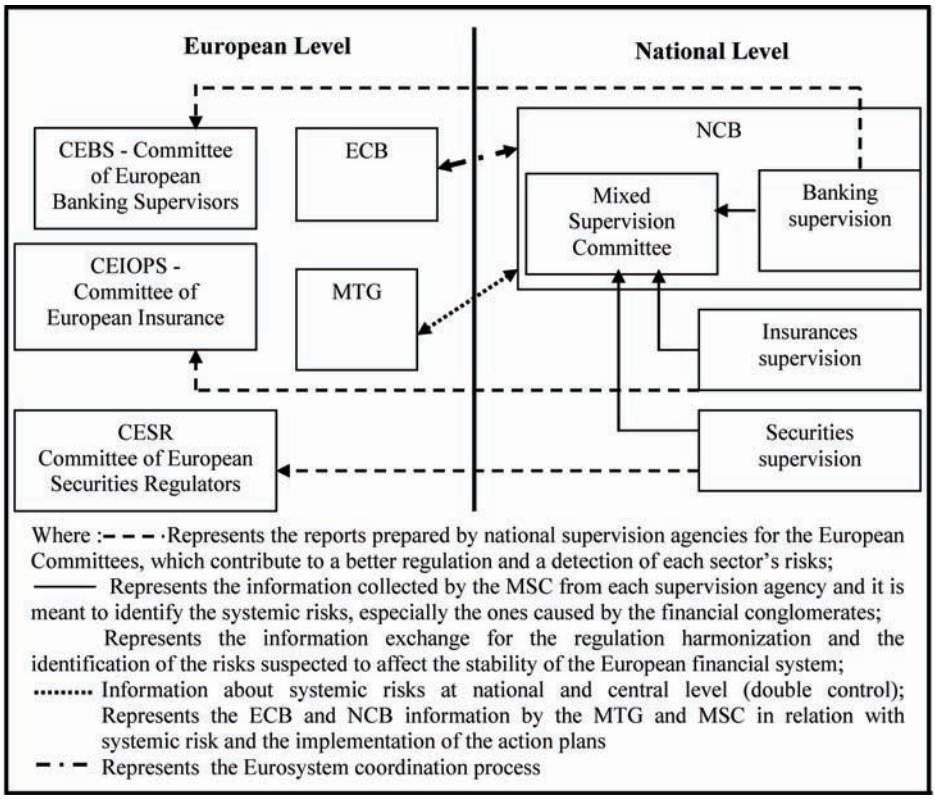
Another issue intensely discussed is the ECB role in the financial system regulation and supervision. The ECB does not have a statutory responsibility in this field and the supervision institutions act at national level. The ECB's main objective is the implementation of the monetary policy and its involvement in the supervision activity could have several implications regarding the independence, transparency and responsibilities of this institution. The loss of the ECB's reputation involves more severe consequences as compared to the loss of a national Central Bank's reputation.

We wonder if the ECB should not get more involved in the supervision activities. We consider that the administration of the TARGET is not sufficient to guarantee the stability of the European financial system and we are also aware that the ECB can not accomplish a centralized LOLR function. A stronger relation between the ECB and the MTG is necessary and, consequently, a much deeper involvement of the ECB in the supervision activity. The ECB must represent the link between the MTG and the national Central Banks (NCB) – the only institutions capable to ensure the LOLR function.

A possible supervision framework at European level which show the compatibility between the national sectorial supervision framework and the centralised supervision structure is presented in Figure 1. The difference between the cen-

tralized and national supervision framework is the location of the Mixed Supervision Committee inside the NCB. This is necessary because the NCB are the only institutions, which dispose of the appropriate tools for preventing financial instability. The NCB must coordinate the Committee's actions and must take the appropriate decision as soon as possible. At European (central) level, there is only an informative relation between ECB and MTG because the intervention instruments belong to the NCB.

Figure 1: *A proposal for the European financial supervision framework*



In our opinion, if, at national level, a SSA replaces the Mixed Supervision Committee and operates outside the NCB, the resulting supervision framework will slow down the decision making process in case of financial stability. At the same time, the role of the European System of Central Banks (ESCB) will be considerable reduced. In order to have a good coordination and cooperation, the national and central supervision framework must have the same structure.

Another debate in the literature regards the implementation of a European

Financial Service Authority (EFSA), and this subject gained again the attention in the context of the recent financial crisis. Eijffinger[31] considers that this preoccupation is based on banking and capital market integration trend, this institution being able to increase the overall transparency of the banking supervision, but this will also suppose the modification of the Treaty.

We raise the question if this new supervision framework will be more efficient. Without performing a cost-benefit analysis, we can reach the conclusion that a good collaboration between European and national supervision structures can occur when the two frameworks are similar. This means that each member state must implement a SSA and we showed that this is not always recommended. The Mixed Supervision Committees can accomplish an important part of the SSA activity, especially in case of consolidated supervision.

Consequently, in countries where the banking sector prevails and where the Central Banks have an important supervision experience, a decentralized supervision framework is more appropriate. The NCB must act as an "umbrella" in the supervision activity (the Mixed Committees can be a distinct department within the Central Banks or the Financial Stability Department). Removing Central Banks from the bank supervision activity means a rupture between the monetary policy and stability policy at national and European level. The relationship between the ECB and NCB is not a formal one, based only on an information exchange like the EFSA – SSA relation. The SEBC implication in supervision means coordination and actions based on real intervention tools meant to ensure financial systemic stability. Even the specialists which sustain the SSA implementation agree that the supervision practices are more important that the change of the institutional framework and propose a progressive approach in the supervision framework of financial conglomerates.

6. The supervision's unification trend in Europe and the Romanian case

We described above the centralized supervision framework and a possible cooperation framework with the national authorities. We will present bellow the particular cases of the SSA implementation in different European countries and we will demonstrate that, at present, the unified supervision framework is not appropriate for the Romanian financial system.

In respect of the financial supervision of European Union member states, this widely differs from one country to another (Annex 1). No less than 10 countries, out of a total of 27, have implemented a SSA before 2004. These countries are: Austria, Belgium, Denmark, Estonia, Germany, Latvia, Malta, United King-

[31] S.C.W. Eijffinger, *Should the European Central Bank Be Entrusted with Banking Supervision in Europe?,* Tilburg University, 2001, p. 1.

dom, Sweden and Hungary. Countries such as: Bulgaria[32], Cyprus, Czech Republic, Greece, Lithuania, Romania and Slovenia dispose of a specialized supervision for each financial sector. The remaining countries have hybrid supervision institutions.

The first European countries where a SSA was implemented were the Northern Countries. The unification of the supervision was necessary after the banking crisis in the '80, when Central Banks failed in applying prudential supervision. Another feature of these countries is the high concentration of the financial system and the presence of financial conglomerates. The fact that the financial industry in Baltic Countries imitates the pattern of Northern Countries, constituted a sufficient reason for the implementation of a SSA in these countries too. Many banking groups from Sweden and Finland activate in Estonia and Latvia. However, a reorganization of the supervision activity was not needed here because the Baltic Countries were confident from the very beginning in the efficiency of unified supervision.

The situation was different in the United Kingdom. The FSA was created in 1997 in particular due to the inefficiency of the nine supervision agencies, which performed their activity in this field. By the set up of the FSA, a tripartite cooperation agreement was signed between the Bank of England, the FSA and the Treasury. The model was also adopted by Ireland. Nevertheless, this supervision framework did not prove its efficiency in 2007 when, after the *supreme* crisis in the United States, the Northern Rock from England was affected. The FSA failed in prudential supervision and the Central Bank had to intervene in its quality of LOLR.[33]

The HFSA from Hungary was set up in 2000. The main reasons put forward for the reorganization of the supervision framework were the interconnection of activities in the banking sector, insurances and financial investments. At the same time, the idea of a better supervision on consolidated basis was sustained. However, another reason was the lack in legislation, which resulted in supervision arbitrage.

In 2002, the BaFin was created in Germany as an SSA subordinated to the Ministry of Finance, its activity being financed by the supervised institutions. Bundesbank still has a formal involvement in supervision.

In Malta, a SSA was also set up in 2002 (*Malta Financial Services Authority* – MFSA). In this case the supervision authority is completely autonomous and it reports directly to the Parliament. The decision for setting up the MFSA was the result of the reform in the financial system legislation, like in Hungary.

[32] Bulgaria modified the financial supervision framework by the unification of the supervision agencies for capital market and insurance sector (*Securities Commission, State Insurance Supervision Agency and Insurance Supervision Agency*). In this way, the *Financial Supervision Commission* was established, having as main purposes to protect the investors' interests and to increase the transparency of financial markets.

[33] W. H. Buiter, "Lessons from the 2007 Financial Crisis", *CEPR Policy Insight*, No. 18, 2007, p. 11.

In Belgium, the Banking, Finance and Insurance Commission (CBFA) was created in 2004 having as main objective to protect the deponents and the insurants. CBFA is also responsible for prudential control.

The most recent unified supervision framework was established in Poland, on the 1st of January 2008, by the set up of the *Polish Financial Supervision Authority* (PFSA). In this case also, the main argument was the presence of financial conglomerates and their importance. Until 2008, the Banking Supervision Commission performed the banking supervision. It was finally proved that the supervision unification was a political decision and it does not represent the best option, the Central Bank remaining *de facto* responsible for the banking sector supervision in Poland.

We can see that there is a trend related to unified supervision in Europe. But not all of these SSA fulfil the independence and credibility criteria; neither do they have clearly defined objectives for ensuring financial stability. For example, in Germany, the activity of BaFin is financed by the supervised entities, situation that may lead to pressures from these institutions. In Hungary, the legislative framework gave room to interpretations and to the arbitrage phenomenon. In Poland, the supervision activity of the Banking Commission was insufficient.

Numerous studies focused on the econometric identification of those elements, which determined the modification of the regulation and supervision framework. Their results show that the set up of a SSA mainly occurred in countries where the capital market has an important place, the market capitalization reaches a high level, the presence of conglomerates is significant and good governance policies are in place, policies characterized by high quality services and limited political interference in choosing and appointing the governors.[34] In addition, an important factor influencing the creation of a SSA is the Central Banks' poor experience and involvement in the supervision activity. The independence, authority and credibility of the Central Bank are also important. If a weak involvement of the Central Bank represents a *status quo*, the authorities do not wish an increased involvement in order to avoid moral hazard and bureaucratic effects.[35] This is called "Central Bank fragmentation effect".

As Abrams and Taylor[36] argued, the supervision unification must take into consideration at least the following key elements: prerequisites for effective supervision (independence, credibility, accountability, clear objectives); regulatory framework (presence of financial conglomerates, regulatory arbitrage prob-

[34] D. Masciandaro, *Central Banks or Single Financial Authorities? A political economy approach,* Bocconi University, Milan, 2004, pp. 21-22; S. Feyler, "Conglomération financière et architecture de surveillance", *Cinquième doctoriales de MACROFI*, Aix-en-Provence University, 2008, pp. 13-15.

[35] D. Masciandaro, "Divide et Impera: Financial Supervision Unification and Central Bank Fragmentation Effect", *European Journal of Political Economy*, Vol. 23, Issue 2, 2007, p. 3.

[36] R. K. Abrams, M. W. Taylor, "Issues in the Unification of Financial Sector Supervision", *IMF WP*, 213/2000, p. 29.

lems, coordination problems); structure of financial system (dominant banking system; presence of universal banks).

None of the above mentioned elements indicate the need to implement a SSA in Romania. The banking sector is the major component of the financial system and the NBR enjoys the independence and credibility necessary to enforce an efficient supervision. The supervision activity objectives are clearly defined and there are no arbitrage cases. The legislative framework does not leave room for different interpretations.[37] The problem related to financial conglomerates exists, but a mixed supervision committee can manage it. The Romanian supervision framework is compatible with the centralized framework and it can thus ensure a corresponding information flow.

One of the Romanian financial system features is a reduced intermediation degree and the activity of the insurance companies and financial investment companies is limited. The banking sector still remains the most important sector within the financial system. NBR presents all characteristics necessary for a supervision authority.

The financial conglomerates in Romania act mainly in the banking sector: Allianz, ING Group, Société Générale, Unicredito, San Paolo, Raiffeisen, National Bank of Greece or Alpha Bank. Most of these financial conglomerates are shareholders within Romanian banks and insurance companies. Romanian supervision authorities, being considered highly important, therefore supervise their activity. The national legislation (in accordance with the 2002/87/CE Directive related to the additional supervision of financial conglomerates), gives the possibility for an additional supervision to be made at the level of each group, which has the characteristics of a financial conglomerate.

The NBR undertook some safety precautions to prevent the systemic risk caused by the financial conglomerates. By adopting the European legislation, the NBR has the possibility to appeal to an information exchange with the partner countries supervision authorities. Mutual information refers to foreign subsidiaries. Thereby, the NBR has concluded MoU with the regulation and supervision authorities from: Cyprus, Greece, Italy, Germany, Netherlands, France and Hungary (the origin countries of financial conglomerates active in Romania which are considered partner countries in prudential supervision).

The information exchange between national supervision authorities is also very important. In our opinion, the cooperation between the NBR and the other supervision authorities is not transparent enough, even if a collaboration agreement has been signed. This agreement stipulates: a clear tasks delimitation, pro-

[37] NBR is responsible for the regulation and supervision of the banking sector while the insurance and the Insurance Supervisory Commission (ISC) respectively by the National Securities Commission (NSC) ensures securities regulation and supervision. In 2007, the private pension funds began their activity in Romania and the Private Pension System Supervisory Commission (PPSSC) is in charge with the supervision of their activities.

fessionalism and transparency, cooperation in regulation, efficiency, confidentiality and an ongoing exchange of information.

This national Agreement (Protocol) was signed on the 10 of March 2006 between NBR, NSC and ISC. The PPSSC joined the agreement in 2007. The MoU foresees quarterly Committees meetings between the decision-making bodies of the four authorities: NBR governor, the NSC president, the ISC president and the PPSSC president (or between the members assigned to represent these authorities). Five distinct Committees are stipulated in the protocol: the Financial Stability Committee; the Supervision and Control Committee; the Regulation Committee; the Payment System Committee and the Financial Statistics Committee. Members of all the parties in the Protocol are included in the structure of these technical committees and the presidency is ensured based on a rotation procedure.

As we can see, the collaboration process has a functional disposal. In the event of a financial instability period, the information exchange can be slowed down due to this spread over structure. These separate Committees do not perform their activity within the NBR and their quarterly meetings are not frequent enough. In this case, the information exchange can prove inefficient. There is no stipulation related to the organization of an extraordinary meeting or to the conditions, which can lead to such a meeting. We sustain the idea that NBR must be the leading authority in this Protocol because it is the only institution, which disposes of the necessary tools to prevent a financial crisis.

At ECOFIN Council recommendations, an additional agreement was concluded in 2007 between the Ministry of Finance, National Bank of Romania, National Securities Commission Insurance Supervisory Commission and the Private Pension System Supervisory Commission for cooperation in the field of financial stability and crisis management and for facilitating the information exchange. Based on this agreement, the National Committee for Financial Stability was set up.

7. Conclusion

The arguments for and against the maintenance of the regulation and supervision function of the banking sector within the Central Banks mutually equilibrate themselves; none of the two theses eliminates the other. However, in case of an economy whose development is ongoing, including the former planned economies experiencing transition nowadays, more factors incline the balance in favour of the integration. Many Central Banks in these countries have been reformed and they enjoy solid guarantees related to independence (sometimes guaranteed by the constitution). Their governors' positions are very strong and the Central Banks have their own financing sources. As Schinasi (2003: p.15) noted, "*the Central Banks have a natural role in terms of financial stability*".

We have to mention that the effective supervision can not be guaranteed through the modification of the regulation structure and the recent trend to set up a SSA at European level does not always stand for the best solution. Buiter38 considers that after the failure to prevent the financial turbulences at the end of 2007, the supervision structure in the United Kingdom proved its limitations, the FSA being inefficient. It is necessary for the Central Banks to remain involved in this process as they are the bodies which have available the instruments necessary to correct the imbalances.

Through their participation to the ESCB and due to the information access, the NCB can gain an advantage in terms of prudential control and systemic risk management. The NCB are both a component of the EU structures and national institutions, fact which can represent an advantage in solving international issues or issues related to the efficient functioning of the European financial system supervision. Unlike these institutions, the national supervision authorities, which are distinct from the Central Banks have an exclusive national mandate and have only formal or sometimes informal connections with the Ministry of Finance in the respective country. In case a problem occurs, these agencies show too little interest in systemic aspects.

Nevertheless, the choice of a certain supervision regime has an endogenous nature depending on the economy and on the institutions' structure, on the context but also on the definition given to the financial stability safety nets. Moreover, it is necessary to take into account an average or a longer time horizon.

The regulation and supervision framework in Romania is a sectoral one. It reflects the structure of a financial system where the banking sector has a significant share. By the set up of mixed supervision committees between the national authorities, the compatibility with the supervision framework, under construction at EU level, is ensured and, at the same time, the decision making process gains an increased efficiency. However, the functional structure of these mixed committees should be revised to have an adequate systemic overview. In addition, taking into consideration the fact that only the NBR possesses the instruments required to correct the imbalances, the mixed committee should function under the tutelage of this institution.

We do not exclude the possibility to rethink the Romanian financial supervision in the future. One of the most important elements is the remodelling of the European supervision framework by the creation of a European Authority of Financial Services (a solution strongly rejected by the Romanian authorities at the European summit held in October 2008 with the purpose of improving the supervision activities in Europe). Another reason is the failure to cooperate in the supervision of financial conglomerates. The elimination of the NBR from

[38] W.H. Buiter, "Lessons from the 2007 Financial Crisis", *CEPR Policy Insight*, No. 18, 2007, pp. 13-16.

the banking supervision activity does not represent a solution for the present situation and it will not improve the financial supervision framework.

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ANNEX: Supervision authorities in EU countries

No. crt	*Country*	*Banks*	*Securities*	*Insurance*
1	Austria	U, CB	U	U
2	Belgium	U	U	U
3	Bulgaria	CB	S	I
4	Cyprus	CB	S	I
5	Czech Republic	CB	S	I
6	Denmark	U	U	U
7	Estonia	U	U	U
8	Finland	BS	BS	I
9	France	BC, B1, B2, B3	CB, S	I
10	Germany	U, CB	U	U
11	Greece	CB	S	I
12	Ireland	CB	CB	CB
13	Italy	CB, S	CB, S	I
14	Latvia	U	U	U
15	Lithuania	CB	S	I
16	Luxemburg	BS	BS	I
17	Malta	U	U	U
18	Netherlands	CB, S	CB, S	I, S
19	Poland	B	B,S	I1, I2
20	Portugal	CB	CB, S	I
21	Romania	CB	S	I
22	United Kingdom	U	U	U
23	Slovak Republic	CB	SI	SI
24	Slovenia	CB	S	I
25	Spain	CB, Bs(**)	CB, S	I
26	Sweden	U	U	U
27	Hungary	U	U	U

The initials have the following meaning: B = authority specialized in the banking sector; BI = authority specialized in the banking sector and insurance sector; CB = Central Banks; G = government; I = authority specialized in the insurance sector; S = authority specialized in the securities market; U = single authority for all sectors; BS = authority specialized in the banking sector and securities market; SI = authority specialized in the insurance sector and securities market.
(*) = state or regional agencies

Source: Excerpt from Masciandaro (2004:pp.11-13)

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THE EFFECTS OF THE PERSONS' FREEDOM OF MOVEMENT UPON THE ROMANIAN LABOR MARKET

Abstract: *The persons' freedom of movement is one of the four freedoms of movement guaranteed by the European Single Market. However, the new members from Central and Eastern Europe cannot (yet) fully take advantage of it. Only some countries have opened their labor markets to the new members, while others wait for the transition period to be over.*

But what will be the effects of this labor market openness upon the old EU members, as well as upon the new EU members? What will be the effects upon Romania?

According to the theory, the free movement of persons will lead to an approach in wage level. Is this available in Romania and EU case? Have the wages in Romania increased, while the wages in the EU decreased?

How about the unemployment rate? How do immigrants influence the unemployment rate in the destination countries? How is affected the employment rate in the departure countries?

The authors try in this article to look for answers to these questions, and to see how the present global crisis is affecting Romania and its labor market.

Key words: *labor market, immigration, EU, Romania*
JEL classification: J40, J31

1. The four freedoms of movement – fundament of the Single Market

The European Single Market implies not only the free movement of goods and services, but also the free movement of production factors (the capital and the labor force).

The liberalization of goods and services and of production factors movement has determined, on the short term, the appearance of some structural and

specialization adjustment processes within the member countries, and on the long term a more efficient allocation of the production factors, an improvement of labor productivity and positive effects in the field of labor force employment.

Through labor force freedom of movement, a more efficient allocation of this production factor is pursued.

2. Which are the main causes and consequences of migration?

Among young people, we can talk about migration in the purpose of education and professional preparation: students or persons in professional preparation. Their migration should be temporary.

Among the migrants, we can also find those working in another country, being immigrant workers or international civilian servants.

Other reasons for migration are the reunification and the formation of families, and also the freedom of establishment, in order to work, based on family connections, ethnic origin, entrepreneurs and investors, or pensioners.

The humanitarian reasons also determine the migration of the population; these are the refugees, the asylum solicitors, and the persons having temporary protection or persons accepted for other humanitarian reasons.

3. The causes of production factors mobility

From an economic perspective, the causes of labor force mobility, as a production factor, are:

- The price differences (wage differences, profit rates differences, interest rates differences) – according to neoclassical theory;
- Income difference, meaning saving excess or insufficiency for the capital, according to Keynes approach;
- Differences in the level of economic development, determining unequal changes, according to the monetarists.

4. The neoclassical theory of price differences

According to the neoclassical theory, the labor force migrates from regions with low wages and low profit rates, to regions having high wages and high profit rate. Thus, the production factors are used in a more productive way.

According to this theory, the factors mobility contributes to the equalization of the wages and to a better factors allocation.

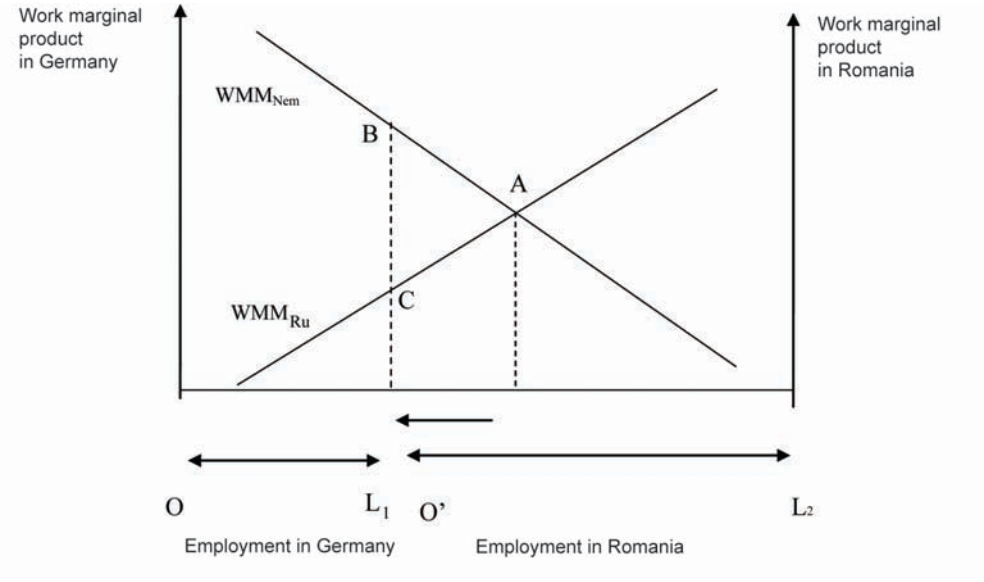
4.1. Consequences of migration

According to the neoclassical theory, there are two consequences of migration: real wages convergence and an increased production on the global level, as we can see in the next graphic.

In this graphic, we present the consequences of labor force migration. We take two countries: Romania and Germany, having different wages. On the vertical axis, we take the work marginal product in the two countries, and on the horizontal axis, the employment level in Romania and Germany.

We suppose two situations: firstly, we assume that there is protectionism between the two countries (e.g.: before Romania's integration in the EU). Then, in a second time, we suppose that the labor force market is liberalized (e.g.: after Romania's integration in the EU).

Graphic 1: *Consequences of migration, according to neoclassical theory*



I. *Before liberalization, under the conditions of protectionism*
OL_1 employees in Germany
$O'L_1$ employees in Romania
Lower wages in Romania: L_1C
Higher wages in Germany: L_1B

II. *If we have liberalization of labor force market, workers can freely move to the country with higher wages, until there will be an equalization of the wages.*
OL_2 employees in Germany

O'L_2 employees in Romania

L_2A will be the wage in both countries

The segment L_1 L_2 represents the labor force migration, from Romania to Germany.

Following the labor force redistribution, we can see the following aspects:

1) The mobility of the labor force determines a convergence of the real wages. The wages will increase in Romania and will decrease in Germany.
2) This mobility will raise the production on the integrated market, represented by the surface ABC

a) For Germany, the production will raise with the surface L_1L_2AB.
b) For Romania, the production will decrease with the surface L_2L_1AC.

As we can see, Germany's gain is bigger than Romania's loss, so, on the whole, the integration has a positive result: the surface ABC.

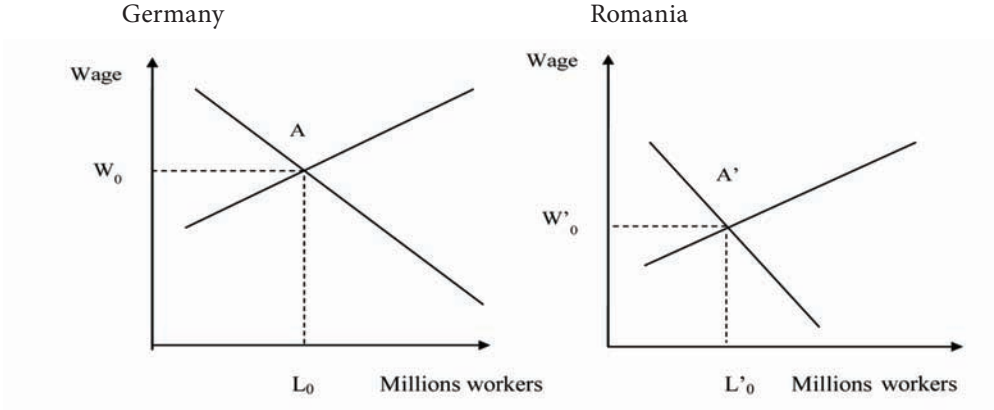
4.2. Effects of labor force migration on wage differences

Does that mean that after Romania's integration in the EU, we witnessed an "invasion" of Romanian workers in the EU? Is this what happened with the workers of the 8 CEEC, new members of the EU?

In practice, the situation can be described as follows: we take the same two countries, Romania and Germany. On the graphic, we take the wage on the vertical axis, and the employment on the horizontal axis. We suppose the same two situations: protectionism, followed by the liberalization of the labor force market.

In Germany, the wage for a worker is W_0. In Romania, the wage is W'_0 for a worker.

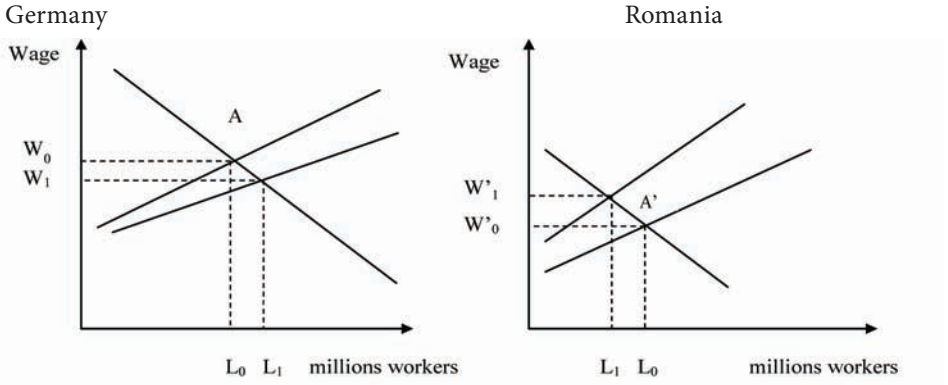
Graphic 2: *The wage difference in Romania and Germany, under the conditions of protectionism*



A and A' represent the equilibrium points in the two countries. Germany: wage W_0, employment: L_0 millions persons. Romania: wage W'_0, employment: L'_0 millions persons.

In the conditions of free labor force movement between Romania and Germany, the labor force will increase in Germany and will diminish in Romania. Consequently, the wages will modify.

Graphic 3: *The evolution of the wage difference, under the conditions of the labor force market liberalization*



B and B' represent the new equilibrium points.

As we can notice, the wages in the 2 countries, after liberalization, are not equal. This can be explained by the fact that immigration has 2 costs:

- an economic cost: moving away, looking for a job;
- a psychological cost: the change of cultural environment, language differences.

Consequently, only a part of the labor force considers that an increased wage is enough to compensate the cost of migration. The wage increase is $W_1 - W'_1$.

Thus, the free movement of workers allows wages to get to a closer level, but not to equalize.

5. The labor force freedom of movement for the members

If the free movement of labor force is complete among the old members of the EU, not the same thing can be said about the new members of the EU, immediately after their accession to the EU.

5.1. The transition period

Thus, the new members, who accessed the EU in 2004 and 2007 respectively, have encountered some transition periods: for 2 years after the integration, this freedom of movement does not apply, for the following 3 years, the labor force freedom of movement can be subject to derogations (5 years totally); after 5 years, only exceptionally restrictions can still be applied, for other 2 years, if it is considered that the labor market can suffer serious disadjustments. Only Malta and Cyprus were an exception from this principle.

This rule is known under the name of 2+3+2. Thus the 8 Central and Eastern European countries, that acceded the EU in 2004, should benefit from May the 1st 2009 of the freedom of labor force movement, on the entire territory of the EU. Romania and Bulgaria, who acceded the EU in 2007, should wait at least until 2012.

5.2. The Schengen Area

In order to stimulate the persons' freedom of movement, in June 1985 France, Germany and the Benelux countries signed the Schengen agreement. Italy joined in 1990, Spain and Portugal in 1991, Greece in 1992, followed by Austria, Finland and Denmark. The United Kingdom, Ireland and Sweden didn't sign this agreement.

According to the Schengen agreement, the control to the internal frontiers of the EU are rarefied and then eliminated, while the controls to the external frontiers are intensified. There is a common policy concerning the visas granting, and the member states cooperate in the judicial and custom field. The labor force freedom of movement implies the following four essential rights: to present itself to a contest in another member state, to be free to move on the territory of another member state in this purpose, to be able to remain on the territory of another member state in case of employment, to be able to definitively live on the territory of another member state. As for liberal professions, they are free to settle down on the territory of any member state.

On December the 21st, 2007, the Schengen agreement was extended on the Czech Republic, Estonia, Hungary, Lithuania, Latvia, Malta, Poland, Slovakia and Slovenia. Romania and Bulgaria still have o lot to do to answer the security criteria of the European Union. Most probably, the two countries will join the Schengen space in 2011.

6. Consequences for Romania's labor market

Let's see now some of the consequences of labor force freedom of movement upon the Romanian labor market.

We must start by saying that the Romanians' emigration, in order to find a better life, did not start in 2007, once the Romania has joined the European Union, nor in 2002, when the Romanians did no longer needed visas for the Schengen states. Even before 1989, there was an emigration movement, both legal and illegal, but having a reduce amplitude.

The changes in December 1989 have brought more simple formalities, in order to obtain a visa for a West European country. Also, at the beginning of the 90, Romania has registered a strong emigration of German ethnics. Thus, from 1990 until 2002, the emigration, as well as the negative natural rise, contributed to the diminishing of Romania's population by 1 million persons, from 23 million inhabitants to 22 million inhabitants. Unfortunately, this movement has continued.

The elimination of visas from January the 1st 2002, in the middle of Romania's negotiations for the EU accession, has determined an increase of the number of emigrants, phenomenon that has amplified after January the 1st 2007, when Romania has joined the EU.

At this moment, it is estimated that in Romania live less than 20 million people (probably, about 18 million), while more than 2 million people work abroad (about 1 million Romanians are in Italy, 1 million in Spain, and other in Germany, France or the UK).

Attracted by big salaries and a better life, many Romanians, young for their majority, have chosen to leave their country and work abroad. They sent important amounts of money to their relatives in Romania, allowing them a decent living.

The Romanians work especially in constructions and agriculture (men), or as housekeepers and in agriculture (women). It is estimated that in agriculture, many of them work illegally.

In 2005, the money sent back home by the Romanians living and working abroad has been of 4.14 billion Euros (5.6% of Romania's GDP). The Romania's spectacular economic growth of the last years has been supported, partially, by this important amount of money, sent home by the Romanians working abroad.

6.1. Consequences in the destination and departure countries

The consequences of emigration, for the destination countries, have been rather positive: the EU GDP has raised by 0.17% on the short term and by 0.28% on the long term; the inflationist pressures have diminished in the destination countries; the wages have dropped by only 0.08% due to immigration, while the

unemployment has raised by only 0.04%. In the departure countries, the consequences are more controversial:

On the one hand, the unemployment rate has diminished (only 4.1% in 2008), the pressure on the state budget has diminished as well; the emigration has allowed Romania, for instance, to avoid an economic and social crisis, of a huge amplitude, which could have endangered our integration calendar; the money sent back home have encouraged the consumption, as well as the real-estate sector, both contributing decisively to Romania's economic growth. But on the other hand, Romania is confronted to a lake of qualified labor force: 100 000 work places have not been occupied in 2008, and it is estimated that until 2013, this labor force deficit will reach 300 000 persons.

In the present, Romania is the country where investors are encountering the biggest difficulties in finding the needed personnel, with the needed qualifications. As a consequence, many investors have brought foreign labor force: only in 2008, 65 000 work licenses have been granted. Many of those workers come from China, Bangladesh, Republic of Moldavia or Ukraine.

6.2. Romanians' freedom of movement

After the integration in the European Union, 16 countries have forbidden Romanians' accession to their labor markets. Since January the 1st, 2009, 5 countries have eliminated these restrictions. By 2013, all EU countries will have to eliminate these restrictions.

In this moment, Romanians are free to work in the following countries: Estonia, Finland, Poland, Slovakia, Czech Republic, Cyprus, Sweden, Slovenia, Latvia, Lithuania, Bulgaria, Spain, Denmark, Greece, Hungary and Portugal, while in the following countries there are still restrictions: Belgium (until 2011), Ireland (until 2012), Netherlands (until July the 1st 2009), the United Kingdom (until 2011), Germany, France, Austria, Italy, Luxembourg, Malta (until 2013). The member states of European Economic Area (Liechtenstein, Island and Norway) have also maintained the restrictions until 2013.

An important step was the Referendum held in Switzerland, on February the 8th 2009. According to the result, and in spite of a very negative campaign, more than 60% of the voters were in favor of prolongation and extension of the Agreements with the EU, regarding the freedom of movement (including the free movement of Romanian and Bulgarian labor force). Following this positive result, in 7, maximum 10 years, Switzerland will eliminate any restriction.

7. Perspectives, under the influence of the global crisis

The global crisis has affected the EU, as well as Romania. On the Romanian labor market, since December 2008, one has registered an increasing unemployment rate: 4.4% at the end of 2008, 4.9% in January 2009 and 5.3% in February 2009. By the end of 2009, in an optimistic anticipation, the unemployment rate will reach 5.5%.

But this is not the only problem Romania's labor market has to face this year. In 2008, some 100 000 Romanians working abroad have lost their jobs, and some more 30 000 Romanians will lose their jobs this year. However, only 14% of them have the intention to come back to Romania in 2009. 33% will remain for 2 to 5 more years abroad, 15% will come back only after 5 years, while 29% have no intention of coming back.

Which are the effects of Romanians' dismissing abroad?

On the one hand, the labor force shortage will be reduced; the return of qualified labor force is a gain, but only on the long term; On the other hand, under the conditions of the present crisis, and taking into consideration unemployment rise in Romania, their return will most probably represent, on the short term, a serious social issue, contributing to an even more higher unemployment rate. Also, the money delivery will decrease, by even 50%, making more difficult the life of those remained in Romania.

8. Conclusions

As we all know, the first right of the European citizen is to be able to travel, work and live anywhere on the territory of the European Union. The Maastricht Treaty has legitimated this right in the chapter referring to citizenship. The freedom of movement and the equality of treatment, by forbidding any restrictions regarding the labor force for the European citizens have created fear among the "old" members of the EU, concerning massive migratory labor force flows, from the East to the West, in search for better salaries and better working conditions. As a consequence, fearing a massive labor force migration, from East to West, separated agreements have been negotiated, regarding the labor force movement after each candidate country will access the EU, a certain period of transition having been asked in order to liberalize the labor force circulation.

We consider that, in order to achieve the Lisbon objectives, it is imperiously necessary to insure the European workers mobility: the geographic mobility, as well as the professional mobility. The last barriers elimination out of the way of the labor force freedom of movement has a particular significance. A transnational and European social dialog is necessary.

In this context, right insurance during the stage of professional transition and, consequently, the social rights portability are extremely important. This is why, the increase of workers mobility is requested, by improving the way the supplementary pension rights are being gained and kept, and the regulation appliance regarding the social security systems is finalized.

The positive connection between migration and economic growth is more and more recognized. The labor force migration represents an increasing source of completing the labor force deficit, and of diminishing the demographic ageing process, by increasing the production in the "old" European countries. But for the origin countries, this represents a temporary or sometimes definitive brains loss, which could affect the country's progress and development. The external migration represents a form of human capital "export", a loss of added value, which could have been achieved in the country.

A fundamental priority for the European Union is the development of a European policy concerning migration, which should complete the member states respective policies. In this purpose, the EU aims the accomplishment of a European pact regarding migration and asylum. Such a pact would emphasize a consolidated common policy regarding migration related issues, based, among others, on a more sustained dialogue with the origin countries.

One must also continue the actions related to the policies plan concerning the legal migration. In this sense, the migrants' rights issues must be rapidly solved, as well as the conditions regarding the highly qualified workers' entrance and stay, the persons detached within the same enterprise, the remunerated persons on probation, the temporary workers. The transition periods, applied to the workers from the new member states, should be eliminated.

The European Union considers as objective the legal migration rise, including the labor force migration, as well as the application of a co-development policy, reflected by specific projects and supported at the European level. In this sense, it is necessary to continue the progress regarding the migration global approach. The cooperation and political dialogue with all the origin and transit countries must be consolidated, and partnerships concerning the mobility, the circular migration and cooperation platforms for migration and development must be promoted.

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EMPLOYMENT – OPPORTUNITIES AND REALITIES IN ROMANIA

Abstract: *Today, there is enormous pressure being put on employers in terms of keeping the best employees, or selecting the best candidates in the event of necessary employment. For being the best, for being selected to obtain the desired job or being kept in the company and avoiding blacklisting of employees fired, a candidate must have a solid training, new attitudes, and new baviors to enter into competition with thousands of other candidates eager to take place in the labor market. Basically in this period of crisis, employees must demonstrate professional competence, commitment, responsibility, creativity in solving tasks, efficiency and come up with practical solutions to reduce costs involved in the work.*

Key words: *employment, job security, Romania*
JEL classification: J23, J28

1. Introduction

The world economy goes through a series of difficulties which have affected the U.S. first and then the countries of Europe and the rest of the world. The effects of the crisis turn directly or indirectly on all branches of the economy.

Inevitably, financial crisis turns into the economic crisis. Foreign investors defer decisions to place capital in local companies, and lack of liquidity and inability to access credits, both for the current activity and the necessary investments for productivity growth are phenomena already encountered in Romania. The effects of the crisis are reflected on accessing credit and contracting of loans and grants European funds, the interest rates are higher, mainly due to increased cost of financing worldwide.

But the economic crisis makes changes and the labor market. The labor market may not be an exception; therefore, specialized studies1 show that an important increase of caution came from the employers in Romania.

Manpower study regarding Employment Prospects of Labor shows, in this context, that is the first time when negative employment intentions are reported.

Currently, in this period of crisis, the best solution for those who are looking for a job is to maintain a high level of knowledge and skills and to understand that employers will focus more on strategies to maximize productivity.

2. Current requirements regarding key-employees profile from organizations

Today, job security is based on individual performance and skills sets.

Employees who fail to create a culture of learning, will not adapt quickly enough, will not face the challenges of the organization in which they operate just because the problems that organizations face today are complex and difficult.

According to HR consultants, companies need people with entrepreneurial spirit in key positions to help them cross the difficult economic period.

"In uncertain and troubled times, you need different people and different methods than in good and predictable times. In clear weather, when the view is clear and you can see in distance, it is expected the following: one traces the course, while others follow it. The disciplined official applies the orders from the center and gets results. Currently, the center is dense fog, the disciplined official is out and may lead the company in chaos. Now there is a need for entrepreneurs and inventive people who seek solutions, make decisions and do not expect directions from center", explains Adrian Stanciu, managing partner for Human Synergistics, consulting company specialized in organizational culture.

"Entrepreneurship can be effective in companies with the organizational structure flat, where contact with clients is easier and decisions are taken quickly", Anca Podoleanu believes, ex-director of human resources for Vodafone Romania, currently manager of the consulting company Choice Consulting.

"The company's set of values and the organizational culture create the key-employees profile. If employees are not effective, it is not necessarily because of them, but as a result of the direction imposed. The solution is not to bring new

[1] Manpower study regarding the Employment Prospects of Labor is a research study conducted quarterly and measures employers intentions to increase or decrease employment in the next quarter. Is the most comprehensive research study of this kind, with the largest capacity of forecast in the world, unparalleled in duration and covers. The study continued over 45 years, being one of the most credible studies in the world regarding employment activity. Manpower study on the Employment Prospects of Labor is based on interviewing a sample of over 71,000 employers across the world of public and private organizations and is considered an important economic indicator in the world.

employees, with the profile that we need, but achieving a change to the present ones", says Podoleanu.

According to Dave Ulrich, one of the most influential specialists in human resources in the world (was present in Romania at a conference organized by the HR Club) to have an effective labor, companies need to formulate a specific purpose, an appropriate leadership, the availability of staff to establish relationships and learn permanently.

The profile of effective leaders is also another in the period of crisis, when there is a need for "inspirational and dynamic leaders, who demand more and decide firmly, basing on clear principles and values on which the organization can rally".

In this context, there is enormous pressure being put on employers in terms of keeping the best employees, or selecting the best candidates in the event of necessary employment.

Today, for being the best, for being selected to obtain the desired job or being kept in the company and avoiding blacklisting of employees fired, a candidate must have a solid training, new attitudes, and new behaviors to enter into competition with thousands of other candidates eager to take place in the labor market.

Basically in this period of crisis, employees must demonstrate professional competence, commitment, responsibility, creativity in solving tasks, efficiency and come up with practical solutions to reduce costs involved in the work.

Witnessing the emergence of "Jack Welch-s model2", in other words, the "20-70-10", which implies that in any organization there are three categories of employees: top performers, representing 20% of the total number of employees, the middle-employees category - 70% and the weakest people from organization representing 10%.

In an economic context and business normally, only the last category is affected by staff reductions, but in current conditions any employee is not safe.

Roxana Cîltea, director of human resources of the pharmaceutical company Sanofi-Aventis Romania, with business over 100 million Euros in 2007 hails from this point of view: "In 2009, employees should continue to be involved, animated by a desire to perform above standards and beyond job descriptions, have wisdom to focus on delivery of results by searching the most effective alternative solutions to any problems arising inherently more or less related to the crisis."

Signals that precede a dismissal are usually relatively easy to identify. Employees "shall know" between them and can tell who might be victim of a disposal plan orchestrated by a company. In general, it is about those people without whom the company can work naturally without face problems or significant changes.

"When it comes to individual cases where people pass out on the basis of poor results or conflicts, surely there are signs, rather signals sent by managers.

[2] One of the best known and most controversial executives of all time.

Maybe even warnings, or meetings, discussion to find solutions before the decision to dismiss", says Gabriela Avram, general manager assistant for an IT company in Romania.

Although layoffs should be the last solution to reduce costs in organizations, after reducing or freezing wages or reduction of working time, employers are also required to adopt different measures when are necessary restructuring of positions and departments, to increase efficiency the organization.

"Involvement, orientation to customer and creativity are qualities valued by employers in this period. Then will be valued those concerned with improving processes, procedures and systems or those who succeed to keep costs under control", says Simona Podgoreanu, HR professor at the training company Exec - Edu, part of ASEBUSS business school, offering an Executive MBA program on the local market.

Heads will see more than ever employees with ideas, efficient and workers employees and those who contribute to business growth and efficiency.

But, for real professionals, the crisis may be an opportunity to advance in career.

"It is not time for employees to sit in their bank, they must be competent, dynamic, bold, because careers are built on time of crisis. They must come prepared to meetings or to bring new ideas. To seek more opportunities in the field and submit them to his superiors with a well defined plan", says Alexandra Oana, HR consultant in the VON Consulting company, specialized in recruiting personnel for IT & C companies.

As for good employees, they have to perform. Although it is easy to get lost in the daily tasks list, they should try to identify activities that bring more profit to the company and prioritize them.

Better management of time, attention in work and in presenting results now worth more in performance evaluation. "If they have doubts, they should behave traditionally. To be punctual, to help the team, and be committed to carry out the task. Traditional values are still highly valued by most employers", added Alexandra Oana, who believes that although we are in full crisis on the labor market, employees should not panic or to be consumed by fear and anxiety. They need to keep calm and to carry out the projects, because employers are strong people, with the triumphant attitude, able to fight under conditions of stress.

But there are also less optimistic views. If the question arises regarding what should employees do in these times to get rid of redundancy, the most honest answer of some consultants is that dismissal is the consequence that there are no results, results of any kind.

According to official statistics of the National Agency for Employment (NAE), the number of employees to be dismissed will increase substantially. Companies alleging decreased or even lack of orders and say they have no other alternative than to quit employment.

"The decision of firing in any company, first regards people who do not have results and appropriate attitude. But those require a consistent effort and a permanent commitment. Of course, anytime is a beginning and that good change have to occur later than never but, unfortunately, a change made today will not change the decision to dismiss taken today too", says Simona Podgoreanu, training company Exec-Edu, Romania.

So bad employees should be aware that periods of crisis are a good opportunity for companies to dismiss those who do not make profit and to keep and reward the employees who received performance.

"Obviously those employees without results, who have a negative behavior inside the company, who do not comply or do not believe in the organization will be the first to go. On the dismissal list will be those poor trained employees too, those who commit repeated errors which make losses to the company. Then follows the passive employees, who do not involve in solving problems and expects to be given work", Podgoreanu values, who added that "during periods of crisis as a result of reducing activity and decreased sales, the restructuring is necessary"'.

Some jobs have no sense and the employer is forced to make redundancies, sometimes tens or hundreds of employees. At the same time, it is quite possible that the fired employees are loyal and effective, and the adopted measure was caused by unfavorable circumstances.

In fact, what is often found, is that not only lack of employee skills is the main factor of dismissal, but the wrong attitude, which may cause major "collateral" losses, such as lack of staff motivation and creating an stressful and unproductive atmosphere, especially if it is the occupant of a position of management.

Often, the reason for redundancies is the decreased importance of a particular department for the organization. If manufacturing companies, first people to be fired are those involved directly in production. By closing the production lines, those who work directly with this equipment will lose their job, at least temporarily, till the improvement of the economic situation.

HR professionals consider that in 2009, in the context in which profits are suddenly no longer for themselves understood and money are counted twice before they are spent once, will be more valuable those who will prove themselves useful for customers or the company for which they work.

However, the management who decides redundancies or restructuring is not always entitled to take certain decisions, there is a risk that good people will be removed. "Unfortunately, it is very likely that in the following period, various people, capable, loyal, will suffer because of incompetent management, for which the own bonus and overall impression have mattered or matters more than the stability of the company", says Cristian Scholtes, senior associate in the Hermes Advisors consulting company in human resources. Until now, when the market produces profits almost automatically, promoting an employee or contracting a consultant was strongly influenced by the extent to which that person knew to be

visible, seem competent, leave the impression that he knows what is talking about, while that effort, professionalism, responsibility passed on the secondary plan.

"In many companies was held a tournament whose rules were less based on fair play and more on finding opportunities to relate and thus preferential promote", says Hermes Advisors consultant, who believes that a unique employee does not necessarily mean that is useful.

Cristian Scholtes attracts attention saying that uniqueness translated through discordant opinion compared to the rest of the group is not appreciated during the crisis. "The uniqueness without real contribution, uniqueness as a show and a mask without genuine effort and responsibility assumed, finally, uniqueness as aparade of image over content, might not be so trendy this year. Maybe it was high time, forced by circumstances, to appreciate more the contribution of those rigorous and punctually and less the talent of others for impression management", explains Scholtes.

Layoffs, like promotions, are made on the basis of criteria established by the employer. In this grid are their skills in solving tasks, attitude toward work or for colleagues, career aspirations, the self or experience.

When an employee proves that it is efficient and productive is not likely to lose the job.

Ultimately, the criteria for dismissal of employees does not change during periods of crisis, but is hurried or explicitly required to be applied.

"Regardless of the period, which will eschew the dismissal is a constant attitude of doing things with pleasure and involvement. Are rewarded and keep members on any hierarchical level, which assumes responsibility for their actions and decisions and seek permanent solutions for increasing the performance of their activities, which have the capacity to learn from mistakes, and creativity in identifying solutions for business problems", mentions Podgoreanu Simona, HR professor on EXEC-EDU company.

In stable economic conditions, an employee is fired because of his behavior. Among the main reasons include incompetence, absenteeism, negligence, theft and disciplinary violations.

The portrait of employee organizations is:

- Having the cult of work ,
- Efficient and effective,
- Responsible for the result of action taken,
- Competent professional,
- A person with new ideeas,
- More useful than unique,
- More dedicate to the job,
- Resistant to stress.

3. Considerations for employment policy in Romania

According to the Manpower study on Employment Prospects Labor[3] for quarter 2 of 2009, employers predicts an unfavorable climate for employment who are seeking employment. Moreover, it is reported the most pessimistic view, from the trial - March 2008 -on the territory of our country, the net employment forecast reaching negative value of -4%. Perspective shows a decrease of 20 percentage points compared with last quarter (quarter 1 2008), and a decrease of 40 percentage points compared with the same period last year (quarter 2 2008).

Perspective indicates that the activity recorded in the labor market in Romania will be deducted for quarter 2 of 2009, 65% of employers claiming that there will be no changes in their employment policy, compared with the previous quarter.

Employers from 7 sectors of the 10 analyzed, reported a negative employment perspective for the quarter 2 of 2009.

The most significant changes caused by the lower rate of employment, compared with three months ago, are in sectors: *finance, insurance, real estate and business services*, where the prospect is 36 percentage points lower, *transport, storage and communications* with a difference of 35 percentage points, *the extractive industry* which presents a decline of 33 percentage points and *wholesale and retail* with a decrease of 26 percentage points.

The most optimistic employers during this period are in the business of *agriculture, hunting, forestry and fisheries sector* and in *public administration and social services*, both reporting a forecast of 2%.

At regional level, most are pessimistic perspectives, the only Net Employment Forecasting with an optimistic note was recorded in the North East (7%) and in the South-West, where employers report a slack pace employment, has forecast a value of 0% for quarter 2 of 2009.

The most pessimistic forecast and with the steep decline of employment plans, is reported by *employers in the West*, where the prospect is 27 percentage points lower compared with the previous quarter, reaching a value of -27%.

"In the future, certainly the situation will change, employers are forced to remember that the loss of a valuable employee is hard to replace. This is the reason to be put in a further effort to retain a competent employee, regardless of existing budgetary limitation", Camelia Stanculescu added, General Manager, Manpower Romania.

[3] Manpower study regarding Employment Prospects Labor, Quarter 2, 2009. The study is based on the responses of a representative sample of 752 employers from 10 sectors and 8 regions, and who have exposed their views on their employment for the quarter 2 of 2009. Included in the study: Public Administration and Social Services, Agriculture, hunting, forestry and fishing, wholesale and retail trade; Construction, Electricity, gas and water Financing, insurance, real estate and business services, hotels and restaurants; Mining, Manufacturing, Transport, storage and communications. Regions covered are structured by Eurostat: Bucharest Ilfov &; Center,, West, North West, South, South-West, Southeast, Northeast.

4. New approaches, new perspectives on the relationship between employer and employee

According to the Manpower study in Europe, Middle East and Africa, only in 7 countries (EMEA) employers report positive employment prospects for the quarter 2 of 2009. On the other hand, *in 12 countries* is predicted a *slow pace of hiring* from quarter to quarter and only in 3 countries such as South Africa, Czech Republic and Italy prospects are improved, compared with the previous quarter.

The most optimistic employment prospects - but also positive for the second quarter - are reported by *employers in South Africa* (14%), *Poland* (6%), *Netherlands* (4%), *Austria* (2%) , *Belgium* (2%), *Switzerland* (2%) and *Norway* (1%).

Globally, the most optimistic Forecasting Net Employment is reported by employers in *India* (25%), and the less optimistic, by those in *Singapore* (-45%). It should be noted that *employers in 23 countries and territories* report *the lowest employment plans* from the beginning of trial on their territory.

Given the stated, there is naturally a legitimate question: What to do in this global context at all attractive?

The answer to this question you still find in the 2007 report of the National Observatory of Vocational Training and Employment of Labor which reminds one concept that could be a possible solution: flexisecuritatea[4].

This report states: "to achieve the objectives of the Lisbon Strategy for more and better jobs is needed for new forms of flexibility and security, both for individuals and companies, and for Member States and the European Union".

The results of this report reveals an interesting aspect, that EU citizens accept the need to adapt and change. Here are some conclusions that are included in this report:

- 76% of Europeans agree that job for life at the same employer are a thing of the past,
- 76% consider the ability to easily change jobs an asset to find a job now,
- 72% consider that to encourage job creation, contracts should become more flexible,
- 88% of citizens are of the opinion that regular training improves the prospects of getting a job.

Flexibility refers to the successful changes ("transitions") during a life: from school to work from a job to another, between unemployment or inactivity and work, from workplace to retirement .

[4] Flexisecuritatea can be defined as an integrated strategy of simultaneous strengthen of flexibility and security of the labor market. The information and data were extracted from the European Commission Communication COM (2007) 359 final "Towards common principles of flexisecurității: Jobs more and better through flexibility and security".

This is not limited to a greater freedom of companies to hire or fire and do not involve contracts' inefficiency for an indefinite period but relate to workers' progress towards better jobs, the "upward mobility" and to optimal talent development.

Also, flexibility refers to the flexible organization of work, able to respond quickly and efficiently to new requirements and powers of productivity and to facilitate reconciliation of professional life with responsibilities of privacy.

Regarding security in the labor market, it is more than keeping the workplace: this refers to the mediation skills that enable progress in the training and support in finding a new job. It also refers to unemployment benefits in order to facilitate appropriate changes in the labor market.Finally, it includes training opportunities for all workers, especially for those with low skilled and older workers.

5. Final conclusion

It is clear that the world of work has fundamentally changed, thanks to successes in technology, demographic changes, globalization and many other factors.

What people do, where they work, skills and abilities that they need for success are variables that change permanent.

People are experiencing new challenges and to build a career, their needs increase, the expectations become higher but paradoxically options delay to arise in the context of the crisis on the labor market.

From the employee perspective, there is a need for capable people to take risks, to change their career direction, to adopt more flexible programs, and in terms of employers are feeling more and more need for retraining to meet new needs that arise, more use of outsourcing services and non-core activities of companies to reduce costs, speed solutions adapted to the new requirements of the labor market.

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REGIONAL DISPARITIES CONCERNING THE LEVEL AND DYNAMICS OF DEMOGRAPHIC INDICATORS

Abstract: *Romania's population in continuous decline is affected by the phenomenon of aging, a phenomenon that occurs in most of the Member States of the European Union. Demographic structural changes made to the total population are found in both supply and demand for skilled labor. Thus, numerical and structural change of the population and an aging population affect the level and structure of the active population as well as the number of employed population and unemployment.*

Key words: *population, demographic changes, Romania*
JEL classification: J11, 018

1. Introduction

European regional policy essentially aims at reducing social and economic disparities in the EU. It comes in addition to structural and regional policies nationally implemented in the poorest regions and the labor market.

Disparities in levels of development of different regions are the result of their differentiated endowments with natural and human resources, and relatively specific frameworks of development (economic, technological, demographic, social, political, and cultural) that have shaped the development throughout history. This led to the dominance of agriculture as economic force in regions where climatic conditions were favorable, the heavy industry in areas that have found resources of iron ore and coal and the concentration of the branches in the service sector in administrative centers.

Romania's population in continuous decline is affected by the phenomenon of aging, a phenomenon that occurs in most of the Member States of the European Union[1]. Evolution of economic phenomena and processes and the

[1] Ministry of European Integration: *Regional Operational Program 2007-2013*, Bucharest, April 2006, p. 13.

complexity of demographic trends are determined for active population of each country. Conditioning demographic, though least visible, is extremely important implications through. Demographic structural changes made to the total population are found in both supply and demand for skilled labor. Thus, numerical and structural change of the population and an aging population affect the level and structure of the active population as well as the number of employed population and unemployment.

2. Population structure and density

In terms of demographics Romania is characterized by significant regional differences. Population structure and density on the main development regions of Romania can be seen in Table 1.

Comparing data from Table 1 we notice that there was a decrease in the number of people, both nationally and regionally. Population fell from 22.43 million in 2000 to 21.53 million in 2007, approximately 4%. According to forecasts made by the National Commission of Prognosis population will continue to decline by about 0.4 percentage points annually as a result of decreasing birth rate.

Even in the eight development regions of Romania, the population in 2006 compared to 2000 has changed to varying degrees, the largest decrease in population occurred in the West region (- 5.7%) and the lowest in North East (-2.5%):

North-East – 96.86 thousand people (-2.5%);
South-East – 103.87 thousand people (-3.5%);
South Muntenia – 164.7 thousand people (-4.7%);
South-West Oltenia – 119.95 thousand people (-5%);
West – 116.66 thousand people (-5.7%);
North-West – 118.6 thousand people (-4.2%);
Center – 118.3 thousand people (-4.5%);
Bucharest-Ilfov – 58.77 thousand people (-2.6%).

Romania's specific demographic phenomena that characterized the last decade and population mobility have influenced its spatial distribution. In the regions, population density shows significant variations. It is noted that the Western Region is the least populated of the eight development regions (60.1 inhabitants / km2 in 2007). The degree of density of population is higher than the average country in the region of Bucharest-Ilfov 1222.4 inhabitants / km2. Large gaps are seen even between the other regions: on one hand is the North - East with a density greater than the national level, on the other hand, the South - East, South West Oltenia, West, North West, Center, with average below this level and South Muntenia region with a high density near the national average. Without taking into account the region Bucharest-Ilfov, the highest population

density is recorded in the Northeast (103.8 inhabitants per km2 in 2000, respectively 101.1 inhabitants per km2 in 2007), the region with the greatest demographic dynamism in the country, and the lowest density is in the western region with the largest decline in population and with mountainous relief on a large part of the land.

Table 1: *Population structure and density in the main development regions of Romania*

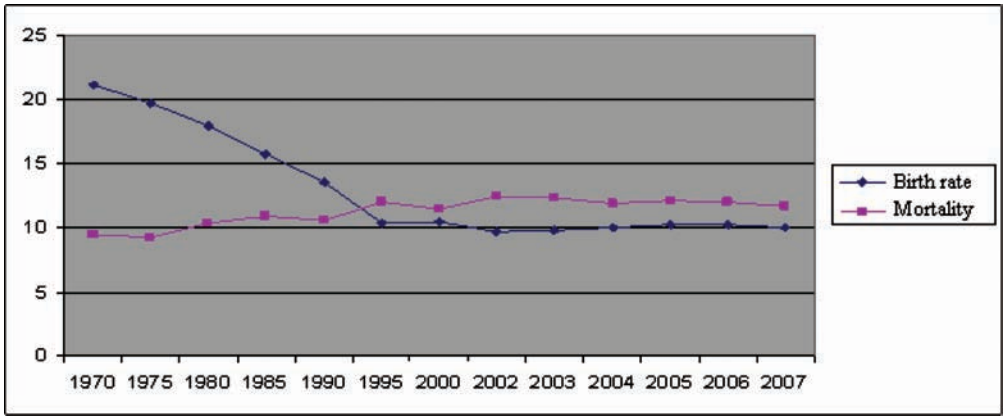
Region	Romania	North-East	South-East	South-Muntenia	South-West Oltenia	West	North-West	Center	Bucharest-Ilfov
Number of people (thousands)									
2000	22,435.2	3,823.5	2,934.3	3,465.5	2,399.8	2,041.1	2,844.1	2,642.2	2,284.7
2005	21,641	3,743	2,853	3,389	2,316	1,930	2,728	2,534	2,198
2007	21,537.6	3,726.6	2,830.4	3,300.8	2,279.8	1,924.4	2,725.5	2,523.9	2,225.9
Population by region (%)									
	100	17.0	13.1	15.4	10.7	9.1	12.7	11.8	10.2
2005	100	17.3	13.2	15.7	10.7	8.9	12.7	11.7	10.2
2007	100	17.3	13.1	15.3	10.6	8.9	12.6	11.7	10.3
Population density (people/km2)									
	94.1	103.8	82.1	100.6	82.2	63.7	83.3	77.5	1,254.6
2005.	90.7	101.3	79.6	96.6	79.0	60.3	80.1	74.2	1,212.7
2007.	90.3	101.1	79.1	95.8	78.0	60.1	79.8	74.0	1,222.4

Source: Statistical Yearbook of Romania 2007-2008.

3. Birth rate, mortality and natural population growth

The decrease in population is determined by the negative natural growth, and by the negative balance of external migration. Dynamics of population birth and death in Romania can be seen in figure no. 1

Figure 1: *Dynamics of population birth rate and mortality in Romania (rate per 1000 inhabitants)*

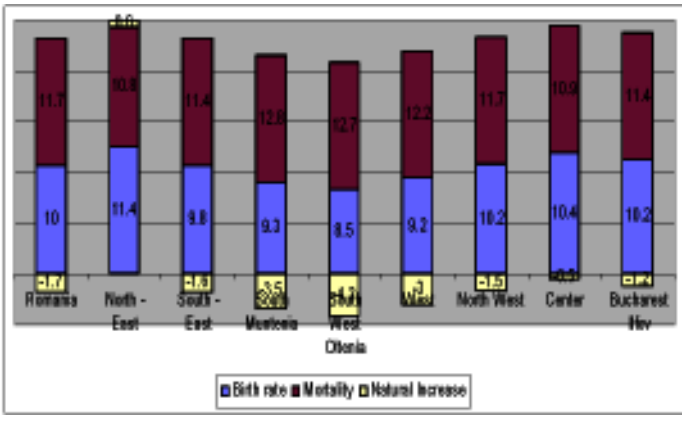


Source: Graph developed from data from the Statistical Yearbook of Romania, 2008;

In Figure 1 we observe that the birth rate has been declining until 2002, after which the period 2003 - 2005 witnessed a slight recovery. Mortality has remained relatively high in Romania, although in 2007 a slight decrease over 2005 (there have been 252 thousand deaths, with 10.1 thousand fewer than in 2005). The birth rate remains the only component of the movement of population which can worked on with effective results, as on the short and medium term it cannot be expected that mortality and external migration to contribute significantly to reducing the demographic decline in Romania.

At the regional level birth rate, mortality and natural increase of population is presented in figure no. 2:

Figure 2: *Natural movement of population by regions in 2007 (rate per 1000 inhabitants)*



Source: Figure Based on data from the Statistical Yearbook of Romania 2008.

In Figure 2 we observe that in seven of the 8 development regions a negative natural growth is recorded, the only exception being registered in North Eastern region where the birth rate exceeds mortality.

4. Interregional migration

Interregional migration has presented specific features caused by regional economic developments. Population movement between regions is seen in Table 2.

Table 2: *Changes of domicile by regions during 2004-2007*

Region	2004			2006			2007		
	Outgoing	Incoming	Balance	Outgoing	Incoming	Balance	Outgoing	Incoming	Balance
North-East	61,079	55,533	-5,546	57,291	50,357	-6,934	65,228	58,609	-6,619
South-East	47,427	46,625	-802	42,787	39,990	-2,797	49,533	48,119	-1,414
South Muntenia	55,279	53,606	-1,673	50,306	48,281	-2,025	56,856	57,353	497
South-West Oltenia	41,472	40,719	-753	38,655	35,291	-3,364	46,323	43,400	-2,923
West	31,695	34,189	2,494	30,312	34,508	4,196	34,740	39,087	4,347
North-West	40,249	39,450	-799	34,413	35,143	730	41,292	42,052	760
Center	39,235	39,327	92	33,987	33,912	-75	40,709	40,574	-135
Bucharest-Ilfov	53,456	60,443	6,987	46,274	56,543	10,269	39,475	44,962	5,487

Source: INSSE, *Regional statistics*, www.insse.ro; Statistical Yearbook 2007 and 2008.

From Table 2 can be noted that the most migratory dynamics was in the North-East region, region with the most numerous population, South-West Oltenia region, in the context of attracting labor available in the mining in the Jiu Valley and the Bucharest-Ilfov region, whose dynamics is determined by the presence of the capital city, characterized by enhanced migration flows. Center and West regions are the only regions outside the Bucharest-Ilfov region, which recorded a positive balance of migratory flow throughout the period under consideration. The phenomenon can be explained by the attraction increasingly exercised by the regions as a result of direct vicinity or the close proximity of the western border and development of urban centers under the European influence. Majority of the negative balance of migration flows in other regions of development demonstrates once again the increased external migration of the population. The largest increase of the migratory balance was in Bucharest region (10,269 persons in 2006). Note that in 2007 inter-regional migration has decreased from the previous year.

People with a great willingness to migrate are usually young people capable of working, which migrate to urban areas in search of better jobs and a more attractive social life. These are usually young people aged between 20 and 39 years. It is noted that, at the same time there is a phenomenon of migration to rural areas, specific to the population aged 40 years and over, and it is affecting the whole country. In general, these are people that, following the restructuring of state companies, have not managed to adapt and thus were forced to return to rural areas where they carry on subsistence activities. The lack of adequate employment led to the departure of people for unqualified work abroad. Thus, if in the years after 1990 they went especially in Serbia, after the crisis in Yugoslavia, privileged destination have become Italy and Spain as far as external migration is regarded.

According to the study "The phenomenon of migration from the perspective of Romania in the European Union" of the European Institute of Romania, the number of Romanian emigrants has increased as a result of career opportunities and a better remuneration of jobs abroad. On the other hand the phenomenon of permanent immigration to Canada and the U.S. is consistently around 2000 -3000 people a year while permanent and temporary emigration (taken from official data) for work has reached worrying proportions. From unofficial data it results that there is a minimum of 2 million Romanians working abroad in countries like Spain, Italy, Greece, and Germany. The highest level of migration is recorded in the regions of Bucharest - Ilfov, Center and West.

5. Population structure on country / urban sides and age categories

Although after 1990 the urban population has registered a continuous decline in all regions of the country, it is seen that the country's urban population is maintaining. We are attending a delay in the process of urbanization. The degree of urbanization of Romania is also different on a territorial profile (Table no. 3).

Table 3: *Population structure on country side and urban side in the development regions in Romania*

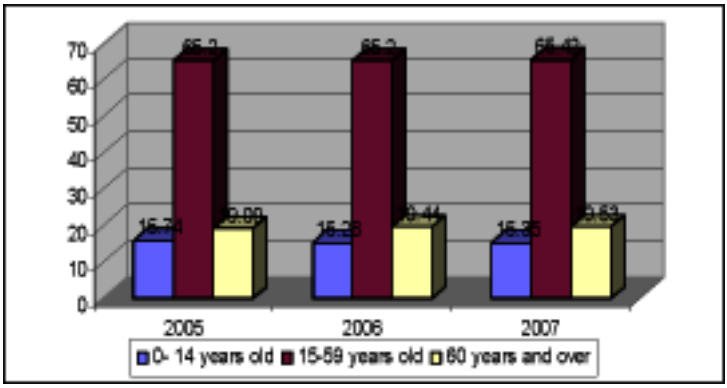
Region	Urban Population (%)			Rural Population (%)		
	2000	2005	2007	2000	2005	2007
Romania	54.6	54.9	55.1	45.4	45.1	44.9
North-East	43.5	43.4	43.4	56.5	56.6	56.6
South-East	56.8	55.5	55.3	43.2	44.5	44.7
South-Muntenia	41.6	41.7	41.6	58.4	58.3	58.4
South-West Oltenia	45.3	47.5	47.7	54.7	52.5	52.3
West	62.2	63.6	63.4	37.8	36.4	36.6
North-West	52.6	53.1	53.4	47.4	46.9	46.6
Center	60.3	59.9	59.6	39.7	40.1	40.4
Bucharest-Ilfov	88.8	90.5	92.4	11.2	9.5	7.6

Source: Statistical Yearbook of Romania 2007 and 2008.

With the exception of the Bucharest-Ilfov region, most urbanized regions are: West and Center regions, which have 60% urban population. In contrast, in the eastern part of the country (North - East Region) and throughout the South (South Muntenia, South-West Oltenia) rural population is predominant, which are areas with large flat areas, where agricultural activities are prevailing. The main cause of the decreasing urban population in some regions has been a migration to both rural and abroad. This was caused by the economic decline, following which some of the inhabitants have left the cities where they were left without jobs. Opening borders and free access of the population abroad has affected some of the cities located in Transylvania and Banat. Massive migration has been less obvious in the major cities in those areas, but very obvious in the case of small and medium-sized cities.

Another demographic aspect is the structure by age groups of the population. Population by age group in Romania can be seen in figure no. 3

Figure 3: *Population by age groups in Romania*



Source: *Romania în cifre – breviar statistic, National Institute of Statistics, Bucharest, may 2008*

Age structure of the population bears the hallmark of a specific process of demographic aging, marked mainly by declining birth rates, which resulted in the absolute and relativ reduction of the young population (0 -14 years), and increasing the share of elderly population (60 years and over). In 2007 compared to 2005 is remarkable the share reduction of young people from 15.74% to 15.35% and increased share of elderly population to 18.89% to 19.53%. According to the National Forecast until 2013, in the future the same age group structure in the population will be maintained, characterized by the continuation of the demographic aging process, by reducing the number of young people under 15 years and growth of the elderly.

Distribution of population by age group is relatively similar in the eight development regions (Table no. 4).

Exception is: North-East region where, due to the high birth rate, young people (between 0-14 years) have the highest proportion compared with other regions (21.0 in 2000 and 18.14 in 2006); Bucharest-Ilfov region, the region with the highest percentage of 15 - 59 years age group. The South - Muntenia and South-West Oltenia is notable by having above country's average shares in the population over 60 years, while other groups are located near national level.

Table 4: *Population by age groups in the development regions*

Regiunea	Total	Age group					
		0-14 years old		15-19 years old		60 years and over	
		2000	2006	2000	2006	2000	2006
Country total	100.00	18.30	15.45	62.92	65.26	18.81	1.29
North-East	100.00	21.00	18.14	60.87	63.47	18.11	18.39
South-East	100.00	18.50	15.23	63.37	65.77	18.15	19.00
South Muntenia	100.00	18.00	15.17	61.04	63.46	20.93	21.37
South-West Oltenia	100.00	18.20	15.24	61.36	63.82	20.88	20.94
West	100.00	17.50	14.68	64.08	66.33	18.44	18.98
North-West	100.00	18.80	15.90	63.58	65.62	17.64	18.48
Center	100.00	18.20	15.59	64.41	66.09	17.37	18.32
Bucharest-Ilfov	100.00	13.90	11.79	67.22	69.41	18.87	18.80

Source: Own calculations based on data from National Institute of Statistics, Regional statistics: www.insse.ro

From Table 4 is observed that the share of population aged up to 14 years entered into decline with the expansion of the segment older than 60 years. The aging population will exert a negative influence on the whole economy, as the number of inactive people will unbalance, in the meaning of burdening, the social insurance system, and implicitly to increase the excess charges in the absence of reforms based on the problem. Regions South and South - West are facing a phenomenon accentuated by aging of the population owning most of the segment above the age of 60 years (21.37% and 20.94% in 2006), expecting a amplification of this trend. The highest share in the young people segment is in the North-East region (18.14% in 2006 declined slightly compared to the rate of 21.0% in 2000) and the lowest in the Western Region (14.68% in 2006 versus 17.5% in 2000), however higher than the 11.79% rate of the Bucharest – Ilfov region.

In the long term, these demographic trends will affect both the educational system, by reducing number of pupils and students, and expanding demand for health services and social protection. The aging population in rural areas of Romania will exacerbate economic disparities in terms of regional development, in the sense that the population capable of working will prefer to migrate internally to important urban areas.

6. Conclusions

The country's population is in decline because of the low birth rate and emigration;

We are witnessing the phenomenon of population aging marked mainly by declining birth rates, which resulted in the absolute and relative reduction of young population and increasing share of elderly population;

Regarding the structure by age groups of the population,this is relatively balanced in the eight development regions with two exceptions: the North East region in which young people between 0-14 years has the highest share and the Bucharest - Ilfov, the region with the highest percentage of the 15 - 59 years age group.

The degree of urbanization of the population differs from region to region; most urbanized regions are the regions Bucharest-Ilfov, West and Center, at the opposite pole having the South Muntenia Region, North East and South-West Oltenia regions where the rural population is predominant.

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MEASURING THE INNOVATION PROJECTS EFFECTIVENESS

Abstract: *In the process of measuring the innovation projects effectiveness it is preferred achieving the settled objectives, even facing some economic difficulties, than achieving with low costs and in a short time, some wrongly planned objectives.*

Based on the statistic process control the paper aims to present a way of measuring innovation projects effectiveness by using some specific indicators. These indicators quantify and compare the actual values variation of innovation project's competitiveness objectives with a statistic-determined level of variability. The pre-definite statistic level of variability is stated by specific standards of each activity domain.

Key words: *innovation projects, effectiveness, measuring effectiveness*

JEL classification: C20, L21

1. Introductory issues

In many cases, the terms effectiveness and efficiency are treated as being similar. So, effectiveness can be defined as the capacity of producing the expected positive effect. In this view, the effectiveness is synonym to efficiency.

On the other hand, some authors make a clear distinction between effectiveness and efficiency. They appreciate that effectiveness means a person's, an organization's, a process's or a system's capacity of producing the desired results or the results that were settled before the action.[1]

Effectiveness means the capability of producing an effect. The word effective is sometimes used in a quantitative way, "being very or not much effective". However it does not inform on the direction (positive or negative) and the comparison to a standard of the given effect. Efficacy, on the other hand, is the ability to produce a desired amount of the desired effect, or success in achieving a given goal. Contrary to efficiency, the focus of efficacy is the achievement as such, not

[1] www.training.ro

the resources spent in achieving the desired effect. Therefore, what is effective is not necessarily efficacious, and what is efficacious is not necessarily efficient.

Efficacy is the capacity to produce a desired size of an effect under ideal or optimal conditions. It is these conditions that distinguish efficacy from the related concept of effectiveness, which relates to change under real-life conditions.

An economic system is more efficient if it can provide more goods and services for society without using more resources. Market economies are generally believed to be more efficient than other known alternatives. The first fundamental welfare theorem provides some basis for this belief, as it states that any perfectly competitive market equilibrium is efficient (but only if no market imperfections exist).

An ordinary way to distinguish among effectiveness, efficacy, and efficiency:[2]

- Efficiency: doing things in the most economical way (good input to output ratio)
- Efficacy: getting things done, i.e. meeting targets
- Effectiveness: doing "right" things, i.e. setting right targets to achieve an overall goal (the effect).

Regarding to innovation projects feasibility, in a very rigorous approach, it implies a double determination: as well effectiveness as efficiency.

In his works, O. Nicolescu[3] is considering that the distinction between effectiveness and efficiency as economic categories is important both from theoretical and pragmatically point of view.

In this approach, the innovation project's effectiveness expresses the measure in which the innovation project's effective results are corresponding to the desired effects of this innovation project. This is measured by the comparison between the innovation project's effective results and the settled results, which were planned before the innovation project's developing.

In the same approach, the innovation project's efficiency is referring to the relation between the innovation project's global output and global input. So, the innovation project's efficiency is expressed by the ratio between the obtained effects and the used resources.

From the innovation project's feasibility point of view, the enterprise management objective is getting both effectiveness and efficiency in the same time. Approaching the innovation project's feasibility valuation by this perspective, although the most part of efforts are focused on getting higher innovation projects efficiency, the enterprises survival and success is depending more on innovation projects effectiveness than on its efficiency. This situation is explained by the fact that in a turbulent business environment, the innovation project's

[2] http://en.wikipedia.org/wiki

[3] O. Nicolescu, coord., "Strategii manageriale de firmă", *Editura Economică*, Bucureşti, 1998

feasibility valuation must firstly consider the interface with the environment in which the innovation projects are developing. Evaluating the measure in which the obtained results are corresponding with the desired results or with the settled objectives makes this. No enterprise will obtain competitive advantage if it is not doing the right business, even if it is doing business in a good way. So, it is more important to achieve the settled objectives (effectiveness) than to successfully fulfil wrong objectives.

By consequence, for innovation projects it is preferred achieving the settled objectives, even facing some economic difficulties, than achieving with low costs and in a short time, some wrongly planned objectives.

So, the innovation project's effectiveness may be perceived like its capacity of fulfilling the settled objectives.

2. The innovation project's objectives

The fast changes of business environment have determined the complete transformation of the competitiveness objectives. Nowadays, the success of the performing enterprises is based on their ability to offer qualitative products and services at low prices, before the competitors. These products and services have to meet the client's needs.[4]

The successful developing and selling of new products that have to meet the client's needs is the most important issue that enterprises' managers are facing nowadays.

With the background of global competition growing fast and the customers needs getting more personalized, compressing the period of time between the perception of customer needs and the moment of throwing on market a new product that is meeting customer needs had become the main feature of the business environment.

A producer's ability to have fast reaction to the market needs had become a critical success factor. The speed of reacting to changing market needs had become more important in gaining the competitive advantage than having a great productive capacity, than cheap labour or than having performing equipments.[5]

In this context, the product's quality, the working out time of the product and the cost become the new competitiveness objectives of a successful enterprise.

The product's quality is referring to its capacity of satisfying customers expectations. This may aim, in the same time, at superior features of the products, at longer lasting products, speed and safety operating products, or at the level of fulfilling the product's specifications.

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4 G. L. Şipoş, *Inovarea în întreprindere*, Editura Mirton, Timişoara, 2004

5 M. Schilling, *Strategic Management of Technological Innovation,* McGraw-Hill, 2008

The working out time of the product is the period of time used for the product design, product development, production, and launching a new product to the market.

The product cost means the total actual cost of obtaining that product, but also, it may aim at the operating cost of the product at the beneficiary. On a competitive market, the size of total actual cost of obtaining the product will determine the producer's profit. Thus, the total actual cost of obtaining the product is an important component of the business success.

The competitiveness objectives are equally important for the new product's success. At a first consideration, it seems that fulfilling one of the competitiveness objectives will act in spite of the other objectives.

That enterprise that will get a superior mix of competitiveness objectives opposite its competitors will get the competitive advantage.

3. Measuring the innovation projects effectiveness

In this paragraph it will be presented a way of measuring the innovation projects effectiveness, based on the statistic process control. This way requires the analysis of a random sample of products obtained as part of an innovation project and making a conclusion concerning the manner in which the features of those products are fitting in the accepted tolerance.[6]

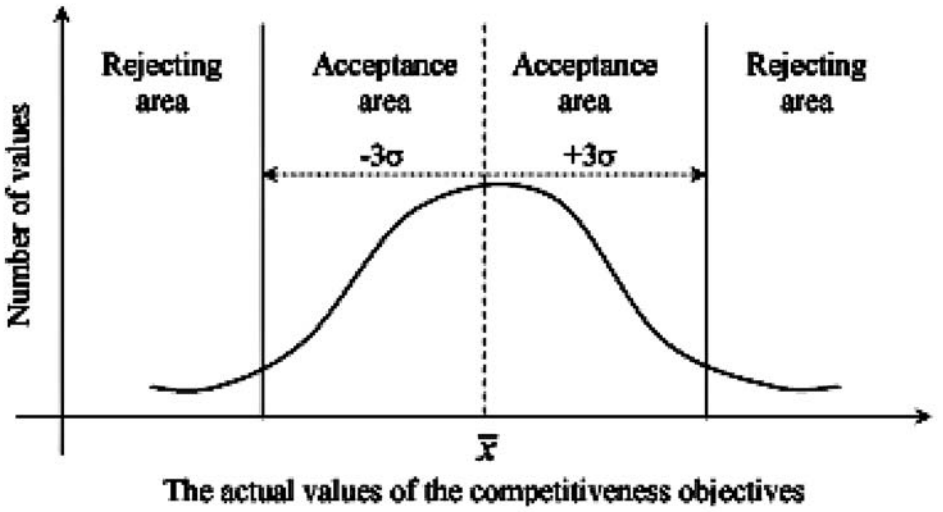
The innovation project's competitiveness objectives (the product's quality, the working out time of the product and the cost) are generally simultaneous expressed by a nominal value (aimed value) and a confidence interval. The confidence interval is expressing the accepted deviation from the aimed value. This confidence interval (CI) varies between the accepted lower limit (LL) and the accepted upper limit (UL) of the competitiveness objectives. So the confidence interval can be defined as:

$$CI = UL - LL \qquad (1).$$

The confidence interval can be determined only if the acceptable deviation from the aimed value of the random variable is bilateral.

[6] R. D. Reid, N. R. Sanders, *Operations Management. An integrated Approach,* 2nd Edition, John Wiley&Sons, Inc., 2005

Figure 1: *The confidence interval for an innovation project's competitiveness objectives*



In statistical view, it is considered that the mean of actual values distribution is fitting in the interval ($\bar{x} - 3\sigma$; $\bar{x} + 3\sigma$). If the standard deviation of actual values (σ) is known, according to critical values of normal distribution Gauss-Laplace, the probability that the mean of a competitiveness objective to be in the confidence level is 99.74%.7

The evaluation of the innovation project's effectiveness involves the variability evaluation of the competitiveness objectives actual values in relation to the confidence interval with the purpose of establishing that the project is able or not to give an acceptable product. A product is considered to be acceptable if its actual values of product's quality, the working out time of the product and the cost are fitting in the settled competitiveness objectives. With a view to give an acceptable product, the innovation project must be effectual and the innovation process must be under statistic control just before the production process start.

In this context, the innovation projects effectiveness may be measured by using two specific indicators: the rate of innovation project's effectiveness (Re) and the innovation project's effectiveness index (Ie).

The rate of innovation project's effectiveness and the innovation project's effectiveness index are two indicators that allow the quantitative measurement of an innovation project's effectiveness, basing on methods of process variability statistic control.

The fact that an innovation project is under statistic control does not guarantee that every product will correspond with the aimed values for cost, working

7 C. Şipoş, C. Preda, "Statistică economică", *Editura Mirton*, Timişoara, 2004

out time of the product and quality. This is due to the confidence interval limits were established based on the mean and the distribution variance of an actual values sample and not based on the settled values of the objectives. For an innovation project being under statistic control it is considered that the quantifiable factors impact upon the new products was eliminated.

The rate of innovation project's effectiveness (Re) is defined using the next formula:

$$R_e = \frac{R}{6\sigma} = \frac{U - L}{6\sigma} \quad (2),$$

Where: UL means the confidence interval upper limit;

LL means the confidence interval lower limit;

σ is the standard deviation of the distribution of the innovation project's objectives actual values.

This indicator is a measure of the innovation project's competitiveness objectives actual values variability.

Concerning the meaning of the rate of innovation project's effectiveness value there are three situations:

- Re = 1 means that the most part of the actual values of the innovation project's competitiveness objectives is fitting in the confidence interval. The innovation project is perceived as being effective at a minimum level. In this case, a percentage of 99.74% of the obtained products are fitting between the accepted limits of the confidence interval, regarding the product's quality, the working out time of the product and the cost per unit. By the other hand, this means that a percentage of 0.26% of the products will not be accepted. Depending on the activity domain, such a situation may be considered fairly good or not. For example, for common activity domains this situation is considered as being acceptable, but for those activity domains that imply a very high level of precision (medical technique, chemical industry, and pharmaceutical industry) a proportion of 0.26% of rejected products is considered as being too high. This is meaning that from a batch of one million obtained products, 2600 products are rejected (the product's quality, the working out time of the product and the cost per unit exceed the stated limits). In these cases, the number of rejected products must be decreased with the purpose of increasing the level of innovation project effectiveness.
- If Re < 1 the actual values of the innovation project's competitiveness objectives exceed the confidence limits (the process variability exceeds the confidence interval). The innovation project is not able to produce acceptable products and it must be improved. In this case, the innovation project is considered to be not effective. This is meaning that either the

product's quality or the working out time of the product or the cost per unit exceed the confidence interval (maximum accepted tolerance).

- If Re > 1 the innovation process variability is smaller than the accepted tolerance and all actual values of the innovation project's competitiveness objectives are fitting in the confidence interval. The innovation project is effective and the minimum effectiveness requirements are even overreached.

For those innovation projects that involve a high level of risk (for example radical innovation projects) the effectiveness requirements may be increased. In those situations, for considering an innovation project to be effective it may be required that Re > 1.33. Such a restriction is able to offer some protection against the risk involved by the innovation project.

The disadvantages of the rate of innovation project's effectiveness are due to the fact that it assumes that the variability of the actual values of the competitiveness objectives is centred upon the mean value of the actual values. This assumption is not always true. For taking over this disadvantage it can be calculated another indicator: the innovation project's effectiveness index.

The innovation project's effectiveness index (Ie) is measuring the project's capability to generate products with competitiveness objectives actual values that are coming near the middle of the confidence interval.

$$Ie = Min\left[\frac{|\boldsymbol{U} - \bar{x}|}{3\sigma}; \frac{|\bar{x} - \boldsymbol{L}|}{3\sigma}\right] \qquad (3).$$

This index allows understanding the situations in that the competitiveness objectives actual values are not symmetrical distributed around the mean value. To evaluate the innovation projects effectiveness, the value of the innovation project's effectiveness index is compared with the minimum accepted value (that is generally 1).

If Ie = 1 the innovation project is considered to be minimum effective. In this case, a percentage of 99.74% of products are fitting in the confidence interval regarding the product's quality, the working out time of the product or the cost per unit. In the same time, a percentage of 0.26% of products is rejected because they are not accomplishing the minimum effectiveness requirements.

Depending on the precision level required for the products and on the activity domain rigour level, it will be established if the innovation project is effective or if the innovation project's effectiveness level must be increased.

If Ie > 1 the innovation project is considered to be effective, the minimum effectiveness requirements are even overreached.

In those cases in which Ie < 1, the innovation project is not effective. Similar to the previous indicator, for those innovation projects that involve a high level of newness and risk, the minimum effectiveness requirements for the innova-

tion project may be increased. In those situations, for considering an innovation project to be effective it may be required that Ie > 1,33.

4. Conclusion

Using the statistic process control principles, the article presented a way of measuring innovation projects effectiveness. This way is based on using two specific indicators: the rate of innovation project's effectiveness (Re) and the innovation project's effectiveness index (Ie).

Considering only the rate of innovation project's effectiveness, an innovation project is effective if the extreme actual values of competitiveness objectives are fitting in the confidence interval. This is meaning that $6\sigma < CI$.

An innovation project will be considered being effective only if the rate of innovation project's effectiveness is higher than the minimum accepted value (critical value) and, in the same time, the innovation project's effectiveness index is higher than the minimum accepted value.

If the innovation project's effectiveness index is lower than the minimum accepted value, then the mean of the actual values of the competitiveness objectives is coming very close to one of the confidence interval's limit. This is meaning that the innovation project is not effective.

The innovation project's effectiveness index will always be lower or at most equal to the rate of innovation project's effectiveness. If the two indicators have similar values the actual values of the project competitiveness objectives are fitting between the confidence interval's limits.

Finally, it is appreciated that the rate of innovation project's effectiveness and the innovation project's effectiveness index are two indicators that quantify and compare the actual values variation of innovation project's competitiveness objectives with a statistic determined level of variability. The pre-definite statistic level of variability is stated by specific standards of each activity domain.

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FOREIGN DIRECT INVESTMENTS AND ECONOMIC GROWTH IN CENTRAL AND EASTERN EUROPEAN COUNTRIES

Abstract: *Reduction of obstacles for foreign direct investments has led, as expected, to an increase in the speed with which foreign direct investments shift, so an adjacent problem that rises in this context regards the effects and impact on the host countries. All the evolutions induced by the foreign direct investment flows at the receiving countries' level, generally show the existence of their direct relationship and contribution to the economic growth through four different channels: capital accumulation, technology transfer, access to the global market and job creation. The analysis of the correlation foreign direct investments – economic growth, in Central and Eastern European countries confirms the positive impact on economic growth, especially highlighted in cases in which the economic policies have as priority the attraction of foreign direct investments.*

Key words: *foreign direct investments, economic growth, transition economies, positive externalities, investments dynamics, Central and East European Countries*

JEL classification: F21, P27

1. Foreign direct investments – factor of economic growth

The foreign direct investments raise the problem of the interest that host countries have in promoting and attracting them, the most important argument in this sense being the one regarding the contribution of foreign direct investments to the development of the respective economies. The benefits brought by

foreign direct investment flows do not limit themselves only to a better use of resources of a country, but also to some aspects regarding the improvement of technologies, enhanced competition and performances of local firms, increased exports, capital formation, through savings and investments, the acceleration of economic growth. Therefore, foreign direct investments constitute a further source of financing for property exchange and gross capital formation, directly contributing to capital formation if the flows relate to investment financing or, indirectly, if investors, that became owners, facilitate technology transfer. On the other hand, foreign direct investments and, especially those in advanced sectors, induce more important shifts at the level of industrial specialization in the host countries, from traditional to more advanced sectors, which can only be of benefit for a country's development. Foreign direct investment flows further facilitate a larger access to the global market, due to the partnership between the direct investor on the foreign market. Furthermore, new company creation through foreign direct investments increases the job creation process.

Although there is a relationship between foreign direct investments and and economic growth cannot be doubted, the complexity of the adjacent interactions raises a series of essential questions: Do foreign direct investments play a catalyst role or not? Can there be some "malign" effects of the foreign direct investments? By which factors is the foreign direct investments' contribution at a sustained growth process conditioned?

Regarding the foreign direct investments' role as a catalyst, this is not unanimously accepted, as there are some approaches that state that foreign direct investments do not significantly induce economic growth in the host countries.[1] The "malign" model for foreign direct investments is substantiated on the imperfect national and international markets' interaction. More precisely, foreign investors from international imperfect industrial markets, which benefit from a preferential access to the local capital and money markets, can obtain both benefits and capitals in such a way that the effect on savings and investments is at least unexpected: the gap is not surpassed but, on the contrary is amplified. The "malign" model of foreign direct investment flows also implies the bankruptcy of local producers, the extension of transnational companies' power on the local market and, repatriated profits. The impact on income distribution and social development is neither beneficial. Intensive technology brought by foreign investors, favours the "elite" of the work force, while the other workers are excluded, moreover if the labour market is rigid. On the other hand, the tight control of technological transfers, managerial competencies and exports, hinders the accomplishment of positive externalities in the host countries.[2]

[1] S. Edwards, "Capital mobility and economic performance: are emerging economies different", *NBER Working Paper*, no. 8076, 2001

[2] P. Nunenkamp, J. Spatz, "Foreign Direct Investment and Economic Growth in Developing Countries", *Kiel Working Paper*, no. 1176, 2003

Given all these aspects, the only factors that could transform foreign direct investments in a source of economic growth, relate to the host country's characteristics, the most important feature being the adequate development of the economic sector. The host country's specific features, that consolidate the relationship foreign direct investments-economic growth, are usually grouped, under the expression "power of absorption".[3] First, as the economies have more human capital and a sufficiently high GDP per capita, they also have ability to obtain benefits from the technological transfer initiated by the foreign branches to the national companies. Second, if the host economies become more open to the international trade, then the imports of intermediary goods are less restricted. Third, the institutional development level (the legal framework, the size of corruption, public management quality, protection of the property right) is a condition for the technology and know-how transfer to the subsidiaries. Last, the underdevelopment of the financial markets hinder host countries from taking advantage of all the advantages brought by the foreign direct investment flows.

In order to take advantage of the positive externalities, the national countries need resources in order to finance the reorganization of the internal structure, equipment acquisition, management development, and hiring qualified personnel. The absence of funds or their high costs hinders the development of the national firms, thus they become unable to face the international competition and to beneficiate from the foreign presence in their country.

Another aspect that must be considered related to the foreign direct investments-economic growth relationship, regards the nature of the flows. The different forms of the foreign direct investment flows, in the initial phase or at maturity, can have an asymmetric impact on the economic growth because of their nature and fundamental characteristics.[4]

On an exact example, if we were to compare the "Greenfield" investments with mergers and acquisitions, their diverse character can be emphasized starting from the fact that "Greenfield" investments involve the creation of new units, allowing for capital accumulation, while mergers and acquisitions, that imply the acquisition or takeover of existent firms, do not always allow for such an accumulation, but only in the case in which it is stipulated in the contract, or the sums allocated are spend in this direction. On the other hand, while acquisitions imply the closing of certain production lines or activities, or layoffs, "Greenfield" investments have an incontestable effect on the economy, because they create new production lines, new job opportunities, new consumers and new tax subjects. In what concerns the level of efficiency, the "Greenfield" foreign direct investments are much better ranked than acquisitions and mergers. Taking all these aspects

[3] M. Carkovic, L. Ross, "Does Foreign Direct Investment Accelerate Economic Growth?", *Financial globalization: a blessing or a curse?*, World Bank Conference, 2002

[4] M. Wang, W. Sunny, "What Drives Economic Growth? The Case of Cross-Border M&A and Greenfield FDI Activities", *NBER Working Paper*, no.10231, 2005

into account, it could be recommended that, in order for the foreign direct investments to improve economic performances, the volume of the "Greenfield" investments surpasses the acquisition of the state owned control packs.[5]

Regarding the level of maturity of the investments, the ones that have reached maturity prove to be less volatile and capable to improve economic performances. As the foreign investment approaches the maturity phase in its life cycle, the less volatile it becomes and, there is a guaranteed long-term effect on economic growth. Vice versa, the more close that the foreign investor is to the initial, opportunity exploring, phase, the more volatile it becomes and the economic growth is no longer guaranteed. So, the long term effect on foreign direct investments on economic performances of the host country depends on the volatility of the capital flows and, even more in the case of a weak financial sector and in the absence of connections of the foreign investor with the host country's economy.

Investors' motivations and the specifics of the sector in which they invest can induce asymmetric effects on economic growth.[6] For example, "efficiency-seeking" foreign direct investments have a strong impact on economic growth because the technology and the know-how brought by investors can be internalized without any difficulties in the host country due to the reduced complexity. The investment itself creates important externalities on the local market, allowing for many export activities. Another category of investments, the "market-seeking" investments, are less favourable to development, despite their contribution to the level of production and spending. In fact, market oriented investments have the risk of eliminating the domestic competitors and of repatriation of huge profits, in the absence of exports.

The contribution of foreign direct investments to economic growth is also conditioned by the existence of a relationship between investment flows and technological gaps. In this direction one must distinguish between foreign direct investment flows that respond to technological gaps and the ones that either integrate in the company's global strategy, or respond to market attractiveness, or seek to compensate the disadvantage derived from commercial restrictions and the favouritism for national producers.[7] Given these categories of flows, if for the first one it is expected to have a significant impact on economic growth, the others are less probable to have more than the average profitability.

5 G. Hunya, *FDI in South-Eastern Europe in the early 2000s,* WIIW, 2002

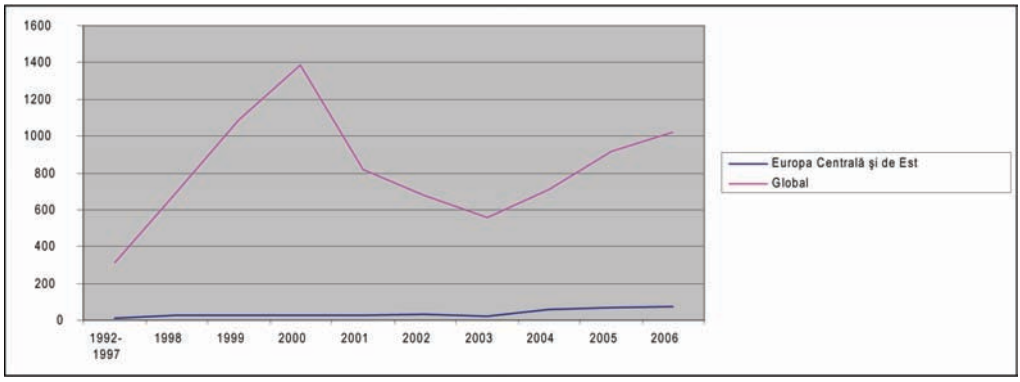
6 P. Nunenkamp, J. Spatz, "Foreign Direct Investment and Economic Growth in Developing Countries", *Kiel Working Paper*, no. 1176, 2003

7 M. Carkovic, L. Ross, "Does Foreign Direct Investment Accelerate Economic Growth?", *Financial globalization: a blessing or a curse?*, World Bank Conference, 2002

2. Foreign direct investment dynamics in Central and Eastern European countries

In the second half of the 90s, foreign direct investment flows have started becoming important capital flows for more and more countries in Eastern and Central Europe, allowing them to integrate in the world economy step by step. If, before 1990, foreign direct investments in these countries exceeded $1billion, in 1995 they reached a level of $14 billion and almost $70 billion in 2006 (WID, 2007). The percentage of the Central and Eastern European countries in the global foreign direct investment flows, increases from less than 1% before 1990 to 4% in 1995, which then decreased to 1.9% in 2000 and increased again starting 2001 (8.3% in 2006). The fluctuation can be explained through the growth of foreign direct investments between developed countries, until 2000, and their decline in 2001, in contrast with a relatively constant increase in the region. In Eastern and Central Europe, the average growth rate of the foreign direct investments, between 1986-2005, has exceeded 40% in most of the countries, like Bulgaria, Hungary, Romania and Slovenia (Figure 2-1).

Figure 2-1: *Evolution of foreign direct investment flows at a global level and in Central and Eastern European Countries, 1992-2006 ($ billion)*



Source: UNCTAD, *World Investment Report*, 2000-2007

Although the expansion of foreign direct investments in Central and Eastern Europe, starting from the end of the 90s, is obvious, its weight in the global flows, continues to remain little significant, and there are several explanations for the low performances in attracting new investment flows in the initial stages of the transition. First, the delays in the accumulation of significant foreign direct investments is explained through the dependency on the structures inher-

ited from the socialist system[8], to which we can add the governmental actions oriented to the protection of domestic producers, in the wish to avoid the situations in which foreign investors put away the domestic companies or slow down their development.[9] Second, economic policies, not adapted to the new framework (frequent legislative changes, the lack of coherent economic strategies, economic and political instability), found in host countries, have driven away foreign investors. Not last, the extreme situations, such as disintegration, war and ethnic conflicts, found in the case of former Yugoslavia, have had adverse and strong effects in what concerns the efficient resource allocation, wealth destroying, transformation and adaptation of institutions to a war economy, being obvious negative signals for investors[10].

At a more detailed look at the country level evolutions, Hungary proved to be the proffered destination for the investors during the first half of the 90s, surpassing by far the other countries in the region. Even if Hungary did not enjoy the size advantage, it attracted more important foreign direct investment flows than the large markets, like Poland and Russia, due to a favourable policy regarding the degree of openness to the foreign investors. Estonia has seen similar evolutions, in terms of flows per capita, while The Czech Republic has had even better results, the positive evolution being explained by the size advantage, foreign investments oriented privatisation and, a more attractive policy regarding foreign direct investments. The West Balkans was less attractive, due to political insecurity, market fragmentation and, hesitating reforms. The most important amount of foreign direct investments, until 1998, was attracted by Slovenia, while Romania and Bulgaria were less favoured, but in the following years the hierarchy tending to shift (Figure 2-2).

From year 2000, i.e. between 2000 and 2001, the countries that have attracted the most important foreign direct investment flows, about 2/3 from the region's flows, were the Czech Republic, Poland and Russia. In terms of flows per capita, the Czech Republic, Estonia, Slovakia and Croatia, were first (WID, 2003). At the end of 2002, 64% from the foreign direct investment flows have been oriented to Central Europe and Baltic Countries, from which 3/4 in the Czech Republic, Hungary and Poland. The countries in eastern Europe proved to be less attrac-

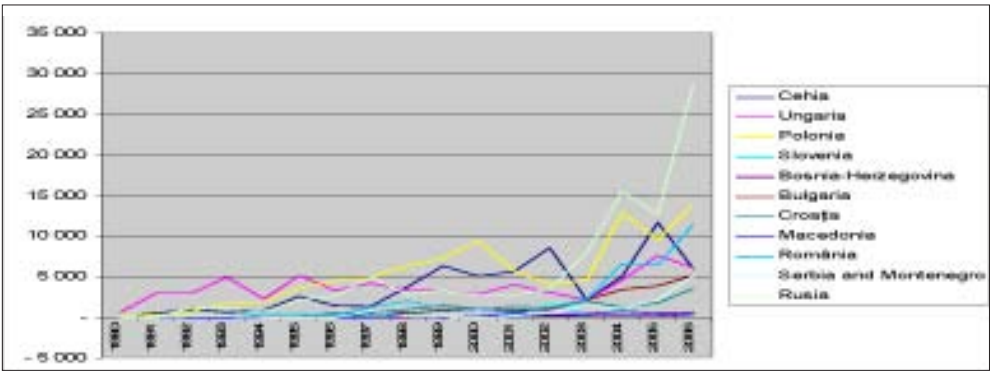
8 Because of the rigidity of the systems that characterized a centralized economy, the shock associated to structural changes was huge and difficult to internalize (countries like Romania, Bulgaria and Albania have confronted with significant problems , in the case of former Yugoslavia, the structural defficiencies were fewer, while the reestablishment of relations with Western Europe was more easy for Croatia and Hungary).

9 K. Ekholm, "Foreign Direct Investment and EU-CEE Integration", Danish and International Economic Policy Conference, Institute of Economics, Copenhagen, 2002

10 The desintegration of teh former Yugoslavia, has meant a forced divisioning of the potential market in the eyes of the foreign investors. Generaly, in small host countries, the dimension of the market is not perceived in a positive way by the foreign investors.

tive (9% from the foreign direct investments in the region, from which 74% were orientated to Bulgaria and Romania).[11]

Figure 2-2: *Foreign direct investment flows in the main countries in Central and Eastern Europe, 1990-2006 ($ billion)*



Source: UNCTAD, *World Investment Report*, 2000-2007

The unfavourable evolutions of the world economy and the recoil of the foreign direct investments between 2001 and 200312 did not gave an significant impact on the Central and eastern European countries, but, due to the stagnation of the developed economies and the loss in market value of several transnational companies, the investment plans for 2002 have declined. So, at the beginning of 2002, foreign direct investments in Central Europe have dropped to ½ from the previous year level, due to the delay of export orientated, Greenfield and acquisition investment projects, but not due to the decline related to privatisations (Hunya, 2006). The declining trend was even more visible in 2003, when foreign direct investments in the region dropped heavily from $31 billion to $21 billion. The collapse of foreign flows has occurred especially because of the Czech Republic and Slovakia. At a broader look, the inflows have risen in ten countries and have decreased in nine (WID, 2004).

Starting with 2004, the global situation has started to straighten out, mainly because of the increase in international mergers and acquisitions, acceleration of economic growth, increase in companies' profits, appreciation of stock value, recovering of capital participation and intergroup loans and, a due to a continuous liberalization of applicable regimes for foreign direct investments. As a matter of fact, the year 2004 represented a peak for South-East Europe. The rapid economic growth, the privatization efforts, as well the progress toward European Union inte-

[11] BERD: "Integration through flows of capital and labour", Transition Report, 2003

[12] The limited performances regarding foreign direct investments was caused especially the uncertainty on the economic perspectives and future orietations of the monetary policy, as well as by the international instability, both in terms of politics and security.

gration have determined, between 2005 and 2006, an important increase of foreign direct investments in the region, especially in the European part of CSI (with 31%) and in new member countries of the EU (with 20%) (WIR, 2007). We can observe a certain gap between Central and eastern European countries that have joined the European Union in the first wave, which were preferred by investors during the whole transition period and, the countries in Southern Europe and European CSI.

3. The role of foreign direct investments in the development of the Central and Eastern European countries

As shown before, between foreign direct investments and economic growth there is a positive interdependence, as they influence each other, without being simultaneous. Given the evolution of this correlation it can be observed that the growth trend of the foreign direct investments, more prominent in the 90s, was accompanied by economic growth.

More precise, between 1994 and 1997, the interdependence between foreign investment flows and economic growth was more obvious in 1998, highlighting a breaking point, as the investment surplus did no longer lead to the acceleration of growth, but, on the contrary to its relaxation. In the region, economic growth was re-established in 1999, as the investments starting growing, reaching a maximum in 2000. The year 2001 brought about a diminishing in foreign direct investment flows, accompanied by a slowdown of economic growth. Still, starting g 2002, we can observe certain stability in this correlation (a slight change in 2006), which defines more clearly this trend (Table 3- 1).

Table 3-1: *The evolution of foreign direct investments and economic growth in Central and Eastern European countries, 1994-2006*

Year	FDI flows ($ mil.)	Real GNP growth rate	Year	FDI flows ($ mil.)	Real GNP growth rate
1994	6,240	-8.02	**2001**	26,723.95	3.80
1995	14,721	-0.97	**2002**	31,145.84	4.65
1996	13,650	-0.60	**2003**	29,089.73	6.52
1997	18,285	2.33	**2004**	40,938.68	7.24
1998	22,284	-1.16	**2005**	55,657.45	7.40
1999	25,071	3.89	**2006**	53,532.76	6.79
2000	25,953	7.45			

Source: UNCTAD, *World Investment Report*, 2007

If we analyse this correlation for a more reduced group of countries (e.g. Romania, Bulgaria, Hungary and Slovenia)13 there can be observed a series of evolutions and contrasting interactions (table 3-2).

Table 3-2: *Foreign direct investment and economic growth in Romania, Hungary, Bulgaria and Slovenia, 1994-2005*

Year	Romania		Bulgaria		Hungary		Slovenia	
	FDI flow	Real GDP growth rate	FDI flow	Real GDP growth rate	FDI flow	Real GDP growth rate	FDI flow	Real GDP growth rate
1994	342	4.57	105	2.86	1,143	2.96	129	4.95
1995	420	7.77	90	3.85	4,518	1.55	177	3.83
1996	264	4.52	108	-8.61	2,274	1.45	195	3.48
1997	1.215	-5.55	504	-4.84	2,166	4.75	375	4.70
1998	2.031	-4.33	537	4.73	2,037	5.09	249	3.57
1999	1.041	-0.67	807	2.99	1,977	4.39	180	5.58
2000	1.026	2.61	999	6.10	1,692	5.45	177	3.91
2001	1.157	6.18	813	4.78	3,936	4.10	370	2.67
2002	1.144	5.51	905	5.60	2,994	3.75	1.686	3.31
2003	2.213	5.33	2,097	4.99	2,162	3.20	337	2.51
2004	5.174	8.66	2,488	6.24	4,167	4.49	516	4.57
2005	6.483	9.77	3,862	6.5	7,619	4.5	496	4.65
2006	11.394	11.5	5,172	5.2	6,098	3.72	423	4.23

Source: UNCTAD, *World Investment Report*, 2007; UNCTAD, *National Accounts Main Aggregates Database*, Statistics Division

In Romania, the foreign direct investment flows appear to be very encouraging because of their contribution to economic growth in the last years, although in the transition period there have been some negative growth rates. A similar

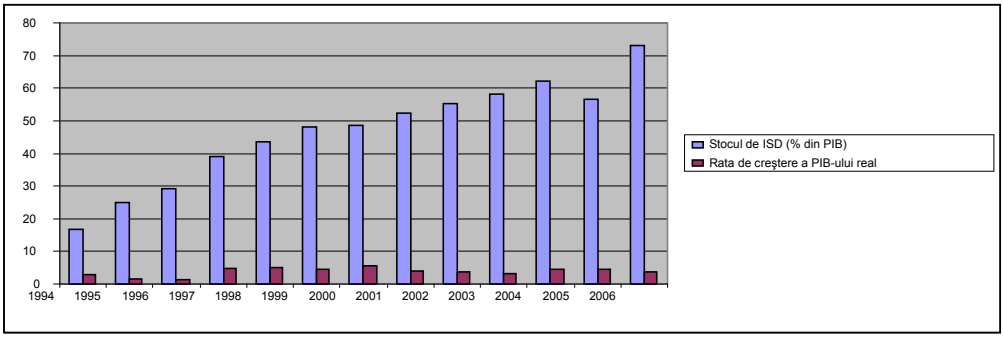
[13] The choice for this sample is justified by the fact that the four countries have a similar past, having experienced a centralized economy, however at different levels, with different natural resources and different policies during transition. Moreover, we can distinguish between two pairs of countries: Hungary and Slovenia, on one hand and, Romania and Bulgaria, on the other hand, due to their belonging to the first and second wave of integration in the European Union. An interesting point to observe is given by the similarities and differences in performances and policies carried out in relation with the foreign direct investments.

evolution can be observed in Bulgaria as well, while Hungary and Slovenia have a constant evolution, without extreme cases. Slovenia, with average growth rates, was not a favourite destination for investors during the whole transition period, as well as in the last years.

Regarding the relationship foreign direct investment funds – economic growth, if in the case of Romania and Bulgaria a certain interaction is obvious, in Hungary, this correlation is less clear, while Slovenia appears to confirm the "malign model" of foreign direct investments.

The evolution of Hungary, regarding this correlation, can be explained by the fact that the foreign direct investments that have successively been accumulated until 1996, have been accompanied by market decreasing pace while, between 1997 and 2001, the extraordinary growth to be sustained by the foreign direct investment accumulations until 1996. In other words, the effects of economic progress were not felt immediately, but with a few years lag, when the respective investments reached maturity. The fact that the plus brought to the foreign direct investments, after 2002, tends to be accompanied by a new relaxation of growth, suggests a cyclical evolution. It is important to notice the fact that, in the case of Hungary, it cannot be identified a linear evolution, in which the accumulation of foreign direct investments immediately reflects an acceleration of economic growth (Figure 3-1).

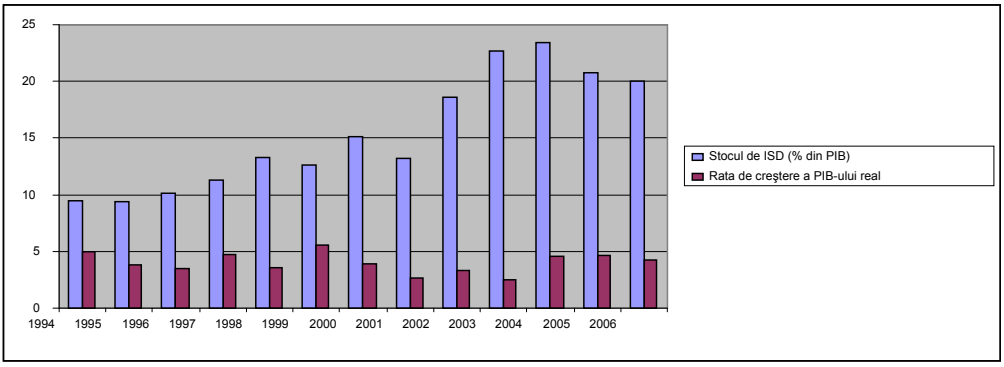
Figure 3-1: *Foreign direct investments and economic growth in Hungary, 1994-2006*



Source: UNCTAD, *World Investment Report*, 2007

In what concerns the evolution of Slovenia, for the promoters sustaining the economic growth through foreign direct investments, it appears at least surprising. The periods in which growth and the reduction of foreign direct investment accumulation are accompanied by economic progress, or regress, were very short (1997, 2001, and 2002). Most frequently, we can observe an inverse interaction that appears to confirm the malign model of foreign direct investments (Figure 3-2).

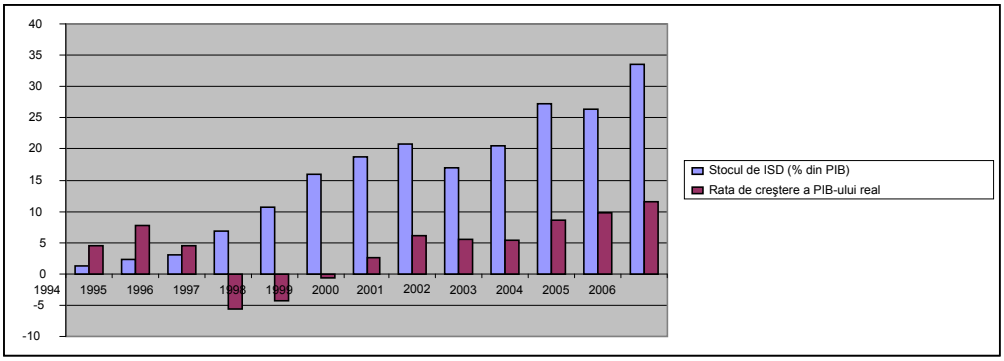
Figure 3-2: *Foreign direct investments and economic growth in Slovenia, 1994-2006*



Source: UNCTAD, *World Investment Report*, 2007; UNCTAD, *National Accounts Main Aggregates Database*, Statistics Division

In the case of Romania, unlike the first years (1994-1996), when foreign direct investment accumulations were little significant and less correlated with economic progress, starting 1997, a stronger correlation between the two emerged. The foreign direct investment accumulations have contributed, step by step, to the shift from negative to positive growth rates, with important leaps between 1998 and 2001. Even if 2002 has seen a decrease in this sense, the correlation foreign direct investments-economic growth, remained in the following years, close to the previously defined trend. In the future we could expect an acceleration of economic growth of 0.11% at a 1% growth of foreign direct investments (Figure 3-3).

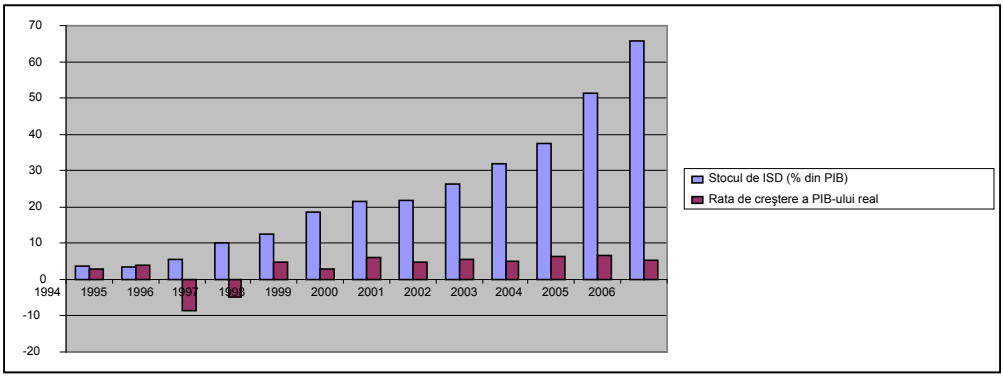
Figure 3-3: *Foreign direct investments and economic growth in Romania, 1994-2006*



Source: UNCTAD, *World Investment Report*, 2007; UNCTAD, *National Accounts Main Aggregates Database*, Statistics Division

Given the negative growth rates until 1997 for Bulgaria, in only 2 years time period it reached a positive 5% growth rate, strongly sustained by the foreign direct investment accumulations, which, in this period have increased from 4% to10% in GDP. The following evolutions, with small variations (2001) have followed the same growth trend, a 1% growth in foreign direct investments leading to a 0.38% increase in economic growth (Figure 3-4).

Figure 3-4: *Foreign direct investments and economic growth in Bulgaria, 1994-2006*



Source: UNCTAD, *World Investment Report*, 2007; UNCTAD, *National Accounts Main Aggregates Database*, Statistics Division

An explanation of the different evolutions is also related to the process of joining the European Union, Hungary and Slovenia belonging to the first wave of integration. One of the principles that lie at the basis of the European unification was that according to which the access to a large market will imply firm efficiency, in the sense of lower prices, competitiveness and quality increase on the foreign markets. Starting from this idea, the extension of the European Union to the Central and Eastern European Countries has created an adequate economic framework for newly integrated countries to interact with the old members of the union, especially through foreign direct investments, the specific competition, created through the market game and that has, at the basis, technical progress, innovation and research that create new products, new companies and industries, hence acting in the direction of increased competition.

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THE QUALITY FILTERS IN THE INFORMATIONAL SYSTEM OF THE COMPANY

Abstract: *No matter how modern is the information processing system, the quality of outputs depend both on the inputs' quality as well as on the quality of the human resource involved in the process. Respecting the professional codes by those that process and deliver information is a warranty regarding the ethics, the quality of information as public goods that go outside the company. Fiscal information, budgetary information, bank information or financial situation of the company information, these must be offered along with the insurance that they have a very high quality and are not going to decisively affect the decisions based on them.*

Key words: *information, transparence, public good, Romania*
JEL classification: L15, H41

1. Information – input value of the transformation system

Information is a good that is produced, sold and bought for multiple purposes.

The most used information is the financial information (in the most general perception) and the fiscal information (as specialized information).

The financial information can be found in different places. It can be found as private goods that are used in a closed circuit or as public goods, of public interest, opened to all of those interested, namely to the public interest.

As input of the processing system, but also as output of the processing system, information must fulfill certain quality requests.

The qualitative properties are attributes that give the usefulness of the information, given by the supplier to the user.

In the large world of finance, useful information must be *relevant, credible, fit for comparison, intelligible*.

Also, a piece of information given to the users can be real, exact, reflecting reality or not.

Any system must create its own protection subsystem that can manage the possible risks that would alter the quality of the information that is offered as the system's output, as any operational or registry activity can be altered, modified as well as any input value (information that is processed for a certain purpose) can be made-up, unreal, incomplete, inexact.

No matter how modern is the information processing system, the quality of the outputs depends both on the inputs' quality as well as on the quality of the human resource involved in the process.

2. Quality filters

The information users' protection is a major objective of the informational flow: producer ---> processor ---> user.

The qualitative analyze of the inputs can be realized by the company's own control system, made up of the internal control and internal audit, that through specific instruments and processes plays the role of the feed-back connection regarding the quality of information.

If the internal control department is under the management control (management that is interested sometimes in the information asymmetry), the internal audit is a department, that is under the Owners' Council and the internal auditors are independent persons that base their activity on the Ethics Code of the profession. And as the information does not remain inside the company, but it is transmitted into the environment, sometimes there is another quality filter, namely the external auditors that validate or not the qualitative properties of the financial information.

Sometimes, the filters that ensure the quality of information become information issuers, especially when we deal with fraud, money laundry or terrorism acts' financing.

In such cases, confidentiality as behavioral property of the auditors, does not apply and the disclosure of the incriminated information becomes obligatory.

3. Confidentiality and information production

Those that have access or work with information that belongs to a company or to a person are obliged to keep the secret of the processed information.

The disclosure of information outside the confidentiality area of that subject is done according and under the protection of the specific legal stipulations.

The competent fiscal authorities, the auditors and experts have the professional behavior codes and they should act according to these codes, as competent and responsible professionals.

Respecting the professional codes by those that process and deliver information is a warranty regarding the ethics, the quality of information as public goods that go outside the company. No matter if we talk about fiscal information, budgetary information, bank information or financial situation of the company information, these must be offered along with the insurance that they have a very high quality and are not going to decisively affect the decisions based on them.

Many of the events that took place in the finance world were generated by protected information or better said by made-up information.

The information's protection and confidentiality of those that have access to them are incompatible with the information leaking. Those that disclose information that were confidential are punished not only according to the codes and norms of the profession but also by specific laws in this field.

4. Transparence and responsibility of the information

The corporative governance cannot exist without the transparence of information and without the assumed responsibility of the published information's quality.

The accounting laws set the obligation of publishing the financial statements, the managers' report and the audit or censors' report (according to the case).

The purpose of publishing these situations is to allow the interested third parties to know about the financial position, the financial performances, the capital changes, the treasury flows, the accounting policies and the explanatory notes.

As one can notice, there are many information supports that are being published for the interested persons.

The responsibility of the information quality and their fidelity is first of all of the management. Through the management report that is published along with the annual financial statements, the management confirms that:

a) The accounting policies that were used when drawing up the annual financial statements are according to the accounting stipulations that apply;
b) The annual financial statements offer a precise image of the financial position, performance and other information that refer to the developed activity;
c) The company will continue its activity (we have cited the Accounting Law republished in 2005, art. 29).

Another level of assuming responsibility regarding the information credibility is that of the censors or of the internal audit. By issuing an opinion, they

give the users a complete but not absolute insurance that the annual financial statements offer a correct image and do not include significant faults.

When, during his mission, the censor faces certain situation that could affect his opinion, instead of a positive opinion he'll have a reserved or unfavorable opinion (when he disagrees with the management).

The notes and comments are meant to help the information users decide (The report norm, the censor's report, in the no. 23 Professional Standard The censor's activity in the company, CECCAR Publishing House, Bucharest, 2006, page 115 and the following ones).

Another level of responsibility is that of the financial auditors.

Some companies belong to the group of companies that must have their financial statements audited.

The final stage of the audit mission is the audit report in which the auditors express their opinion regarding the reasonable insurance that the financial statements do not include significant errors and they offer a faithful image in respect to a referential.

The financial auditor, even if we talk about an external auditor, must be in direct touch with the management of the company during his entire mission.

The audit standards and norms lead to the public interest financial information quality filtering.

After the big scandals concerning the altered information offered by big companies, the auditors' responsibility has increased. Auditors are asked to promote skepticism and prudence in their audit missions as well as to always apply the international audit standards requirements (mainly 240 Fraud and error, 250 knowing the entity and its environment and evaluating the significant distortion risks, 570. The activity continuity principle). We were mentioning earlier that the confidentiality principle is not opposable to the information disclosure (transparence). The Financial Auditors Chamber of Romania, through no. 91 Decision from 26 June 2007, regarding the applying of the specific legislation regarding the fight and prevention of money laundry and/or financing terrorism acts by the financial auditors, sets measures (professional rules) that allow them to identify or prove a suspicious state regarding the existence of such acts, as they are defined by no. 656 Law from 2002, regarding the prevention and punishment of money laundry as well as setting measures of preventing and fighting against the financing of terrorism acts.

Still, the stipulations of the Chamber's Council shall not exceed the adopted Audit standards, taking into account the limitations of an audit and the respecting of the Ethics Code that apply to the financial auditors.

Article 4, of no. 91 Decision from 26 June 2007 (No.525 Official Monitor from the 2nd of August 2007) stipulates:

"If, by applying the audit procedures that are meant to fulfill the audit mission, an auditor has collected enough and adequate evidence, regarding

the possible case that through the company that he is auditing are taking place money laundry or terrorism financing operations, he will bring this fact to the attention of the authorized organisms, according to no. 656 Law of 2002 with all the changes and added stipulations, without being considered that this is a breaking of the Ethics Code that apply to the financial auditors, namely the confidentiality. Also, the auditor shall inform in 5 working days time the Financial Auditors Chamber of Romania about the fact that he has identified and brought to the attention of the authorized organisms such a situation, also mentioning the date of the notification".

It is a measure of protecting the public interest and of increasing the trust in the information published by the audited entities.

5. Conclusions

Without information and informing, one cannot evaluate and take different decisions.

Information as a good can be or not of the necessary quality, can be or not exact and real.

The need to protect the users from taking decisions based on false, inexact or modified information is more and more important.

The competitive environment, the sources and factors of performance, the world restructuring are factors that influence the transparence degree of the information as well as the possibility to maneuver them.

The quality filters that ensure the quality of the published information are a necessity that ensures the information users about the fact that the image presented is a true and fair image of the presented processes and results, without any favors and privileges regarding the access, quantity and moment of the informing.

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DYNAMIC GAMES WITH INCOMPLETE INFORMATION IN THE OLIGOPOLY

Abstract: *In order to fully understand the relevance of game theory to oligopoly, first of all we need to define the basic notions on which the present work is central: oligopoly and game theory.*

The objective of the present article is to analyze the model of oligopoly with the dynamic games. The game theory proposes solutions for interactions resultant between rational individuals using numerous mathematical models with a possible practice in the economic field. Having as starting point these aspects, in the following lines the work makes distinction between dynamic and static games. The final conclusion talks about the choice of the oligopoly optimal strategies. Based on the performed research, we can conclude that the problem of dynamic game with incomplete information is a very complex process, the need for a detailed analysis being absolutely necessary.

Key words: *game theory, incomplete information, dynamic games, oligopoly*
JEL classification: C73, L13

1. Games theory and economic theory

Game theory analyses the interaction between rational, decision-making individuals who may not be able to predict fully the outcomes of they decisions but they mutually interdependent.

Intuitively, we always think of oligopoly as competition a few. To be more precise, if a firm believes that its own profit is affected significantly by the actions of the other firms, then we can talk about the market situation of oligopoly. The oligopoly is the situation where a few firms dominate a particular market which has the characteristic that competing firms are interdependent.

The introduction of asymmetric and incomplete information in economic models stimulated new approaches in microeconomic, macroeconomic and public economic analyses. The neoclassical point of view, in which all that is need for functioning markets and the achievement of social welfare is the presence of a

price system, a government that supplies public goods and makes contracts enforceable, is now considered unsustainable. In the neoclassical theory of consumer and firm behavior, consumers have perfect information about important features of them commodities they buy, such as their quality and durability. Firms have perfect information about the productivity of the inputs they demand. A situation in which different agents possess different information is said to be one of asymmetric information. As we shall see, the strategic opportunities that arise in the presence of asymmetric information typically lead to inefficient market outcomes, a form of market failure Is important the effect of asymmetric information on the efficiency properties of market outcomes. Many real-life situations involve substantial doses of incomplete information about the opponents' payoffs.

Games theory is the systematic study of how rational agents behave in strategic situations, or in game, where each agent must first know the decision of the other before knowing which decision is best for her. The solution concepts include Nash equilibrium and strategic decision-making. For example the Bertrand models of duopoly capture strategic decision-making on the part of the two firms. Each firm understands well its optical action depends on the action taken by other firm.

In general, when it is possible to make someone better off and no one worse off, we say that a Pareto improvement can be made. If there is no way at all to make a Pareto improvement then we say that situation Pareto efficient. That is, a situation a Pareto efficient if there is no way to make someone better off without making someone else worse off.

The idea of Pareto efficiency is pervasive in economics and it is often used as one means to evaluate the performance of an economic system. The basic idea is that if an economic system is to be considered as functioning well, and then given the distribution resources it determines, it should not be possible to redistribute them in a way that results in a Pareto improvement. Which, if any, of the three types of market competition- perfect competition, monopoly or oligopoly- function well in the sense that they yield Pareto-efficient outcome?

Note that difference between the three forms of competition is simply the prices and quantities they determine. For example, were a perfectly competitive industry taken over by a monopolist, the price would rise from the perfectly competitive equilibrium price to the monopolist's profit-maximizing price ant the quantity of the good produced and consumed would fall.

Our conclusion is that the only price-quantity pair yielding a Pareto-efficient outcome it's the perfectly competitive one. In particular, neither the monopoly outcome nor the oligopoly outcome is Pareto efficient.

Note well that we cannot conclude from this analysis that forcing a monopoly to behave differently than it would choose to must necessarily result in a Pareto improvement. It may well lower the price and increase the quantity supplied, but

unless the consumers who are made better off by this change compensate the monopolist who is made worse off, this move will not be Pareto improving.

In the games theory the information is incomplete when some players don't know the earnings associated with distinctive strategic combinations. Incomplete information creates strategic problems when some players possess some private information, which is inaccessible to other players. Therefore, the games theory studies this sort of situation in which the information is not only incomplete, but also asymmetric.

For example, considering the static games with incomplete information, there is at least one participant, which is not sure about the earnings function related to the other participants. At the same time, this game type proves that there can be private information at the „i" player level. This kind of information can refer to his earning and/or the earnings of the other playing participants.

The patterning of different market structures can be realized with the help of sequential games in which the decision of one player can stress upon a particular sort of information and, thus, can modify the decisions of the other players who perform choices subsequent to the player's one. The Bayesian equilibrium can specify the rationality meaning of different behaviors within strategic situations with incomplete information.

The dynamic games with incomplete information in steps partially resemble the dynamic games with complete, but imperfect information characterized by players performing simultaneously, in different steps, but considering, for example, a game with two economic actors, one player has private information while the opponent doesn't have access to it.

Dynamic games with incomplete information have numerous economic applications. For example, we can consider the oligopoly game type with a „leader firm", in which only this firm possesses private information, while the „satellite firm" will always notice the decisions of the leader firm on the market.

Studying the market car "lemons"(the market in which the seller has private information about the quality of goods supplied, while the buyer has not) Akerlof (1970) demonstrated that, in such a situation, the buyers have to make an expectation on the quality of the car and that, in equilibrium, only bad quality cars are sold. Rothschild and Stiglitz (1976) applied this approach to insurance markets and the key common conclusion of these studies is that, under certain assumptions, a bad allocation of information could lead markets to failure.

We can have two different types of asymmetric information between two economic agents. The first is the so called "hidden action" situation. One person, called the "principal" cannot control all the actions that another person, called "agent" has to make to achieve the goals contracted with the principal. The utility of the principal depends on the results achieved by the agent, who has, however, an informative advantage, in the sense that his actions are not fully controllable by the principal.

This situation is described in economic literature as the "moral hazard" problem. In equilibrium to make sure that the agent will act as the principal wants, the latter must offer incentive to the agent, with a loss of social surplus due to the incentive scheme necessary to neutralize information asymmetry.

The games theory developed by John von Neumann and Oskar Morgenstern concerning situations generated by a bargaining process with its own rules, where each agent maximizes his utility function and the information set given. John Nash argued that the notion of an equilibrium point is the key ingredient in our theory. This notion yields a generalization of the concept of the solution of a two-person zero-sum game. An equilibrium point is a profile of strategies in which each agent's strategy is the best response to the strategy of the others. In this situation, the role of the information set available to various players is crucial. In equilibrium only a strategic profile incentive compatible with the information set would dominate.

2. Dynamic oligopoly games

2.1. Repeatable Oligopoly Games

In the case of oligopoly, firms have to take two factors into account: the reactions of the competition and their own actions. When it comes to oligopoly, the process of making a decision presents the characteristics of a repeatable game. If we take a look at the Cournot game, taking quantity as a variable, on a repeatable game, we can create an analogy between the repeated Cournot game and the Prisoner's Dilemma. In this case, the solution of the cartel is based on cooperation. The strategic variable should be quantity. The strategies, which can be utilized in order to determine the solution in the cartel, are the following: "don't cheat" and "cheat". In this type of two person game with identical firms which have null marginal costs, we can take into consideration the following strategy as picked by firm no. 1: in the first period it will produce Y_1 quantity, if the other firm will produce Y_2 in the first period, if the competition will produce a quantity different from Y_2 then, it produces a large enough quantity for lowering the market costs to zero. What is the optimum answer that firm 2 can give in the case of this threatening situation? If it produces Y_2 in the first period and Y_2C in the second period, it will have a gain of: $\pi_2(Y_1, Y_2) + \delta\pi_2(Y_1C, Y_2C)$. If it produces a different quantity than Y_2 in the first period (for example, a quantity x) it will achieve a gain of $\pi_2(Y_1, x)$. This way, it will be more profitable to cooperate with firm 1 when: $\pi_2(Y_1, Y_2) + \delta\pi_1(Y_1C, Y_2C) > max\pi_2(Y_1, x)$. This condition will be sustained for a wide array of Y_1 and Y_2 quantities. The equilibrium of the perfect mini-game in

a game of determination of the quantities which can be played in a finite number is that of Cournot equilibrium for the game played in repeated rounds.

If you take π_i^C as the profit of a firm named "i" in the Cournot equilibrium state of a certain period and π_i^* as the profit of the cartel solution from the period, then we will take the next strategy used by firm no 1: it will produce the quantity of cartel whilst firm 2 respects the permission of the cartel; in an opposite scenario, the situation will go back permanently at the Cournot type production. If firm 1 can anticipate the fact that firm 2 will produce its quantity of Cournot type in the course of one particular period, the optimum answer is the following: it has to produce the Cournot quantity in an equal manner. As a result, the Cournot quantity will eventually become that of equilibrium of a repeated game.

2.2. Oligopoly market and dynamic games

Because, in most cases, competition will be a part of a dynamic situation, firms will have to elaborate their strategies based on the experience, which they obtained during past situations. Because of this, the dynamic aspect of competition links will basically state the fact that firms won't stop at choosing prices at the same time, without any communication between them. As a result, they will be tempted to create agreements, most of them being illegal, or they will start a price war.

In general, models are formulated as games of "n" people with a null sum in a normalized form. In order to define an equilibrium point, you can start by taking a game of "n" players, which forms a mass. "N" will be each player who has a finite mass of pure strategies. A function called H_i can be associated to player "i", in the situation in which ξ_i is a mixed strategy of player "i". For the payment function H_i we will define all valuable strategies as: $H_i(\xi_1, \xi_2, ... \xi_n)$. If we will name ξ_i a mixed strategy of the "i" ranked player, we will be able to write "n" payment functions for each player, resulting that $H_i(\xi_i, \xi_2, ..., \xi_n)$[1] will be the sum received by the "i" ranked player according to the strategies taken by all players. If we will name S the mass of "n" strategies $(\xi_1, \xi_2, ... \xi_n)$ and with S(;η;) the mass of "n" dimensions $(\xi_1, \xi_2, ... , \xi_{i-1}, \eta_i, \xi_i ... \xi_n)$ where γ_I represents a strategy of player "i" defined by ξ_i then, a mass S of "n" dimensions will represent a point of equilibrium if for every "I": $H_i(S) \geq \max H_i(S; \eta)$, for $(\forall)\ \eta_i$.

A point of equilibrium is a mass of "n" dimensions if the strategy adopted by each player maximizes the gain and the strategies used by other players remain the same. Each player is assumed to know the rules of the game and the payment functions; we will say that sometimes the information is complete. An economical interpretation of the complete information can be given starting from the "n" firms which have control over their own production and which act on a certain market. It is assumed that each firm knows the interval of possible production

and the costs of the other firms. On the other hand, each firm can calculate not just the profit, which it could obtain as a result of an action on the market, but the profit of other firms too. Using these confidence strategies will result in obtaining cooperative equilibrium. If in the static model of Bertrand the "n" firms present on the market have null profits in an equilibrium situation, then constant repetition of the game will highlight the existence of a positive discount factor named $\delta \leq 1$, which signifies that 1 euro will be gained will become δ euro by repeating the game in the future. This way, firms can make agreements for setting a monopoly price higher than the unitary cost "c" after the maximizing of the total sum of profits, namedπ, which will be divided in "2n" equal shares. Such an agreement can't become equilibrium in a static game. Individually, the firm has the interest of setting a price lower than the monopoly price for obtaining the entire demand and for gaining the entire monopoly profit.

A firm, which has an informational advantage, may want to modify its own behavior in order to manipulate its competitors. If we think about the model with two firms for which the game is repeated twice, with incomplete information, then for each of the firms there is a probability α that the other firm might adopt a cooperation strategy. When both firms are aware of rationalization, a competitor who is aware of the fact that the game will end will apply the method of reverse induction and choose to create a competitive price. In the model of Bertrand type, the Nash equilibrium is a combination of weakly dominated strategies: the players are indifferent when choosing between setting an equal and superior price with "c", others will set an equal price with "c" because the profit is null in all cases. An irrational player who sets a price P_T>c will obtain the same profit as the one who obtains a Nash equilibrium, if the competitor always sets a price equal with "c". The irrationality of the player will manifest when he will set a price lower than P_1, while a rational competitor has to exploit such a behavior, setting the price P_1 which is higher than the costs, but lower than P_T.

This type of rationalization shows us that players may have the interest of manipulating their competition making them think that they are irrational. If player 1 adopts the reputation of an irrational agent, by choosing a monopoly price, then player 2 sets a price P_2 lower than the first one. Because of this, the reputation problem can be studies in an explicit dynamic environment. We can consider a repeated game by naming the discount factor for both firms δ and by trying to determine the perfect equilibrium Bayesian that is compatible with the revised knowledge after we go over the Bayesian process. Such a game will get solved through reverse induction, taking into account the knowledge of each player. If the cooperation was sustained in the first period, players will maintain their reputation in the last period. If some of the players have veered of course, then they will have a worst reputation than the initial one. On the contrary, by choosing a cooperative strategy, the Bayesian process of revising confidence shows that the player will keep his reputation intact because he doesn't bring any

change in his cooperation behavior. If we assume that players have cooperated in the first period, then in the last period one player obtains a result α by setting an inferior price than that of the monopoly. The conclusion will be that the optimum strategy would be the one of cooperation in the last period, no matter which is the value of α. In this type of situation, we can ask the question: „Can players have the interest of collaborating in the first period?" the firm will obtain a hope of gain equal with α (π/2+δπ) when it will use the strategy „collaborate" because it knows that it won't collaborate in the next period. If it doesn't collaborate, it will obtainαπ, getting the entire monopoly profit, but its reputation will get damaged. In result, the firm needs to collaborate because δ≥1/2.

This model shows us that firms can have the interest of collaborating in the first period when their preference for the present is lowered to the right point. In such a case, we will see collaboration at the beginning of the game, which can later lead to a true war when it comes to price. Because of this, δ≥1/2 is a necessary condition if the strategy „collaborate" wants to be independent from the value of the probabilityα. The phenomenon of reputation can play an important role when it exists based on the perfect rationality of each player. This type of attribute shows us that the game theory can explain numerous behaviors assuming that players believe that other players are irrational.

In the situation in which the game is repeated for an infinite amount of times, firms can make secret or open arrangements on the following fact: „each firm will start by setting the monopoly price and continues to do so as long as the firms maintain the same price. If one firm sets a different price, the agreement is broken." We can ask the question: in what type of circumstances can this agreement be respected by both of the firms? For giving an answer, we just have to compare the gains in the case of respecting the agreement and in the case of not taking it into account. This way, if a firm decides not to respect the agreement by setting a lower price than that of monopoly, it will obtain a gain equal to π a in the current period and the profit will be null, because the agreement is broken. The final gains are equal with π. If the firm respects the agreement, they will share the profit with the "n-1" partners. The profit will be obtain in each period will be equal with π/n. The value of the gains will eventually be:

$$\sum_{i=0}^{\infty} \delta^{i} \pi / n = \frac{\pi}{n(1-\delta)} \qquad [1]$$

In other words, each firm has the interest of not cheating on their partners if , which means: $\delta \geq 1 - (1/n)$ [2]

$\pi \leq \frac{\pi}{n(1-\delta)}$ If the condition marked [2] is satisfied, than the firms can apply their agreement. The value of one discount factor equal with $1 - \left(\frac{1}{n}\right)$ is rising based on the number of firms. At the limit, if we have

an infinite number of firms, the discount factor should be equal to 1 if the agreement is possible. The duration of the period between two interactions plays an important role because, on a longer period it can determine the lowering of the discount tax (a longer period of time would be required between the two confrontations) as well as a shorter period might put the agreement out of balance. Because of this reason, repeated games will be able to explain the emergence of a price based agreement. They can be helpful if you want to predict situations when illegal agreements can appear. Because of this, we know how important it is to look at the informational asymmetry, through a high sense of realism. In the previous example, the profit of these firms will become null in the period when they don't respect the agreement. In more complex situations, when the demand is fluctuating and when the firms don't know the price of the competition, the situation is different. We can notice that firms can't close agreements in the case when the end of the game is unknown.

A firm, which has an informational advantage, can have the interest of modifying its behavior for manipulating its competition. It can have a serious consequence: the possibility of starting an agreement, even if the game is finite. If we take into consideration the Bertrand model, with two firms and we assume that the game will repeat twice, the information being incomplete, then each of the two firms will see the situation in which the other firm will adopt a collaboration strategy. In this case, the monopoly price will be set and the total profit will get split in the first period and it will continue in this manner in the second period if the competition has choose the monopoly price and a competitive price equal to the costs and if the competitor has set a price lower than the monopoly price.

3. Conclusion

The games theory can provide explanations of the knowledge-society in real economy. By applying this theory as a reference in representing economic agents' behaviors, a broad investigation field has been revealed. Economic agents should no more be concerned with studying of perfectly competitive markets functionality, but instead with analyzing the modalities in which they can coordinate decisions in static or dynamic configurations, within a competitive environment influenced by risk and uncertainty.

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SOME CONSIDERATIONS ABOUT KNOWLEDGE MANAGEMENT, A VIEW FROM KNOWLEDGE MANAGEMENT AND ARTIFICIAL INTELLIGENCE RELATIONSHIP

Abstract: *In this era of knowledge economics, the role of knowledge management is becoming increasingly important. Knowledge management is hard to define precisely and simply. In practice, knowledge management often encompasses identifying and mapping intellectual assets within the organization, generating new knowledge for competitive advantage within the organization, making vast amounts of corporate information accessible, sharing of best practices, and technology that enables all of the above — including groupware and intranets. As few studies have dealt with the relationship between knowledge management and AI, the purpose of this paper is to determine whether or not there is a significant link between these two factors.*

Key words: *Knowledge Management (KM), Artificial Intelligence (AI), Knowledge Base (KB), inference engine*

JEL classification: D83, L86

1. Introduction

In today's information society, highly innovative knowledge technology are widely accepted as key enabling technologies to support organizations in treating knowledge as a valuable asset. Organizations are aware that their survival and future success depend on their knowledge about the latest development in the field and on the solutions they realize to effectively support the management of knowledge. The role of knowledge management is becoming increasingly important.

Knowledge Management (KM) is a topic of growing interest to large organizations. Knowledge management is hard to define precisely and simply. Rebecca

O. Barclay[1] defines knowledge management as a business activity with two primary aspects:

Treating the knowledge component of business activities as an explicit concern of business reflected in strategy, policy, and practice at all levels of the organization.

Making a direct connection between an organization's intellectual assets – both explicit [recorded] and tacit [personal know-how] – and positive business results.

In practice, knowledge management often encompasses identifying and mapping intellectual assets within the organization, generating new knowledge for competitive advantage within the organization, making vast amounts of corporate information accessible, sharing of best practices, and technology that enables all of the above – including groupware and intranets.

KM comprises activities focused on the organization acquiring knowledge from many sources, including its own experience and from that of others, and on the effective application of that knowledge to fulfill the mission of the organization.

The knowledge management community has been eclectic in drawing from many sources for its methodologies and tools. Typical approaches to the management of knowledge are based on concept maps, hypermedia and object-oriented databases. Techniques developed in artificial intelligence for knowledge acquisition, representation and discovery are seen as relevant to K. M. However, there is as yet no unified underlying theory for KM, and the scale of the problem in large organizations is such that most existing AI tools cannot be applied in their current implementations.

2. Theory Fundaments

2.1. Artificial Intelligence

Artificial intelligence is increasingly becoming an important part of everyday life. It is helping people in every field make better use of information: in the cruise control of cars, the servers that route our email, and medical tools that can automatically assess electrocardiograms.

What is Artificial Intelligence? To some, the mere mention of artificial intelligence creates visions of electromechanical automatons replacing human beings. But, as anyone involved in the area of AI will tell you, there is a distinct difference between human beings and machines. Computers will never be able of simulating the distinctly human qualities of creativity, humor and emotions. However computers can drive machines that mimic human movements (pick up objects

[1] Rebecca O. Barclay, "What is knowledge management", *Knowledge Praxis*, http://www.media-access.com/whatis.html

and place them at a prescribed location) and provides the "brains" for systems that simulate the human thought process within the domain of a particular area of expertise (tax preparation, medical diagnosis and so on).

Even though significant strides have been made in the area of AI, research is still at embryonic level. Each year AI researchers come up with new discoveries and innovations that serve to redefine AI. Some say that AI is such an abstract concept that it defies definition. It seems as if each new revelation in AI raises more questions than answers. "It's a moving horizon", says Marvin Minsky, a pioneer in AI research from Massachusetts Institute of Technology.[2]

The aims of AI[3] reflect ancient dreams of using minds and hands to create beings like us. In centuries past, pursuit of these dreams gave rise to both mechanical automata and formal theories of reasoning, eventually yielding the spectacularly successful modern artificial computers that, in calculating and computing, replicate and surpass abilities that people of earlier times regarded as intellectual activities on a par with writing letters and playing good chess. Using these computers over the past four decades, modern AI has built on the best thinking in a number of areas especially computer systems, logic, the mathematical theory of computation, psychology, economics, control theory, and mathematical problem solving to construct concrete realizations of devices that:

- solve intellectual problems both theoretical and practical, common and esoteric;
- control robot motions through planning, sight, touch, and self-awareness;
- interpret human language, both written and spoken; and
- learn new skills and knowledge through instruction, from experience, and by analyzing other data.

Categories of AI. Research in the field of AI can be divided into categories:

- Knowledge-based and expert systems
- Natural language
- Simulation of human sensory capabilities
- Robotics

I will briefly describe each category. A *knowledge-based system* is a computer system to which present IF-THEN rules are applied to solve a particular problem, such as determining a patient's illness. Like management information system and decision support systems, knowledge-based systems rely on factual knowledge, but knowledge-based systems also rely o *heuristic knowledge*, such as

[2] L. Long, *Management Information Systems*, Englewood Cliffs, Prentice-Hall, NJ, 1989

[3] J. Doyle, Th. Dean, "Strategic directions in artificial intelligence", *ACM Computing Surveys,* 28 (4), December, 1996: http://surveys.acm.org/

intuition, judgment and inferences. Both the factual knowledge and the heuristic rules of thumb are acquired from a *domain expert*, an expert in a particular field. The knowledge-based system uses this human-supplied knowledge to model the human thought process within a particular area of expertise.

In practice the term "knowledge-based system" and "expert system" are used interchangeably. Technically speaking an expert system is the highest form a knowledge-based system. An expert system is an interactive system that respond to questions, asks for clarification, makes recommendations, and generally aids in the decision-making process. Once the knowledge of once or more human experts has been entered to an expert system's knowledge base, users can tap this knowledge by interacting with the system in much the same way as they would interact with a human expert ask and respond to one another's questions until a problem is resolved.

One area of AI research involves computer *simulation of human capabilities*. Intelligent machines that can simulate human sensory capabilities (talking: voice response units, hearing: speech recognition, seeing: vision systems) have the ability to establish a link with their environments.

To date the area of AI experiencing the greatest commercial success is robotics. *Robotics* is the integration of computers and industrial robots. An industrial robot is best at repetitive tasks, tasks that require precision movements, moving heavy loads, and working in hazardous area.

2.2. KM and AI

For practical purposes, Tsui4 considers knowledge management as a discipline that encompasses processes and techniques for the creation, collection, indexing, organisation, distribution, access to and evaluation of institutional knowledge for improvement of performance, and more generally, for the exploitation of intellectual capital, including reuse opportunities. In order to establish seamless knowledge management processes that cover the above aspects, cultural and human resource issues should be considered as well as the development of intelligent (e.g. knowledge capturing and sharing) systems that enhance the performance and execution of the ever-increasing, common knowledge-intensive tasks facing organisations today.

As for the role and significance of AI in KM, there are two questions that are commonly encountered by AI researchers moving into the KM arena. The first question is "What exactly is Knowledge Management?". Knowledge Management is more aligned with the goals of capturing, sharing and reusing knowledge in

[4] E. Tsui, B. J. Garner, S. Staab, S., "The role of Artificial Intelligence in Knowledge Management", *Special issue*, 2000: http://www.pdfdownload.org/pdf2html/pdf2html.php?url=http%3A%2F%2Fwww%2Euni%2Dkoblenz%2Ede%2F%7Estaab%2FResearch%2FPublications%2Fkbs%2Deditorial%2Dnote2000%2Epdf&images=no

an organisation or among organisations. The second common question about AI in KM is "There is still no AI system that can converse with a human. The technology is not ready yet. Should one nonetheless attempt to tackle the even more difficult problems in Knowledge Management?" The general answer for this question is very simple; namely, most sophisticated commercial Knowledge Management tools already embed some form of AI technology: Bayesian reasoning, ontologies, data mining, intelligent agents to name a few.

Knowledge management draws from a wide range of disciplines and technologies,[5] like: cognitive science, artificial intelligence, computer-supported collaborative work, decision support systems, relational and object databases, semantic networks, and so on.

According to Daniel J. Power, "Researchers working on Decision Support Systems have brought together insights from the fields of cognitive sciences, management sciences, computer sciences, operations research, and systems engineering in order to produce both computerised artifacts for helping knowledge workers in their performance of cognitive tasks, and to integrate such artifacts within the decision-making processes of modern organisations."[6]

3. Case Study

I used Corvid, an expert system generator developed by EXSYS Inc., for implementing the application presented in this paragraph.

The basic components of an expert system are a knowledge base or KB, and an inference engine. The information to be stored in the KB is obtained by interviewing people who are expert in the area in question. The interviewer, or knowledge engineer, organizes the information elicited from the experts into a collection of rules, typically of an "if-then" structure. Rules of this type are called production rules. The inference engine enables the expert system to draw deductions from the rules in the KB. For example, if the KB contains the production rules "if x, then y" and "if y, then z," the inference engine is able to deduce "if x, then z." The expert system might then query its user, "Is x true in the situation that we are considering?" If the answer is affirmative, the system will proceed to infer z.

TimInvest, a real estate company with 10 offices and a sales staff of 50 full-time and 15 part-time real estate agents, has high turnover rate among agents (in Timis county). The turnover rate is high for two reasons. First, many new agents get discouraged and leave before they establish themselves and make a their first big sale. Second, many successful agents are lured away by other real estate com-

[5] R. O. Barclay, "What is knowledge management", *Knowledge Praxis*, http://www.media-access.com/whatis.html

[6] D. Power, "What is the status of knowledge management", *Special issue*, 2006: http://dss-resources.com/faq/index.php?action=artikel&id=110

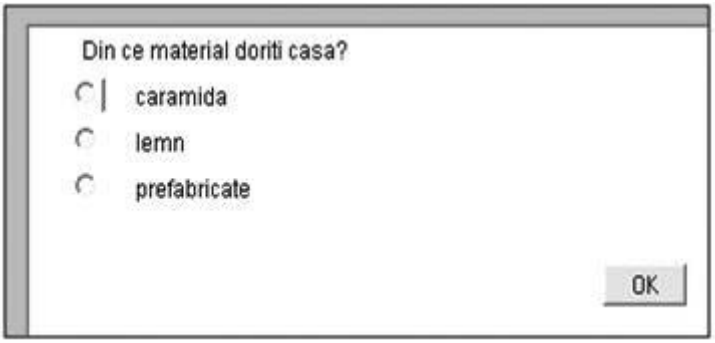
panies. TimInvest is like most other realty companies in that at any given time, about half the sales staff is inexperienced. Over 80 percent of TimInvest's sales volume is in residential real estate. At TimInvest each agent's objective is to show potential home only those properties that a prospective buyer is likely to find appealing. The inexperienced agents have problems matching clients to the available homes. These mismatches invariable result in wasted time and unhappy clients. The owner of TimInvest, Mr.Popescu, decided to hired a consultant.

After reviewing the situation, the consultant decided to develop an expert system to help both inexperienced and veteran agents do a better job of matching buyers with available properties. The purpose of system is to create a profile of a house that meets the buyers'need. The consultant interviewed the sales leader from company, Mr.Vasile, ask him to share his expertise. Mr.Vasile said that he asks his clients a series of questions relating to their needs and desires. He was based on the client's responses when searching the list of available homes to determine which ones to show the client.

Mr.Vasile asks his clients for the following data:

the client's budget, the house location, materials used, surface and number of bedrooms. (Figure 1)

Figure 1: *User interface for asking needs*



The application contains MetaBlocks, which provide a way to build systems that put generic decision-making information in Logic Blocks that interact with spreadsheet files that contain all of the detailed product data.

MetaBlocks can be used for many types of systems, but they are best for selection problems that involve frequently changing properties or features of the items being selected among.

The database where I stored the features offered by the market contains following fields (Figure 2): house's name, price, location, amount of land, materials, development, bedrooms, features, image.

Figure 2: *The content of the database used in metablock*

	A	B	C	D	E	F	G	H	I
1	**nume**	**pret**	**zona**	**suprafata t**	**tip materiale**	**utilitati**	**dormitoare**	**finisaje**	**imagine**
2	casa 1	85000	2	800	1	0	3	1	image1.jpg
3	casa 2	75000	3	1200	2	0	2	2	image2.jpg
4	casa 3	400000	1	300	1	1	2	4	image3.jpg
5	casa 4	190000	2	450	3	1	2	4	image4.jpg
6	casa 5	60000	3	600	3	1	3	3	image5.jpg
7	casa 6	500000	1	450	1	1	3	4	image6.jpg
8	casa 7	180000	2	600	1	0	3	4	image7.jpg
9	casa 8	600000	1	750	1	1	4	4	image8.jpg
10	casa 9	125000	2	900	3	1	3	2	image9.jpg
11	casa 10	130000	2	1200	3	0	3	2	image10.jpg
12	casa 11	150000	2	1400	3	1	4	3	image11.jpg
13	casa 12	120000	2	2000	2	1	4	3	image12.jpg
14	casa 13	60000	3	2500	2	0	3	2	image13.jpg

The field location from database contains the following values: 1 - inner city, 2 - suburb, 3 - rural. The field materials contain the following values: 1 - brick, 2 - wood, 3 - prefab. The field features contain the following values: 1 - red, 2 - interior, 3 - exterior, 4 - complet.

A part of metablock is presented in Figure 3.

Figure 3: *A part from the implementation of the Corvid metablock*

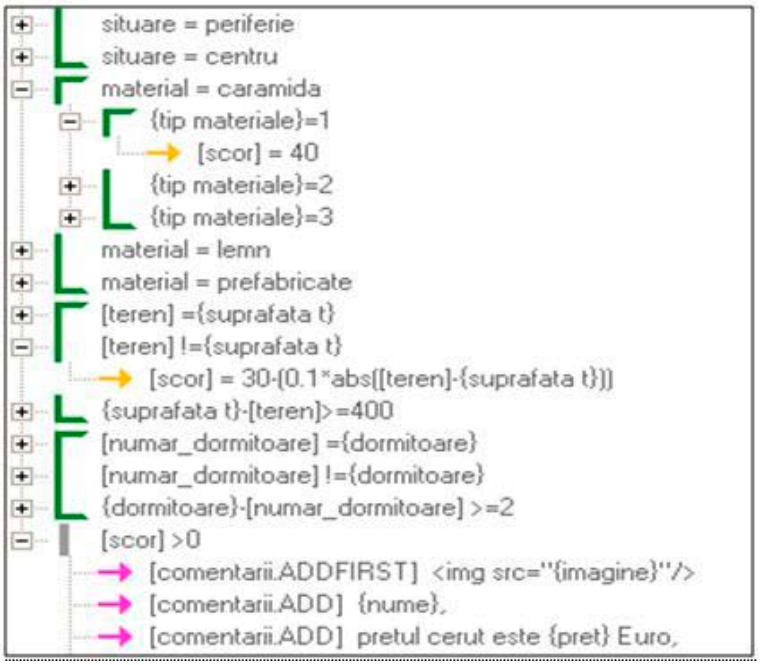


Figure 4: *Result screen with recommended options*

4. Conclusions

By addressing both the underlying nature of intelligence and the development of theories, algorithms, and engineering techniques necessary to reproduce reliable, if rudimentary, machine intelligence, AI research makes numerous, large, and growing contributions to computing research and to the evolving social and industrial information infrastructure. Some contributions come through study of the deep scientific issues that concern our understanding of computation, intelligence, and the human mind. AI is inherently a multi-disciplinary field. Research in AI can be characterized by the AI techniques or methodologies used in a particular project, or by the motivating application for which AI is used. AI techniques and methodologies include learning, intelligent agents, knowledge representation, logic programming, and planning. AI applications include electronic commerce, intelligent tutoring systems, knowledge management, performance management, and exploratory vision.

This paper has highlighted that Expert Systems, part of Artificial Intelligence, are innovative tools for managing knowledge in any domain.

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DETECTING AND REPORTING THE FRAUDS AND ERRORS BY THE AUDITOR

Abstract: *Responsibility for preventing and detecting fraud rest with management entities. Although the auditor is not and cannot be held responsible for preventing fraud and errors, in your work, he can have a positive role in preventing fraud and errors by deterring their occurrence.*

The auditor should plan and perform the audit with an attitude of professional skepticism, recognizing that condition or events may be found that indicate that fraud or error may exist.

Based on the audit risk assessment, auditor should develop programs to audit procedures by which to obtain reasonable assurance that the financial statements in their entirety, all significant errors and fraud have been identified. It is expected that the auditor to implement procedures that will lead to the discovery of errors or fraud without significant impact on the financial statements can not be held responsible for undetected such irregularities.

The auditor should communicate with the management of his client. He should ask the management information concerning any significant fraud or error has been detected in order to detect key problems that could lead to certain activities, the implementation of audit procedures more than usual However the auditor faces the risk inevitable that some significant errors to be detected, even if the audit is planned and done properly

Key words: *fraud, error, tests, audit*

JEL classification: M42, K20

1. Introduction

The incidence of financial fraud is increasing and has been a central feature in a number of financial scandals in recent years. This fact, together with the increasing sophistication of fraudsters, creates difficult problems for management and auditors.

Some would argue that the detection of fraud and error should be the auditors' principal function. This prevailing attitude clearly gives rise to a public expectation, which is neither shared nor fulfilled by the profession.

ISA 240 *The Auditor's Responsibility to Consider Fraud in an Audit of Financial Statements* provides guidance on the auditor's responsibility to consider fraud and error in an audit of financial statements.

2. Differences between fraud and errors

In planning and performing audit procedures, as well as in assessing and reporting audit results, the auditors should consider the risk of significant misstatements in the financial statements, as a result of fraud or errors.

Misstatements in the financial statements can arise from either fraud or errors.

The term *error* refers to an involuntary misstatement occurred in financial statements, including the omission of an amount or disclosure, such as:

- an error occurred in the collection or processing of data on which the financial statements are based on;
- an incorrect accounting estimate occurred due to overlooking or misinterpretation of facts;
- an error in applying accounting policies related to data assessment, recognition, classification, disclosure or description.

Errors may occur in connection with the recognition, assessment, disclosure or description of elements included in financial statements. The financial statements do not comply with the European Directives (in Romania – *Order of the Ministry of Public Finance no. 1752/2005 for approving accounting regulations in accordance with the European Directives*) if they contain material or immaterial errors made intentionally for getting to a certain presentation of a company's financial position, performance or cash-flow, and such an intentional misstatement of information disclosed in the synthesis documents leads to *fraud*.

Potential current period errors discovered in that period are corrected before approving the financial statements. Although the European Directives also state the possibility of correcting errors related to previous financial years, and discovered in the current financial year, by means of affecting the opening balances

of the financial year in which the error was found, according to the Romanian legislation in force, errors shall be corrected in the financial year in which they were discovered.

The term *fraud* refers to an intentional act by one or more individuals among management, those charged with governance, employees or third parties, involving the use of deception to obtain an unjust or illegal advantage. Fraud may involve:

- manipulation, falsification or alteration of records or documents;
- inadequate allocation of assets;
- voidance or omission of transactions in records or documents;
- recording of transactions without substance;
- incorrect application of accounting policies.

In the analysis of bank financed projects, the Department for Institutional Integrity considers that following actions are cases of fraud:

- contractual irregularities and violations of procedures regarding public procurement;
- subsequent amendment of contractual terms existing as of the date of winning the auction;
- agreement between participants in an auction;
- product substitution;
- inadequate setting of prices and partnerships;
- incorrect calculation of costs and work provided;
- request for a bribe;
- acceptance of money and other gifts;
- incorrect use of funds or positions;
- theft and abuses;
- revenge;
- irrational use of bank funds.

From a legal point of view, according to the definition given by Mr. Alexandru Boroi in his Dictionary of Criminal Law", fraud is defined as cheat, misguidance, and delusion for profit purposes by inducing damage.

Mr. Mircea N. Costin, in his "Dictionary of Civil Law", defines fraud as an intentional violation by the parties of the mandatory provisions of the legislation in force, often by using perfidious means, at the conclusion or execution of a legal act.

Although fraud is a broad legal concept, the auditor is concerned with fraud that causes a material misstatement in the financial statements. It is possible that the misstatement of financial statements should not be subject to fraud. The auditor does not make legal determinations of whether fraud has actually occurred or not.

The distinguishing factor between fraud and error is whether the underlying that results in the misstatement of the financial statements is intentional or unintentional. Unlike error, fraud is intentional and generally implies deliberate concealment of facts. While the auditor may be able to identify potential opportunities for committing frauds, it is difficult, if not impossible, for the auditor to determine whether misstatements, particularly in issues involving management judgements, such as accounting estimates and proper application of accounting policies, are caused by fraud.

According to International Standard on Auditing 240 (hereinafter called ISA 240) (redrafted) *The Auditor's Responsibility to Consider Fraud in an Audit of Financial Statements* (effective for audits of financial statements for periods beginning with 15 December 2008 or later), the term fraud is defined as "an intentional act by one or more individuals among management, those charged with governance, employees or third parties, involving the use of deception to obtain an unjust or illegal advantage".

In planning the audit activities, the auditor shall make inquiries of management to determine whether the material misstatements are due to fraud or errors. The auditor is interested both in management's assessments of the risk that the financial statements may be misstated due to fraud and the systems for identifying and responding to the risk of fraud, as well as in the accounting and internal control systems implemented to prevent and identify errors. Issues to be discussed as part of these inquiries include:

- existence of sites, business segments, types of transactions, balances of accounts or categories of financial statements with higher risks for errors, or for which that may exist factors for fraud risk, as well as how these problems are addressed by management;
- the internal audit function of a company and whether the internal audit has identified fraud or any significant gaps in the internal control, system;
- how management communicates to the employees its views on responsible business practices and ethical behaviour, for example through policies or ethical codes of conduct.

The auditor's opinion on the financial statements is based on the concept of obtaining reasonable certification. Thus, in an audit engagement, the auditor does not guarantee that material misstatements, arising from either fraud or errors, will be identified. Given the inherent limitations of an audit engagement, the risk of not identifying a material misstatement caused by fraud is higher than the risk of not identifying a material misstatement caused by errors, because fraud implies sophisticated and carefully organised actions, aimed to conceal them, such as deliberate omission of transactions or inaccurate statements provided intentionally to the auditor. The audit procedures that are effective for identifying an error may be ineffective for identifying fraud.

3. Detecting fraud and errors by auditors: Case studies

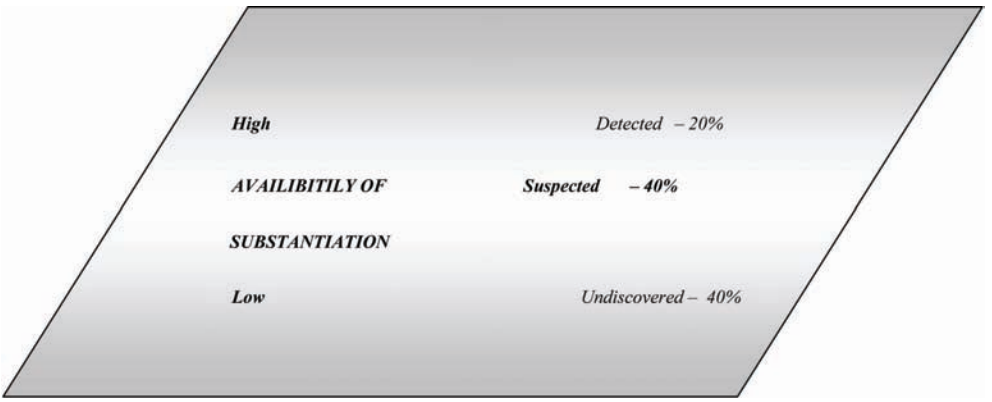
3.1. Detecting fraud and errors by auditors

Already in the planning stage of the audit, the auditor should assess the risk of errors or fraud that can generate a material impact on the financial statements. Thus, based on the audit risk assessment, the auditor should develop audit procedures for identifying all material errors and fraud misstating the financial statements. Usually, if the auditor suspects the existence of fraud or errors with material impact, he expands the scope of auditing procedures, until he is convinced that the misstatement has been either corrected, or properly disclosed in the audited financial statements.

ISA 240 (redrafted) provides that the auditor's objectives in identifying fraud are the following:

- to identify and assess the risks of material misstatement of the financial statements due to fraud;
- to obtain sufficient appropriate audit evidence about the assessed risks of material misstatements due to fraud, through designing and implementing appropriate responses; and
- to respond appropriately to identified or suspected fraud.

Despite his efforts, the auditor is subject to the inherent risk that some material errors in the financial statements may not be identified, even if the audit is properly planned and performed. In the business world, the percentage of identifying fraud is small considering the legislation in force and the modern means for preventing and finding it. In order to summarise the possibility of identifying fraud by the auditor, we present the following scheme:



According to ISA 240 (redrafted), the primary responsibility for the prevention and detection of fraud rests with both those charged with governance of

the company and management. It is important that those charged with governance and management place a strong emphasis on fraud prevention, which may reduce opportunities for fraud to take place, and fraud deterrence, which could persuade individuals not to commit fraud because of the likelihood of detection and punishment. This involves a commitment to creating a culture of honesty and ethical behaviour, which can be reinforced by an active oversight by those charged with governance. In exercising oversight responsibility, those charged with governance consider the potential for override of controls or other inappropriate influence over the financial reporting process, such as efforts by management to manage earnings in order to influence the perceptions of analysts as to the company's performance and profitability.

The auditor is not and cannot be held responsible for fraud and errors, but through his work he can play a positive role in preventing fraud and errors, by deterring their occurrence. The fraud character of an operation can be established only in court, so that, since the auditor has no responsibility to prove fraud from a legal point of view, his concerns are directed rather towards actions suspicious of fraud, than proven fraud.

The conditions and events that increase the risk of fraud or errors refer primarily to the gaps in the functioning of accounting and internal control systems or to inconsistencies of internal controls. Besides these, we can add the following:

- *Questionable integrity or competence of management*. Ultimately, such a situation may lead to the auditor's withdrawal from the engagement; clues indicating such a situation may be:

- a person or a group of persons dominate the audited company's management and the shareholders have no effective control over them;
- a continuous failure in the internal control system or in the correction of the main weaknesses of the internal control structure;
- frequent changes in the structure of key personnel within the financial department or frequent changes of company lawyers and auditors.

- *The existence of unusual pressure in the company or on its management*, such as:

- a significant decrease in profits, to the extent that the assessment of management performance and, implicitly, its revenues are related to profit evolutions;
- adopting of an aggressive expansion policy, which generates a severe working capital deficiency;
- production of goods or services, which require an accelerated investment rate;
- the personnel in the accounting department has to prepare the financial statements in an unusually short time.

- *The existence of unusual transactions*, which may generate fraud or errors due to the fact that they are either not caught in the internal control system, or they are so complex that, inevitably, are inappropriately understood or accounted for. Examples of such transactions:
- unusual transactions that take place during the closure of the financial year, with a material impact on profits;
- unusually high payments for certain services, such as those provided by consultants, lawyers, agents.
- *Difficulties in obtaining sufficient and appropriate audit evidence* – the audited company's management or other categories of employees refuse the collaboration or intentionally misinform the
- *Auditor.* Such difficulties arise where the auditor finds:
- inadequate accounting records, with omissions, too high adjustments, etc;
- insufficient or inappropriate justifying documents;
- an unusually high number of differences between accounting records and confirmations from third parties;
- audit evidence is not correlated;
- unusual and irrational changes of operation ratios.
- *Factors specific to computerised information systems that refer to events and conditions described above:*
- inability to extract information from computer files due to lack of documents regarding the contents of records or programmes;
- a large number of programme changes that are not documented, approved or tested;
- an inappropriate report between computer transactions and databases, on one hand, and financial accounts, on the other hand.

Detecting errors and fraud by the auditor can be achieved through a combination of control tests and procedures.

Control tests are those tests performed for obtaining audit evidence about how the accounting and internal audit systems are designed and operated.

The audit procedures are those tests performed in order to obtain audit evidence regarding detection of errors with material impact on the financial statements.

Detail tests on transactions allow the auditor to assess how transactions are recorded, by means of analysing credit or debit accounts.

Detail tests on balances are aimed to collect rather evidence of accounts balances, than of individual transactions that led to those balances. The auditor checks the total amount of debt to a supplier, by requesting a written confirmation from the supplier, and not by checking the final balance of the respective supplier account.

The analytical procedures are those procedures that analyse various accounting correlations in order to identify the trends of the analysed elements.

Also, the auditor may obtain audit evidence by applying certain alternative procedures, such as inspection, observation, examination of documents and records, investigation and calculation.

An inspection consists in examining records, documents or tangible assets.

Observation consists in pursuing a process or a procedure performed by other persons, such as, for example, observation by the auditor of stocktaking performed by the company's personnel or observation of control procedures application that do not generate audit evidence.

Examination of documents and records received or issued by the audited company presumes reading of documents, tracking their circuit, their comparison and reconciliation. The auditor may examine minutes of the Board of Directors in order to understand the policies implemented by the audited company regarding funding. Also, by tracking the circuit of documents, the auditor checks how invoices issued to clients or those received from suppliers are recorded in accounting.

Investigation consists in obtaining information by addressing written or oral questions to people inside or outside the company that can provide to the auditor information that he could not obtain by applying of control tests and procedures. Investigations and procedures for obtaining audit evidence are more effective when combined with confirmations, usually requested from third parties.

The calculation consists in checking the arithmetic accuracy of amounts included in source documents, accounting records or financial statements.

In conducting his work, the auditor may often face situations of fraud. The detection of these situations depends also on the threshold established by the auditor. There is a risk of not detecting fraud, which does not imply auditor's responsibility as it falls to those who have committed fraud. However, this does not allow the auditor to treat fraud with indifference, as he is the one to issue a reasonable opinion on the fairness of the information included in the financial statements.

3.2. Case Studies

1. Company SC X SA decides to build three buildings that will serve as storage for finished products, of which the company will have to cover the high demand. The company announces a bid for obtaining price offers from constructors, provided that the offer is global for the three buildings, but specifying individual costs for each of them.

The three bids are listed below:

Euro

	Building I	**Building II**	**Building III**
Company A	700,000	150,000	150,000
Company B	500,000	300,000	300,000
Company C	400,000	400,000	400,000

It is clear that the first offer is the best, with costs of only EUR 1,000,000. Of course, company X will choose this option. Company A accepts the engagement and begins construction, and finalises it quickly and qualitatively. A member of the Board of Directors informs management about works performed, therewith suggesting reconsidering the necessity of buildings II and III, because there are market signs that actual demand will not meet forecasts. After analysing this issue, the Board decides cancellation of buildings II and III. The auditor knows for sure that the member who suggested cancelling buildings II and III and Company A are plotters, as the contractor is winning at least EUR 200,000 in comparison to the other offers.

2. In an audit engagement is selected a payment transaction, which pays the value of repairs to a water tank. The repairs were aimed to restore the tank's internal insulation against rust and exterior painting. After examining all documents (services contract, invoice, payment order and work reception), all signs indicate that maintenance services were carried out properly and at minimum costs. The auditors note with satisfaction that there has been no fraud. Actually, the auditors did not examine in a factual manner how works were executed, by taking a worker/technician/engineer from another department, getting him into the tank and asking for a detailed description of findings. Thus, they did not observe that the tank was not treated with an insulating layer, being rusty inside. In this case, fraud was caused by the conspiracy of those who signed the reception document.

3. An internal auditor selects from the multitude of services payments a transaction that pays for cleaning rolls at the company's headquarters. The company that cleaned them offers a discount of 2% if the invoice is paid within 10 days, what has happened. In terms of quality, helped by another employee, the auditor concludes that the rolls have been cleaned properly. By examining the document for providing the work, the purchase order, the reception document and the invoice, the auditor considers that the transaction does not contain elements of fraud. By further examining the actual contract, the auditor finds that there has been negotiated a discount of 10% compared to the last minimum price published by the services provider. However, the invoice is issued for the full price. This error of omitting to apply the discount was used in a repetitive manner, which shows that this is not a simple mistake, but fraud.

4. Reporting fraud and errors

In the audit engagement, if the auditor gets wind of fraud or error, whose potential effect on the financial statements may be immaterial or material, he must communicate his findings to management as soon as possible. However, when communicating fraud or errors, the auditor should take into account the credibility of management statements. If the auditor suspects involvement of the company's personnel in committing fraud, he should take into account the position of the involved personnel in the company's organisational structure. It is preferable to report fraud at hierarchically superior levels to that of persons to whom the involved persons are subordinated. Where there is doubt on people who have final responsibility with respect to the company's management as a whole, normally the auditor would call on legal advice to determine the procedures to be followed. Normally, the auditor's obligation to maintain confidentiality forbids him to report fraud or errors to third parties. However, under certain circumstances, by statute, law or court decision it may be decided to disclaim confidentiality. In such circumstances, the auditor may call on legal advice, taking into account the auditor's responsibility against public interest.

In case of detection of fraud, if the company fails to take measures to remedy fraud that the auditor considers necessary in these circumstances, the auditor may withdraw from the engagement, even if fraud is not material to the financial statements.

The auditor must assess whether the problems on which fraud or errors are based on have been properly reflected or corrected in the financial statements, taking into account the possible impact of such issue on his report. Thus, we can highlight two different situations:

a) where the auditor concludes that fraud or error has a material impact on the financial statements and it was not properly reflected or corrected in the accounts, the auditor should express a qualified or a contrary opinion,
b) where the company hinders the auditor from obtaining proper and sufficient audit evidence to assess the possibility of occurrence of fraud or errors that would significantly influence the financial statements, then, the auditor should express a qualified opinion or even declare his impossibility of expressing an opinion on the financial statements due to limitation of audit scope.

For companies listed on capital markets, Romanian legislation[1] requires the auditor to report fraud issues to the National Securities Commission (CNVM).

Within 30 days, the auditor must prepare additional reports on operations indicated by shareholders holding at least 5% of the total voting rights. If managers and auditors fail to comply with their requests within the prescribed period

[1] Law no. 297/2004 on capital markets

or the report does not include reporting information, the shareholders may address themselves to the territorial court where the company has its headquarters for appointing another financial auditor. Within 10 days, the auditors are pledged to report any fact or act in connection with the activity of the listed companies, which they have become aware of in the exercise of their particular duties and which:

a) represent a significant violation of laws governing the licensing and functioning of the audited company;
b) are likely to affect the audited company as an on-going concern;
c) may lead to a qualified audit opinion, to the impossibility of expressing an opinion or to a contrary opinion.

Upon written request from CNVM, the auditors are pledged to submit to this institution:

a) any report or document that was made available to the audited company;
b) a statement indicating the reasons for the termination of the audit contract, regardless of their nature;
c) any report or document containing the findings that were brought to the attention of the audited company.

Fulfilment in good faith by the auditor of the obligation to inform CNVM, does not represent a breach of his obligation to professional secrecy, and it will not imply the auditor's responsibility.

Referring to fraud detection in financial audit engagements, ISA 240 provides: "If, as a result of a misstatement resulting from fraud or suspected fraud, the auditor encounters exceptional circumstances that bring into question the auditor's ability to continue performing the audit, the auditor shall:

a) determine the professional and legal responsibilities applicable in the circumstances, including whether there is a requirements for the auditor to report to the person or persons who made the audit appointment or, in some cases, to regulatory authorities;
b) consider whether it is appropriate to withdraw from the engagement, where withdrawal from the engagement is permitted; and
c) if the auditor withdraws:

- discuss with the appropriate level of management and those charged with governance about the auditor's withdrawal from the engagement and the reasons for the withdrawal; and
- determine whether there is a professional or legal requirement to report to the persons or persons who made the audit appointment or, in some cases, to regulatory authorities, the auditor's withdrawal from the engagement and the reasons for the withdrawal.

Due to the nature of fraud and the difficulties faced by auditors in identifying material misstatements arising from fraud in the financial statements, it is important that the auditor obtains a written representation from management to acknowledge that following had been brought to the auditor's attention:

a) the results of management assessment of the risk that the financial statements may be materially misstated as a result of fraud; and
b) management knowledge of fraud or suspected fraud affecting the company.

5. Conclusion

ISA 240 The Auditor's Responsibility to Consider Fraud in an Audit of Financial Statements makes it clear that the responsibility for the prevention and detection of fraud and error rest with management, through the implementation and continued operation of adequate accounting and internal control systems. Such systems reduce but do not eliminate the possibility of fraud and error.

In contrast, the auditor is not and cannot be held responsible for the prevention of fraud and error. The fact than an annual audit is carried out may, however, act as deterrent. The auditor must therefore seek sufficient appropriate audit evidence that any fraud or error, which may be material to the financial statements, has not occurred. If it has occurred, the auditor must ensure that the effect of fraud is properly reflected in the financial statements or the error is corrected.

Because of the inherent limitations of an audit, there is an unavoidable risk that material misstatements in the financial statements, resulting from fraud or (to a lesser extent) error, may not be detected. Where such a misstatement is detected after the audit, the auditor will only have failed to adhere to basic principle and procedures if it is found that the audit procedures undertaken were not adequate in the given circumstances.

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Book review
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BUSINESS – ART DE VIVRE

An essay on the book "Business - Art de Vivre",
By Professor Mića Jovanović Božinov, PhD, Megatrend University, Belgrade, 2008

At the end of March 2008, in the frame of extensive publishing activity, a book titled "Business – Art de Vivre", written by Professor Mića Jovanović Božinov, Ph. D., and reviewed by Professor John Nesbit, Ph. D., was released by Megatrend University.

This "autobiographical text-book" is 337 pages long. The very important contributions to its transparency are both clear expression and appealing stile, which make this book easily accepted by wide audience. This is why we could expect public to make their judgments and opinions about this "textbook of life". The book is consisted of the following eighteen chapters: *1 Rain; 2 British Museum; 3 Berkeley; 4 Emberstar; 5 London School of Economics; 6 Fall; 7 London by Night; 8 Business I; 9 Life I; 10 Business II; 11 High Risk; 12 1989; 13 Business as a Life-Style; 14. Life II; 15 Institute; 16 Business and Art; 17 Midi – South France and 18 La vita e bella*.

The first chapter deals with the hero's (this is actually the author himself) arrival to London, and with his consideration of his own environmental and business mission in England. The next section already summarizes the writer's thoughts about art, about culture and science ... Barclay is the third issue Professor Jovanović pays attention to, within which are the most important information about both "money" and "risk" as factors that are impossible to avoid on the road to success in business.

In the fourth chapter, the author presents the process of establishing of his first company, called "Emberstar Ltd." (flaming stars), and the related issues on three immediate risks involved in starting a business (market, product or service and technology).

In the fifth chapter, entitled *London School of Economics,* Professor Jovanović displays his timetable, with all the activities included, during his stay in the prestigious London School of Economics, stressing the constant need to improve himself further and, in addition to already achieved success in the stock market

(which was, we have to admit, a high level one) to get his business experience verified by academic world. Here we can also find some of author's comments on stocks and bonds.

The following chapter comprises the writer's consideration on his first loss on the metals market, and on both credit transactions and "pirate style purchases" in Chinese ports. Concerning the seventh chapter, its very title may lead us to a conclusion on what the writer is going to write about: of course, about London by night. However, at this point we find a very wise author's thought about the need to get the decision related to a difficult dilemma left to be solved the next day (p. 45). In addition to that, Professor Jovanović here writes about exchange markets as well as about defense of his thesis at the London School of Economics.

Within the eighth chapter of this book the author describes his involvement in new business, which was trading in chemicals containing a high percentage of gold, platinum, palladium and selenium. Professor Jovanović points out that one should, on the occasion of going to the market, have in mind a necessity for the product to be brand new, not known before and in notable demand. Also, he explains the very basic principles of body language (look, body position, gestures and manner of speech), which are very important to use in business communication and negotiation.

In the chapter titled *Life I,* Professor Jovanović presents his sailing experience gained around the blue Adriatic Sea. At the first glance a reader understands that the author is an excellent connoisseur of sailboats and sailing techniques, being the genuine devotee of the sea. Here he writes about his business history that was, almost always, heading "to the top". Then, he presents the principles that we need to bear in mind when recruiting new people for our company, with the very basic features of globalization included.

Business II is the title under which the author talks about expansion of his business. Namely, at first he was involved in stock exchange business, trading in potassium-gold-cyanide alloy, and then he switched to future contract market. Here, he explains characteristics of these markets in detail.

The eleventh, twelfth and thirteenth chapters of this book describe one of the largest and the most hazardous business enterprises taken by the author, depicting the business that eventually yielded huge profits, unless it was uncertain up to its very completion. Here, the reader will find the author as a very sensitive, even flamboyant person (he looses his appetite due to stress; he sleeps badly, experiencing "two and a half months of anxiety, uncertainty ..." /p. 138/, his feelings and commitment to his family, especially to his parents and his son). These parts of the book comprise explanations of the following economic concepts: options, taxes (imposed to businessmen by states), investments, self-management, and people - as the most important resource of any company. The author also writes about how honored he was on the occasion when he was invited to give a lecture to graduates at INSEAD, the world's most famous MBA business school.

The next chapter, titled *Life II,* presents a completely different life-stile the author was involved in later on. In the new situation, away from the Stock Exchange, he was invited by universities - being still very young man (he was only 36 years old), a very successful businessman and Ph. D. of the prestigious London School of Economy - to convey his business experience to students. He was very successful and committed in doing so. His topics included the following: productivity with reference to motivation, motivation, and robots – "work killers". While doing so he came to the idea to establish "his own school".

The fifteenth chapter is dedicated to embodiment of Professor Mića Jovanović's, idea. Namely, on December 27, 1989 was founded the Institute which was continuously under development process in the coming years, being guided by this successful businessman's vision. In this period of his life the writer was involved in development of new business projects within the Institute. He was giving lectures, among which was a lecture on transition and *turn around,* as well as on *turn about*, where the *turnabout* was named the *recycling of business* and explained, as usually was, with ease and simplicity of his expression, in a very picturesque manner. From these pages the reader will get a picture of Professor Jovanovic's extremely high observation skills, reaching to the detail. As the example, timetables of the long past events reported in detail (appearance of Tottenham Court Road /p. 236-237/). Also, one finds that he has an extreme knowledge of martial arts (karate): "... he managed noting but to turn his head, just trying to minimize the surface that was going to be hit..." (p. 238).

In the frame of next chapter, Prof. Jovanović, Ph. D. emphasizes the importance of key linkages between art and big business. In this regard, here are information on a famous Flemish painter Rubens and a French painter Renoir. The author presents his speech on management and on human resources management, comprising an explanation of "the longevity of business concept", which was given in the year 1993 - in our society it was a brand new notion at the time, which became the up-to-date subject not sooner then ten years later. The author also presents the concept of adjustment of business strategy to globalization.

Penultimate part of the book pictures the writer's life in France, in the old, beautiful South France village of Moujan. There is an account on a major problem he had, with persistent and stubborn ways he was fighting it. The problem was about the French tax authorities which, almost by the rule, used to burden businessman with extremely high taxes. Here we will also find that he still dealt with music, which fits into the author's concept of eligible human resources of a successful company - meaning that a newly recruited person must be involved, apart from his or her professional references, into both music and sports. The cover of this autobiographical textbook shows a *Rolls-Royce Silver Cloud III,* belonging to the British royal family. It was not there by chance but because cars were, just as readers could see after all, to be Professor Jovanovic's passion. On that May1, 2003, in his Moujan villa only, there were 11 cars purchased at various auctions.

In the last chapter of the book, entitled *La Vita e Bella*, we will see the author as he successfully solves the problem with the French tax authorities. He had already left these unpleasant events behind, remembering fine ones only. His life became beautiful, of course. He was powerful and rich, building up his reputation in the world of science slowly and thoroughly.

To testify Professor Mića Jovanović's exceptionally fruitful work (which is in the good part presented in this book), is the fact that he became, on February 10 this year, an elected expert of the European Economic and Social Committee of the EU Parliament in Brussels, and only a year ago he was proclaimed "The Best European" and appointed the President of the NGO European Forum.

In accordance to the above, and given the fact that this is a book based on the writer's life and works, i. e. on experiential works, I would highly recommend this textbook to students, especially students of economics which could use it for the purpose of improvement and renewal of both their knowledge (parts covering topics of economic nature are framed in blue) and of their general culture. Also, I would recommend this textbook of life to the other people interested in experience, featured by many ups and downs, of this businessman-scientist, a great man, recognized not only by national but by international scientific community as well.

Book Review
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CORPORATE FINANCIAL ANALYSIS

An essay on the book titled "Corporate Financial Analysis"
By Prof. Nataša Bogavac-Cvetković, PhD, Megatrend University, 2009

Targets of any financial analysis are to explore enterprise financial equilibrium conditions and to get profitability of invested assets measured. Financial analyses are made by company's analysts for the purpose of preparation of management for their decision making which is based on these analyses. Investors, creditors, especially banks, and state agencies, such as various inspection and statistic services, all of them need financial analysis.

Without understanding of methodology, i. e., of financial analysis indicators, it is impossible either to get an insight into both position and perspective of a company, or to make economically justified business decisions. Thereupon, one of the key, or basic, goals of economists' education is making them capacitated to understand, i. e., to be able to "read" a balance as a key information base of any financial analysis. In other words, students which are not familiar with financial analysis methodology and instruments will not be able to take their parts in economy.

A corporate financial analysis is a complex branch of science. Making both adequate business deductions and decisions implies skills in domains of methodology framework and financial analysis, as well as an excellent analytical capacity. It requires not only superior understanding of theory frameworks of corporate financial analysis as an economic science branch, but specifics of a given company subject to analysis as well. In consideration of the importance, of features presented and of corporate financial analysis specifics, authors in domain of this branch of science face enormous responsibilities. Only textbooks written with high quality and competence, with this highly complex subject matter adequately systemized, written and explained, could give students the appropriate knowledge. They need knowledge of the kind in order to become able to solve complex financial analysis problems in their future corporate practice.

The new Megatrend University release is the Corporate Financial Analysis, by Prof. Nataša Bogavac-Cvetković, Ph. D., used as the basic textbook at

the subject named Corporate Operation Analysis, a part of syllabus for 3th academic year students at the Faculty of Business Studies. The book reaches beyond capacities of a textbook, representing a comprehensive study of interconnections between financial analysis, balancing and corporate management. The fact that Prof. Nataša Bogavac-Cvetković, Ph.D., is a recognized scientist, a participant and a manager in numerous studies and projects executed for both the Republic of Serbia Government and the World's Bank, an author of numerous textbooks, monographs and more then hundred scientific papers. She is the winner of the Ministry of Science, Technology and Environmental Protection First Prize for Exceptional Scientific Contribution as well, which is more then enough to guarantee that this textbook is a book worth the wide public interest.

The integral subject matter discussed and presented in this book was methodologically conceived in accordance to accepted and presented theoretical-methodological premises, as well as according to corporate financial analysis definition models. It is exposed in three interconnected parts referring to the following domains of study: Theoretical Approach to Corporate Operation Analysis, Financial Statements Analysis and Company Credit Scoring System.

In the *first part* of this book the author points at the importance of corporate operation analysis, gives definitions of subject, forms, sorts and methods of the analysis, and presents theoretical-methodological issues of both balance sheets and income statements. Problems of balancing theory and principles, the financial statements' balancing being based on, are elaborated separately. Having in mind the fact that balancing principles were developed as influenced by dominant balancing theories, they make the very basis of balancing problems understanding, i. e., of both layout and contents of a statement. Without understanding of balancing theory it is impossible to understand balancing principles, and without understanding of balancing principles it is impossible to understand complex International Accounting Standards (IAS), i. e., International Financial Reporting Standards (IFRS), which are mandatory for Serbia to apply to both medium-size and large businesses. The author especially emphasizes the importance of business analysis, which is situated in possibilities of application of specific investigation methods based on known theoretical scientific principles of dialectic materialism, on both system and information theories, as well as on the other related economic sciences in both micro and macro aspects. This is the way to obtain, through business analysis, objective analytic conclusions based on scientific findings.

A thorough insight in and understanding of modern financial analysis methods and technology required a detail elaboration of all actual types of balances as well as of balancing itself. The author points out the fact that there are, in both theory and practice, many types of balances and balancing methods. The author emphasizes the importance of balancing theory evolution, having in mind the fact its unquestioned contribution to both business economy and literature in account-

ing-balancing domain. And at last, the importance of making statements as reliable sources of information is emphasized here as well, with their formal and material correctness being indisputable.

The *second part* of this book deals with the basic features and specific facts of financial statement analysis process. Starting with the importance and complexity of financial analysis, compatible to national conditions, the author makes a detail analysis of both financial statements and individual instruments of financial analysis, such as *Net working fund*, *Cash flow* i *Funds flow analysis*. Problems presented in this part of the book reach beyond financial analysis itself and partly deal with financial management, which is relative to financial analysis in its aspects such as cash management models, stock management models, management of receivables, and the like. All the above stated makes readers able to understand the presented matter more deeply.

Such an integral insight in and comprehension of corporate financial analysis required an analysis of both capital structure and net working fund. The author points at the fact that important contribution to understanding of financial function is given by formulation of fixed capital strategy, because financial interests have their reflection on capacity to pay, finance, invest, and to expand the owner's property.

The book ends by the chapter dedicated to importance of ratio analysis to business decision making as well as to company credit scoring. Having in mind the fact that numerous ratio indicators can be used in company credit scoring, this paper comprises elaboration of the most frequently applied ratios which are relevant to decision making process made by management, owners and creditors. Lenders and creditors are mostly interested in company's liquidity, solvency and cash flow, because a company's capacity to pay off both due monthly installments and capital sum depends on them.

Financial analyses are used by company managements for the purpose of efficient planning and control, i. e., for the purpose of establishing a financial balance of earning capacity required by the owner of capital. Corporate management, i. e., decision making process in accordance with defined company tasks, considers designing of effects that potential decisions may have, permanent analyzing of the actual state of affairs in comparison to planned ranges, as well as permanent monitoring of offset range between incurred and expected changes. Projected financial statements are used for that purpose, as expressions of complete or partly assumed financial or non-financial information.

The author emphasizes the importance of financial analysis to shareholders, because its results make a ground on which conclusions on company's valuation capability are made. Financial-analysis approach normally starts with a share value, and ends with a recommendation about sale or buying of a company. Since share value is at first place conditioned by return, investors into ordinary shares are interested in present and future returns, in their stability, and in payment

of dividends. To pout it shortly, it can be concluded that investors are naturally interested in maintenance of financial equilibrium, since ruined financial equilibrium could prevent payment of dividends, which could, in the final instance, lead a company into bankruptcy.

The author especially emphasizes the importance of financial analysis from creditor's point of view. This type of analysis is made by application of company's solvency and liquidity indicators. Providers are primarily interested in liquidity of a company, since their outstandings are short-term ones. Possibilities of collection of short-term outstandings are assessed by means of liquidity analysis. On the other hand, bond owners are, first of all, interested in investigation of company's ability to meet its liabilities in time, i. e., by bond maturity dates. Therefore, the very basis of assessment of future cost-effectiveness of potential bond buyers are analyses of capital structure, basic resources and their placements, as well as analysis of realized cost-effectiveness.

Irrespective of the fact that both creditors and investors do not require the same results of a financial analysis, applied techniques are the same because a value-making company is solvent, while a value-decreasing company will, sooner or later, face solvency problems. Nevertheless, both information base and depth of financial analysis are conditioned by requirements made to analysts, which are determined by primary interest sphere of users of analysis.

At the end of this summary, the conclusion is that this book is a result of comprehensive research endeavor, including analysis of ample literature in the fields of finance, accounting, management and related branches of science. The book gives plenty of information and knowledge on business processes, work and business conditions and results, on the necessity to work on evidence, control and analysis with corresponding information included. Although it is at the first place designed for students, the book could be used as a framework for scientific research in domain of corporate financial strategies, and it could be used by both businessman and public, since understanding of corporate tasks, as well as of concepts of cost-effectiveness, liquidity and solvency, are not only imperative to business management but a part of general business culture as well.

Book review
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LOCATING OF BUSINESS ACTIVITIES AND ITS CRUCIAL IMPORTANCE FOR ECONOMIC GROWTH AND DEVELOPMENT

An essay on the book
"Evolutionary Economic Geography, Location of production and the European Union",
By Professor Miroslav N. Jovanović, Ph. D.,
T&F Books UK (1st ed. 2009), European Institute, Geneva, 2009

The subject of the book written by one of the leading European experts in the fields of geo-economy and regionalism, economic integration and the spatial location theory, is a cue. At the same time, it requires a great degree of responsibility when it comes to presentation of this book, which is to prevent us from understating both the importance of its content and the concept that the author advocates. Even more appealing is to deal with contemporary approaches to the analysis of economic and regional integration within global economy, which the author searches from standpoints of both theory and practice. Development approach, as a very recent approach in the analysis of economic geography development within the regional science, being supported by the author himself, is the core matter of this book. Although still in its initial phase, the development approach takes an important place in science and gives a strong contribution to geo-economy in general, considering a long-term process of structural change in both space and time.

As a proponent of a new course in science and as the author of this book, Professor Miroslav N. Jovanovic has the opportunity to share his rich scientific and practical experience with his students, as a Visiting Lecturer at the Megatrend University. Professor Dr. Miroslav N. Jovanovic is at present employed by the UN Economic Commission for Europe, Geneva, Switzerland, as well as by the European Institute in Geneva, as a lecturer. The largest part of his scientific perfection he has gained abroad, where he has won, as a prominent individual involved in scientific works, many prestigious awards and scholarships granted by the outstanding European institutions. Professor Miroslav N. Jovanovic gave

this recently published book as a present to the Megatrend University. Credits for that, as well as for reviewing his previous book already used as a textbook at the Faculty of Geo-Economics, go to Professor Oskar Kovač.

This book is a guide to the theoretical basics of the corporate and industrial spatial location from the aspect of economic development, and as such it is intended for students and researchers dealing with imbalances in the economy, development and complex economies, geo-economics and location of firms and industries in geographic areas. It could find its use in the sphere of international business, as a useful part of literature aimed at economic policy makers. Clear and simple interpretation of such complex problems makes the book accessible and understandable even to the wide riding audience not involved in any scientific disciplines.

The book answers the key questions, such as how to locate a business having in mind possible future (re)allocation of business, in the context of developments in domains of technology, innovation, imbalance and local uncertainties. It emphasizes state intervention positions, the importance of investment from social stability standpoint, education and training at the local level, as well as uncontrollable changes that are beyond the control of any company, industry, region and capacities of states. In addition to theoretical analysis, this book comprises a handful of examples taken from real life, which are reflected by both ability and capacity of companies or governments to get adjusted to new attitudes and challenges over time, and to benefit from it.

The very complex contents of the book cover the notion of spatial location of business activities analyzed from different aspects and in varying circumstances. Within it the author, simply and concisely, analyzes various approaches criticizing the most recent, generally accepted, neo-classical standpoints. What distinguishes these approaches from the above ones is the manner in which the traditional neo-classical equilibrium theory, among other things, ignores the role of history, the area of dependence[1] and the growing revenue field. At the same time, these approaches are far closer to real life then the other ones. Thus, the development approach in economic geography returned both regional economy and geo-economy back to life, being a multidisciplinary and conventional approach, not closed towards the other disciplines.

The book is abundant with extensive definitions such as the *Developmental Economic Geography* definition stretching beyond both *New Economic Geography* and *Endogenous Growth Theory* which are deeply embedded in the standard neo-classical theory framework, and reaching *Theory of Complexity* and *Developmental Economics*, both of which are based on the imbalance system with various methodological disciplines included – starting from mathematical modeling to case studies.

[1] Area of dependence is defined by: available natural resources, a huge existing or earned capital, technological heritage, education effect, specialization, growing revenues, networks and location of specific institutions.

Consideration of these approaches that could not, to say the truth, become fully incorporated in the theory of development, put forward issues of location of multinational enterprises, formation of agglomerates and clusters, relations of exchange among countries and approaching-separating among regions. The examples include companies such as "Microsoft", "IBM", "Honda", cities like New Orleans, Antwerp, Venice, Geneva, Basel, as well as both development of the U.S.A. political parties' ideology and the impact of wars on location of industry.

From the point of view of theory it is necessary to confine the *Krugman's New Economic Geography* from *Developmental Economic Geography*[2], because the first one is firmly embedded into the balance maximizing analysis, while the later one relies on the basis of realization of rationality imbalance principle. Although the Developmental Economic Geography has a potential of realistic alternative within analysis, it is necessary to ensure realization of all the starting assumptions. One of the fundamental public controversies are the issues of definition and empiric dimensions of subjection field, which should be of the kind that is possible to compare among countries. However, the actual current method of network analysis has some shortcomings. The same goes when it comes to the clusters. Although the literature on this subject is very rich, is neither a clear picture of what happens to the clusters, nor about benefits/expenses they provide for local companies during their business cycle. Not so serious problem, unless not totally formulated one, occurs with creation of economic policy. Since the Developmental Economic Geography approach criticizes the neo-classical equilibrium theory, according to which market deficiencies are referred to as public policy basis, this developmental approach is entirely focused on the way of setting public wealth, monetary and social policies up.

The author leaves some room within contents of his book for discussion about never outdated economic question: *Where to locate a business?* Not understating the importance of traditional neo-classical equilibrium theory standings that he accepts as a clear and acceptable to the academic circles considering its standpoints such as: *any market shortcomings shall be suppressed*, the author emphasizes benefits of developmental approach reflected in his realistic standpoints. Advantages include, primarily, possibilities of multidisciplinary approach to various areas of life - economy, geography and business – from various aspects of living - microeconomics, planning, development, economic geography, regional science, economy of cities, spatial location theory, industrial organization, international trade, integration, foreign direct investment (FDI), transport economics, business economics, innovation, public finance, environment and the rational application of resources. The author considers space as a common element connecting these poles and puts it in the center of his analysis,

[2] Based on various assumptions and on the same general features – dependence, growing income and imperfect competition.

considering it from the aspect of favorable opportunity and mutual influence, as well as from the aspect of potential restrictions.

The author points out that both imperfect competition and economy of scale influenced the growth of spatial economy importance. At the same time, this is where he finds the explanation of new international trade segments, as well as of agglomeration and formation of clusters. However, although young and new discipline, with underdeveloped analytical tools and insufficiently validated empirical results, the developmental economics is gaining importance and gradually strengthens its position in the economy by the very fact that it has became an increasingly interesting topic of numerous scientific works.

The main standpoint of this book the author refers to the way an economic and business system changes the other. According to him, there is no need for economists to unconditionally follow traditional analytical framework of economy which is based on theoretical, mathematical and non-spatial models, establishing a system of equilibrium. According to this author, they are at least due to turn to both real life and current developments that comprise a system of economy. Because he cannot rely on the neo-classical equilibrium model comprising an analytical model which sometimes becomes impractical for certain occupations - such as when a geographer analyzes real geographical space, which is a very complex category of geographical science - and he is not able to make his analysis based on simple mathematical formulas only. Similarly, pure economic models relate to geography only as a support to economic analysis of both market logic and the equilibrium established on the basis of a very specific and many (unrealistic) assumptions that make mathematical modeling easier, at the same time aggravating process of making proper conclusions. Economists therefore have to focus their research beyond the usual issues related to the input-output strategy or total factor productivity. Some economists have extended the analysis on issues such as institutions, history and diversity of enterprise in the use of production factors, multiple equilibrium, development, technological and time-space trajectories, spatial location theory, local market imbalances and different imperfections.

On the other hand, geographers need to leave their "traditional analytical framework" in which they deal with the economy only to the extent that helps them to understand and explain the spatial organization of society. Instead of ignoring each other, economists and geographers should attempt to discuss issues of mutual interest, as well as both potential agreements and obvious differences. Also, they can examine the theory of complexity for the purpose of solving of common problems. By this attitude the author gives a clear signal that the application of appropriate models in the analysis of some social phenomena should be based on methodological concepts in the process of analysis, which will give certain results, and provide the appropriate interpretation, in accordance with both theoretical premises and empirical experience.

By highlighting the everyday and real life as the foreground, and by naming problems that burden underdeveloped economies and regions, referring to the fact that high newly added values are created exclusively in developed economies and regions, the author revives this theme and gives it a new and broader dimension. Moving of economic activities from one region to another[3] is a problem that will always be topical, the one that should not be questioned even if some results do not leave space for the adventure called "moving of facilities". As the addition to the above stated fact, the author clearly points out the question of establishment of production sites. Whereas, according to the author, this issue only deepens the question of location of the company, pointing out that the pressures arise not only from the aspects of the other potential locations, but from technology development and innovation, varieties of competition, changing tastes, as well as from ageing of the population. There are many elements that still affect the location of the company, and there are some among them which are new and which have overpowered once crucial elements upon which the theory of location was based before. Having the approach of the kind, the author presents a wide range of analysis and confirms the high multidisciplinary level this approach is featured by in domains of both economics and geography.

Professor Miroslav N. Jovanović has structured his book in the way that particular topics simply pass from one to another, making a proportionally formed unity of the complex content. After the opening introduction to the problems of the book, the author introduces the theoretical concepts and regulatory measures, to lead us through everyday examples and make us know the secrets of the market, of locating businesses/industries and TNC. Through the conclusion, the author leads us into continuing story about the significance and importance of locating the company, i. e. of production for a dynamic economic system, through both the further study and new research. The content of the book is designed in six thematic units with the following structure.

First Chapter: **INTRODUCTION** - At the beginning of the book the author introduces the basic problem*: why some areas, regions or economies develop faster than others?* At the same time he gives the answer: **spatial location of economic activity is the most important and challenging issue of the economy**. Quotation from *Beinhocker*: *The economy of today is still oddly complex*, he has used as a message, about the need to refrain from ignoring the traditional theory, and at the same time about the need for new solutions and applications to contemporary research economy to give better results than they have given so far. Since the direction presented by the author is of a recent date, he reserves more space in this

[3] Prosper economies or regions are ready to move parts of their activities to low-cost economies or regions with abundant available resources and beneficial business environment with skilled and cheap workforce. Expectations are that major part of the World's manufacturing industry will be moved to China. On the other hand, considering its economic growth and development, China makes its investments in regions which are not economically interconnected and which are poor in natural resources!?

book for explanations of key tendencies before he gives his final answers. Thereby, he singles out the development model as the very variable and endlessly dynamic transformation process. The constant "creative destruction" of the system itself and within, according to the author, makes the economy developing in real time.

Second Chapter: **THEORY** - is the central part of the book. Author begins this chapter by considering the space and geographic distance, from the cost aspect of trade relations, and suggests connect different methods in science and research. By discussing relationships in both economy and geography through the second and third chapter, the author suggests ways of overcoming different approaches of these two disciplines, emphasizing discussion and cooperation between the two branches. In the fourth chapter, through the basic concepts of biology, economics and evolution, the author makes us know that economy is always associated with other sciences and, from this standpoint, he informs us through the fifth chapter about the modern attitude on specifics of production, or company location. Although the old theories of production location were linked to resources and available technology, more recently, in the situation of prevailing instability, market segmentation, mobility and international connections, production and company location is determined by: (1) costs and prices, (2) demand (3) organization and technology, (4) political factors, and (5) social factors. In this chapter the author clearly distinguishes achievements of the economic growth theory, as the first of all past theories, in contemporary circumstances, and points out the advantages of the new developmental approach.

Modern circumstances reflect a higher degree of openness of the economies throughout the world, a higher degree of market specialization and fragmentation, and less difficulty in coordinating the production process through space and time zones. Also, an increasing number of products in the world become interchangeable (tradable goods), as previously positioned products in high demand in domestic market as well as competitive products in the integrated market. In circumstances of the kind, the increasing complexity of markets and systems (Chapter Six), and the difficulty of predicting market trends and imbalances to reach, according to the author, make the developmental approach superior to the neo-classical theory. The developmental economy acknowledges complexity of the system - not only from point of view of mechanisms, feedback interfaces (interoperability), endogenous change, competing expectations, strategies and demands of economic actors, but from the aspect of their incorporation in the aggregate imbalance and constantly variable picture of the system. In other words, according to the developmental theory, the state of balance can only be a temporary situation or a temporary "opportunity" for the economic system. Therefore, the author points to three possible available activities: adaptive motion, random jumps and combinations of the previous two (characteristic of the "Microsoft"). The stronger relations in the medium and long term, the narrower range of applicable strategies: own institutions are created in order to

mitigate the possible negative development process in nature, and actions are taken for the purpose of allocation of resources, in a manner supporting the future development path. Therefore, over time, in the same product's development process accompanied by market anomalies, postulates of neo-classical theory of economic equilibrium – *supply and demand lead to market equilibrium* - are violated and dominated by developmental approach principles. Effects of synchronization of measures undertaken dominate. These effects, observed on the example of production, may be twofold, positive - firms benefit from specialization and economies of scale, and negative – adaptability to both previous and current solutions can cause inefficiency, incompliance and lagging change in domains technology, competition and demand. Certainly, technological changes that are based on content, structure and nature of products and by-products (materials) that are in use should be added to the above.

Real world is full of disadvantages (market imperfection) such as shortages of supplies or sophisticated staff, or insufficient production capacity, or negative external effects, or selective measures taken in regional policy, and so on. They all have an impact on the time lag[4] between the measures taken and the desired or expected return reactions. Spatial units[5] should look for solutions in the possibilities of company/industry location. This primarily concerns agglomeration, which, on the one hand, contributes to linking of regions – by linking of activities, and on the other, to market segmentation – by separation of activities. Spatial units (clusters) suffer the effects of spatial relocation by centripetal[6] and centrifugal[7] forces. Therefore, the author points out that locating of companies in an area depends, in addition to the balance of these two forces, on the mobility of production factors, barriers to relocation of resources, on demand and its changes and on public policy. The author leads us to three possible outcomes: (1) economic activities lead to specialization; (2) economic activities are accumu-

[4] Time lag is essential to a dynamic system. It can be manifested by the following: new investments, market effects, discussion and analysis, realization of activities, term of undertaken activities results, and the like.

[5] Classification of economic and geography space includes: households, facilities (factories), clusters, industrial areas, systems, cities, regions, states, regional integrations among states, continents and the World. In this chapter the author emphasizes only three spatial units: clusters, cities and regions.

[6] Centripetal forces lead a system to spatial balance based on compatibility of various participants, including: market size (concentration of both companies and consumers), economy of scale, former and future connections between production and distribution, costs of trade, increase of transport returns, existence of providers, limited range of information and scope of knowledge, inactive workforce.

[7] Centrifugal forces test stability of balance, i. e., of the system and they include: spatial factorial non-mobility, differences of earnings both on regional and international plan, relative rent value, competition among factors of production and consumers, costs of change, environmental pollution, overpopulation, traffic accidents, criminal activities, allergies, infections and the other diseases, water shortages, sewage system, inefficient management.

lating in one region disregarding the other ones and (3) long-term polarization leads to division of developed and underdeveloped regions. At the same time, the author emphasizes the importance and motives of clusters, information and knowledge, innovation and institutions, organizations and external effects, universities, as well as of cluster policy and its protection. Cities are also viewed from the standpoint of a flexible economic system, not as in the past - only from the aspect of availability of (not) mobile resources and flows of mobile factors of production. In this way, the author once more separates the developmental approach from neo-classical theory, according to which cities do not exist because they have to be spatially interlinked, more or less evenly. The same goes for regions. Region are defined, in the perspective of economy, from the aspect of available production factors – according to the neo-classical theory as well as to combination and mobility of production factors – and from the aspects of developmental economic geography. While the first theory advocates the convergence between regions, the other one highlights their growing divergence. The author refers to a handful of examples informing us about the influence of history (historical heritage, the measures undertaken in the past, wealth, technology) and expectations (progress of society as a whole), company/production location, as well as about the extreme impact of war on the location of the company.

Third Chapter: **REGIONAL POLICY** - As an important element of the system, regional policy is relevant to the spatial distribution of economic activities, but also prone to the influence of various interest groups. Therefore, it is based on numerous compromises. Spatial approach advocates an idea about linking of markets, both national and international, and about regional policy that leads more to divergence than to convergence of regional economic activities. Thus, the efficiency of regional policy is reflected in its ability to coordinate activities related to allocation of resources. That leads to a conclusion that one of the main tasks of regional policy is to help redistribution of economic activities among regions, by introducing its regulation. The author reviews government intervention as a measure of regional policy through: (1) equality – socially motivated measures, (2) efficiency - employment of both potential and capacities and (3) strategic behavior - planning of both comparative advantages and impacts of potential output to the economy. Interventions promote growth in regions lagging behind, and are based on the assumed market imperfections. The purpose and justification of regional policy intervention the author comments through their impacts to just spatial distribution and fair distribution of economic activities, reducing of social and economic differences among regions (rather than protectionism against the new regional imbalances), projected future GDP increase, strengthening of national competitiveness, promotion of profitability based on available local resources and capabilities, as well as maintaining a higher level of production factors mobility.

National governments implement regional policies to encourage and promote the growth of underdeveloped regions. In accordance with the existing market imperfections, the objectives and instruments of regional policy are created. Regional policy objectives are the following: balanced growth, an equal share of social and cultural development of society, solidarity, regional specificity and stability, jobs, unemployment decrease, macroeconomic stability (economic growth, price stability, savings and investments, stable exchange rate), entrepreneurial spirit, the appropriate level of education, relatively competitive and liberal market, infrastructure development and improvement of living standards. Regional policy instruments are aimed at entrepreneurs and owners of production factors directly (for example, the abandonment of existing technology and switching to new technologies or to new economic activities) or indirectly (for example, through infrastructure improvements). Common effects are reflected in the change, improvement and/or in increase of employment rate and of investments and output in the region, least in the medium term. There is a dilemma only in the aspect of whether to stimulate regional development through private investment, or through direct investments in production or infrastructure (without any interest in the private sector) and/or to stimulate public-private partnerships. As the most important instruments of regional politics the author emphasizes the following ones: investment and extra investment, direct investment and state subsidies (made in domains of capital investment, social protection, income) tax benefits, licensing, provision of infrastructure and services, protection of intellectual property, interest rates decrease, decentralization of government institutions, education and health services, credit guarantees, decrease of both energy costs and public transport, and trade protection.

At the same time, the author makes firm connections between regional policy and the impact international economic integration makes in the field of the business/production location - first of all, from the aspect of positive and significant impact on the scope and direction of trade and FDI. Effects that are significant only in the medium and long term, are reflected in potential benefits (easier access to new markets, investment opportunities increase, increase of efficiency, eliminating of trade barriers, increasing competitiveness in the integrated market followed by the pressure aimed at price reduction, the exchange of information and technological innovation, the increase of economies of scale benefits, coordination of economic policies, etc..), in relocation of resources and in costs of adaptation.

Fourth Chapter: **MARKET STRUCTURE AND LOCATION OF PRODUCTION** - based on competition policy and business/industry location theory. The purpose of competition policy is reflected in the market ability to reach and maintain the level of flexibility needed to promote initiatives, innovations and constant improvement of resource allocation, while the primary objective is maintaining and increasing of living standards. Competition policy is com-

plex, and comprises two opposite polarities. On the one hand, this is an issue of spatial concentration of business, which rationalizes production and realizes economy of scale, while on the other hand, this is an issue of antitrust policy, covering the area of monopoles and protection of freedom and property. The author deals with the issue of monopoly in a picturesque way and with reference to real life examples.

As different from the neo-classical theoretical approach, which advocates innovation as an exogenous factor and/or as a random variable in the production function, the author, quoting Schumpeter, advocates the **innovation process** as **endogenous and essential to economic growth** (in the range of investments). Production function advocated by the author relies on a *customized Solow production function*, which in addition to the two basic elements, labor and capital, includes the level of knowledge (as an indicator of innovative and technological processes). The author stresses the role innovation plays as important to economic life, primarily because of the value, because of both cultural heritage and acquired advantages, as well as because of political interests. At the same time, institutions and intellectual property protection (patents), as well as the use of innovations for commercial purposes, are the basic concepts of modern exchange.

Modern business is increasingly covered by intra-industrial exchange, particularly among developed economies. In addition to that, the author quotes mergers and acquisitions (i. e, combination and incorporation), as the increasingly common forms of economic operations, which reduce operating and transport costs. In this part of the book the author points out the field of microeconomics, discussing the following from the aspect of economic integration: competition, specialization, the rate of return, economy of scale, barriers to entry and to exit a branch of industry, standardization. Special attention here is paid to the rule of origin, which is of importance when it comes to exchange (the creation and diversion of trade) within the free trade zones. This chapter ends with the important issue of non-trade barriers, by presenting them in a practical manner, through various types of these measures (anti-dumping, public procurement, technical standards, regulatory measures, precautions, etc.).

Fifth Chapter: **INTERNATIONAL COMPANIES** - In this section the author reminds us that the scope of spatial (re) allocation of production, covers not only actions of national companies and government intervention aimed at it, but also includes companies with foreign ownership structure. This is the way of connecting the international mobility of production factors (primarily capital) with transnational companies' operations (management and control of TNC and their impact on local businesses). At the same time, the author presents the importance of creating "factor customs"[8], as well as the importance of

[8] Creation of "factor customs" inside an integrated area is a strategy leading TNC into position not to rely on benefits of production factors efficiency and on employment (i. e.

TNC function in "trade creation and deviations"[9]. Through a series of theoretical examples from the domain of "TNC cross-border operations[10]", the author explains the way organized TNC capital enables overcoming the limitations of various geographic, sociological, cultural and the other environments, which are due to structural and market irregularities. There are, first of all, emphasized some measures that some governments take in accordance to state interests (tax breaks, subsidies, incentives, protection of property, economic development and regional promotion of industries, etc.), and opportunities for TNC activities.

The author approaches the notion of globalization as the great economic and political phenomenon of our time, which is not featured by positive effects on the world but – quoting Stiglitz – **there are much more losers than winners**, at the same time emphasizing the increased number of bad globalization features and illustrating his standpoint by two basic shortcomings of globalization: transparency and responsibility[11]. Unlike the neo-classics' standpoint that money flow is directed towards developing and underdeveloped countries so that they could achieve a higher level of development and reduce gap between them and the developed world, the author clearly indicates flows to the opposite direction. The question is: the gap between developed and developing countries increases, not to speak about the underdeveloped countries? Or, why there are more and more hungry and poor people in the world?

The very basis of globalization is firmly founded by the concept of liberalization. However, the experience of many countries shows that there can be no standard by which the liberalization must be carried out. Each economy is specific and therefore it must set its own the pace and depth of liberalization, according to both its economy features and its long-term strategy of economic growth and development. It can be accepted as a universal norm only, the norm which is already confirmed in practice, together with the notion that liberalization of capital must be preceded by the liberalization of goods and services. While liberalization is the political and economic process pursued by govern-

on resource efficiency), but to rely on advantages of (or on avoiding of) restrictions made weather by joint external customs or by non-custom barriers.

9 These terms are characteristic to integrated markets. Trade is "created" by the way of exchange of expensive national products for cheap foreign products made by nations which are members of the integration, while trade is "diverted" by exchange of imports from integrated countries for imports from third countries, i.e. from those which are outside the integrated area.

10 The author tries to find, by both theoretical and practical research, an answer to his own question about reasons of location of commercial activities out of national borders: *what motivates companies to locate in foreign countries?*

11 The additional shortcomings of globalization, and a burden as well, are global control instruments applied by WTO, SC, IMF and TNC. However, in accordance to the anti-globalization strategies, there are four globalization process weaknesses: lack of consistence, lack of responsibility, lack of organization and lack of transparency (exposure to the public).

ments[12], globalization is a condition that determines *behavior of companies* (TNC) - their organization, acquisitions, changing of technology, control and finance, economy of scale, customer behavior - loss of both confidence and loyalty to national producers and certain domestic products; as *liberalization of both national and international trade, production and finance*. Links between company location (TNC) and global competition the author observes from Porter's point of view, according to which the location in the modern world becomes a less relevant factor. According to Porter, ***selecting a location becomes ever more operational and less strategic task***. Transnational companies locate their head offices or sophisticated business in their countries, while their sections are distributed worldwide - of course, depending on TNC interests and functions, not only on economic but sometimes on political interests as well.

In the further parts of this book the author discusses various definitions of globalization, and leaves on his reader to get his final attitude to the phenomenon of globalization on the basis of arguments presented by both supporters and opponents of globalization[13]. The author has left a space for modern forms of organization and institutionalization in the frame of global trade processes: telecommunication (internet, satellite signals), electronics and automatics (robots), as well as some space for global standards. Alias, the theory connects foreign location of business activities to the following four motives: macro-economic stability, existence of clusters, impulses, laws and regulation policy, promotion of investments, state liberalization and privatization policies, business activity, open economy, flexible administration and quality of life. Thereby, it is not easy to find, in everyday practice, a company location based on these four motives.

The abundance of examples, that features this book, gives the reader an insight into comprehensive presentation of more frequently present business relations within mutual activities, including connecting, external effects and spillover effects. Also, a large number of examples linked to the relationship of the host country and TNC (TNC investment in research and development, intervention in favor of TNC, cultural significance, effects in domain of organization, possibilities of entering the market, wages, local impact, national and international regulations, and the like.). Undeniable fact is that host countries benefit from TNC – they increase production capacity and product range, and

[12] Globalization process is tied to privatization process, which follows both the decrease of public sector activities and the increase of private sector activities.

[13] Globalization supporters base their attitudes on positive effects of globalization – increase of economic opportunities and growth and decrease of disparities and poverty throughout the World. On the contrary, the opponents base their attitudes on social-economic costs of globalization – increase of both income gap and disparities throughout the World, uneven geography and social division of benefits, social tensions, ecological degradation and growing intolerance of political opponents. At the same time, a role of state has not ceased but changed. It is necessary for a state to forward the globalization process and to change both its role and its authority in terms of globalization process.

therefore the range of export; they increase tax revenues and job creation, and material resources (capital transfer, taxes, economies of scale, use of domestic resources and labor), as well as various factors and intangible items (new technology in production, management and control that enables productive use of resources, positive external effects in production through the process of connecting, international networks within international markets, new ideas, networking of companies inside clusters, additional training and retraining of workforce, and competition) There is a long-term question of whether a potential outflow of revenues realized through TNC operations exceeds the level of initial investment in the host economy upon the arrival of TNC. However, the activities of TNC and can adversely affect the host country, if the funds invested by TNC (FDI) jeopardize national product and employment potential of the economy. Investments in the host economy are organized mainly in domains of financial services and productive sectors of the economy, but not in backward industries, or in those for which there is sufficient demand on the world market, regardless of the structure of industry and of available resources. Also, technology transfer, as a rule, does not include both the latest generation of technological innovation and introduction into the production process of such technologies is of a local character only. The biggest problem facing any economy is the volatility of FDI and uncertainty regarding the reliance on FDI in the long run. It tells us that the local accumulation is necessary for realization of long-term development and economic growth.

Sixth Chapter: **CONCLUSION** - While the general conditions in the economy deal with economic policy by creating and achieving an optimum, a revolutionary approach emphasizes the continuous long-term process of structural change, both in space and time. In other words, as the author points out, ***a system changes the other one*** - relations between the perpetrators and the institutions are changing, and well educated workers, which can contribute to development of new ideas and/or provide new solutions to old problems, are employed. Any system, or state, or region, is specific, so these generally accepted conditions and equilibriums are not realized neither in the same way, nor by the same economic policy measures, and the least of all by the same relationship between perpetrators and institutions or by the similar structure of employment[14]. It is obvious that this approach makes the system and elements of the system far more complex than they were within the various past approaches.

For the purpose of future location of the company or business, the quantity and quality are not placed at the foreground of available/potential jobs, but instead of them there are the following terms: creating profit, tax incentives, the

[14] *The Washington Consensus*, of which neo-liberals hurriedly credited themselves, has given totally different results in South American and in Asian countries. Not only the World Bank, headed by Mr. Stiglitz, but the author of the text himself, Mr. John Williamson, who denoted wrong interpretation of his paper, proved the failure of the Washington Consensus.

structure of exports, public consumption, urban planning, technology innovations, changes in demand, the degree of economic policy liberalization, high mobility of production factors, fragmentation of markets and international connections. At the same time, modern forms of communication are increasingly ignoring distance, once an important element of locating of business activities.

The author shows that, unlike the traditional model, which specializes in production based on local comparative advantages, development approach starts from the points of synchronization of self-initiative effects, level of dependence, accumulation of knowledge, agglomerations, clusters and mergers. With the aspect of the local specialization outcome, the author also separates the attitudes of traditional and new developmental approaches. According to the first, it is necessary to reduce the cost of exchange, while in accordance to the second one the effect of local specialization is ambiguous. The final outcome is reflected in a specific industry, and depends on intra-industrial production connections, on market structure, consumer preferences, market factors (availability and mobility of price factors and flexibility) and on expectations. What characterizes this approach, according to this author, is a constant presence of shocks, uncertainty and dynamics. Such circumstances impose changes of benefits that an economy can get by the newly acquired creative knowledge, innovation, new products/factors of production or changes in consumer tastes. There are only a few industries and services remained to keep a simple, routine and standardized knowledge. These industries produce low processed products, with no effects on long-term economic growth, which will lead to further deterioration of this economy position in the World market as well as to their growing gap in relation to developed countries. Any delay in the global economic race will be all the more difficult to make up in the future. Therefore, it is necessary to get adjusted on daily basis!

By his positions presented in this book, the author directs us towards the developmental approach which is not, although rational and incorporated in contemporary developments, the best strategy of general economic policy implementation. This approach just emphasizes the fact that there are, due to frequent changes of both the environment and general circumstances, numerous strategies (featured by complex possibilities) that may be available. Thus, this is just a matter of choosing the right or appropriate one. It is really hard, or we can say that it has never been harder, to opt for an appropriate direction when it comes to locating of economic activities. Experiences among countries are diametrically opposed, and there are examples of completely different results realized by application of the same or similar strategies. Therefore, the development approach does not provide any final answers, and it leaves any question open to public discussion, political debate or theoretical and empirical analysis. It may represent both the beginning and the end. Also, this approach itself is not a source of profit, but it provides possibilities of resource relocation as possible source of profits.

Today, when it is very difficult to predict, with the high degree of reliability and certainty, in what direction the world economy will move in the future, the absolute changes that are implemented gradually and in small doses can be detected after a long time only, when it is too late to react - that is, when it is impossible to act upon the results of implemented activities, because of the missed suitable moment for taking initial actions. Therefore, the linear approach is wrong, i. e. it is wrong to believe and expect that what is there today will be there tomorrow as well, and that it will be there with greater intensity. The developmental approach is therefore based on a nonlinear, multiply balanced dynamic basis, and it requires both medium and long terms for the purpose of representing its effect completely. As such, it makes a space for new thought, discussion and research.

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