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**I. STRUCTURE MODERNIZATION AND THE  
INCREASE EFFICIENCY OF THE USE  
RESOURCES – THE ESSENCE OF THE  
DEVELOPMENT PROCESS  
DURING POSTCRISIS**



# INFORMATION TECHNOLOGY AND COMMUNICATION (IT&C) AND RESEARCH AND DEVELOPMENT (R&D), OUTSTANDING FACTORS OF THE POST-CRISIS ECONOMIC RECOVERY

**Gheorghe ZAMAN**, Professor Ph.D

Corresponding Member of the Romanian Academy

**Zenovic GHERASIM**, Senior Lecturer Ph.D.

Faculty of Financial-Accounting Management, Bucharest

*Spiru Haret* University

## ***Abstract***

*Regardless of the business cycle or of the crisis, the knowledge-based society continues to evolve based on two main pillars – IT&C and R&D – although the funding and investments in such areas are currently more or less shrinking. Under these circumstances, there are economic, social, technological and environmental reasons for which investments in the IT&C and R&D fields must be prioritized under the anti-crisis strategies in Romania.*

*The main argument in favour of is mainly based on the economic and social efficiency, on the technological progress on short, medium and long terms. At the same time, we are pointing out the main ways, instruments and mechanisms through which efficiency could be obtained for IT&C and R&D investments efforts in Romania during the post-crisis economic recovery.*

**Key-words:** *Information Technologies & Communications (IT&C), Research & Development (R&D), economic crisis, economic efficiency; sustainable development, knowledge-based society (KBS), management*

**JEL Classification:** O<sub>32</sub>, L<sub>86</sub>

## **1. Introduction**

***Information Technology and Communication (IT&C) sector*** includes the totality of technologies implying the acquisition, storage, adaptation and distribution of the information through methods, techniques and electronic means (computers, radio, television, telephone etc.).

***The Research and Development (R&D)*** includes<sup>1</sup> the creative work undertaken on a systemic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications.

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<sup>1</sup> OECD – *Glossar*, 2010, [www.oecd.org](http://www.oecd.org).

Regardless of the business cycle or of the crisis, the knowledge-based society continues to evolve based on two main pillars – IT&C and R&D – although the funding and investments in such areas are currently more or less shrinking. Under these circumstances, there are economic, social, technological and environmental reasons for which investments in the IT&C and R&D fields must be prioritized under the anti-crisis strategies in Romania.

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## 2. The institutional framework at international level

*The Organisation for Economic Cooperation and Development (OECD)* founded in 1960, at first, comprised 20 states, among which the USA, Germany, France, Great Britain, Italy, Spain, Canada, Greece. Data collecting, analysis and synthesis, as well as decision-making have been on OECD work agenda as priority positions for urgent actions at the global level for improvement of the IT&C and R&D performances in close relation with protecting and preserving the environment, fighting global warming and developing the resource management.

*The Committee on Information, Communications and Computer Policy* of OECD is preparing its analysis and recommendations for the e-economy taking into consideration the following three interdependent pillars: connectivity (the convergence of integrated voice, video and data platforms on bases of the wideband networks, wireless and mobile communications); creativity (socio-economic and innovation activities allowed by IT&C); trust (the protection and authorization of online users and consumers). This committee provides: data sources for comparative analysis on the economic and social implications of IT&C and R&D; impact analysis of IT&C on the economy and environment, including the digital content, e-business, the IT&C competences; the personal data cross-border flows on the digital identity management, on the risks the children accessing the Internet encounter, as well as on information security strategies.

The basic elements of the digital economy are the IT&C infrastructure, the facilities of insuring the online transactions and the transmission means of the information from one subscriber to another (subscriber being either the person or the organisation).

Ever since Lisbon, in 2000, the European Union defined the **e-Europe objectives**, meaning that initiative to impel the IT&C application in the EU member states, with an accent on the digital economy, education and scientific research, the healthcare services development, also the development of the intelligent transport, of the e-Government etc. The European Commission's strategy *i2010 – an information-based society* refers to a integrated approach of the IT&C systems based especially on the multi-access platforms' progress, of the wideband communications (optic fibre, satellite), systems generating infrastructures and software applications at the base of the digital economy.

At the EU level, many Web-based information instruments are dedicated to the management of the research-development projects within the **European technological platforms**, in accordance with “smart and green” objectives of EU Strategy 2020 and other programs for current crisis exit.

*The USA competent institutions and International Development Agency (USAID)* elaborated in 2009 a series of programs and minimum standard guide for the post-crisis economic recovery. These guide include common standards for all sectors and analysis and evaluation standards, grouped in four distinct fields: financial services; assets access; new workplaces; the development of the company. The “core” measures of these programs are focused on the efficiency “panaceum” potential and outstanding role of IT&C and R&D sectors.

### 3. The IT&C and R&D impact on the post-crisis economic recovery

Although delayed, the prospects of post-crisis economic recovery determines the characteristics of the governmental analysis, measures, programmes and initiatives concerning the business environment taking into account the special impact that science and technology are able to exert on the total factor productivity, using in this context the new endogenous models generation.

OECD has analysed a total of 92 Governmental programmes and industrial initiatives in the IT&C and R&D and environment fields, in 22 OECD and EU states pointing at the necessity of non-reducing investments in these fields. The direct effects of IT&C are closely related by OECD to the term **Green IT&C strategies** according to the requirement “**doing more with less**”.

A conceptual model for the analysis of the influence of the IT&C and R&D factors on the post-crisis performance level of the company is presented in Figure 1 (according to Grewal).

Figure no. 1 shows the main factors of influence for the performances after crisis from the viewpoint of socio-economic environment, company flexibility and instrumental variables. All such factors are essentially changed under the crisis and post-crisis circumstances. For example, the R&D in the field of green technologies is becoming one of the most relevant priorities for achieving the sustainable development objective for the future.

It is worth mentioning that the R&D expenditures for the “green” technologies have become a priority in the economic stimulation package of many governments. For example, in 2008 the USA spent 59 billion dollars on “green” technologies, Germany - 5.8 billion dollars, Australia – 5.7 billions and Canada – 2.8 billion dollars. Special attention is given to the technologies providing new ways of energy efficiency increasing through IT&C devices and the most recent results of R&D in the field.

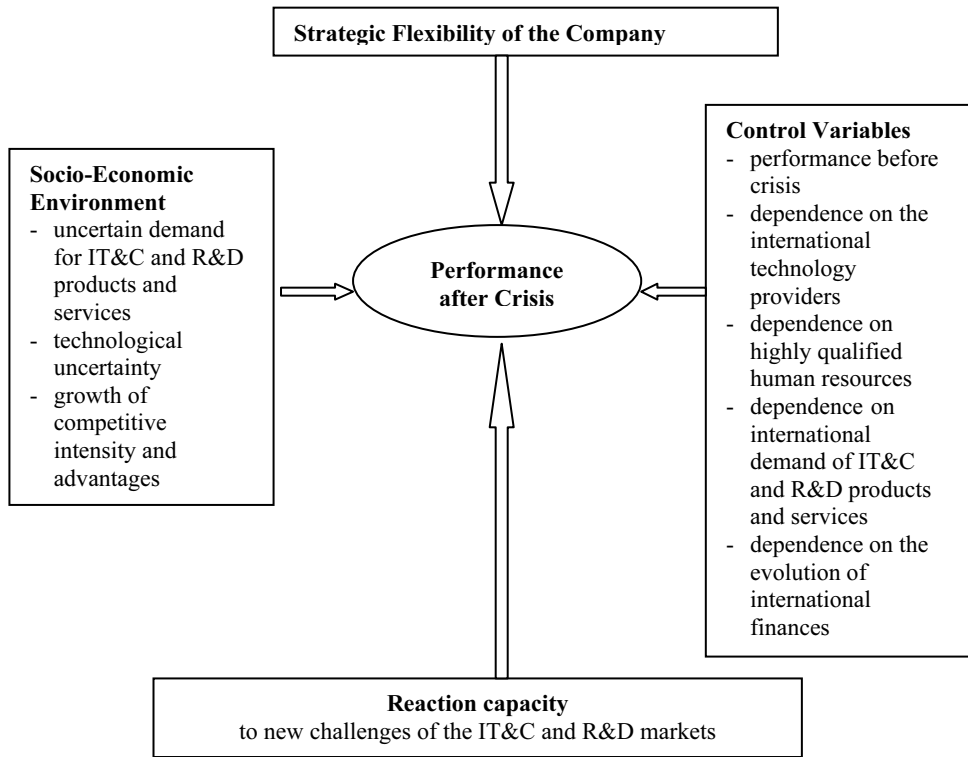


Fig. 1. *Conceptual model for the analysis of the influence of the IT&C and R&D factors on the post-crisis performance level of the company*

As a consequence, the governmental IT&C policies concentrate on: a) stimulation of the R&D for the “green” and applied IT&C technologies; b) the growth of public-private partnership role in distributing the “green” and “applied” technologies on a complementary basis; c) the development of competences and level of education in the IT&C field.

In 2008, Japan spent about 3 billion USD for R&D and IT&C technologies with high energetic efficiency. Another focus is on IT&C projects with intelligent application. At the same time, Denmark allocated a research fund of 36 million DKK for applications where intelligent technologies develop tele-work and virtual meetings, as well as for research capable to contribute to the conservation of the global energy.

A greater emphasis is put on the initiatives of the business environment related to: 1) encouraging the R&D companies (start-ups, spill-overs and spin-offs); 2) IT&C diffusion for “green” and “applied” research projects devoted to product and process technology improvements; 3) optimisation of energy efficiency within value chains.

**The analytic matrix, used by OECD for the classification of governmental programmes and industrial initiatives analysed in the IT&C field**

Impact categories	Direct and permissive effects of the IT&C	Life cycle phases				
		R&D and design	Production	Distribution	Use	Cassation
	Global warming					
	Energy use					
	Toxicity					
	The exhaustion on non-energetic resources					
	Soil usage					
	Water usage					
	Ozone layer exhaustion					
	The bio-diversity					

*The analytic matrix* used by OECD for the classification of governmental programmes and industrial initiatives analysed in the IT&C field (table 1) takes into consideration *the direct effects, the environment impact and the life cycle phases*. Each cell of the matrix represents a potential target and indicates the focus of the policies, programmes and proposed initiatives.

We can therefore conclude that the main factors of reducing crisis aftermaths and re-launching sustainable economic development at the macro level are concentrated on general efficiency factors as well as on science and technology contribution, enhanced by IT&C infrastructure and oriented in accordance with multidisciplinary approach required by sustainability and complexity, as well as by the triple objective of EU Strategy 2020 concerning “the smarter, cleaner and more cohesive society”.

#### **4. The innovative factors at the company level and the possibilities to recover from the crisis**

Taking into consideration the new trends of the economic and social development today, it is clear that IT&C and R&D have become autonomous sectors of the economy, in the input-output terms, distributing their outputs to practically all the other branches of the economy. This means the increasing role of innovation and IT&C at micro level and intangible assets as the main source of generating profit and income. In view of this situation, a new twofold pattern of R&D and IT&C activities can be observed for their intra- and extra-muros deployment in the public and private sectors. At the same time, the size of firms has a very great importance to the recovery from crisis. In this respect, large-size enterprises seem to be less affected by the crisis consequences as far as the R&D funding and investments are concerned.

According to specialists and researchers<sup>2</sup>, about half of the innovative European companies do not develop in-house R&D activities. However, they become innovative mainly using information received from the suppliers and competitors in their non R&D-related daily business. For this type of companies, this could be a potential way to overcome the crisis. On the other hand, the companies with in-house R&D divisions must also use clients, universities and other research institutions, buy patents as important information sources for enhancing their innovations. In both cases, one conclusion is of overall significance in the sense that IT&C and R&D are a promising way for re-launching business.

In parallel with a greater importance given to R&D funding, they have to pay more attention to improved commercialisation of products, services and new or modernised (improved) technologies (processes), as a prerequisite for being successful and competitive.

Besides innovation itself, there are at least three additional ways to develop new products and processes:

a) achieving small improvements to the existent products and processes based on the creative abilities of the professional staff in the company;

b) the imitative reproduction that does not need R&D in case of adoption of certain innovations by the users;

c) the combination of scientific and technologic knowledge in a way that implies industrial design and engineering.

The innovative activities without having specialised R&D sectors in the companies are very common, representing a proportion of over 52.2% of the total number of companies.

The innovative potential of the companies that do not develop R&D activities must be taken into account when formulating the policies to stimulate their innovative capacity as well as the cooperation with in-house R&D activities, with companies contracting R&D with third parties or companies having minor in-house creative activities and companies acquiring new technologies from other companies (technologies adoption).

In crisis and post-crisis periods, the choice of innovation strategies through R&D and non-R&D activities (contracting R&D from third parties, licenses, consultancy services, obtaining new technologies by buying other companies or hiring new highly qualified employees) becomes particularly important in terms of resource savings and R&D efficiency growth.

Under the crisis circumstances, both the R&D and non R&D companies are involved in the well-known process of the creation and diffusion of R&D results according to the following stages: first creators and adopters (about 5% of companies); early adopters (15% to 30%); majority adopters (about 40%); late adopters (about 25%). In our opinion, the recovery imposes for developed countries a more intense R&D process in the category of first creators and first adopters, while for developing countries, a special effort should be devoted for the so-called majority adopters, meaning in fact an intensification of technology transfer.

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<sup>2</sup> *Third European Innovation Survey (LIS-3)*.



The general ability of companies to finance and manage innovation **depends on their dimension and export capacity**. Ever since 1950, Schumpeter considered that, in the mature market economy, the big companies are the most important generators of technologic progress. Unlike the small companies, the big ones have enhanced capacities to generate funds that can be invested in R&D projects with a relatively high risk-degree, taking advantage of the scale economies. The relation between the company's size and the R&D intensity differs from one sector to another, but it is generally known that big companies have more possibilities than the small ones to engage in research activities that need growing investments. The small companies lack the adequate financing sources in most of the cases and for this reason they need specific measures and policies of micro-financing R&D in this sector.

**The export**, as an indicator measuring the innovative activity reveals that on average, the **export companies** are more R&D active than the non-export ones, using a greater volume of intangible assets and allocating more resources for R&D. Exporters' competitiveness is tested on the external markets especially by more opportunities, the access to a relatively extended number of technologies, comparatively with the internal market technologies. There is a clear advantage that export companies can afford supplementary expenditures for R&D, leading to maintaining their external competitiveness.

Generally, the companies performing in-house innovation with or without R&D have a higher innovative capacity than those acquiring new technologies developed by others and that remain early, late or majority adopters.

**The highly skilled labour force** is another indicator reflecting innovation, and is an *intangible good* of companies, especially in the industries based on knowledge, where they are organised in complex, often multi-disciplinary, research teams, with clear labour divisions among the team members (the scientist giving the ideas, the executors, the R&D results marketing specialists etc.), and also beneficiaries of products and services.

The companies with a low innovative capacity (especially the small non-exporter companies that do not have highly skilled labour force and innovation internal activities) can innovate more by non-R&D activities which however could result in creativeness.

The differentiation of innovative activities according to the final results – the product or the process – highlights a series of particularities for each activity type.

**The product innovation** means making new or significantly improved goods and services, while **the process innovation** means introducing improvements to the operations, logistics, information flows and equipments.

The product innovation implies more research, and the process innovation more external suppliers and this frequently means creative activities (that do not necessarily need R&D resources or efforts) such as buying cars and modern tools, hardware, software, patent and licence, training investments and other activities such as design, engineering.

However, a very close interdependence between R&D and non R&D activities seems to be the optimal solution for crisis remedies.

## **Information is an important source of multiplying the technological and innovation opportunities.**

The sectors in which the suppliers have an important role (the light industry, leather, footwear) mainly innovate when impelled by the equipment and material suppliers, spending most of the allocated funds for purchasing new modern equipment and tools. The companies dependent on suppliers and very productive in the wood industry, pulp industry, textile industry, leather industry, footwear industry, metal products, printing and publications, paper, plastic, rubber, vehicles spend over 50% of their innovation budget on non-R&D activities, such as purchasing new equipments, machinery and logistics. The science-based sectors (pharmaceuticals, IT&C, radio, precision instruments, computers) develop most of their technology with their own effort, through R&D activities, allocating over 50% of their total expenditures for innovation.

The decision to invest in R&D is limited by the company's capacity to recover the investment expenditures as soon as possible or to decrease production costs to comfortable levels. At the same time, the R&D strategies have to pay more attention especially on patent protection, brand and commercial secret, benefiting of the time advantage versus competitors, the complexity of the design and the proprietorship of the different types of tangible and non-tangible assets. Although patents are one of the most suitable value-generating means, they cannot be fully taken advantage of by themselves. They can rather be used with some other forms of intangible assets.

In appendix 3 we presented the results of a survey<sup>3</sup> regarding the *behaviour of the companies in the EU member states during the crisis in 2009-2010* from the point of view of innovation expenditures behaviour of companies, based on relevant the following: the company size; the innovation intensity; the importance of innovative products/services for sales; the opportunity for innovation; the implication of the potential innovation users; the significant changes in the area of the policies with a positive effect on innovation.

Annex 3 shows that generally only a proportion between 28-32% of the total number of companies expects the reduction of innovation expenditures in the near future (the first half of 2010).

## **5. The remuneration of the intensive science branches – potential recovery factor**

Using the classification of the national economy branches, according to the *intensity degree of innovation* (see annex 1), *the average monthly net wage by economy sectors*, calculated for the following branches in Romania between 2003 to 2008: **highly innovative (HI)**; **average-highly innovative (AHI)**; **average innovative (AI)**; **poorly innovative (PI)**.

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<sup>3</sup> See Kanerva M., Hollanders H., *The impact of economic crisis on innovation. Analysis based on the Innobarometer 2009.*

Table 2

**The monthly net wage in Romania, by economic branch groups and innovation level**  
Lei/ employee

Branch groups	Years		
	2003	2005	2008
<b>Total economy</b>	<b>484</b>	<b>746</b>	<b>1309</b>
• Highly innovative branches (HI)	533	812	1289
• Average highly-innovative branches (AHI)	597	893	1438
• Average innovative branches (AI)	565	873	1411
• Poorly innovative branches (PI)	644	877	1798

*Source: Own calculations based on data from the Romanian Statistical Yearbook, 2009, p. 295, 302.*

The data in table 2 and annex 2 reveal some important aspects regarding the average level of monthly wages, grouped by innovation intensity, that can be used as benchmark for a remuneration and income policy in order to boost Romania's recovery after the crisis, by stimulating the innovative activity.

Compared to the net average wage in all the analysed years, the employees from the poorly innovative branches received much better salaries than the ones working in the highly innovative branches, which may be seen as a paradox. Generally, the intensive-science branches, which are the driving force of the knowledge-based society are the best paid in the developed countries.

However, the situation in Romania is exactly the opposite. The causes of such anomaly may be explained by:

- the Romanian market and the decision makers do neither fully understand or appreciate the contribution of this branch group (HI) to the economic and social progress, nor the creative input of the intangible assets or of the intellectual capital for the profit generation, including multiple positive externalities, as a proof of their poor expertise and abilities;

- the highly innovative branches (HI) do not have the necessary and sufficient *de facto* output, proven at least on the short term, still achieving relatively weak performances compared to other countries.

Although it is hard to give a strait-forward answer to this “vicious circle”, we consider that the maintenance of the status quo in matters of remuneration in this field cannot contribute to Romania's recovery from the crisis.

In order to validate one of the two explanations or a combination of both we need to study more thoroughly the causes of the under-performances of the national innovation system, taking into consideration the necessity to solve the problem against the background of certain restrictions regarding the financing sources and their efficient allocation, on different time horizons.

The 25% decrease in the public sector wages – measure implemented by the government in 2010 – affects the employees in research, health and education and will aggravate even more the situation in the HI branches, therefore delaying the recovery.

The HI branches confer solid premises for internal and external competitiveness, export promotion and increase of the added value. Wage-wise, their disadvantage is not meant to stimulate the innovative input in Romania. The G-20 summits, as well as other economic and social international organisations highlighted the necessity to avoid the drastic funds cuts for R&D during the 2009-2011 crisis years. The decision of certain developed countries to maintain the level of investments in the R&D sector during the crisis should be considered as an example.

Table 3

**The R&D expenditures in Romania and other countries during 2008-2010**

– bil USD –

Country	GDP 2008 bil. \$ PPP	GDP 2009 bil. \$ PPP	R&D stimulants 2009 bil. \$ PPP	GDP 2010 bil. \$ PPP	2010 R&D as % GDP	2008 expenditures R&D bil. \$ PPP	2009 expenditures R&D bil. \$ PPP	2010 expenditures R&D bil. \$ PPP
<b>Romania</b>	<b>271</b>	<b>248</b>	<b>-</b>	<b>249</b>	<b>0,53</b>	<b>1,434</b>	<b>1,314</b>	<b>1,320</b>
USA	14,260	13,875	787	14,083	2,85	397,629	389,203	401,919
Japan	4,329	4,095	110	4,165	3,41	147,800	139,640	142,026
China	7,939	8,651	586	9,429	1,50	102,331	123,709	141,436
Germany	2,918	2,763	103	2,772	2,46	71,861	67,970	68,191
South Korea	1,335	1,322	11	1,369	3,13	41,742	41,379	42,850
France	2,128	2,077	33	2,096	1,98	42,233	41,125	41,501
UK	2,228	2,128	36	2,147	1,75	38,893	37,240	37,572
India	3,297	3,475	4	3,697	0,90	26,706	28,148	33,273
Canada	1,300	1,268	-	1,294	1,83	23,781	23,204	23,680
Russia	2,266	2,096	20	2,127	1,04	23,482	21,798	22,121
Italy	1,823	1730	6	1,733	1,08	19,678	18,684	18714
Brazil	1,993	1979	4	2,048	0,91	18,136	18,009	18,637
Spain	1,403	1350	113	1,340	1,28	18,000	17,280	17,152
Sweden	344	327	-	331	3,51	12,076	11,478	11,618
Netherlands	672	644	8	648	1,63	10,950	10,479	10,562
Israel	201	201	-	206	4,40	8,846	8,844	9,064
Austria	330	317	-	318	2,58	8,530	8,179	8,204
Switzerland	317	311	1	312	2,36	7,474	7,340	7,363
Belgium	389	376	3	376	1,81	7,028	6,808	6,806
Turkey	903	844	-	876	0,76	6,830	6,414	6,658
Finland	194	182	-	183	3,36	6,520	6,115	6,149
Czech Republic	265	254	-	257	1,44	3,814	3,658	3,701
Poland	668	675	4	458	0,74	3,654	3,552	3,611
Portugal	238	229	3	369	1,21	2,850	2,711	2,783
Greece	343	340	-	340	0,53	1,828	1,802	1,802
Hungary	197	184	6	182	0,93	1,823	1,711	1,693
Slovenia	59	56	-	57	1,38	0,828	0,784	0,798
Slovakia	120	114	-	119	0,42	0,498	0,749	0,500

Source: *R&D Magazine*, Battelle, OECD, IMF, CIA 2009, <http://www.rdmag.com/Featured.Articles/2009>.

In 2008, a larger gap between the nominal net average wage in the HI branches and the average salary in the national economy (1,309 lei/ employee vs 1,289 lei/employee) is visible and cannot be considered as a promising trend.

If doctors, teachers, researchers are paid less than an average skilled worker, it means that the economic and social value axis is strongly distorted, and it does not take into account the economic and social input on the short, medium and long terms of the different levels of the labour force skills. Consequently, the wage discrepancies, even if existing *de facto* in the emergent market in Romania as some specialists or theoreticians might claim, is far from being sustainable and solution-oriented.

Some average-highly innovative branches (AHI) also have superior remuneration levels than the HI branches over the analysed period. We think this confirms the preponderance of the technology transfer to Romania, as priority. It is important to keep in mind that the technology transfer, the assimilation of new products and processes in Romania perpetuate its position as catching-up country. The relative or absolute reduction of the above-mentioned wage gaps is possible through an optimal combination of intensifying scientific research and the effective original R&D outcomes (inclusively through development of the imported, transferred technologies) and the assimilation through patents and licences of the products and processes from other countries.

The data in table 3 highlight a series of important aspects regarding the R&D GDP/expenditures relations, among which we mention:

- the developed countries which allocate a greater percentage to R&D expenditures from the GDP, compared to the less developed countries;
- the decrease in GDP in 2009 happened in most of the countries, except for China, Poland, Israel, Switzerland, Norway and Poland;
- the volume of expenditures allocated to R&D in general was smaller in 2009 comparative to 2008, except in China and India;
- a series of countries allocated in 2009 special incentives funds for R&D, among which the USA (787 bil. UDS), Japan, Spain and Germany over 100 bil. USD, France and England – 33 and 36 bil. USD.
- Romania, in line with some other countries, did not allocate incentive funds, but reduced the R&D financing in 2009;
- the PIB prognosis and the R&D expenditures forecast for 2010 increases comparatively to 2009, even if the recession continues this year in certain countries.

We must take into account the fact that the foreign direct investments in Romania are mostly in fields that are average or poorly innovative and that the results of the research within the parent company are transferred to the subsidiaries in Romania. This situation is not meant to stimulate the Romanian R&D sector.

There are certain exceptions as well. We shall refer now to the case of Dacia Renault Automobile Company (table 4) which enhanced the research activities in Romania offsetting the effects of the crisis, increasing or maintaining the turnover during 2009-2010.

Table 4

**The innovation activity – Dacia Automobile company turnover relation**

Years	<i>Dacia Automobile Company turnover</i> (Bil. Euro)	The evolution of <i>innovation activity</i>
2003	390	Dacia only sold Dacia Super Nova and had a 100 bil. lei loss.
2004	593	Dacia Logan's introduction – First product built at Mioveni on the low-cost technical platform
2005	1,250	Diesel motorization of 1,5 litres and 70 horsepower, completing the commercial driving force range for Logan with an economical version
2006	1,575	Logan MCV's (break) introduction representing approx. 25%
2007	2,078	Logan VAN and Logan Pick-Up (utilitarian vehicles for the small business) introduction
2008	2,075	SANDERO's introduction – 50% of the sales (for the 20-45 year-old category)
2009	2,125	SANDERO STEPWAY's introduction
2010	2,000-2,010	DUSTER's introduction – the first SUV in the history of the brand

*Source:* Dacia Automobile Company data.

Over 2003-2010, Dacia Renault Automobile managed to increase the turnover through successive improvements of the Dacia car based on R&D, even if the local and international business was hit by the crisis. The new Dacia model – Duster – incorporated elements from Nissan, Renault and Dacia. The financial crisis raised certain issues regarding the company management, as the component suppliers registered delays at delivery.

The Duster project started in France in 2006 after Dacia Logan had been introduced in 2004. For the first time, the technologies integrated the traction system with the low-cost platform of the former Logan model. It is interesting that about 50% of the Duster project was developed in Romania, by Romanian engineers within the *Renault Technologie Roumanie* (RTR) Engineering Centre, which designed elements connected to the motors, car bodies, brakes, gear boxes, etc. In 2009, the Dacia sales increased by 20% to more than 310.000 units over Europe, while other companies in the field registered lower sales rates. The Renault research centre in Titu employed 300 engineers recruited amongst 1,200 candidates. RTR currently works at the mini version of Renault. The *facelift* version will be built by Romanian engineers. At the same time, the larger version of the utilitarian *Kangoo* is under construction, most of the project being developed in Romania. All these results encouraged Renault France to rely to a larger extent on the innovation capabilities of their Romanian branch.

Unfortunately, we cannot enumerate many examples of positive responses to the crisis based on the R&D input, such as the case of the above-mentioned company, which belongs to the average-highly innovative branch group.

**The classification of the economic sector according to the innovation intensity**

<b>Sector</b>	<b>CANE sector</b>
Highly innovative	29: Cars and equipments 30: Office equipment and computers 31: Electric equipment and devices 33: Medical, precision, optical and watch-making instruments 72: Computers and connected activities 73: Research & development
Average-highly innovative	17: Textiles 23: Coal, petrol products and nuclear fuel 24: Chemical products 25: Rubber and plastics 26: Other mineral non-metallic products 27: Basic metals 34: Motor vehicles, trailers and semi-trailers 35: Other transport equipment 64: Post office and telecommunications
Average innovative	20: Wood and wood products, woodblocks, except furniture 21: Cellulose, paper and paper products 28: Metal products 36: Furniture and other manufacture products 62: Air transport 65: Financial intermediation except the insurances and the pension funds 70: Real estate 71: Car hiring, personnel equipment and domestic goods 74: Other business
Average-poorly innovative	10: Brown coal and coal extraction 11: Petrol and natural gas extraction 15: Food and beverages 16: Tobacco products 22: Publishing houses, publications, reproductions and recordings 40: Electricity, gas, steam and hot water suppliers 41: Water management, purification and distribution 45: Constructions 66: Insurances, pensions fund, except the compulsory social security

**Average net monthly wages (lei/ employee) at the economy level and according to branch groups taking into consideration the innovation level**

	<b>2003</b>	<b>2005</b>	<b>2008</b>
<b>Average net monthly salary</b>	484	746	1309
<b>1. Highly innovative</b>			
– cars and equipments	514	759	1252
– office equipment and computers	547	417	1129
– electric equipment and devices	504	694	1083
– media equipment, television sets	665	1281	1628
– medical instruments and devices	488	851	1107
– education, R&D	477	829	1538
<b>Media (1)</b>	532,5	811,8	1289,5
<b>2. Average-highly innovative</b>			
– textiles	356	523	831
– coal, petrol products and nuclear fuel	942	1475	2357
– chemical products	639	951	1531
– rubber and plastics	457	638	1011
– other mineral non-metallic products	484	755	1253
– basic metals	634	971	1543
– motor vehicles, trailers and semi-trailers	543	833	1397
– other transport equipment	644	938	1445
– post office and telecommunications	673	957	1576
<b>Media 2</b>	596,8	893	1438
<b>3. Average innovative</b>			
– wood and wood products, woodblocks, except furniture	300	455	741
– cellulose, paper and paper products	472	687	1060
– metal products	447	714	1532
– furniture and other manufacture products	348	517	821
– air transport	673	957	1576
– financial intermediation except the insurances and the pension funds	1246	2065	3208
– real estate	469	720	1339
– car hiring, personnel equipment and domestic goods	-	-	-
– other business	-	-	-
<b>Media 3</b>	565	873	1411
<b>4. Poorly innovative</b>			
– brown coal and coal extraction	988	1352	2304
– petrol and natural gas extraction	805	1346	2665
– food and beverages	388	582	959
– tobacco products	948	1717	2623
– publishing houses, publications, reproductions and recordings	470	676	1116
– electricity, gas, steam and hot water suppliers	858	1348	2389
– water captation, purification and distribution	537	763	1345
– constructions	424	628	1156
– commerce	364	575	1040
– public administration, security	692	1136	3386
<b>Media 4</b>	644,4	877,2	1798,3

*Source: Romanian Statistical Yearbook, INS 2009.*



The response of the EU countries companies to the current and awaited decreases of the innovation expenditures, in the conditions of the current economic crisis

	-%-					
	The innovation expenditures did not decrease in the last 6 months of 2009	The innovation expenditures decreased in the last 6 months of 2009	Total	The innovation expenditures are not expected to be reduced in the near future	The innovation expenditures are expected to be reduced in the near future	Total
<b>All the companies</b>	76,7	23,3	100,0	70,6	29,4	100,0
<b>Size</b>						
20-49 employees	77,4	22,6	100,0	68,1	31,9	100,0
50-249 employees	75,6	24,4	100,0	75,3	24,7	100,0
250+ employees	76,1	23,9	100,0	71,2	28,8	100,0
<b>Branch groups</b>						
Highly innovative	80,3	19,7	100,0	73,0	27,0	100,0
AHI	71,6	28,4	100,0	60,0	40,0	100,0
innovative	76,1	23,9	100,0	71,6	28,4	100,0
Average innovative	76,9	23,1	100,0	74,7	25,3	100,0
Average-poorly innovative	75,9	24,1	100,0	69,5	30,5	100,0
Poorly innovative						
<b>Innovative capability of the companies</b>						
– leader	83,9	16,1	100,0	77,4	22,6	100,0
– follower	78,6	21,4	100,0	70,1	29,9	100,0
– moderated innovator	71,9	28,1	100,0	64,5	35,5	100,0
– recuperator	67,1	32,9	100,0	67,1	32,9	100,0
<b>2007-2008 innovation expenditures tendencies</b>						
Increasing	82,8	17,2	100,0			
Decreasing	44,0	56,0	100,0			
Stable	77,6	22,4	100,0			
<b>Companies decreasing innovation expenditures in the last 6 months</b>				35,7	64,3	100,0

(continuing annex 3)

<b>Innovator type</b>						
Product or/ and process <i>innovator</i>	77,4	22,6	100,0	70,5	29,5	100,0
Marketing and/ or organisational <i>innovator</i>	76,5	23,5	100,0	71,0	29,0	100,0
<b>Non-CD innovator</b>	76,3	23,7	100,0	68,0	32,0	100,0
<b>Intensity of the company innovation</b>						
Low (<5%)	76,9	23,1	100,0	72,3	27,7	100,0
Average (5% la 25%)	77,6	22,4	100,0	67,1	32,9	100,0
High (>25%)	65,6	34,4	100,0	61,7	38,3	100,0
<b>The importance of the innovative products/ services for the sales</b>						
The greatest part of sales comes from innovative products or services	76,0	24,0	100,0	78,7	21,3	100,0
<i>The innovative and non-innovative products and services have almost the same weight</i>	81,1	18,9	100,0	72,8	27,2	100,0
The greatest part of sales comes from non-innovative products or services	73,0	27,0	100,0	66,8	33,2	100,0
<b>Companies' integration for the support of the innovation activity</b>						
Knowledge management systems	76,3	23,7	100,0	73,0	27,0	100,0
Staff-rotation for different positions	72,6	27,4	100,0	69,5	30,5	100,0
<b>The implication of potential and common users in innovation activities</b>	76,4	23,6	100,0	71,6	28,4	100,0
<b>The establishment of creativity targets in training and recruitment</b>	78,0	22,0	100,0	72,5	27,5	100,0

(continuing annex 3)

<b>The main advantages in the near future shall be:</b>						
New products, processes and services development	78,5	21,5	100,0	76,8	23,2	100,0
Reduced costs	68,2	31,8	100,0	58,1	41,9	100,0
<b>Public acquisitions interest (obtained contracts, submitted for auctions or investigated opportunities)</b>	73,7	26,3	100,0	70,3	29,7	100,0
<b>Companies operating on international markets</b>	76,6	23,4	100,0	67,7	32,3	100,0
<b>The leader market to own country</b>	77,6	22,4	100,0	72,5	27,5	100,0
<b>The greatest innovation opportunities in the near future come from:</b>						
New export markets	69,9	30,1	100,0	66,6	33,4	100,0
The eco-products demand	76,8	23,2	100,0	71,1	28,9	100,0
<b>Significant changes in the policy areas with a positive effect on innovation</b>						
New demands from environment standards/ regulations	76,6	23,4	100,0	71,4	28,6	100,0
Environment taxes changes	76,9	23,1	100,0	71,5	28,5	100,0
Public financial support changes	82,0	18,0	100,0	75,2	24,8	100,0

Source: *The impact of the economic crisis on innovation. Analysis based on the Innobarometer 2009 survey*, Kanerva M., Hollanders H., December 2009.

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# THE ROLE OF *E-LEARNING* SYSTEMS IN REGIONAL DEVELOPMENT

**Maria ANDRONIE**, Associate Professor Ph.D.

**Iustin ANDRONIE**, Lecturer Ph.D.

Faculty of Financial and Accounting Management, Bucharest

*Spiru Haret* University

## **Abstract**

*Nowadays, many countries develop human resource remodelling strategies. Having in view the increasing competition at international level, these countries develop lifelong learning systems to hold their edge in the global competition. Increasing competition leads to the development of new staff training methods in order to meet the customers' demands; the e-Learning systems stand out.*

*The Information Communication Technology – ICT, an useful strategy for the education system improvement, is a means enabling the students develop their fundamental knowledge and the necessary competences in various fields in a knowledge-based economy. Computer skills become a “must”. We need to understand the way to improve the education system of an institution by implementing these technologies, in general, and the e-Learning systems, in particular. In this context, the information systems are the driver of a global education.*

**Key-words:** *Information Communication Technology, e-Learning*

**JEL Classification:** I<sub>20</sub>, I<sub>21</sub>

## **Introduction**

On the knowledge-based economy background, education is the main field aimed at knowledge dissemination for a better world. We need a high-quality education system providing fair access to knowledge. The education system improvement must be approached from various perspectives, depending on the specific context and on the leaders' vision.

Developing a knowledge-based economy involves various objectives in a resource competition (innovation, education, information infrastructure). In the future, all economic systems (not only the advanced ones) will strive to develop a knowledge-based economy. In a knowledge-based economy, the innovators and lifelong learners will be winners. Such a phenomenon will place the human resources in the centre of competition and development. Political support and social consensus are essential in developing a knowledge-based economy. [4].

The human capital's key role in developing the regional and global economy in the contemporary knowledge-based information society imposes a new approach of education and training. Practically, an increased competitiveness in a local and global economy depends on increased investments in education and training. The

information society involves both access to information and knowledge and new knowledge generation and transfer. In this context, the education and training processes in every country become more and more important. Human resource training and improvement systems may be implemented at regional level as well, the Euroregions are not an exception in this case.

On the current economic and social background, education and training undergo major changes, turning from knowledge and information transfer-based processes, in processes enabling the citizens, irrespective of their age, sex or residence area, to learn how to learn, to access, analyse and turn to good account the available information and knowledge and to turn them in new information and knowledge, useful in their activities.

A modern economy involves turning to good account all the opportunities provided by digital, multimedia and communication technologies and particularly by the Internet-based ones, due to the importance of information systems in extending the education and training process. Practically, using state-of-the-art technologies as learning and assessment tools sets directions for each country at national and international level, in order to reduce the effects of the current global economic crisis.

### **Euroregions and their role**

The “Euroregion” concept is made up of the term “region” (coming from the Latin „regio”) denoting a geographical area in general [1]. The “Euroregion” modern term refers to a geographical area situated in a European country.

Euroregions are cross-border regions linking several European countries. Such regions are not politically independent and provide cross-border cooperation.

Their role is coordinated by the local authorities and it doesn’t interfere with the international policy of the states involved [1].

The Euroregions serve the cross-border cooperation interests of outskirts population. This way the economically underdeveloped areas may flourish through cooperation.

According to the Association of European Border Regions – AEBR, there are various criteria to define a Euroregion, since it is not a mere European area. Therefore, a Euroregion must meet the following four conditions [1]:

- The authorities from two European neighbouring states must actively cooperate; under certain circumstances, the authorities from such a region must have representatives in the respective state’s Parliament;
- A cross-border association of the authorities of the two neighbouring states, with a permanently available secretariat and an own technical and administrative team must be set;
- Private law rules on non-profit associations and foundations situated on both side of a border, in compliance with the legislation of the two neighbouring states, must be implemented;
- Public law rules based on intergovernmental agreements between the two neighbouring states to regulate the participation and responsibilities of border local authorities must be implemented.

As the other European states, Romania is part of a series of Euroregions, the most important being [3]:

- *Carpatica* Euroregion, bordering Hungary, Poland, Slovakia and Ukraine. The component counties are: Bihor, Botoşani, Maramureş, Sălaj, Suceava, Satu Mare and Harghita (Figure 1) [3].



Fig. 1. *Carpatica Euroregion map* [4]

- *Danube-Criş-Mureş-Tisa* Euroregion, bordering Hungary and Serbia. The component counties are: Timiş, Caraş-Severin, Arad and Hunedoara (Figure 2) [3].



Fig. 2. *Danube-Criş-Mureş-Tisa Euroregion map*

- *Dunărea 21* Euroregion bordering Bulgaria and Serbia. The Romanian part is represented by Calafat and several neighbouring communes [3];
- *Giurgiu – Ruse* Euroregion. The component counties are Giurgiu (Romania) and Ruse (Bulgaria) [3];
- *Southern Danube* Euroregion bordering Bulgaria [3];
- *Lower Danube* Euroregion bordering the Republic of Moldavia and Ukraine. The Romanian part is represented by Brăila, Galați and Tulcea [3];
- *Upper Prut* Euroregion bordering Ukraine and the Republic of Moldavia. The Romanian part is represented by Botoșani și Suceava [3];
- *Siret- Prut- Nistru* Euroregion bordering The Republic of Moldavia. The Romanian part is represented by Iași, Vaslui și Neamț [3];
- *Middle Danube – Iron Gates* Euroregion bordering Bulgaria and Serbia. The Romanian part is represented by Mehedinți county [3];
- *Lower Danube* Euroregion bordering Bulgaria. The Romanian part is represented by Călărași, Constanța and Ialomița [3].

The major objectives are cross-border economic development, human resource development in the neighbouring countries and joint programmes initiation [2].

### ***e-Learning* systems for training the human resources**

*e-learning* is electronic mean-based training (computer, telecommunication-assisted training and the like). Therefore, the human resource continuous training requires specialized information systems.

The traditional teaching/learning methods (printed materials, teacher – student direct interaction) are now replaced by computer and communication-based ones. Modern technology facilitates the teaching and learning process; the students can acquire the necessary information easier and faster.

*e-Learning* systems contribute directly to the training process:

- By improving the traditional training activities carried on within education institutions (primary schools, secondary-schools and universities);
- By facilitating continuous professional training.

The two learning types require specific information systems and methods permanently adjusting to the learners' needs.

Nowadays, the specialized information systems may be implemented within both education institutions and companies (for those seeking professional training). These two types of *e-Learning* systems are similar from various perspectives, yet there are a few differences based, to a great extent, to the learners' availability. Compared to the employees, the students have more time to learn. The former possess the necessary knowledge and expertise and the useful information must be briefly made available to them.

However, modern technology cannot substitute for the teacher. Computers and telecommunication systems help the teacher make available the information to a greater number of students.



The major difference between the education institutions and the companies, in point of the training process, resides in the fact that in the latter case, the information must be provided more quickly, the teaching methods efficiency being vital. In this case, modern technology is applicable, contributing to a great extent to the EU regional development.

In addition to the requirements of a traditional education system, the *e-Learning* system involves specialized software for auxiliary activities, such as: finding roles for the instructors and learners, creating user accounts, electronic courses provision, creating reports and the like. The software can also be used for an objective assessment process.

The *e-Learning* software must be provided with a communication interface enabling an efficient instructor/learner interaction through messages, announcements and the like.

The maintenance of such specialized devices requires additional costs.

Implementing *e-Learning* technology in the corporate environment:

- The learners enrol for various courses according to their field of expertise and to certain criteria set by the management;
- Certain conditions must be fulfilled so that the employees of an institution enrol for such courses;
- The employees are selected according to their performances; this involves an *e-Learning*/performance assessment systems interaction;
- After identifying their weaknesses, each employee will receive additional training according to their abilities;
- The training process is developed at organizational level;
- The learners are grouped according to various criteria, such as: their line of products, level of training, their area of residence, the size of the institution and the like.

Some *e-Learning* systems may be developed for trade purposes, requiring licensed access, while others are open-source type free systems.

### **Euroregion sustainable development due to *e-learning* technology**

*e-Learning* modern technology contributes to the welfare and economic prosperity of the persons using it.

Whether implemented within education institutions or companies, *e-Learning* information systems have a series of advantages:

- Each learner may study at home, irrespective of location, if they have an internet-connected computer;
- Reduced time for professional training due to the course consistency and efficient methods;
- The learners are provided with case studies to help them grasp the fundamentals;
- The course content is efficiently presented by means of the latest multimedia technologies;
- The learners, especially the employees, may study when they have time;
- Each learner may study in his own rhythm and may be subject to individual ongoing assessment;
- The learners are provided with self-assessment tests enabling them to improve their knowledge.

The *e-Learning* systems are applicable irrespective of the learners' country of residence.

Having in view that traditional education involves teacher/learner direct interaction, in the past, education was not accessible to everyone. The urban population had clearly some advantages over the outskirts and rural population. Nowadays, *e-learning* modern technology enables the latter to benefit from training.

Given the fact that cross-border areas are isolated, such areas will enjoy the long-term benefits of using the *e-Learning* system.

The component areas of the Euroregions are the main beneficiaries of an efficient training following the implementation of *e-Learning* systems. This translates in the human resource improvement, leading to an economic sustainable development in these areas.

By developing the Euroregions, the people from one European country may study in a neighbouring country, if more favourable conditions are provided. The *e-Learning* systems diminish the cross-border importance, therefore the learner and the teacher may come from different countries.

## Conclusions

One of the main advantages of using the *e-Learning* systems is the human resource improvement impacting favourably the economy. The Euroregions enjoy more benefits because the component areas are usually isolated regions, thus having the opportunity to develop and become competitive.

Another advantage of *e-Learning* systems is the fact that the borders are no longer a restriction to knowledge and training. The only condition is that the learner has an internet-connected computer.

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# DEVELOPMENT OF THE GREEN ECONOMY AND INCREASE OF ITS IMPACT ON EMPLOYMENT

Ph.D. student **Eva MILITARU**, CS III

**Cristina STROE**, CS II

Ph.D. student **Silvia POPESCU**, CS III

The National Institute for Scientific Research in Labour and Social Protection

## ***Abstract***

*The world economic recession caused the loss of jobs for 34 million people between the years 2008 and 2009, thus finding viable alternatives for job creation is a global priority. In this context, our work's objective is to study the effects of green economy development on job creation at global level for the next decades. Based on a detailed documentary analysis, our paper will analyze the estimations regarding the number of jobs that will be created in one sector of the green economy, namely the renewable energy sector. Data prove that the renewable energy sector has a remarkable potential for job creation, the estimations showing that by carrying out smart policies for its support, massive investments would immediately follow and the number of jobs created in renewable energy sector could double in the next ten years and even triple in the next twenty years.*

**Key-words:** *green economy, renewable energy, green employment, sustainable consumption*

**JEL Classification:** Q<sub>20</sub>, Q<sub>42</sub>, Q<sub>52</sub>, J<sub>21</sub>

## **Introduction**

Sustainable development refers to the improvement of life quality and the welfare of the present and future generations and it represents the target aimed at by both the developed countries and the emergent economies of the world. The achievement of this objective is, first of all, threatened by the way how people live today, produce and consume – behaviours that greatly contribute to global warming, pollution and waste of natural resources. Scientists are warning that, in order to limit the catastrophic effects of climate changes, the industrialized states must reduce the carbon emissions (compared to 1990), by at least 40% until 2020. To this end, a new economy has emerged fast, 'green economy', as an alternative to 'black economy', based on fossil fuels. The central element of the green economy is the generation of green energy, which will lead to more green jobs, to a sustainable economic growth and to a re-definition of the consumption and

production human behaviour and the man-environment relations. The last years brought evidence in favour of this concept – the scientists, ecological groups or the European and international institutions in the field believe that the green economy is able to generate a sufficient number of jobs and their safety depends little on the context (e.g. economic crisis). This is a quite important element, since both developed and developing countries face an economic decrease and unemployment growth.

The world recession has triggered loss of jobs for 34 millions of people, between 2008 and 2009, hence to find viable alternatives for creating jobs is a global priority. To this end, we aim to study the effects that the green economy development will have upon creating employment at a global level. Based on a solid documentation, the paper herein will analyze the estimations regarding the number of employment places that will be created in the decades in the renewable energy sector.

The paper will start with a conceptual framework for the green economy and green employment and will examine the development stage of the green economy at a global level. The second part is meant to analyze the impact of the green economy development on creating new jobs, based on a case study: the sector of renewable energy and the third part will include the conclusions of our study.

### **Green economy and green employment: theoretical and empirical framework**

The challenges that the mankind is facing at present are a consequence of how we live, we produce and consume, leading to global warming, pollution and waste of natural resources. As per the study *Environmental Impact of Products (EIPRO)* conducted by the Center of Joint Research and the Institute of Prospective Technological Studies (IPTS, 2006), at the EU level, the consumption sector related to food, housing (including heating, water, house gadgets) and transport is the cause for 70%-80% of the effects upon environment. For this reason, there emerged the need and priority that people evolve towards more sustainable consumption and production models. But the climate changes and the surging demand for energy and resources hinder the achievement of this objective – this is why the academia and business people consider this is the time for an energy and resource efficient economy.

*Green economy* is the economic model that has been witnessing a very fast growth for the last decade and an alternative and in contrast with the current model of the so-called 'black' economy based on fossil fuels, like oil, coal and natural gas. Green economy relies on the ecological economy, which targets the interdependence between the economy and the natural eco-systems and the negative effects that the economic activities make upon the climate change and the global warming.

The basic idea of the green economy is the substitution of the fossil energy with other sources of *renewable energy* (alternative energy or 'green' energy), as they are environmental-friendly. The renewable energy comes from natural resources like wind, water (hydraulic), light and solar radiation (solar,

photovoltaic) or the earth (geo-thermal energy). The list also includes the energy derived from biomass (biodiesel, bio ethanol, biogas).

The sector of the renewable energy has been on the fast lane for the last five years. Thus, according to the Renewable Energy Policy Network for the 21<sup>st</sup> Century (REN21), in 2008, the capacity of producing wind energy has risen by 29% worldwide, photovoltaic solar energy by 70% and hydraulic energy from small power stations by 8%, compared to 2007 and 600%, 250% and 75% versus 2004, respectively.

Despite of criticism brought by certain technologies of producing renewable energy being intermittent, the renewable energy market is in full bloom. The concern about the climate changes, the high oil price, as well as the governmental support given to this sector, makes it develop faster. In this context, the green economy becomes an opportunity to create jobs, considering the world context of financial crisis resulting in job loss for a large number of people. Practically speaking, the green economy stakes on solving two of the most serious problems that we are facing now at a global level: decrease of unemployment (by creating employment places) and the reduction of the pollution level (by decreasing the carbon emissions in the atmosphere, a key factor in starting a chain reaction of recovering the terrestrial eco-system).

The *green jobs* are considered to be those jobs that will substantially contribute to the maintaining or recovering the environment quality. Specifically but not exclusively, the concept refers to jobs that protect the eco-systems and biodiversity and to the reduction of energy and water consumption via streamlining strategies, to decreasing the carbon emissions and to minimizing or avoiding any pollution problems.

The report *Green Jobs: Towards Decent Work in a Sustainable, Low-carbon World* (2008), conducted by a consortium supervised by the Environment Program of the United Nations and the International Labour Organization believes that employment will be affected by the shift towards a green economy, from at least four points of view: new jobs will be created (eg., in building equipment to control the pollution level), some jobs will be substituted with others (the transition from fossil fuels to renewable ones or from waste incineration to recycling, etc.), some jobs might just disappear without any substitutions (certain packaging will stop from being manufactured), and the content of some jobs will be modified (plumber, electrician, construction worker, etc.).

### **Case study: The evolution of employment in the renewable energy sector**

As said earlier in this paper, the green economy brings opportunity for creating new jobs and decreasing unemployment, two crucial targets at the present moment, when the world is trying to come out of the financial crisis and severe unemployment. Thus, according to the ILO, in 2009, there were 212 million jobless people in the world (6.6% in the employed population), 34 millions more than in 2007, while 40 new million jobs were created during 2008.

The opportunity that the renewable energy sector brings is about creating new jobs, as the sector is expected to rise very fast in the next decade, i.e. from 4.4% to

30% from the global energy consumption, where the main prerequisite of this development is the target of reducing the carbon emissions by 40% until 2020. For now, the production of the renewable energy is concentrated in a few countries. For example, the countries in top five in terms of wind energy production hold 72% of the global capacity. For the photovoltaic solar energy, Japan and Germany have 87% of the global capacity, and for the thermal solar energy, the USA have most of the world production capacity. For the biomass derived energy – bio ethanol, the USA and Brazil hold 90% of the global capacity; for biodiesel, the top five countries hold 78% of this capacity.

As far as the number of people employed in the renewable energy sector, the ILO estimates that there are 2.3 million people globally in 2006 (limited to the countries providing such data). Greenpeace International Organization in its report *Working for the climate: Renewable energy and the green job [R]evolution* (2009) says that for 2006-2007, there were between 1.3 and 1.7 million workers. As per the Environment Program of the United Nations, the developed countries are leaders in technological development in this sector but also the developing economies play their role, too – China and Brazil for solar radiation and biomass-derived energy. The jobs in this sector are to be found both in research-development and in the processing, equipment, maintenance or biomass cultivation.

We repeat that the potential of creating new jobs is enormous in this sector. Besides the developed countries, like Germany, Spain, USA, Japan – the pioneers who have invested huge amounts of money here and will not stop here, countries like Brazil and China are trying to catch up with the top ones.

Thus, the European Commission forecasting, quoted by ILO, indicates that at the EU level, there will be approximately 950,000 jobs in the renewable energy sector at the end of 2010 and 1.4 million until 2020, directly or indirectly linked to the expansion of this sector. These numbers represent net employment figures, also taking into account the potential losses of jobs in the sectors of traditional production of energy. More optimistic scenarios, based on advanced strategies of developing this sector, indicate a number of up to 1.7 million jobs by 2010 and 2.5 million by 2020. Among these jobs, 60-70% of the jobs are estimated to be in the renewable sector, and the rest in the agriculture supporting industry (eg., biomass), while a third will go to the highly qualified people. These estimates under-evaluate the number of new jobs created in this sector, only referring to the EU15, while the new Member States have an important potential for developing this sector (eg., Estonia, Latvia, Lithuania, Romania, Poland). Germany, one of the leaders in the renewable energy sector, has quantified a number of 260,000 employees for 2006, and the estimations for the 2020 indicate 500,000, and in 2030, the number of workers in this sector will exceed 700,000 people.

For the USA, another world leader in this sector, there are currently employed around 446,000 people and by 2030, it is expected to be created 1.3 million jobs in a similar scenario as present, or 3.1 million jobs for a moderate expansion or even 7.9 million people in an optimistic scenario. For two other countries on top positions, Spain and China, which have now 188,000 and 943,000

workers in this sector, the estimates are very optimistic, even if we do not have any numbers yet.

The source of renewable energy that hires the highest number of workers, i.e. the bio-fuels, will have the fastest development in the next ten years; estimates say 12 million workers for 2030. A heated debate is about the quality of the jobs in this sector – mainly the ones in agriculture, which are not decent jobs, wages are inadequate and the health and security conditions are poor.

Greenpeace International and European Renewable Energy Council (2009) have made estimates at a global level in terms of jobs in the renewable energy sector, the existent and the ones that will finally disappear. Thus, for 2020, there will be 5.03 million jobs in this sector, and 6.9 million in 2030, according to the scenario that says that in 2020, 32.5% of the global energy will come from renewable sources, and 42% in 2030. The same report states the fact that there will be a net growth of 2 million jobs in the energy sector in 2030, compared to 2010, despite the fact that there is an estimate for a reduction in the number of jobs in the coal sector (by circa 3 million).

## **Conclusions**

The data presented above clearly reveal that the renewable energy sector truly provides a remarkable potential for creating green jobs. The estimates show that the massive investments will come and by smart support policies, the number of jobs will double in the next 10 years and even triple in 20 years. The sources of the renewable energy that will be the most exploited and generate most jobs will be the bio-fuels (12 million people employed by 2030) and the radiations and solar light (6.3 million people in 2030). The jobs will be generated both in the developed countries in the world, which are the leaders of the renewable energy resources, i.e. USA, Germany, Japan, Spain and other countries of the EU, and also the developing economies, like China, Brazil, India, Kenya that massively invest in this sector.

We may conclude that the development of the renewable energy sector represents both a necessity, for reasons related to redefining the consumption and production models and environment protection, and also an opportunity for creating jobs – thinking that recession has indeed led to the loss of thousand jobs.

Even if the expansion of this sector will lead to the decrease of the employment in other traditional energy sectors, like mining, coal, oil, natural gas and nuclear energy, the specialists estimate that the employment in the renewable sector will counterweight and the net employment will rise globally. Still, the governments should consider that some territories that are dependent on the traditional energetic sectors will be harmed during the first stages of transition to renewable sources.

Another aspect that needs to be mentioned for the jobs is their quality – in some area, like bio-fuels, they do not offer adequate wages and working conditions are not as safe and secure as they should be.

The future research projects in terms of creating jobs in the renewable energy sector will have to go beyond numbers and take a closer look at the changes in the structure of employment, depending on the sectors, regions, gender and qualifications. Likewise, the academic environment, along with the governments, will have to come up with methodologies and statistical systems to register and estimate the occupations and the employment places in the green sector, in order to give a helping hand to the increased accuracy and credibility of the future research and political decisions in this area.

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## FISCAL AND ACCOUNTING NEWS 2010

**Cicilia IONESCU**, Professor, Ph.D.  
Faculty of Accounting Financial-Management Bucharest  
*Spiru Haret University*

### **Abstract**

*By decree of the Minister of Public Finance no. 3055/2009 for the adoption of the accounting Regulations in compliance with the European directives (that abolish completely the provisions of the 1752/2005 Decree), a series of modifications/news were introduced in the field of accounting, as well as in the fiscal field. These regulations are applicable starting the 1<sup>st</sup> of January 2010.*

*The herewith material details the main accounting and fiscal news such as: news concerning the accounting procedures; news concerning the internal control, news concerning the companies' stock-taking; anticipated disbursement system for the profit tax applicable starting 2010 by all the contributors; the regularization of the profit tax owed for 2009; clarifications regarding the certification of the annual profit tax declaration for 2009; the new regulations for the elaboration and deposition of the recapitulative declaration, as well as other declaration obligations associated to the beginning of the new year; important accounting aspects referring to the patrimony stock-taking at the end of 2009.*

**Key-words:** *accounting news, fiscal news, accounting procedures, company stock-taking, accounting policy manual, internal and financial accounting control, fiscal consultant*

**JEL Classification:** M<sub>40</sub>, M<sub>41</sub>

This material aims at systemizing the main news in the accounting field and fiscal fields emerged in the specialist literature from Romania, applicable starting 1<sup>st</sup> of January 2010. The literature is indicated in the Bibliography section.

### **1. Accounting news**

The accounting regulations approved by Decree no. 3055/ 2009 bring a series of additional information and modifications regarding the general accounting principles, as well as the application of the economic prevalence principle over the judicial and the significance threshold principle by all entities, regardless of their size.

#### *a. News regarding the accounting procedures*

Among the modifications affecting the accounting procedures of the company we find the following:

- The liquid assets and other treasury values in currencies, as well as the receivables and debts in currency are reviewed at the end of every month,

according to the currency value communicated by the Romanian National Bank in the last banking day of the month;

- The commercial discounts given by the supplier and registered in the purchase bill adjust the purchase cost. On the other hand, the commercial discounts received subsequent to the invoicing are distinctly highlighted in accounting, in income or expenses accounts, regardless of the time period they refer to;

- The purchase cost of the stocks and shares on the short term admitted when transacting on a regulated market does not include the transaction costs directly attributed to the purchase. These are included in the purchase cost of the stocks and shares on the short term that are not admitted when transacting on a regulated market, as well as the cost of the long term ones;

- The insignificant errors pertaining to anterior financial exercises can be corrected using the loss and profit account;

- The corporal immobilizations and the purchased stocks for which the associated risks and benefits have been transferred, but that are being purchased are distinctly registered in accounting as “corporal immobilizations currently under purchase” or “stocks under purchase”.

*b. News regarding the internal control*

The new accounting regulations include provisions referring to the organization of the internal control and one major element is the **financial and accounting internal control**. Therefore, the companies must take into consideration, among other things, the elaboration of an accounting policy manual, the elaboration of an application procedure for this manual, controls that insure the manual compliance, specific controls of the sore points, the identification and treatment of the anomalies, the adaptation of the information programmes to the entity’s needs, the compliance with the accounting rules, the insurance of the exactness and exhaustiveness of the accounting registrations. The evaluation of the internal control starts, among others, with assuring the access to the system for the external control.

*c. News regarding the companies stock-taking*

On 4<sup>th</sup> November 2009, Decree no. 2861/2009 came into effect; it approved the norms regarding the organization and stock-taking of the elements such as assets, debts and own capital. Some of the modifications are:

- the number of the members is not limited anymore;
- in the case of the entities without employees who are in charge of the stock-taking, this is accomplished by the administrators;

- the accountants keeping the record of the inventoried stock-taking can participate to the stock-taking operations without being part of the commission, if stipulated as such in the internal procedures of the entities;

- the entities that have chosen a financial year different from the calendar year must organize the annual stock-taking so that its results are included in the financial situations elaborated for the financial exercise. For this purpose, they must take into account the information associated to the last day of the chosen financial exercise.

Generally, the modifications and completions brought by the accounting regulations approved by Decree 3055/2009 have the purpose of clarifying certain specific accounting treatments. Also, some concepts provisioned by the IASB General Framework are undertaken.

The modifications of the accounting regulations, as approved by Decree 3055/2009, are applicable for all the companies, lest the ones regulated/supervised by The National Bank of Romania, The Commission for Insurance Supervising, The Commission for Supervising the Private Pensions system and the National Commission of the stocks and shares.

Definitely, some modifications are relevant and will have a greater impact for the societies with a complex activity, regardless of the field they work in. Among these, we mention the application of the prevalence of the economic upon the judicial or the principle of the significance threshold.

The principle of the prevalence of the economic upon the judicial requests that the presentation of the values in the balance and the profit and loss accounts be made taking into consideration the economical background of the transaction or the reported operation and not only their judicial status. Application examples of this principle: the consignment, accreditation of the income and expenses in the profit account or as advance incomes, advance expenses. The application of the significance takes into consideration the possibility to combine certain elements in the balance or in the loss and profit account if these information are not significant for the insurance of a clear image of the financial situations or if such a combination offers a greater degree of clarity and the elements combined as such are presented separately in the explanatory notes.

Also, the implementation of the provisions referring to the organization of the internal control system and its documentation so that the compliance of the published financial and accounting information is insured will have a greater relevance for the companies with a complex activity. Nonetheless, these requirements are applicable to all the societies.

If we think of certain activity fields, the new accounting regulations include, among others, certain relevant clarifications for the companies developing/investing in real estate, for the societies that have signed concession agreements of the public-private type, for the companies that have programmes for the employee participation to profit or the ones offering shares of the company to the employees.

Clarifications regarding the manner to change a financial exercise different of the calendar year for the subsidiaries in Romania are still being awaited, for the cases when the foreign company has a financial exercise that is different from the calendar year and from the consolidated subsidiaries, when the parent company has a financial exercise that is different from the calendar year.

## **2. Anticipated payments for profits tax owed for 2010**

In compliance with art. 34, a) and b) of Decree no. 571/2003 regarding the Fiscal Code, starting with 2010 all the contributors (except those who pay an annual profit tax) must apply the profit tax anticipated payment system, applicable

only to commercial banking companies, Romanian legal persons, and to the Romanian subsidiaries of the banks, foreign legal persons in the precedent years.

Thus, starting 2010, the contributors have the obligation to declare and to effectuate anticipated payments every trimester, in the account of the annual profit tax. The amount is a quarter of the profit tax owed for the precedent year, updated according to the inflation calculator (December, compared to last year's December), estimated with the occasion of the elaboration of the initial budget for the year for which the anticipated payments are made, until the 25<sup>th</sup> of the month following the trimester for which the payment is made.

The profit tax for the precedent year, based on which the anticipated payments are determined, is the profit tax owed for the precedent year in compliance with the declaration regarding the profit tax for that precedent year without taking into consideration the anticipated payments effectuated that year.

### **3. The regulation of the profit tax owed for 2009**

In compliance with the provisions of art. 34, paragraph (10) and (11) of the Fiscal Code, the contributors, others than the commercial banking companies, Romanian legal persons and the Romanian subsidiaries of the banks, foreign legal persons, must declare and pay for the 4<sup>th</sup> trimester of 2009 an amount equal to the tax calculated for the 3<sup>rd</sup> trimester of the same fiscal exercise, the final payment of the profit tax for the fiscal year being due to be made until the due date for deposition of the declaration regarding the profit tax provisioned by art. 35, paragraph (1), until 25 April 2010.

By exception, the contributors who finish the closing of the anterior financial exercise by 25 February 2010 deposit the annual profit tax declaration and pay the profit tax associated to the closed fiscal year until 25 February of the following year, without declaring profit tax to pay in the trimestrial declaration associated to the 4<sup>th</sup> semester of 2009. Consequently, the companies will analyse, until 25 January 2010, if the company can actually finish the profit tax calculation for 2009 until 25 February 2010.

### **4. The certification of the annual tax declaration by a fiscal consultant**

According to the provisions of art. 83, paragraph (5) of Decree 92/ 2003 regarding the Fiscal Procedure Code, the annual fiscal declarations of the legal persons, contributors shall be certified by a fiscal consultant, lawfully, except for the ones for which audience is compulsory.

It seems that the provision applies to annual profit declarations code "101" with a deposition due date subsequent to 1 January 2010, therefore, to the annual profit tax declaration for 2009 as well. Also, the exception from the certification rule is not applicable to those contributors who, although they were not obliged to be financially audited, opted for audition.

## **5. The monthly deposition of the recapitulative declaration**

According to the Fiscal Code, art. 156<sup>4</sup> (as modified by OUG 109/2009), starting with 2010, the recapitulative declaration regarding the inter-community goods deliveries/purchases must be elaborated and deposited by any tax payer registered for VAT in compliance with art. 153 or art. 153<sup>1</sup> of the Fiscal Code, until the 15<sup>th</sup> of the following calendar month. In the recapitulative declarations the following shall be mentioned: the inter-community goods deliveries/purchases, according to the regulations enforced until 2010; the services purchases for which the tax place is in the member state of the beneficiary, starting 2010.

This category excludes the services exempt from VAT in the state member where these are taxable.

The recapitulative declaration will be elaborated for every month of the calendaristic year in which the liability of the tax for this type of operation appear.

## **6. Other procedural obligations for the beginning of 2010**

– the issuance of the decision regarding the number from which the first bill is issued in 2010, in compliance with the provisions of Decree no. 2226/ 2007, addendum 4;

– the deposition, until 25 January 2010 inclusively, of a declaration obtained or if the case recalculated, as well as a note referring to the fact that there have been no inter-community goods purchases during the precedent year, if the entity had the obligation to depose trimestrial VAT clearings for 2010 (Fiscal Code, art. 156.1 (6));

– the deposition, until 8 January (5 working days since the end of December 2009) of the deed of undertaking code “092” regarding the changing of the fiscal period for the VAT return, if in 2009 the company had the obligation to declare the VAT every trimester and had made at least one taxable intra-community purchase in December 2009 (Fiscal Code, art. 156<sup>1</sup>, paragraph (6.1));

– the communication of the temporary pro-rate applicable for 2010 to the competent fiscal organ and its manner of calculation, by the taxable persons with a combined status, until 25 January 2010 (Fiscal Code, art. 147, paragraph (9));

– the deposition of the notifications mentioned at article 156.3, paragraph (5) and (6) until 25 February 2010;

– the solicitation from the non-resident beneficiaries of the income for which retention taxes in Romania are owed, the fiscal residency certificate issued by the competent authority in the residence state, valid for 2010, as well as the issuance of a affidavit that indicates the beneficiary status, in order to apply the double taxation avoidance agreements, with the purpose to apply the EU legislation (Fiscal Code, art. 118, paragraph (2), as it was modified by the Governmental decision 109/2009);

– the informative declaration deposition referring to the interest income payments made by natural persons resident in the member states of the European Union, until 28 February 2010 (Fiscal Code, art. 119). The annual declaration

concerning the retention tax on the non-residents income shall be deposited until June 30 2010;

– the deposition of the fiscal information referring to the calculation of the salary income tax, until February 28 2010 (Fiscal Code, art. 59.)

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# INNOVATION, RESEARCH AND DEVELOPMENT IN ROMANIAN ENTREPRISES

**Cristina BARNA**, Lecturer Ph.D.

**Manuela EPURE**, Associate Prof. Ph.D.

**Claudia BAICU**, Lecturer Ph.D.

Faculty of Marketing and International Affairs

*Spiru Haret University*

## **Abstract**

*The European Union declared the year 2009 – The Year of Creativity and Innovation. Creativity and innovation can move society forward toward prosperity. In this context, we analyzed in our paper the innovation, research & development potential and performance of the Romanian enterprises. After presenting the conceptual framework and statistical sources in EU for innovation and a general overview of Europe seen as a place for research activities, we examined in details the Romania case: a country still in the group of catching-up countries, but one of the growth leaders among this group. In the last part of the paper we focused on research and development data analysis for the 2003-2008 interval, at enterprise level, also with commentaries about the economic and financial crisis impact.*

**Key-words:** *innovation, research, development, creativity, Romanian enterprises*

**JEL Classification:** O<sub>30</sub>, O<sub>31</sub>

## **Introduction**

Innovation has to be considered a core element of the renewed Lisbon strategy for growth and employment. Sustainable growth and job creation in the European Union increasingly depends on excellence and innovation as the main drivers of European competitiveness. In order to compete in the global economy marked by the economic and financial crisis, enterprises must become more inventive, react better to the consumers' needs and preferences and address challenges by increased innovation. Recognizing this fact, the European Union declared the year 2009 – The Year of Creativity and Innovation. Creativity and innovation can move society forward toward prosperity.

## **Literature review**

In the context of 2009 – The Year of Creativity and Innovation, it is hardly surprising that the innovation, research and development issues have attracted

considerable attention in recent years. Generally, studies and articles have focused on the situation in the 27 Member States (European Union, Manifesto – *European Ambassadors for Creativity and Innovation*, Creativity and Innovation Year 2009, *European Innovation Scoreboard 2008: Summary of the situation in the 27 Member States*. MEMO/09/18, Brussels, 22 January 2009, *Science, technology and innovation in Europe*, European Commission, Eurostat Pocketbooks, 2008 edition and the like), but also on new European initiatives in favour of the support of innovation (European Commission, Enterprise and Industry 2010 – *Europe INNOVA*, European Commission, Enterprise and Industry 2010 – *A Lead Market Initiative for Europe*, European Commission, Enterprise and Industry 2010 – *PRO INNO Europe*, European Commission 2010 – *Enterprise Europe Network* and the like). The reports regarding especially Romania or some Romanian studies (European Commission, Enterprise Directorate General, *INNO – Policy TrendChart, Innovation Policy Progress Report, Romania 2009*, RO INNO Romania 2010 – *Business Incubators*, RO INNO Romania 2010 – *Innobarometer 2008*), and Romanian statistical data from National Institute of Statistics, like *Research-development in Romania – Statistical data collection (2003-2008)* are also useful for our research.

### **Theoretical background**

For this analysis we used data from international sources (European Innovation Scoreboard 2008, Global Competitiveness Report 2009 – World Economic Forum, INNO-Policy Trendchart, Innovation Policy Progress Report, Romania 2009 and the like) and also from national sources (Innobarometer 2008 Report published by the Romanian National Authority of Scientific Research, data regarding enterprises from the Romanian National Institute of Statistics and the like).

Using SPSS (Statistical Package for the Social Sciences) and Le Sphinx softwares, we developed a regression analysis in order to determine whether the turnover of enterprises (dependent variable) is related to gross investments and research and development expenses (independent variables). This way we demonstrated the importance of innovation (in terms of research and development) for enterprise competitiveness.

#### *1. Innovation – the main driver of European competitiveness*

Having a detailed look at the most important aspects of the European Union research and innovation investment and performance presented in *Key Figures 2005* report, which offers an overview of the progress achieved towards the 3% objective. The need for Europe to strengthen its research and innovation capacities is obvious. The Key Figures 2005 shows the worrying trend of R&D investment in Europe: the growth rate of R&D intensity has been declining since 2000 and is close to zero, growth of R&D investment as a % of GDP has been slowing down, from 2002 to 2003, only an increase of 0.2% being achieved. Europe devotes a



much lower share of its wealth to R&D, compared to the US, China and Japan: 1.93% of GDP in the EU in 2003, as compared to 2.59% in the US and 3.15% in Japan. As for China, which registers a lower R&D intensity than Europe (1.31%), but with a 10% increase between 1997 and 2002, it will reach by 2010 the same R&D intensity as Europe (about 2.2%). One of the reasons of this worrying trend is business funding of R&D, and one of the most worrying conclusions of the Key Figures 2005 is that Europe is becoming a less attractive place for research activities.

In this context, European Union developed new initiatives in favour of the support of innovation like Lead Market Initiative for Europe, Europe Innova, Pro Inno Europe or Enterprise Europe Network, which is part of Competitiveness and Innovation Framework Programme. For examples, *Lead Market Initiative for Europe* is aiming to unlock market potential for innovative goods and services by lifting obstacles hindering innovation in a first batch of six important markets: eHealth, protective textiles, sustainable construction, recycling, bio-based products and renewable energies. These markets are highly innovative, respond to customers' needs, have a strong technological and industrial base in Europe and depend more than other markets on the creation of favourable framework conditions through public policy actions. *Pro Inno Europe* is aiming to become the focal point for innovation policy analysis, learning and development in Europe, with the view to learning from the best and contributing to the development of new and better innovation. Pro Inno Europe supports *The Network of Innovating Regions in Europe* which provides a platform for the development of 'Regional Innovation Strategies', the exchange of best practices for regional support to innovation and it develops methodologies to benchmark regional strategies. From projects funded by *Europe Innova* we can mention as remarkable examples The European Eco-innovation Platform with the aim to accelerate the take-up of eco-innovative solutions in Europe or Knowledge Intensive Services Innovation Platform with the aim to accelerate the take-up of services innovations in Europe, but there are more else.

## *2. Innovation: conceptual framework and statistical sources in the European Union*

In Oslo Manual 2007 innovation is considered 'a new or significantly improved product (good or service) introduced to the market or a new or significantly improved process introduced within an enterprise. Innovations are based on the results of new technological developments, new combinations of existing technology or utilization of other knowledge acquired by the enterprise'. Also, it is important to remember an approach from 1995: according to *Green Paper on Innovation, European Commission*, innovation is: 'the renewal and enlargement of the range of products and services and the associated markets; the establishment of new methods of production, supply and distribution; the introduction of changes in management, work organization, and the working conditions and skills of the workforce.'

Generally, in the EU statistical reports, the following terms regarding innovation are used:

- *Product innovation* which refers to introduction to the market of a new good or service or of a good or service with significantly improved capabilities, such as improved software, user-friendly components or sub-systems.
- *Process innovation* which represents the implementation of a new or significantly improved production process, distribution method or support activity for goods or services. Purely organizational innovations are excluded in this form of innovation.
- *Organizational innovation* which is implementation of new or significant changes in a firm's structure or management methods that are intended to improve the firm's use of knowledge, the quality of its goods and services or the efficiency of its workflows.
- *Marketing innovation* understood as implementation of new or significantly improved designs or sales methods to increase the appeal of goods and services or to enter new markets.
- *Intramural (in-house) R&D* which refers to creative work undertaken within the enterprise to increase the stock of knowledge and use it to devise new and improved products and processes (including software development).
- *Extramural R&D* which comprises the same activities as intramural R&D, but performed by other companies (including other enterprises within the same group) or by public or private research organizations and purchased by the enterprise.

The innovation challenge for the success of European economy is argued by the recent efforts of quantifying innovation, assessing innovation performance, policy responses, innovation policy governance and trends across EU, and also measuring the progress of knowledge-based economy. In this sense it is worth to remember as main statistical sources for innovation: STI (Science, Technology and Innovation) – EUROSTAT, EIS (European Innovation Scoreboard) – PROINNO Europe, SIW (Sectoral Innovation Watch) – Europe INNOVA, Innobarometer, INNO-Policy TrendChart, Sectoral Innovation Watch, European Cluster Observatory. A new remarkable initiative is the use of composite indicators to assess progress towards the knowledge-based economy, still an emerging and pioneering field in European statistics. Two composite indicators have thus been developed: one is aggregating the various forms of investment in the knowledge-based economy and the other is aggregating measures of performance in the knowledge-based economy. These composite indicators are a weighted average of a number of components or base indicators and have been developed with the involvement of a number of Commission services, including Eurostat and the Applied Statistics Group of the Joint Research Centre, and external assistance from academic world.

### 3. Romania in the European Union – a catching-up country

Considering the innovation performance of the different Member States, as measured in the European Innovation Scoreboard (EIS) 2008, *Romania is in the group of catching-up countries* together with Malta, Greece, Hungary, Slovakia, Poland, Lithuania, Latvia, Bulgaria and Turkey. Although these countries scores are significantly below the EU average, the scores are increasing towards the EU average over time with the exception of Greece and Lithuania. Besides this group, three other main groups of countries emerged based on performance over a five year period: Switzerland, Sweden, Finland, Germany, Denmark and the UK are the *innovation leaders*, with scores well above that of the EU27 and all other countries; Austria, Luxembourg, Ireland, France, Belgium and the Netherlands are the *innovation followers*, with scores below those of the innovation leaders but equal to or above that of the EU27; Cyprus, Estonia, Slovenia, Iceland, Czech Republic, Norway, Spain, Portugal and Italy are the *moderate innovators* with scores below that of the EU27, except for Cyprus. Recent improvements in innovation performance for Cyprus, Estonia, Slovenia and Iceland suggest that these countries could move to the innovation followers in the near future.

Having a special look to Romania, according to European Innovation Scoreboard 2008, our country is one of the growth leaders among the catching-up countries, with an innovation performance well below the EU27 average but *a rate of improvement that is one of the highest of all countries*. Considering the dimensions of innovation grouped by EIS in three main blocks (enablers, firm activities and outputs – see Fig.1), the *relative strengths*, compared to the country’s average performance, are in *innovators* (the number of firms that have introduced innovations onto the market or within their organizations, covering technological and non-technological innovations) and *economic effects* (captures the economic success of innovation in employment, exports and sales due to innovation activities) and relative weaknesses are in finance and support (the availability of finance for innovation projects and the support of governments for innovation activities) and throughputs (captures the intellectual property rights generated as a throughput in the innovation process and technology balance of payments flows).

1. <i>Enablers</i>	2. <i>Firm activities</i>	3. <i>Outputs</i>
Human Resources Finance and Support	Firm Investments Linkages & Entrepreneurship Throughputs	Innovators Economic Effects

Source: based on European Innovation Scoreboard, 2008.

Fig. 1. *Dimensions of innovation – main blocks*

Over the past 5 years, Finance and Support and Throughputs have been the main drivers of the improvement in innovation performance, in particular as a result from strong growth in Public R&D expenditures (18.0%), Private credit

(17.4%), Broadband access by firms (24.3%), Community trademarks (36.0%) and Community designs (44.3%). Performance in Firm Investments and Innovators has increased at a slower pace.

As we have already pointed, considering the high growth rate of Summary Innovation Index in 2008 related 2007 and also the rankings in 2008-2009 from World Economic Forum (see fig. 2), Romania is undoubtedly one of the growth leaders among the catching-up countries.

1. **Summary Innovation Index (SII):** 0.277 (with a growth rate of 6.9% relative to 2007), ranked Romania 25<sup>th</sup> from 27 EU member states in 2008 (from European Innovation Scoreboard 2008)
2. **Growth Competitiveness Index (GCI):** ranked Romania 68<sup>th</sup> in 2008-2009, six places higher than 2007-2008 (from World Economic Forum – Global Competitiveness Report 2009)
3. **Networked Readiness Index (NRI):** ranked Romania 58<sup>th</sup> of 134 countries in 2008-2009, rising from 61<sup>st</sup> position in 2007 – 2008 (from World Economic Forum. Note: NRI measures countries' propensity to exploit the opportunities offered by information and communication technology)

Fig. 2. *Summarizing recent trends in Romania's innovation performance*

As stated in the Trend Chart Country Report, Romania, 2008, for our country the main challenge is the institutional one: improving innovation and business support infrastructure. This challenge is related to the need to improve the R&D absorption capacity of industry and enhance technology transfer. Business incubators are primarily managed by National Agency for SMEs and Cooperatives/Ministry of SMEs, Commerce and Business Environment and funded by the United Nations Development Programme, while innovation and technology providers are managed by the National Authority for Scientific Research and are grouped in the specialized network National Technology Transfer and Innovation Network (ReNITT from RO INNO Romania) funded both by national funds and EU Structural Funds. The performance of the existing business incubators is generally perceived to be weak and many of the incubated firms do not achieve the expected growth or new jobs, even go bankrupt shortly after or in the incubation period. ReNITT covers 13 business incubators, most part (8) in Bucharest and the others in Covasna, Brasov, Valcea, Dolj and Arad. Responsibility for the funding received from the UNDP (for business operations) or from EU Structural Fund (for the construction of the incubator) is also generally low, and the selection of firms to be incubated is often questionable. In comparison with business incubators, TrendChart Country Report, Romania 2008 appreciates that S&T Parks focus more on strengthening technology transfer and partnership among research institutes, economic agents and universities. Romania currently has four S&T Parks located

in Bucharest, Timisoara, Iasi and Galati. The increased funding channelled through the 2007-2013 National Research, Development and Innovation Plan is expected to stimulate the number of R&D projects and partnerships undertaken within the S&T Parks.

Beginning with 2008, in Romania is published by National Authority of Scientific Research *Innobarometer. Innovation in the development regions*. Analyzing the data from Innobarometer 2008 report, we can see another characteristic of innovation in Romania: gaps between the regions of development, the most innovative region being Bucharest – Ilfov (see table 1).

Table 1

**Level of innovation of the regions of development**

<i>Rank</i>	<i>Region of development</i>	<i>Score</i>
1	Bucharest – Ilfov	72.49
2	South – East	31.73
3	North– West	29.56
4	North – East	29.44
5	Center	28.04
6	West	26.05
7	South – West	21.35

*Source: Innobarometer. Innovation in the development regions, 2008*

*4. Romania: the main innovation challenges in the crisis context. Statistic analyses regarding Research and Development before the crisis*

In Romania the economic crisis of 2008 had effects on the innovation potential, too. The crisis brought significant cuts in the 2009 gross expenditure on research and development (GERD), with consequences difficult to quantify yet. Instead of continuing the progression (0.41% in 2005, 0.46% in 2006, 0.5% in 2007, 0.7% in 2008, 0.89% in 2009, 1% in 2010) according the government commitment to meeting Lisbon Strategy objectives, because of the crisis in January 2009 the government allocated only 0.18% of the GDP to research, development and innovation activities. Though, because of the protests from the scientific community, in February 2009, GERD was supplemented with approximately EUR 148 million, reaching 0.27% of the GDP, but still remaining significantly lower than the 2008 GERD level and the foreseen level for 2009. The drastic cuts in public funding of research, development and innovation have been reflected in the main financial instruments coordinated by the National Authority for Scientific Research, such as the programmes of the 2007-2013 National RDI Plan NP II (for example Programme 5 Innovation – coordinated by Managerial Agency of Scientific Research and Technological Transfer) and the grants (Ideas, Human Resources etc.) of the National Council of Scientific Research from Higher Education, blocking 2009 competitions and even unrolling projects. The consequences of the cuts are complex and annihilate the encouraging signs of a

slight recovery for Romanian RDI after a few years of improved funding, especially in regards to the attraction of human resources for RDI and enhancing the public-private partnerships, which are some of the key weaknesses of the system (Giurgeanu, 2009).

Let's analyze in detail the situation before the crisis, with focus on the enterprise sector, the subject of our paper.

Table 2

**Weight of total research-development expenditure by execution sector and funding source in the GDP**

	– percentage –					
	2003	2004	2005	2006	2007	2008
<b>Weight of total research-development expenditure by execution sector, in the GDP – %-</b>	<b>0,39</b>	<b>0,39</b>	<b>0,41</b>	<b>0,46</b>	<b>0,52</b>	<b>0,59</b>
Enterprises sector – % in the GDP	0,22	0,21	0,20	0,22	0,22	0,18
Government sector – % in the GDP	0,12	0,13	0,14	0,15	0,18	0,24
Higher education sector – % in the GDP	0,04	0,04	0,06	0,08	0,13	0,17
<b>Weight of total research-development expenditure by funding source, in the GDP – %-</b>	<b>0,39</b>	<b>0,39</b>	<b>0,41</b>	<b>0,46</b>	<b>0,52</b>	<b>0,59</b>
Enterprises – % in the GDP	0,18	0,17	0,15	0,14	0,14	0,14
Public funds – % in the GDP	0,18	0,19	0,22	0,29	0,35	0,41
Higher education units – % in the GDP	0,01	0,01	0,02	0,01	0,01	0,02
Funds from abroad – % in the GDP	0,02	0,02	0,02	0,02	0,02	0,02

*Source: Research-development in Romania – Statistical data collection (2003-2008), p. 19.*

The weight of total research-development expenditure in GDP in enterprises sector during the period 2003-2007 was constantly greater than the similar weight in government sector or higher education sector. Moreover, the differences between enterprises sector and higher education sector are relevant. Unlike previous years, in 2008 the weight of total research-development expenditure in GDP in government sector was higher than in enterprises sector. The weight of total research-development expenditure in government sector and higher education sector has increased each year (2003-2008), while in the enterprise sector had a cyclic evolution.

Regarding the weight of total research-development expenditure by financing source, in GDP, it is noted that public funds have the largest share, with a constant growth trend. The enterprises sector ranks second, followed far away by higher education units and abroad funds. Besides, the indicators for enterprises sector have a little tendency to decrease (according to table 2).

Table 3

**Total expenditure from research-development activity, by execution sector and scientific field (In concordance with preponderant scientific field of R&D activity)**

– lei million current prices –

	2003	2004	2005	2006	2007	2008
<b>Enterprise sector</b>	<b>443</b>	<b>527</b>	<b>589</b>	<b>759</b>	<b>907</b>	<b>893</b>
Scientific field						
Natural sciences	21	37	41	161	164	159
Engineering and technology	346	411	422	426	537	550
Medical sciences	14	14	37	34	52	59
Agricultural sciences	62	65	89	135	132	124
Social sciences	-	-	-	2	22	1
Humanities	-	-	-	1	-	-

Source: *Research-development in Romania – Statistical data collection (2003-2008)*, p. 21.

A main indicator of research-development activity within the enterprise sector refers to the total expenditure from research-development, by scientific field: natural sciences, engineering and technology, medical sciences, agricultural sciences, social sciences and humanities. The obvious feature seen from the Table n. 3 is that engineering and technology is the science field with the highest total expenditure from research-development activity. Beginning with 2006, natural sciences ranked second, followed by agricultural sciences and medical sciences. Total expenditure from research-development activity in humanities field is almost inexistent. The same observation is valid for social sciences, except year 2007, when total expenditure from research-development activity was higher (22 lei million current prices compared with 1 or 2 lei million current prices in 2008 and 2006).

Table 4

**Current expenditure from research-development activity, by execution sector and type of research**

– lei million current prices –

	2003	2004	2005	2006	2007	2008
<b>Enterprises sector</b>	<b>394</b>	<b>470</b>	<b>525</b>	<b>649</b>	<b>738</b>	<b>768</b>
Fundamental research	55	58	48	142	179	203
Applicative research	251	284	384	408	465	446
Experimental development	88	128	93	99	94	119

Source: *Research-development in Romania – Statistical data collection (2003-2008)*, p. 23.

Another indicator for the research-development activity of enterprises sector refers to current expenditure from research-development activity by type of research: fundamental research, applicative research and experimental development (table n. 4). In this regard, over the period under review, applicative research ranks first. Regarding fundamental research and experimental development, it is noted a different evolution in 2003-2005 and 2006-2008. While in 2003-2005, current expenditure from research-development activity for experimental development was higher than the similar indicator for fundamental research, in 2006-2008, the trend was reversed.

Based on the priorities defined in the key current policy documents and the EIS 2008 indicators, *INNO – Policy TrendChart, Innovation Policy Progress Report, Romania 2009* identified the following main innovation challenges for our country:

1. Increase the innovative potential of enterprises, particularly the SMEs;
2. Improve technology transfer and business support infrastructure (business incubators, technology transfer offices, S&T parks and the like);
3. Improve partnerships among industry, university and R&D institutions.

The first challenge is argued by: Business R&D expenditure (relatively stable around 20% of EU-27 average over the last five years, 0% growth), Venture capital (3-year average) (slightly positive trend, 3.5% growth), SMEs innovating in-house (slightly positive trend, 2.6% growth), Innovative SMEs cooperating with others (slightly positive trend, 0.6% growth), Firm renewal (SMEs entries + exits) (oscillating trend, -0.1% growth), Public-private co-publications (2-year average) (positive trend, 6.4% growth), Product/process innovators (SMEs) (slightly positive trend, 2.1% growth), Employment in medium-high/high-tech manufacturing (slightly positive trend, 1.6% growth), Knowledge-intensive services exports (slightly positive trend, 2.3% growth), New-to-market sales (negative trend, -9.2% growth). Following indicators and trends argue the second challenge: SMEs innovating in-house (slightly positive trend, 2.6% growth); Innovative SMEs cooperating with others (slightly positive trend, 0.6% growth); Firm renewal (SMEs entries + exits) (oscillating trend, -0.1% growth), and Public-private co-publications (2-year average) (ascending trend, 6.4% growth) supports the third challenge.

### *5. Multiple Regression Model*

Using SPSS (Statistical Package for the Social Sciences) and Le Sphinx softwares, we developed a regression analysis *in order to determine whether the turnover of enterprises* (dependent variable) *is related to gross investments and research and development expenses* (independent variables). In this way we wanted to demonstrate the importance of innovation (in terms of research and development) for enterprises competitiveness. We used for the model data from table 5 and table 6.



Table 5

**Main economic and financial indicators of enterprises, by size class and by type of ownership (Enterprises with main activity industry, construction and market services)**  
– lei million current prices –

Size classes, by average number of employees	Year	Turnover	Gross investments
Total	2003	345743	42386
Total	2004	450843	62749
Total	2005	512614	73668
Total	2006	627535	87457
Total	2007	769905	145879

Source: Romanian Statistical Yearbook 2005-2008

Table 6

**Total expenditure from research-development, by execution sector and type of ownership**

– lei million current prices –

	2003	2004	2005	2006	2007
Total	762	953	1184	1566	2177
Of which: current expenditure	673	861	1040	1319	1742
<i>Enterprise sector</i>	443	527	589	759	907

Source: Research-development in Romania – Statistical data collection (2003-2008), p. 17.

Analyzing total turnover achieved in 2003-2007 by the Romanian enterprises, it can be generally described as an annual average turnover of 541328 mil. RON for the considered period of time, which is approximately 147953.14 mil. EUR. The conversion was realized considering the average of exchange rate for EUR/RON (1 EUR = 3.65878 RON, according to the Romanian National Bank data).

In the same period, the gross investments were at the average level of 82427 mil RON/year which means 22528.54 mil. EUR (calculated using the same average exchange rate), and the mean of R&D expenses was 645 mil. RON (176.28 mil. EUR) (See table 7)

Table 7

**Descriptive Statistics**

	Mean	Std. Deviation	N
TURNOVER	541328,0	163511,93613	5
GROSSINV	82427,80	39111,00436	5
RDEXPENS	645,0000	186,75117	5

In our analyses we assumed that the turnover is generated in its significant part by the gross investments and also by the research and development expenses. We examined the relationship between these three variables, and, the hypothesis is confirmed, a significant correlation is established between turnover and gross investments, and between turnover and R&D expenses, as you can see in the table 8,

were the value of the correlation coefficient is very close to 1, which means that the considerate correlations are strong.

Table 8

**Correlations**

		TURNOVER	GROSSINV	RDEXPENS
Pearson Correlation	TURNOVER	1,000	,970	,995
	GROSSINV	,970	1,000	,962
	RDEXPENS	,995	,962	1,000
Sig. (1-tailed)	TURNOVER	,	,003	,000
	GROSSINV	,003	,	,004
	RDEXPENS	,000	,004	,
N	TURNOVER	5	5	5
	GROSSINV	5	5	5
	RDEXPENS	5	5	5

*Regression equation:*

$$\text{Turnover} = +313.183 \times \text{R\&D Expenses} + 2.622 \times \text{Gross Investments} + 114770.079$$

Our multiple regression model demonstrated that the turnover increase can be predicted using two significant predictors such as gross investments and R&D expenses. The Model Summary table revealed us the following:

- The R – coefficient (multiple correlation coefficient) value is 0.996 and if we compare it with the maximum value 1, we can conclude there is a highly strong correlation, approximately 99% of the turnover variation can be predict by the two variables (Gross investments and R&D expenses);
- The R square has the value 0.992 and
- The Adjusted R-square takes into consideration the number of observations, generally is smaller than R and R square, but is still highly enough to explain the relationship between variables.

Table 9

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	,996 <sup>a</sup>	,992	,984	954,61263	,992	120,778	2	2	,008	1,528

a. Predictors: (Constant), RDEXPENS, GROSSINV

b. Dependent Variable: TURNOVER

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,996 <sup>a</sup>	,992	,984	20954,61263

a. Predictors: (Constant), RDEXPENS, GROSSINV

b. Dependent Variable: TURNOVER

The regression model has an acceptable limit of standard error: 20954 mil RON, meaning 3,8% of the average turnover (less than 5%).

Table 10

**Residuals Statistics<sup>a</sup>**

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	365844,7	777133,0	541328,0	162839,20093	5
Std. Predicted Value	-1,078	1,448	,000	1,000	5
Standard Error of Predicted Value	10186,34	20887,33	15652,92	4801,49958	5
Adjusted Predicted Value	385422,5	891352,8	575964,0	208040,56199	5
Residual	-20101,7	18268,39	,0000	14817,14868	5
Std. Residual	-,959	,872	,000	,707	5
Stud. Residual	-1,414	,998	-,281	1,090	5
Deleted Residual	-121448	23921,13	-34636,0	58328,16318	5
Stud. Deleted Residual	-49,072	,995	-10,188	21,796	5
Mahal. Distance	,145	3,174	1,600	1,391	5
Cook's Distance	,051	10,531	2,634	4,477	5
Centered Leverage Value	,036	,794	,400	,348	5

a. Dependent Variable: TURNOVER

Table 11

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1,06E+11	2	5,303E+10	120,778	,008 <sup>a</sup>
	Residual	8,78E+08	2	439095790,3		
	Total	1,07E+11	4			

a. Predictors: (Constant), RDEXPENS, GROSSINV

b. Dependent Variable: TURNOVER

Applying ANOVA analysis (see table 5), we can conclude that the model fits very well (Sig has the value of 0.008, less than 5%).

Table 12

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	13337,456	59615,324		,224	,844
	GROSSINV	,712	,978	,170	,728	,542
	RDEXPENS	727,614	204,813	,831	3,553	,071

a. Dependent Variable: TURNOVER

Table 13

**Coefficient Correlations<sup>a</sup>**

Model			RDEXPENS	GROSSINV
1	Correlations	RDEXPENS	1,000	-,962
		GROSSINV	-,962	1,000
	Covariances	RDEXPENS	41948,382	-192,638
		GROSSINV	-192,638	,956

a. Dependent Variable: TURNOVER

Table 14

**Collinearity Diagnostics<sup>a</sup>**

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	GROSSINV	RDEXPENS
1	1	2,916	1,000	,00	,00	,00
	2	8,073E-02	6,010	,17	,06	,00
	3	3,057E-03	30,886	,82	,94	1,00

a. Dependent Variable: TURNOVER

Table 15

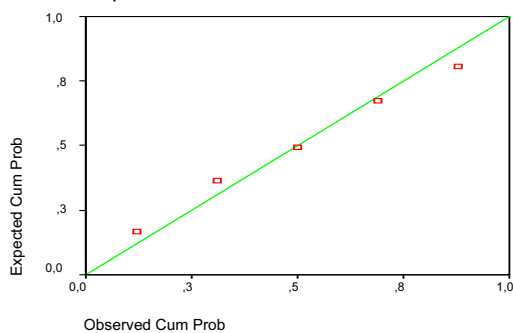
**Residuals Statistics<sup>a</sup>**

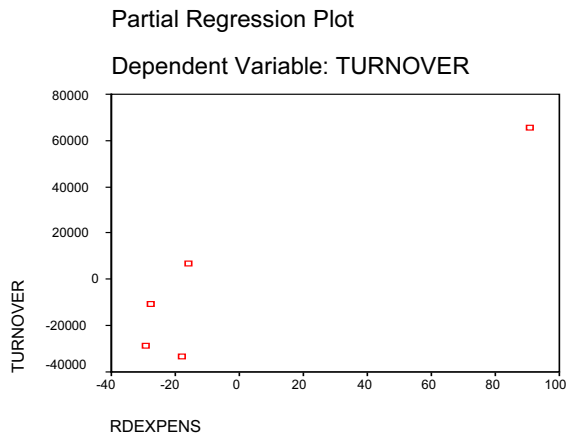
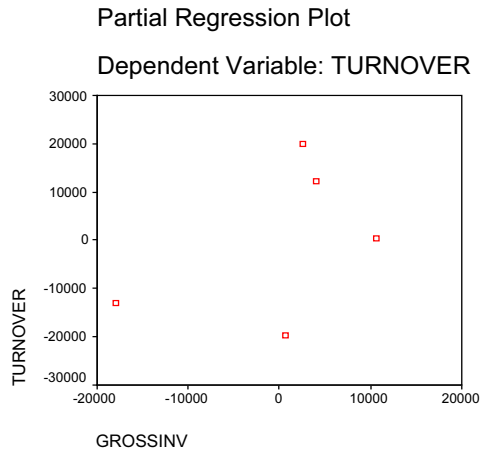
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	365844,7	777133,0	541328,0	162839,20093	5
Residual	-20101,7	18268,39	,0000	14817,14868	5
Std. Predicted Value	-1,078	1,448	,000	1,000	5
Std. Residual	-,959	,872	,000	,707	5

a. Dependent Variable: TURNOVER

Normal P-P Plot of Regression Standardized Residu:

Dependent Variable: TURNOVER





## Conclusions

It is very important for Romania to find the right measures which will allow the innovation capacity to be increased. Research and development are key elements for innovation, but they are not the only ones: we can speak also about organizational and the marketing issues and about the fundamental role of human resources. Innovation must be understood as a multi-faceted phenomenon, denoting both a process and its results. Innovation is very strong connected with competitiveness in terms of economic processes, products (or services), opening up new markets, business start-ups or work organization, having a major role for social and economic progress of Romania, and also for the success of the European knowledge-based society.

Unfortunately, the effects of financial crisis have occurred over the internationalization of innovation (trends in foreign direct investments, trade, geographic focus, scope of activities). Another consequence of the credit shortage

is that the financing of innovation and related educational and R&D activities has become more difficult. Generally, the effects of the crisis on innovation have been felt by individuals, businesses and communities across Europe since 2008. It is important for Romania to demonstrate the capacity to deal with the crisis, in order to prevent a reduction in innovation activities or to initiate innovation-boosting measures. Romania has to act in a proactive manner.

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## MODERNISATION OF PASSENGERS STOCK DEPOT AT THE REGIONAL DIVISION BRASOV

**Elena SIMA**, Associate Prof. Ph.D., ec. ing.  
Romanian-German University of Sibiu

### ***Abstract***

*The purpose of this paper is to present the latest accomplishments at the Regional Division Brasov regarding the modernisation of stock depot for passengers but also future programs that will continue this process. The rolling stock used in passenger transport was followed: passenger wagons, sleeping wagons, diesel engines, electric engines.*

*Passenger transport organisation should aim the accomplishment of the following requirements: ensuring passengers' security on the route and in stations; reducing travel time (by increasing trains' speed, choosing the best routes, reducing stops at stations, ensuring certain fast links at railway junctions); intensive usage of rolling stock, of fixed installations; the appropriate combination of freight with passenger transport, passengers' good serving at stations and trains, especially by ensuring a timetable which would provide convenient hours and reliable connections at railway junctions.*

**Key-words:** *rolling stock, modernisation, European Union*

**JEL Classification:** L<sub>620</sub>

### **Introduction**

The paper aims the tendencies and efforts made for the modernisation of rolling stock for passengers at the Regional Division Brasov, for the railway transport to become attractive, competitive and in accordance to the stipulations of the European Union transport policy.

Studying this issue is extremely important because the Romanian passenger rolling stock is mostly old, physically and morally worn out and its modernisation is a decisive requirement for restoring railway transport.

The development and improvement of the passenger railway transport system in all developed countries is motivated by this system's undeniable advantages:

- energetic efficiency: the energy consumption per transport unit is 6 times lower than the auto system and 3 times lower than the naval system;
- environmental pollution: the emanated pollutants volume per transported unit is only 1/10 as compared to the other means of transportation;
- train usage: the train occupied by a railway takes only 60% as compared to the one necessary to a road of the same capacity;

- social involvement: railway tariffs are accessible for the general population;
- the number of accidents resulting in deaths and injured is the lowest of all means of transportation.

Railway transport is one of the least polluting means of transportation and its development contributes to the creation of a sustainable transport as stipulated by the European Union.

Considering the great importance of this issue, with this paper it has been intended to collect the necessary information from the company as they have evolved over time, representative graphs were made which would outline the phenomenon and these have been afterwards interpreted. Moreover, we have considered the opportunities offered by the European programs in this regard.

The specialty literature generally presents the rolling stock, by mentioning the evolution of all elements in time, outlining their improvement. The poor situation of the Romanian rolling stock has also been highlighted by the press, TV shows or radio.

Lately, however, important modernisation activities of the Romanian rolling stock have been started, this paper outlining the ones appropriate for the Regional Division Brasov but this process needs to continue.

### **Literature review on the proposed topic**

In the paper *Transports Logistics*, Gheorghe Caraiani shows aspects regarding magnetic levitation used by high-speed vehicles and its advantages. Moreover, fast railway transport is mentioned which is in full development for passengers transit around the world.

In the book *The Management of technologies in transportation*, I have presented aspects on the railway, wagons, engines, their evolution in time and the Romanian contributions to the development of this field.

Valentin Nita in the book *The Management of transport systems*, in the chapter dedicated to the railway transportation describes its technical and material basis regarding the railway means of transportation and also the railway traction.

Alina Melnic and the collective show in the book *Transport systems*, the railway means of transportation, outlining a short history and their classification.

### **Theoretical approach**

As far as European concerned, Romania is part of the working group on pan-European transport networks, where railway plays an important part. CFR passengers is a full member of The International Union of Railways (IUR), which has as main activity to maintain and develop overall coherence of the railway system, to increase inter-operability and railway competitiveness, especially in international traffic.

In Romania, the public passenger railway traffic is provided with an average number of almost 1700 trains and it is daily used by almost 330.000 passengers on an average distance of 98 km.



Although advantaged by the geographical positioning, Romania has a poorly developed transport system and the lack of invested capital in this field increasingly becomes a barrier to the country's economic development. That is why, the insufficient modernisation of the main transport corridors might lead to the loss of advantages given by Romania's geographical positioning, on the transit routes West-East and North-South.

The lack of financial resources caused serious cutbacks in infrastructure maintenance and rehabilitation of rolling stock (outdated and insufficient in terms of both quantity and quality), which has significantly altered the railway transport in terms of both quality and safety, the Romanian infrastructure standing below EU standards.

### **Modernisation of rolling stock at SNTFC CFR Travellers Brasov**

The main problems faced by SNTCF CFR Travellers Brasov are:

- outdated passenger coaches and sleeping coaches park show a modest technical condition and comfort;
- still high level of fraudulent travel;
- the level of subsidy is insufficient as compared to the volume of passengers;
- computer reservation systems and ticketing are modest as compared to the number of agencies and pay offices;
- an aggressive marketing of the road passenger transport; the market's decrease;
- high prices as against the population purchasing power.

Given that the passenger transport company has very limited finances sources for investments and modernisation and that these are used to repay previous loans, it is necessary that the state budget provides resources for the accomplishment of these actions, considered minimal:

#### *A. Coaches*

Unless modernisation or coaches or electrical multiple units purchases are made, in the following 10 years 1841 coaches of the total 4084 exhaust their lifetime and because of the technical condition and type of construction, they can no longer be exploited. The available park shall fall in 2010 to 2247 coaches – *fig. 2, curve 1.*

- 1) if the company's possibility to finance the reconstruction of the 1291 coaches which technically and economically call for reconstruction is maintained, the park can keep up to the current level until 2008 – curve 2. This implies that the annual subsidy covers both current repairing and the reconstruction program.
- 2) co-financing within the EBRD loan for the modernisation of 100 wagons allowed that in 2002, a transport capacity equivalent to around 14 trains at European standards to be put into circulation. The amount needed was 5 mil. USD in 2001 and 5 mil. USD in 2002.

- 3) securing funding to begin a manufacturing program in the Romanian industry for about 224 railcars and 94 electric multiple units with the following intervals (table 1).

Table 1

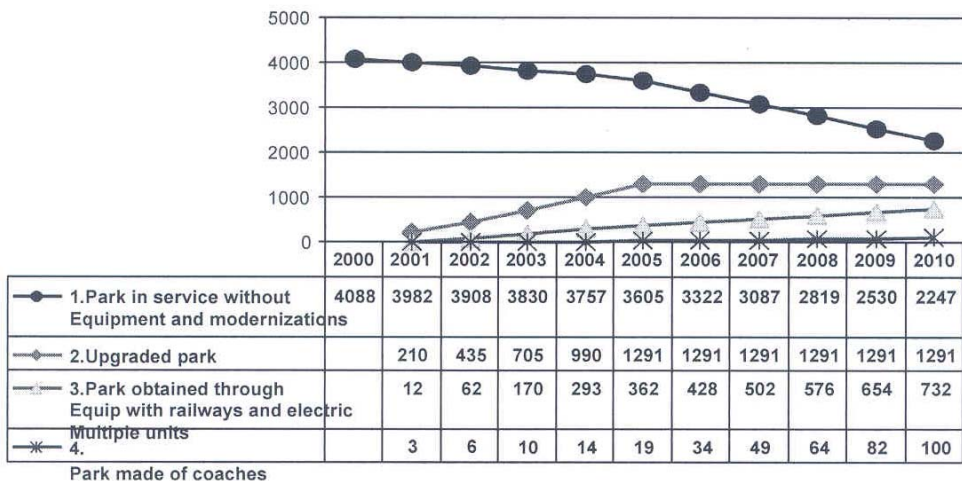
**Financing program for the manufacturing of railcars and electric multiple units in the Romanian industry**

	total	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Railcars	224	2	10	24	24	24	24	28	28	30	30
Electric multiple units	94	2	10	20	25	7	6	6	6	6	6

Source: SNTFC CFR Travellers Regionala Brasov.

These facilities will provide a transport capacity that will allow the replacement of approximately 732 cars – *fig. 1 – curve 3*.

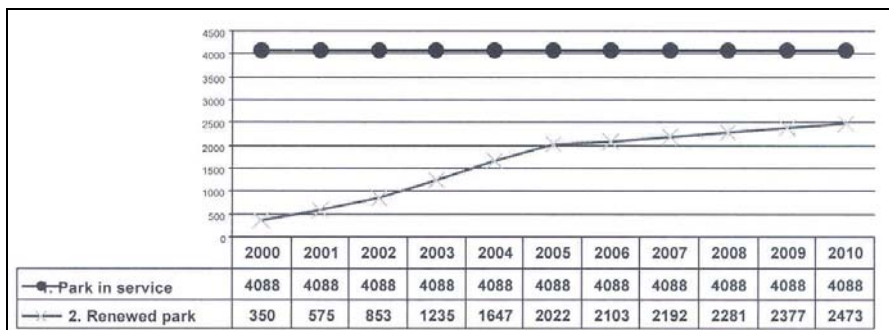
The continuation of the manufacturing program in Romania at the limit of economic efficiency of coaches under CORAIL licence purchased on state guaranteed loans was financed in 2001 for 18 coaches and further on, during the following years for up to 100 coaches – *fig. 1 – curve 4*.



Source: SNTFC CFR Travellers Regionala Brasov.

Fig. 1. Modernisation program for coaches under CORAIL licence purchased on state guaranteed loans during 2001-2010

Through the above mentioned measures, the coaches transport capacity is practically maintained at its current level and the introduction of upgraded, new coaches, railcars and electric multiple units into the park will provide continuous increase of the percentage of coaches that offer quality travelling conditions.

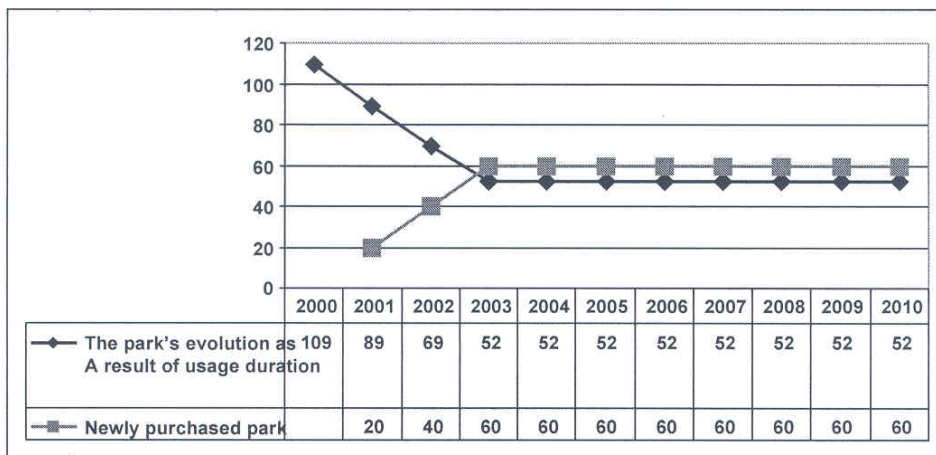


Source: SNTFC CFR Travellers Regionala Brasov.

Fig. 2. The park in service and the renewed park during 2001-2010

### B. Sleeping coaches

The current park of 109 coaches has reduced in three years to only 52 coaches, the rest unfulfilling the minimum conditions of comfort and security – fig. 3 – curve 1.



Source: SNTFC CFR Travellers Regionala Brasov.

Fig. 3. The current park and to be renewed for sleeping coaches during 2001-2010

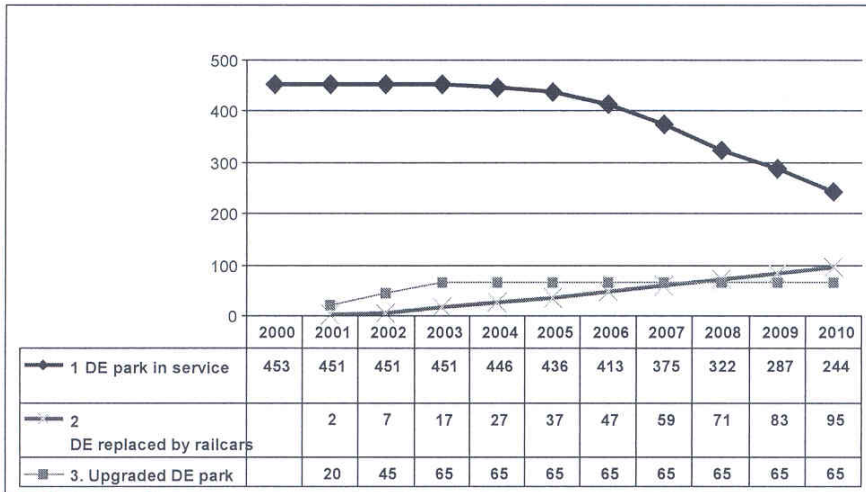
To ensure the necessary transport capacity, the purchase of 60 cars from Germany and upgraded in the warehouses at CFR Grivița is suggested – fig. 3 – curve 2.

Under these circumstances, at the end of 2010 the entire necessary sleeping coaches' park is usable in good travel conditions.

### C. Diesel engines

The current of 457 Diesel engines necessary for passenger trains towage will get equipped beginning with 2005, reaching in 2010 only 244 engines – fig. 4 – curve 1.

- Through the equipment of railcars, the need for engines is gradually reduced, reaching up to 95 engines in 2010 – *fig. 4 – curve 2.*
- By carrying the modernisation loan of 65 engines in the next three years, their lifespan increases by another approximately 15 years at higher parameters – *fig. 4 – curve 3.*



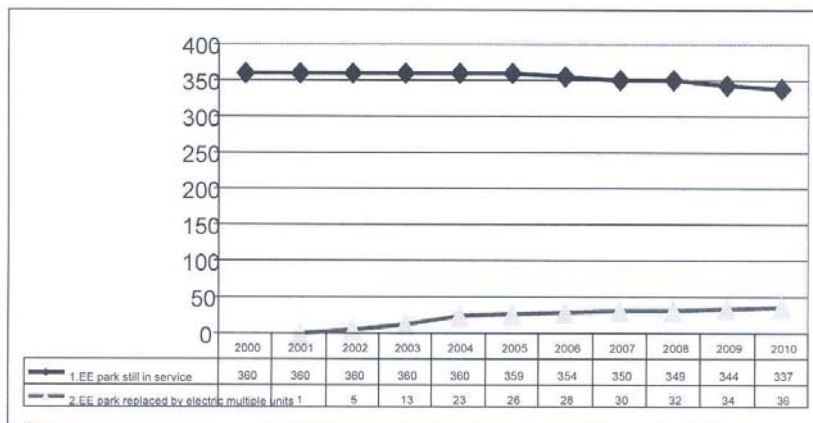
Source: SNTFC CFR Travellers Regionala Brasov.

Fig. 4. The current park and to be renewed for diesel engines during 2001-2010

- Practically, their implementation should provide towing capacity for the public service.

#### D. Electric engines

The current park of 306 electric engines 5100 KW and 55 electric engines 3400 KW are practically in service until 2004-2005 and until 2010 only 23 engines will removed from service for exceeding the lifetime – *fig. 5 – curve 1.*



Source: SNTFC CFR Travellers Regionala Brasov.

Fig. 5. The current park and to be renewed for electric engines during 2002-2010

- Obtaining a loan for the modernisation of 50 electric engines 5100kw (approximately 40 mil. USD) and of 20 electric engines 3400kw (approximately 20 mil. USD) as well as continuing the reconstruction program of Diesel engines with modern engines and transmission systems – practically ensures that during 2001-2010 the entire inventory park of electric engines remains fit for service.

- Ensuring financing of the electric multiple units' construction program will replace in this period approximately 36 engines – *fig. 5. – curve 2.*

- The replacement with electric multiple units practically allows the elimination of electric engines that can be capitalised through rent, their number being directly determined by the equipment rhythm – *fig. 5 – curve 2.*

Since 2008, The National Travel Company has started several purchase programs, some for coaches, others for their modernisation, so that the coaches' park would comply with the current transport requirements and with the European Council's Regulation on passengers' rights and obligations.

These programs want to ensure until 2015:

- New built cars, by concluding a framework agreement of maximum 200 coaches for international trains, intercity and fast trains.

- Speed coaches and more comfortable, by signing a framework agreement of maximum 90 coaches.

- Modernization and change services of maximum 1400 coaches.

This will succeed in:

- Classifying passenger trains in IC trains (intercity), IR (interregional), R (regional).

- Improving comfort conditions for all train categories, so that by the end of 2015, trains would be equipped by newly built or rehabilitated coaches.

## **Conclusions**

The main necessary actions to provide the public railways passenger transport in Romania, in the following years are:

1. The necessary budgetary allocation for public railway passenger transport to be guaranteed based on serious analysis of costs for ensuring the public service at the level and quality standards that would correctly reflect the correlation of services and the price paid by travellers.

2. The thorough analysis of certain travelling facilities granted by legislative acts and amendment of this legislative framework so that the number of facilities is closely related to the state's ability to finance them.

3. the long term tariff policy sets as an objective the gradual reduction of budgetary transfers so that their value in the total of costs decreases from 59,2% in 2003 to approximately 30% in 2010, reaching the state's sustainability level of the passenger railway transport in the European Union countries.

4. the increase of public railway passenger transport services will be made by modernising the current park of rolling stock and by purchasing railcars and electric multiple units.

Across the Regional Division of Railway Passenger Transport Brasov, there is currently running a number of 211 trains/day, out of which 10 international trains, 26 Desiro railcars (Blue Arrow), 12 intercity trains, 16 fast trains, 26 express trains, 121 slow trains.

Each engine and railcar towing trains from RTFC Brasov goes between 200 and 650 km per day, making a total number of 1000000 train km in one month, of which approximately 100000 km are made by the Blue Arrow trains.

During the last 5 years, due to the SNTFC modernisation strategy of the rolling stock, The Regional Division Brasov was equipped with new types of engines and railcars.

Last year, a number of 14 million passengers have left from the stations in the RTFC Brasov area, traffic peaks being April, May, October 2009.

The assessments made in a recent document of the International Railway Union show that railway transport is not only one of the safest, but lowest environmentally unfriendly, but will become the most reliable and most financially accessible means of transportation.

European high speed railway transportation in 2015 is envisaged as taking place on different competitive networks along corridors that allow great traffic densities. High speed passenger trains will run on these corridors, on large distances, which will be controlled by centralised systems. For the modernisation of its own networks according to the European requirements, Romania has signed various international agreements on the railway transportation and has taken part to a number of international projects in the field, binding itself to integrate the railway transport into the European Union.

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## FROM COOPERATION TO GLOBALIZATION

**Gabriela UNGUREANU**, Lecturer Ph.D.  
Faculty of Marketing and International Affaires  
Spiru Haret University

### ***Abstract***

*Globalization is seen as a consequence of cross-border business. This complex and irreversible process can be seen as an extension of capitalist relations of production or increased interdependence in the economic system. Globalization has given rise to more and more fields of activity worldwide. To meet the challenges of business globalization, many companies form strategic alliances, cooperate or merge with other companies. Cooperation is seen by many companies as an alternative path to success. In recent years joint international associations, licensing, co-production agreements, joint research programs, exploration of consortia and other cooperative relationships between two or more corporations with potential have increased. We notice a cooperation tendency among small-sized companies, especially among those from the developing countries.*

**Key-words:** *cooperation, globalization, strategic alliances, global financial system, economic growth*

**JEL Classification:** F<sub>23</sub>, P<sub>13</sub>

### **Introduction**

As is increasingly becoming a reality, globalization has become the most controversial concept in international economic and political literature. Globalization can be seen as the extension of capitalist relations of production or increased interdependence in the economic system. Post-communist transition processes belong to the former category, and universal access to information, to the latter.

Note first that the globalization phenomenon can also be expressed through other terms such as universality of economic life, a partnership between states and peoples, general economic integration, globalization of capitalism, the new global economy, globalization. Of these, the concepts of globalization and mondialization, the former having Anglo-Saxon origin, while the latter, French origin, are frequently used.

Globalization means cutting off borders, increased cross-border trade and investment, deregulation, global products and global customers, global competition and global standards. Thus globalization involves a new global economic order that transcends traditional models of capitalism and requires a new institutional framework.

## Literature review

Globalization deepens the problems that affecting the people and requiring large-scale human cooperation, for example, the overharvesting of natural resources and human-induced global warming. (Buchan N. et al, 2009) However, what does globalization imply for the cooperation needed to address such global social dilemmas? Two competing theories are provided. The former refers to the fact that globalization prompts reactionary movements that reinforce parochial distinctions among people. Large-scale cooperation then focuses on favouring one's own ethnic, racial, or language group. The alternative theory suggests that globalization strengthens cosmopolitan attitudes by weakening the relevance of ethnicity, locality, or nationhood, as sources of identification. In essence, globalization, the increasing interconnection of people worldwide, broadens the group boundaries within which individuals perceive they belong. We test these theories by measuring globalization at both country and individual levels and analyzing the globalization/individual cooperation relation with distal others in multilevel sequential cooperation experiments in which players can contribute to the individual, local and/or global accounts. Our samples were drawn from the general population of the United States, Italy, Russia, Argentina, South Africa, and Iran. We find that as country and individual levels of globalization increase, so does individual cooperation at global level compared to the local one. In essence, “globalized” individuals draw broader group boundaries than others, eschewing parochial motivations in favour of cosmopolitan ones. Globalization may thus be fundamental in shaping contemporary large-scale cooperation and may be a positive force towards the provision of global public goods.

Globalization has improved the living standard of hundreds of millions of people – but growing resource scarcity means it risks becoming a victim of its own success. (Evans A., 2010) Left unaddressed, scarcity of food, energy, water, land and other key ‘natural assets’ may trigger an increased zero sum competition between states – in the process, increasing poverty, state fragility, economic instability, inflation, and strategic resource competition between major powers. Scarcity issues could emerge as an important catalyst for collective international action to tackle global challenges – in the process helping to ensure that an already *efficient* globalization process also becomes more *sustainable*, *equitable* and *resilient*. Few observers of the multilateral system would dispute that it is up to the task of managing scarcity, configured as it is today. But this paper argues that it is already possible to begin assessing the key implications of scarcity issues for a range of international agendas; to identify the specific cases in which international collective action of reform of existing multilateral institutions is needed; and to start mapping out the short, medium and long-term key actions.

Anwar Sajid, Doran Christine, Choon Yin Sam (2009) present the relationship between regional and national identities in the age of globalisation, with particular reference to the Association of South-East Asian Nations (ASEAN). For members of ASEAN, economic integration is seen as a necessary step forward in order to (i) reduce reliance on Western countries during times of economic crisis



and (ii) speed up the recovery process in the aftermath of a crisis. The concept of an ASEAN Economic Community represents a step towards achieving this goal. However, by means of a case study, this paper demonstrates that the idea of an ASEAN Economic Community does not yet have sufficiently solid foundations. Cracks appear when member states act in response to the national interest. Given the frequency of friction between member nations, and the fact that ASEAN members are quite diverse in both economic and cultural respects, there is still much more to be done to form an effective and credible regional economic group. This paper provides some suggestions in this respect.

### **The mechanisms of the globalization process**

Rick Wilson and five other academics found that globalization might be “fundamental in shaping contemporary large-scale cooperation and may be a positive force toward the provision of global public goods.” (Rick Wilson, et. all, 2009)

Globalization is primarily a consequence of cross-border business. This complex and irreversible process gives rise, at state level, to winners and losers, and those who know how to capitalize this phenomenon will only win. Of course, that globalization as a dynamic phenomenon, both sides have positive and negative sides and no one denies the overwhelming importance of this process, in any economic and social life of mankind. Globalization should not be perceived as an exclusively negative phenomenon. Rather, we must realize that it is a necessity and is the only solution to solving the major challenges faced by humanity. However, we needed to develop models for implementation of this concept such that its effects on humanity to be desired, beneficial, leading to equity and harmony, the development of the whole world depending on available resources and a formidable opportunity afforded to future technology. Globalization would not have been possible without technical progress, in general, and especially without the revolution in information and communication technology.

Aspects of social and economic life that reflect the globalization process:

- the global nature of science and technology: even if the main technical development opportunities are concentrated in the developed world, scientific research is based on global resources, and on the implementation of technology designed for global goals;
- global marketing: marketing strategy of companies that meet and promote the globalization process;
- global financial system: the world economy relies on a network that involves global, banking and capital market operators, national regulatory bodies, international financial institutions;
- communication infrastructure: technical progress has allowed the improvement of communications systems material, achieving media coverage worldwide, and especially to establish a global network of transmission/reception of information;
- global institutional framework: a number of organizations such as government (UN system) or non-governmental organizations (NGOs) to promote discussions and actions concerning global issues: pollution, crime, underdevelopment and the like.

Globalization of economy requires a globalization thought and activity, which means the ability to understand the world as a single market, the conditions and laws are very different.

Currently, globalization is contested by everyone. There are complaints about it, but not missing any praise. Globalization can be a force for spreading the good: the globalization of ideas about democracy and civil society has changed people's thinking, while political movements have gone global products to ease debt burden.

Globalization has made hundreds of millions of people to achieve higher living standards, also economic globalization has brought benefits to countries that took advantage of it by identifying new export markets and attracting foreign investment. Stiglitz said that countries which had gained most were those who took their own fate and realize the role they can play in the development of the state, abandoning the reliance on the idea of a market capable to solve their own problems (Joseph E. Stiglitz, 2005, p. 378). Globalization has had beneficial effects on democracy, national elites trying to replace dictatorship with the dictatorship of international finance. Some countries have been forced by the markets and international financial institutions to give up their sovereignty, which allowed the capital markets, including speculators whose concerns were short-term economic growth, long term and not a country along with increased living standards, to "bring order", telling them what to do and what not to do.

For millions of people, we can say that globalization has not brought anything, or even a negative impact because their moral situation has worsened, their jobs were abolished, people become powerless in the face of globalization force that no one could control, while witnessing the undermining of democracy and the erosion of their cultures. Economic growth – including that induced by globalization – will lead to urbanization, undermining traditional rural societies. (Vârgă A., Ungureanu A., 2010)

Developing countries have been most successful, most of East Asia, opened to the world, but they did it slowly and following certain steps. Those countries have benefited from globalization to boost exports, and consequently, to develop a faster pace. They are abandoning the protectionist measures carefully and consistently, when they were new jobs created. These countries have ensured that there is sufficient capital to create new businesses and jobs or even their own forces have contributed to this effort. China has eliminated trade barriers not very long, but at a distance from the time the road had already started to walk towards a market economy, a period which has seen very rapid growth.

Other problems associated with globalization are inevitable and must be taught how to cope with.

Globalization has made the fields more and more effects will be manifest in the world. In these areas must develop collective action – and the rules on international business management are essential. With the identification of these areas have been created international institutions to deal with these problems, but not all operate with better results.

However, globalization is just one of many forces that affect our societies and economies. Technological changes have increased the importance of skills in

certain markets, so that those who have won in today's economy are those who have or can obtain those skills. Changes in technology may ultimately prove a more important factor than globalization, even the decline in unskilled wages. (Joseph E. Stiglitz, 2008, p. 234)

The globalization era leads to new types of relationships between business and its environment. The existence and future of the company are under the sign of the impact of information technology and telecommunications. They are the vectors that spread the advanced technology and wealth, contributing to increased living standards and improving the business environment. (Ionuț Pandelică, 2007, p. 82)

To meet the challenges of business globalization, many companies form strategic alliances, cooperation or merging with other companies, even competitors. Mergers, cooperation, acquisitions and strategic alliances are logical and inevitable consequence of competition in a global economy without barriers, and becoming more integrated. We are witnessing a globalized economy combined with information technology, which enables large corporations to consolidate this control on a scale that has not been possible until now.

### **The benefits of cooperation**

Cooperation is seen by many companies as an alternative path to success. In recent years have increased joint international associations, licensing, co-production agreements, joint research programs, exploration of consortia and other cooperative links between two or more corporations with potential. We see a preference for smaller companies, especially those from developing countries to form cooperative relations, despite the fact that these agreements were often regarded as a good option but placed second place from one option to enter a market. (Moravcsik, A., 1999, p. 267-306). Licensing, joint ventures, co-management and service agreements can also be used as an option to pass protectionist barriers to entry into a market in developing countries.

Increasing tendency towards cooperation is currently visible in two forms: first, large firms started to focus on key competencies, and secondly companies can't handle the competition at the highest level of performance in all activities they carry, so they use to relocate certain parts of the production process in other countries. Also, companies find that successful cooperation in order to enter into a market exchange relationship with a supplier and integration activities with it substantial benefits.

Cooperation agreements, which are joint ventures between local firms, are common and also necessary for market access. The operation involves pooling of capital and technology change, and benefit from greater economies of scale. On the other hand, each partner in the cooperation has less freedom to make decisions to themselves in terms of optimizing a new market entry, product development, application of transfer pricing, territorial scope of laws, and delays in the accumulate profit for dividend payment. (Farok J., Lorange, P., 2002, p. 8] There are situations in which cooperation is seen as a governance structure for organizing

the exchange through cooperative relationships that do not involve transfer of capital between firms involved in business. Companies are bound by relationships, each company performing a specific role within the group format.

The growing number of alliances and cooperation in which firms carry out their work suffers constantly changes, companies are increasingly seeking partnerships close to their key activities and exchange of technology, development of knowledge, innovation, value creation becomes the concern of alliances, rather than production of tangible goods. Such cooperation may become a dominant organizational form of the economy, defined as a system based on the development, manufacture and marketing of goods and services where a substantial part of business activity is conducted within the alliance of many firms. Cooperation in this sense is defined as autonomous organizations directly or indirectly interacting, based on one or more contracts of alliance. The aim of cooperation is gaining a competitive advantage for individual organizations involved. One network won't cover an entire market; each network has its limitations, although they are difficult to define. A key element is that the interaction between an alliance of member firms is more intense than between companies from outside the network. Cooperative is formed by independent companies trying to meet their targets with other companies involved. Companies interact in a collaborative, are influencing each other, to establish collaborative relationships. Not all member firms must work with each member, there are connections between each of the member companies, but situations in which companies collaborate indirectly through members of the alliance partners. Collaborations between companies are considered the basic elements of cooperation. There may be an alliance concluded between several companies, which became a company network, but can exist simultaneously and networks formed by bilateral agreements between partners of the alliance companies.

Penrose shows that the network companies do not lose their individual identity, but their administrative boundaries are unclear and the extent to which any individual company to exercise control is also unclear. Although formal contracts are legal base of businesses, their operations based on cooperation is not so much on the exercise of control, but on given the consensus of the participants shared goals and addiction. Given the expansion of various forms of cooperation between firms in recent years (strategic alliances, management contracts, joint ventures, franchise agreements, etc.), the question arises whether we already have a new theory of the firm based on the network. (Penrose E., 2002)

A cooperation agreement focuses on four major areas, each bringing important contributions:

- *the first* area is a selection of partners;
- *the second* operation involves the cooperation to include strong organization with a continuous existence in the market to provide stability and continuity of cooperation;
- *thirdly*, cooperation between organizations powerful means to share a common purpose;

- *in the fourth*, often incorporating more technology cooperation. In this way, corporations are partners in a co-creating value, but may also be affected by operational interdependencies due to other third party partners.

An important benefit of cooperative relationship between the corporations is marked by inter-trading operations. From a general point of view, the operation of joint ventures, licensing arrangements and other types of cooperation can be achieved through inter-trade objectives, such as risk reduction, economies of scale and/or rationalization, exchange technology, co-opting or blocking competition, facilitating the company's international expansion and inexperienced vertical. Operations benefits of trade integration between the company the potential benefits of cooperation creates value and could provide a more competitive economy and not finally, saves cost benefits. (Reuer, J.J., 2004, p.14)

## Conclusions

Globalization is just one of many forces that affect our societies and economies Understanding globalization is a necessity and is the only solution to solving the major challenges faced by humanity. Aspects of social and economic life that reflect the globalization process include: the global nature of science and technology, global marketing, global financial system, communication infrastructure, global institutional framework.

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# THE PROCEDURE DIMENSION OF AN ASSESSING MODEL FOR THE TEACHERS IN THE PRE UNIVERSITY SYSTEM OF LEARNING

**Daliana Ecaterina TASCOVICI**, Assistant Lecturer Ph.D. Student  
The Faculty of Accounting and Finance, Campulung  
*Spiru Haret* University

**Robert Gabriel DRAGOMIR**, Lecturer Ph.D. Student  
The Faculty of Accounting and Finance, Campulung  
*Spiru Haret* University

## ***Abstract***

*The paper is part of an ample research which proposes to fundament theoretically, methodologically and procedurally an assessing model for the teachers in the pre university system of learning. The purpose of the present paper consists in presenting the procedure dimension of the above mentioned assessing model.*

**Key-words:** *procedure, dimension, assessing, model, teacher*

**JEL Classification:** I<sub>20</sub>

## **Introduction**

We started from the hypothesis that the teachers' assessing in the pre university system of learning will constitute a scientific and efficient approach, if it bases on the structural, procedural and of process dimensions, all of them integrated in a complex assessing model. [3, 4] The inter correlation among the basic dimensions: the structural one, the procedural one and of the process, included in a logical system fundament the proposed model.

## **Theoretical background**

Within the diagnostic evaluation, we proposed to record a sufficient amount of information referring to the individual performance and improvement.

In order to fulfil all the stages of the proposed model, a series of pedagogical instruments were used for. Beginning with the balance, every teacher elaborated a *Plan of professional development*, taking into consideration the obtained results within the *Auto appreciation scale*.

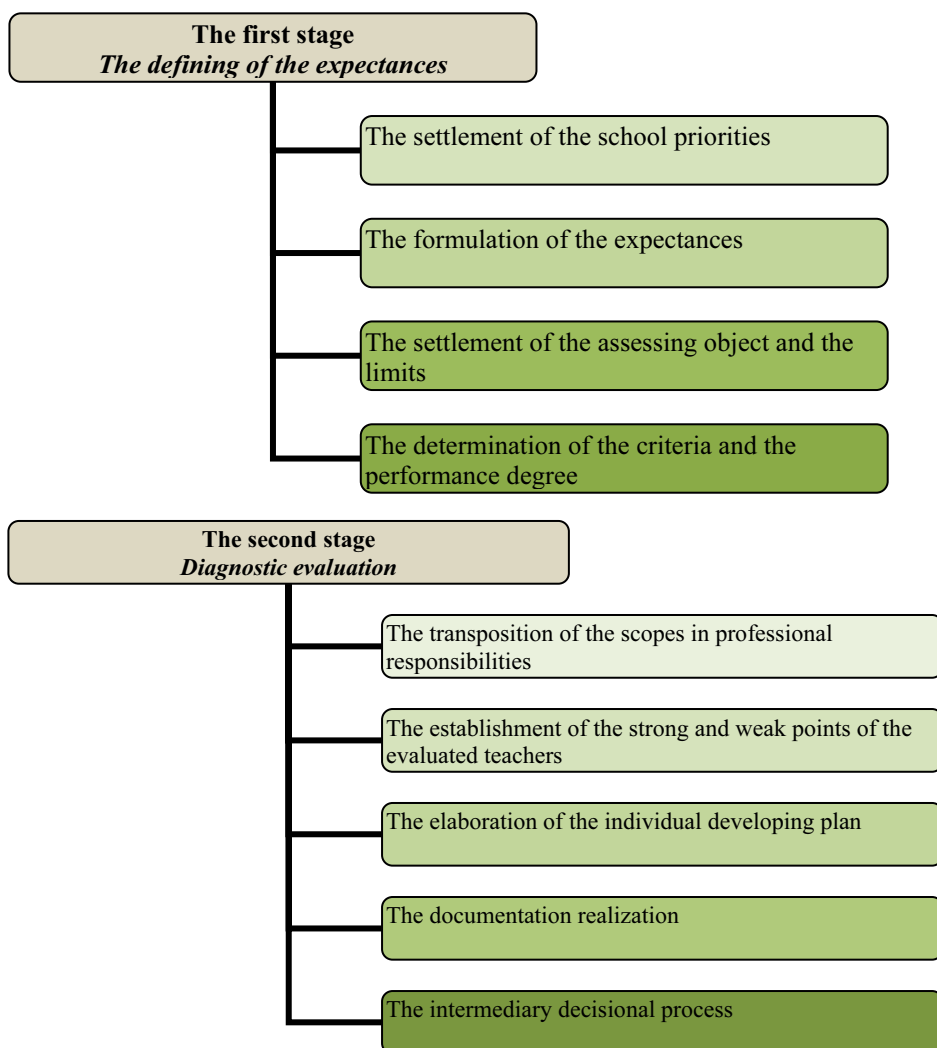
After realizing and collecting the necessary documents, we passed to the formative stage, which allows the determination of the degree of realizing of the improvement plan. Here a lot of formal or informal meetings took place. These supposed different working modalities: individual, teams, groups, workshop, practice activities, brainstorming.

Other materials gathered with the help of different reports, questionnaires were: *Evaluation report, Auto evaluation report, Auto appreciation scale, Graphic profile of diagnostic auto evaluation* and so on.

### **The procedure dimension of the assessing model**

The procedure dimension of the assessing model is composed of four stages, as we can see in the figure no.1 and can be extended on a variable period of time, depending on the current administrative directions adopted by the school system in use. [1,2]

The model verifies the knowledge, the abilities and the attitudes of the assessed teachers, around five professional domains: instruction, evaluation, learning environment, human relations and professional engagement. [5]





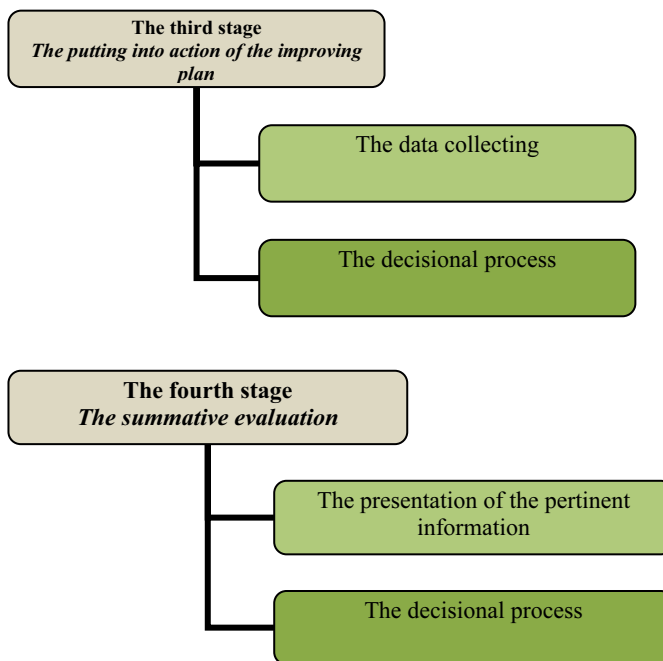


Fig. 1. *The assessing model in its procedure aspect*

The first stage, *The expectances defining* assumes the establishment of the expectances towards the competences the teachers must touch inside the above mentioned five domains of activity. The evaluator collaborates with the implied members – the school managers and the evaluated teachers – as concern the characteristics of the required knowledge, attitudes and abilities. The level to be touched by every teacher is also determined within this stage, too. The expectances constitute a minimum; they take care of the educative school project and respect the pedagogical priorities of the school system. We determined level of performance in which the teachers' responsibilities have to be recognized. The next step is to establish the evaluation objectives and the touched levels. Once the expectances are clearly uttered, there are chosen specific expectations within the evaluation objects and performances criteria are elaborated for each of them. These evaluation objects are drawn up as specific and quantified results.

The second stage, *The diagnostic evaluation* proposes to transpose the scopes into professional roles and responsibilities for every teacher; it also implies the establishment of the weak and strong points of the evaluated person efficiency, in accordance with the expectances defined at the first stage; the next step is to elaborate an improvement plan. It is compared the actual level of the knowledge, attitudes and abilities with the levels prior defined. The teacher reviews his competences, marking the indicators which describe and affirm their accomplishment. He compares his number of indicators with the stages established

by the team. The documentation takes place also here. It implies the recording of a sufficient amount of information, referring to the scopes fulfilment, in order to sustain the professional development and justify the personal decisions. The next step is the intermediary decisional process. Every teacher modifies, if required, the action plan. Depending on the school standards, the evaluation coordinator establishes the place of every individual plan into the global frame, respecting the priorities and orientations of the school system. The presence of a trustful climate, team collaboration, respect is essential for assuring the success. The exchanges and communication among the implied persons assure a better coherence between the personal and school objectives and give a dynamic aspect to the following stage.

The third stage, *The formative evaluation*, supposes the determination of the fulfilment level of the improvement plan. This can be realized depending on the proposed improvement plan and determines the level of touching the personal objectives. The author of the present study accompanies the teacher along the whole approach and facilitates the making up to date of the improvement objectives. This kind of evaluation is characterized by its interactive, positive and constructive aspect. The formative evaluation occupies an important part in the evaluation cycle. Every person establishes predetermined moments to respect the deadlines and can change the progress or the met impediments

The formative evaluation methods are inspired from the improvement plan of the teachers. They are diversified and offer some opening.

In its turn, the formative evaluation is realized in three moments:

1. The coming into play of the improvement plan. It is based on the continuous evaluation of the personal plan, with the available resources.

2. The data collecting. It is required the evaluators, the colleagues, the students' feed-back. A great variety of instruments is used. There are included observing grills, appreciation or verifying lists, documents, reports, questionnaires which form an abundance of authentic and multidimensional data. During this stage, the evaluator cooperates with the evaluated teacher in order to gather data.

3. The decisional process. The realized progress is verified, by relating to the objectives.

The fourth stage, *The summative evaluation*, quantifies and qualifies the teachers' realization at the beginning of the assessing cycle and after the expectances' defining stage. The summative evaluation allows the establishing at the end of the cycle a sum of the achievements, in order to take a decision. The obtained materials are also presented here. In its turn, this stage is composed of two moments:

1. The presenting of the pertinent materials. Every teacher produces concrete results and pieces of information of his formative evaluation. All these materials are resumed in an official file of the evaluated person.

2. The decisional process. After the process of summative evaluation, the evaluator meets the teachers. Taking into account the school expectances and priorities, one of the following decisions is taken:

- the recognition of the excellence;
- the naming of the improving domains.

## Conclusions

The triad structure – procedure – process, the evaluation methodology promoted by the research as well as its results can stand for the systematical issue of the pre university teachers' evaluation in Romania and Moldavia Republic. The results and the recommendations as concern the evaluation of the teachers in the pre university system of learning can be used for the field of initial and continuous forming of the teachers, the practice of professional selection and the elaboration of the professional and institutional development strategies. The research results gain an up to date position due to the development of the perspectives within the national conception and the pre university teachers' evaluation policies.

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# BOOKKEEPING INFORMATION USE FOR IMPLEMENTING MANAGEMENT PRINCIPLES

**Aurelian Virgil BĂLUȚĂ**, Lecturer Ph.D.  
Faculty of Accounting Financial Management  
*Spiru Haret University*

## ***Abstract***

*One of the principles used for the new projects and agreed by the enterprisers is that of 3D. In order to apply this principle, one needs to use bookkeeping information. In the attempt of managers to be successful in business, there is also used the bookkeeping information. The managers use a series of practices in order to increase the companies' performance. For most cases, the account department helps the successful managerial practices with adequate information and procedures.*

**Key-words:** *bookkeeping information, managerial principles, the 3D principles, bookkeeping law*

**JEL Classification:** M<sub>4</sub>

## **Introduction**

We present in the hereinafter article, the needs of bookkeeping information, plus a few rules and practices of the successful management. It represents, in fact, the approach to a disciplinary problem.

The formalization of bookkeeping informational flows towards management is very important since both disciplines evolve rapidly. The accountancy is in the process of international harmonization and the management tries to find solutions to the new problems of the companies related to the actual tendencies of globalization, regionalization, of those concerning the crisis and its overcoming in the near future. It is possible that the evolutions of accountancy should not always take into account the specific needs of the successful managerial principles and practices. In the absence of informational support in the account department, no rule or managerial practice will be successful, no matter how successful it would be from a conceptual point of view. On the other hand, the generalization of successful practices of some of the companies that have advanced informational systems, based on detailed procedures and that work in compliance with corporatist governing involves the reshape of data flows in an intelligible way, which could also be applied to the realities of the most companies.

How does the author answer to this issue here?

The management of the companies evolves rapidly. A series of rules unanimously accepted have made the object of previous studies, even at the level of academic texts. In this article, I synthesize the informational high demands from the 3D principle as well as from a series of successful managerial practices and identify the sources of bookkeeping information that can support them. It is practically the first step from the managerial concepts to the applicative accountancy. For the next step, at the level of every organization, there are established attributions, tasks, procedures and schemes of informational flows, according to specific realities.

The article started from the identification of some principles, practices and rules in the management literature elaborated by practitioners, with concrete results. In general, the authors of the respective specialty materials addressed themselves to management practitioners and pursued the development of applications on the empiric way. Attention was only paid to managerial problems. The role of the article is to take and interpret some principles, rules and managerial practices and bring them to a common language with the accounting law, so that it became interdisciplinary subjects with an operational solution at a company level.

No important theoretical contributions have been noticed lately, with a view to adapting the bookkeeping informational flows to new managerial principles, rules and practices.

### **Theoretical substantiation**

The article is meant to establish a mechanism for the use and adaptation of the instruments for accounting law and for the accounting concerning the delivery of information necessary for the application of some management rules, practices and principles. There are to be taken into account the basic concepts of bookkeeping in agreement with the high demands of the advanced practices of management.

### **The use of bookkeeping information for applying the 3D principle**

The information from the account department and the instruments of the accounting law are frequently used for the application of some of the successful management principles. In the approach to a new project of a company, the successful management recommends making the difference with the help of *the principle of the 3D: determination, dimension, differentiation*.

The application of this principle implies the use of some bookkeeping information and of some instruments of accounting law. In table 1 there is synthesized the information in the accounting domain and the instruments of the accounting law required for the use of 3D principle.

Table 1

**Bookkeeping information and instruments of accounting law required  
for the use of the 3D principle**

No.	The managerial principle/ signification	Required information/ data sources	Method of capitalizing the information for applying the principle
1.	Determination	Financial position	The company can be made to get involved in the project due to the following reasons: in order to avoid or eliminate the losses in the present activity, in order to place the surplus into other projects, in order to diversify the portfolio and decrease the risks or exaggerate exposures on a transaction or on a client (or group of clients), in order to avoid the effects of market glut or of the attainment of the maximum potential of business, in order to efficiently place some of the surplus resources.
2.	Dimension	Sales figure, assets value on the whole and on a specific structure, staff number	Data regarding dimension (taken as a parameter of a principle of managerial filtration) are mainly obtained from the financial situations and are interpreted according to the rules of accounting law.
3.	Differentiation	Actual potential capable of generating differentiation	The accounting or special management reports are interpreted according to the accounting law and the principles of successful management.
4.	The combined analysis: determination-dimension-differentiation	Previous evolution, rational estimates, business logic / Financial situations, special reports, analyses of budget execution, fiscal file, business partner relationships	The accounting law has a main importance in the interpretation of data for the combined analysis: determination-dimension-differentiation.

*Source:* column 1 site [www.masurianticriza.ro](http://www.masurianticriza.ro) or series in “Adevărul”, signed by Dinu Patriciu; columns 2 and 3 represent the author’s findings.

**The information in the accounting area and the instruments of accounting law for managerial objectives during inflexion in the company's trajectory**

One of the manager's tasks in the company is to help this overcome any difficulties coming from the competitors or the economic environment. This must be done in spite of other interests going against the company.

The position of the accounting informational system in the managers' fight for success is noticed in table 2. We have here the dependence between the managerial activities necessary in the company's bout for success on the accounting informational flow and on the compulsory filters in the accounting law.

Table 2

**The position of accounting informational system in the managers' bout for success**

No.	Managerial activity in the fight for the company's success	Informational needs	Data sources from the informational system
1.	Identification of the causes leading to waste of time	To know the available working hours of the company	The structure of wages fund on centres of responsibility, cost centres, activities, the correlation between wages fund and financial results as seen in the present and future.
2.	Identification of the reasons of wasting material resources	To know the dimension and structure of technological consumptions	Cost calculations, economic-financial analysis.
3.	Identification of the reasons of wasting financial resources	To know the commercial credit structure, client or customer	The analysis of the incomings terms of claims and of the terms of payment of the suppliers, the analysis of treasury flow.
4.	Collective trust-building	Including communication and information regarding the projects' stage	Information at least at the level of work legislation demands and of the corporatist order (the advanced management practices of the big companies) supposes the staff report by means of financial excerpts and cost calculations.
5.	Clients and suppliers' trust- building	The reminding of the positive historic of the commercial relations	Partner's description (client or supplier).



No.	Managerial activity in the fight for the company's success	Informational needs	Data sources from the informational system
6.	Reconstruction of discipline and motivation for performance	Information regarding the intended objectives (including the financial-accounting dimension) and the stage reached, the disparities towards the objectives and the financial assessment of failures	Monitoring reports, including those of bookkeeping.
7.	Association with appropriate entities	The applicability of the 3D principle according to the previous chapter	Detailed description of each component of the 3D principle in the previous table.
8.	Association at the right moment	Calculations of the best economic moment	It is necessary to have mixed-type elements of a bookkeeping and of a commercial nature.
9.	The recognition and exploitation of the opportunities offered	Calculations of relative advantages in a new project	The element of calculation and simulation of costs, benefits, risks.
10.	The creation of measurable purposes in relation with mental images of the purposes attached to success	Formalization of objectives and establishment of value and quantitative performance indicators	Many value objectives of the performance make the object of registering in bookkeeping.
11.	Filtering of those risks which deserve being taken	Calculus of risk/benefit report	Assessment of the benefit attached to each risk is based in principal on bookkeeping information.
12.	<i>Rhythmical monitoring of the proposed objectives</i>	Measurable objectives belonging to the proposed strategy	Elements of calculation for the objectives which are to be monitored, the adaptation of the bookkeeping informational system to the need of monitoring certain objectives.

Sources: column 1 is taken from Horvath & Partners, *Controlling-efficient systems of increasing the company's performance*, C.H. Beck Publishing House, Bucharest, 2007 and columns 2 and 3 represent the author's findings.

In table 3, it is presented the correlation between the efficient managerial practices and the bookkeeping informational system or the instruments of the accounting law. We notice that the efficient managerial practices are in great need of bookkeeping information. Filtering by means of accounting law instruments is compulsory so that information can be taken over and used efficiently within an advanced managerial practice.

**The correlation between efficient managerial practices and bookkeeping informational system or instruments of the accounting law**

No.	Efficient managerial practice	Correlation with the bookkeeping informational system or with the accounting law.	Observations
1.	To establish 'what must be done'	Practice which helps to obtain necessary information, including or especially from bookkeeping.	The previous evolutions of the business as reflected in bookkeeping represent the starting point in establishing what must be done from now on.
2.	It is established 'what is good for the company'	Practice which helps to obtain necessary information, including or especially from bookkeeping.	One must select the tactic and strategical objectives, the indicators which will measure the attainment of objectives. the bookkeeping information being certain and proved by documents, it is the best one to be used for the performance measuring; out of this reason, formalization must take into account the specific of the accounting law instruments.
3.	There are elaborated action plans	This practice helps change information into efficient actions; in order to draw a business plan, one uses the bookkeeping information; this is also used in the feasibility study, the cash flow, the expense and income budget and other parts of the action plan.	In the end, the action plan materializes itself in the numerical form of the business plan, feasibility study, cash flow, expenses and income budget.
4.	To assume the responsibility of decision adoption	This practice is a way for the organization to assume the way in which the information transformation took place, including bookkeeping, in efficient actions.	Taking the responsibility of decisions involves the acceptance of the reliability and consistency of information, including the bookkeeping information which represented the basis of this substantiation.

No.	Efficient managerial practice	Correlation with the bookkeeping informational system or with the accounting law.	Observations
5.	To assume the responsibility for communication	Bookkeeping and financial data processing which are to be communicated.	The communication of objectives comes from managers but performance monitoring is an essential characteristic of bookkeeping.
6.	Concentration on favourable opportunities, not on problems	Improvement of internal system report, including the accounting-financial part.	More time is allotted for the selection of decision possibilities than for the problems' management.
7.	Organization of productive meetings	By this practice it is insured that the organization consider itself responsible and conscious.	The meetings which suppose the check of data from the trial balances or from the financial positions must take into account the normal cycle of accounting.
8.	The use of „ us” instead of „ I” by the manager	By this practice it is insured that the organization consider itself responsible and conscious.	The financial-accounting results belong to the whole staff, not to the manager only.

*Source:* column 1 is taken from Joe Girard, Robert Casemore, *The Scenario of Ascent*, Businss Tech International Publishing House, 2010, p. 9-12 and columns 2 and 3 are the author's findings.

## Conclusions

In the applicability of the 3D principle, there is necessary information from the accounting domain with a different degree of a detailed description for each component. The interpretation of all data flows for the 3D principle is recommended to be made with accounting law instruments.

The accounting informational system has a distinct and essential position in its bout for success concerning the business done by successful managers.

There is a strong correlation between the efficient managerial practices and the accounting informational system or the accounting law instruments.

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**II. ENHANCING THE ACTION  
OF CONTEMPORARY DEVELOPMENT  
PROCESS FACTORS**



# LABOUR PRODUCTIVITY AS A FACTOR OF THE ECONOMIC SUSTAINABLE DEVELOPMENT

**Mariana-Elena BALU**, Professor Ph.D.

*Spiru Haret* University

**Luise MLADEN**, Associate Professor Ph.D., CS III

National Scientific Research Institute for Labour and Social Protection

## ***Abstract***

*Romania aims at reducing the economic and social gaps to the EU developed Member States. This requires an economic sustainable growth. An increased labour productivity is one of the main factors of competitiveness at national level and of sustainable economic development.*

**Key-words:** *labour productivity, sustainable development, economic growth*

**JEL Classification:** E<sub>20</sub>, J<sub>01</sub>

In order to promote an economic growth, we need strong macroeconomic strategies to support development, employment and price stability.

A dynamic economic activity and increased productivity result in:

- encouraging competition on the goods and services market;
- integrating the capital market;
- promoting investments in knowledge (3% of the GDP), innovation and new technologies;
- increased contribution of the public sector to the economic growth.

An increased labour productivity is one of the main factors of competitiveness at national level. The productivity sustainable growth and an increased workforce usage rate on medium-term are two major objectives of Lisbon Strategy.

In Lisbon, the European Union sets two strategic objectives to be attained by 2010:

- 1) developing the most dynamic economy in the world, focused on sustainable development and social cohesion;
- 2) making the EU enlargement a success, through an increased living standard within the new Member States.

The attainment of these objectives involves a sustainable economic growth process. The economic growth modern theories promote:

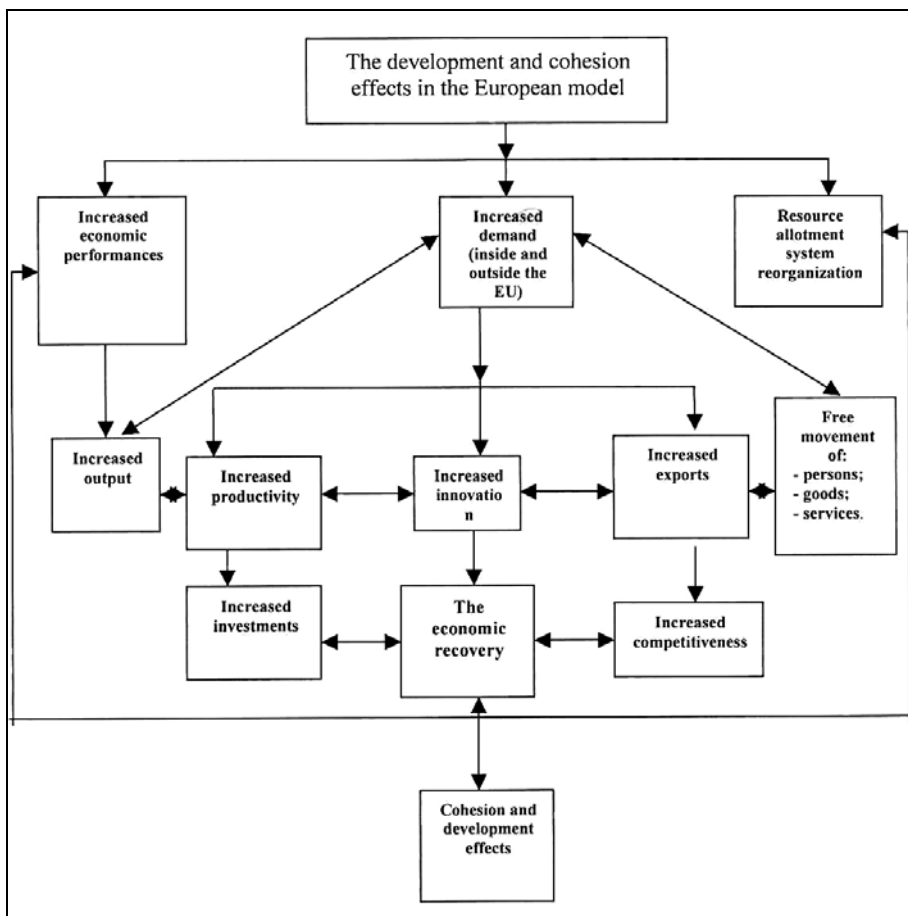
- ◆ The technological changes in line with the market requirements;
- ◆ The efficiency of the factors of production;
- ◆ An increasing employment rate and income redistribution which are interconnected.

The economic growth is based on well-established macroeconomic and social cohesion strategies. Therefore, in the European model, social cohesion, stability and economic growth are complementary processes, for a high economic growth rate leads to long-term economic stability and social cohesion.

From a positive perspective, the economic growth stimulates the technical progress unlimited potential supported by knowledge, thus saving all the factors of production.

The European model is economically and socially bivalent and also multidirectional, because it covers the aspects inside and outside the market.

The new European economy reveals unconventional resources such as knowledge potential and the human capital innovation capacity. The economic/social balance ensures the EU stability (diagram 1)



Source: Marin D., Socol C., Marinaş M., *Economie europeană. O prezentare sinoptică*, Economica Publishing House, Bucharest, 2004.

Diagram 1. *The development and cohesion effects in the European model*



An efficient economic growth implies a permanent improvement process:

**Stage 1: *Factor-based economy***

– the primary factors of production are the competitive edge sources:

- ◆ cheap workforce;
- ◆ access to natural resources;

**Stage 2: *Investment-based economy***

- improves output efficiency;
- improves the quality of goods and services;

**Stage 3: *Innovation-based economy***

– the competitive edge resides in the capacity to develop innovative goods and services by using state of the art methods in line with the global technology.

At national level, competitiveness must be analysed primarily in point of productivity, salaries and costs and subsidiarily in point of the business environment, the economic and technological infrastructure, education and competences, innovation and creativity.

We may say that the access to information and knowledge is a driver of the future economic development. The competences and the intellectual capital are the factors of the economic competitiveness, the way to increase labour productivity and to develop new products.

Innovation is the key to capitalize competitiveness, facilitating a sustainable economic development.

The manufacturers must have in view that productivity is the prerequisite to survive in a globalizing market.

We will analyse the economic growth issue on an increased labour productivity background:

- *the quality and performance of tangible assets* – equipment, infrastructure used in the production process;
- *the quality of the human capital* – the people holding management positions must adjust to new technologies and work practices;
- *innovation and technological progress* – an increased productivity results in:
  - technological development;
  - investments in human capital and modern tangible assets;
  - new working practices and technologies.
- *competition* – stimulates:
  - the production and management sectors;
  - cost reduction;
  - output efficiency.

An increased productivity requires a proper financial support. We must have in view that sustainable development involves the reorganization of the increased productivity and output process. We must also analyse the shapes productivity takes in relation to:

- the output;
- the value of the sold goods;
- the gross added value.

The productivity may also be expressed through: GDP/inhabitant; GDP/employee; GDP/working hour; productivity/employee; hour productivity.

At macroeconomic level, the state must:

- develop a favourable business environment leading to increased productivity and economic growth;
- maintain the macroeconomic stability;
- develop the microeconomic environment through:
  - o *the commodity market* – which will pressure upon the production sector (by minimizing the production costs, increasing the demand, increasing the prices and the like);
  - o *the labour market* – which contributes significantly to the economic growth (through increased supply, a more flexible labour market, fair salaries according to performances and the like).

Sustainable development correlates elements as:

- o expansion;
- o growth;
- o progress;
- o development and underdevelopment;
- o economic and human development.

Human development is a sustainable process especially because it involves people and their participation in the economic outcomes and fair income distribution. The human potential must be improved. This translates in investments in education, culture, professional training and health. Knowledge is accessible to anyone.

Productivity reflects the efficient use of the factors of production (workforce – N and capital – K).

The factors of production are seen as inputs, while the production as output:

$$Q = f(K, N)$$

Therefore, we will analyse:

- the global productivity:  $w = Q / K + N$ ;
- the partial productivity:
  - capital productivity  $w = Q / K$ ;
  - labour productivity :  $w = Q / N$ .

At national level, the GDP and the total number of employees ( $\sum N$ ) may determine:

- the social labour productivity:  $W = \text{PIB} / \sum N$ ;
- at the level of each branch ( $W_i$ ), the individual productivity results from the gross added value of the branch ( $VAB_i$ ) plus the number of employees from the respective branch ( $N_i$ ):  $W_i = VAB_i / N_i$ .

We know that the GDP value results from the sum of the  $VAB_i$  of each branch:

$$\text{PIB} = \sum VAB_i; VAB_i = W_i N_i$$

Then, the productivity at national level (table 1) is calculated as follows:

$$W = \text{PIB} / \sum N = \sum VAB_i / \sum N = \sum W_i N_i / \sum N = \sum W_i g_i$$

Table 1

**Social labour productivity/branches in Romania**

Branch	Gross added value VAB <sub>i</sub>	The employed N <sub>i</sub>	Labour productivity / branch W <sub>i</sub>	The employed structure g <sub>i</sub>	W <sub>i</sub> g <sub>i</sub>
Agriculture and forestry	34448,2	2421	14,23	28,40	4,04
Industry	117995,7	1919	61,49	22,51	13,84
Constructions	54538,2	680	80,20	7,98	6,40
Trade	53635,1	1170	45,84	13,73	6,29
Other branches	197872,2	2334	84,78	27,38	23,21
<b>Total</b>	<b>458489,4</b>	<b>8524</b>	<b>53,79</b>	<b>100,00</b>	<b>53,79</b>

Source: INS-THE 2007 Statistical yearbook.

The social labour productivity:  $W = \text{PIB} / \sum N = \sum \text{VAB}_i / \sum N = 39,13$ .

The agriculture and forestry sectors record the lowest level in point of labour productivity/branch (14,23%), while the constructions one records the highest level (80,20%); the “other branches” category includes branches experiencing a high productivity rate (mail and telecommunications services, financial and banking operations, real estate transactions and the like). If we perform a comparative analysis of the number of employees and the labour productivity/branch, we find that agriculture is the sector with the highest workforce share (28,40%) and the lowest labour productivity rate (14,23%), while at the opposite side lies the constructions sector with the lowest workforce share (7,98%) and the highest labour productivity rate (53,79%).

That’s why we must analyse the labour productivity different values/branches and the economic differences in various regions. An increased labour productivity level determines an increase in the real income leading to a significant economic growth. Therefore, labour productivity is an important economic growth factor in our country. The transition to the market economy entails a drastic fall in the GDP during the 90s, followed by an economic growth period (between 1993 and 1994) and a new economic downturn (between 1997 and 1999) marked by massive privatisation. The economic reorganization strikes the mono-industrial regions, deepening the economic gaps in different areas of Romania. In 2000, the economic recovery process is hindered. The GDP per inhabitant / labour productivity relation may be analysed as a variation of two qualitative variables. By means of GINI inequality coefficient, such variables may indicate the extension or the reduction of the economic gaps, depending on the economic growth or fall recorded in various countries or regions.

The *GINI inequality coefficient (CG)* measures the income uneven distribution. It can be used to measure any type of irregular distribution. The index’s values range from 0 to 1.

- 0 – indicates a perfect equality (all the people have the same income)
- 1 – indicates a perfect inequality (a person is fully remunerated, while the others’ income is 0)

$$CG = \sum (2i - n - 1) * x_i / n \sum x_i$$

**Where:  $x_i$  – the values of the analysed variable.**

The *GINI coefficient disadvantage* resides in the fact that an income distribution comparative analysis in various countries may be a difficult task, for the benefit system may vary from country to country.

*Data collection* (income) is difficult as a result of the regular or fortuit errors; the GINI coefficient cannot work with less accurate data.

Examples: Gini coefficient:

U.S.A.	– 1970	– 0,394
	1980	– 0,403
	1990	– 0,428
	2004	– 0,408
Japan	2004	– 0,249
Germany	2004	– 0,25
France	2004	– 0,327
Russia	2004	– 0,456

The GINI coefficient in Romania (table 2):

Table 2

Year	<i>GINI inequality coefficient</i>	
	GDP/ inhabitant	Labour productivity
2000	0,1719	0,1749
2002	0,1760	0,1464
2003	0,1631	0,1211
2004	0,1621	0,1112

The GDP / inhabitant and labour productivity values recorded in Romania are far below the EU average (table 3)

As a rule, the GDP is expressed in comparable prices: **PIB comp 1=PIB1 / Ip**

Where: **Ip** – the price index;

**PIB 1** – the GDP expressed in actual prices.

Table 3

**The average labour productivity in Romania compared to the EU 27 countries (EU -27) (EU 27=100)**

Country	<b>Labour productivity / employee</b>									
	2000	2001	2002	2003	2004	2005	2006	2007	2008	
<b>Romania</b>	<b>23,6</b>	<b>25,6</b>	<b>29,3</b>	<b>31,1</b>	<b>34,5</b>	<b>36</b>	<b>39,6</b>	<b>44,1</b>	<b>47,7</b>	
Germany	108,0	106,8	106,4	108,6	108,2	109,4	108,9	107,7	107,6	
France	125,1	125,0	125,5	121,6	120,7	122,2	121,5	122,1	121,1	
Italy	126,0	125,5	117,7	115,5	112,2	111,0	109,7	108,6	108,3	
Bulgaria	30,4	31,4	33	33,4	33,7	33,6	34,7	34,9	36,5	
Hungary	63,8	68	71	71,3	67,3	67,3	68,1	68,0	69,3	

Source: EUROSTAT.

Between 2000 and 2008, Romania records the lowest productivity rate, compared to the EU developed Member States, yet experiencing an increase from 23,6% in 2000, to 47,7% in 2008.

Among the economically developed EU Member States, Germany and France record constant labour productivity values between 2000 and 2008, while Italy, enjoying the highest value (126%) in 2000, experiences a permanent fall down to 108,3% in 2008.

Hungary records higher productivity rates than Romania. Therefore, in 2000, the labour productivity value reaches 63,8%, in 2003 it goes up to 71,3%, then it goes down, to reach 69,3% in 2008.

Compared to our neighbouring country, Bulgaria, we record similar values and although in 2000 Bulgaria's productivity rate exceeds 30,4%, in 2008 it only reaches 36,5%, therefore Romania is ahead by 11,2%.

A comparative analysis between Romania and the EU Member States may be made in point of productivity/working hour (W/h) as well – table 4.

Table 4

**Productivity/working hour (EU 15=100)**

Country	2000	2003	2005	2007	2008
<b>Romania</b>	18,6	24,7	28,5	34,5	-
Germany	107,3	110,1	111,8	110,5	110,4
<b>France</b>	115,0	115,7	114,9	115,5	-
Italy	99,1	92,3	89,5	87,8	88,2
Bulgaria	27,1	29,7	29,7	30,8	-
Hungary	45,3	52,1	49,4	50,2	51,2

Source: EUROSTAT.

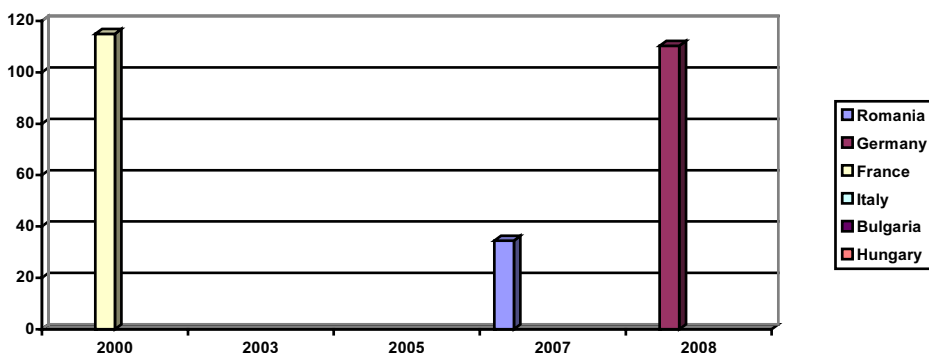


Fig. 4. Productivity / working hour within the EU-15 between 2000 and 2008

Even in point of the productivity/working hour Romania records the lowest value. Although in 2000 our country records a 18,6% rate, it enjoys a slow yet permanent growth, reaching 34,5% in 2007, surpassing Bulgaria which records 3,8% in the same year. Compared to the EU Member States, Romania records a low productivity level because:

- France records the highest rate, from 115% in 2000, to 115,5% in 2007;
- Germany records a high rate, from 107,3% in 2000, to 110,4% in 2008.
- Hungary surpasses both Romania and Bulgaria, recording a 45,3% value in 2000 and reaching 51,2 in 2008.

Table 5 reveals the annual EU real productivity (taking the year 2000 as basis):

Table 5

**The annual EU real productivity 2000 = 100**

Country	2000	2003	2005	2008	2009	2010
Romania	100	131,5	117,8	128,2	121,9*	126*
Bulgaria	100	111,5	118,9	130,4	126,7*	129,5*
Germany	100	102,1	138,6	148,2	140,6*	144*
France	100	101,4	98,2	97,3	93,8*	95,2*

Source: EUROSTAT.

\*If we tackle the real productivity rate/employee (taking the year 2000 as basis).

Therefore, Germany has a high real productivity rate (148,2% in 2008) estimated to reach 144% in 2010.

France's real productivity level (97,3%) is below Germany's (148,2%), Romania's (128,2%) and Bulgaria's (130,4%).

The forecasts for 2000 show an increase in the real productivity level compared to the basic value (100 in 2000) but also to the previously recorded progress.

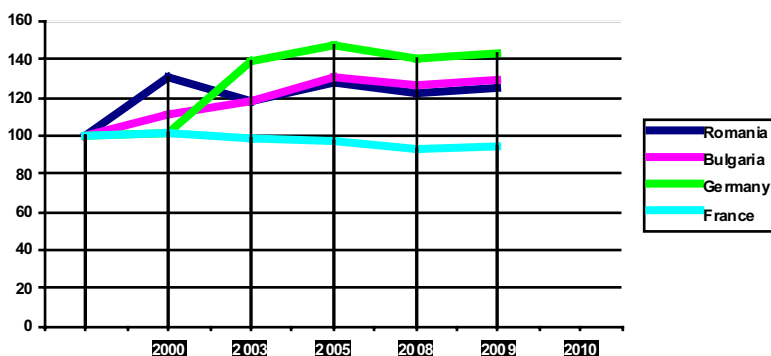


Fig. 4. Real productivity in the EU taking the year 2000 as basis (2000 = 100)

Another important aspect is the labour productivity ( $W_{mc}$ )/wage increase correlation). Between 2000 and 2006, this fundamental economic correlation is applied; starting from 2007, however, along with a sudden wage increase, it undergoes significant changes translating in the wage dynamics (**22,2%**) in the January – September 2008 interval exceeding the  $W_{mc}$  dynamics (**9,8%**).

This phenomenon impacts the *inflation process* and the *export*, entailing difficulties in *controlling inflation*.

*Export*, as an economy driver, is an important factor, having in view that the internal absorption – based models are limited.

However, Romania allots **62,2%** from the GDP in 2008 compared to the European countries allotting between **71** and **14,8%** from the GDP, because we're not supported by exporters.

Although Romania experiences a sustainable increase in the GDP/inhabitant (74% between 2003 and 2008), this deepens the macroeconomic imbalances (budgetary deficit, deficit in the current account BPE), making it hard to maintain the GDP dynamics in this uncertain international environment.

An economic sustainable growth in Romania requires *low inflation rates*. Inflation may entail *economic, social and environmental instability* as well as increased uncertainty and risk.

Reduced inflation and costs involves primarily increased competitiveness and labour productivity and subsidiarily, wage increase.

The economic growth involves high employment rates correlated with a decrease in the unemployment level (down to its basic value – 4,5%).

The sustainable development concept is very popular in the contemporary world bringing innovative ideas in line with the markets' goals.

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# THE NEURAL BASIS OF FINANCIAL RISK-TAKING\*

**Camelia M. KUHNEN**

Stanford Graduate School of Business  
Stanford University, Stanford

**Brian KNUTSON**

Department of Psychology  
Stanford University, Stanford

## ***Abstract***

*Investors systematically deviate from rationality when making financial decisions, yet the mechanisms responsible for these deviations have not been identified. Using event-related fMRI, we examined whether anticipatory neural activity would predict optimal and suboptimal choices in a financial decision-making task. We characterized two types of deviations from the optimal investment strategy of a rational risk-neutral agent as risk-seeking mistakes and risk-aversion mistakes. Nucleus accumbens activation preceded risky choices as well as risk-seeking mistakes, while anterior insula activation preceded riskless choices as well as risk-aversion mistakes. These findings suggest that distinct neural circuits linked to anticipatory affect promote different types of financial choices, and indicate that excessive activation of these circuits may lead to investing mistakes. Thus, consideration of anticipatory neural mechanisms may add predictive power to the rational actor model of economic decision-making.*

**Key-words:** *affect, accumbens, insula, risk, decision, choice, rational, finance, economics, fMRI, human*

## **1. Introduction**

Individual investors systematically deviate from optimal behavior, which could influence asset valuation (Daniel et al., 2002; Hirshleifer, 2001; Odean, 1998). The causes of these deviations have not been established, but emotion may have some influence. While some research has examined the role of emotion in decision-making (Camerer et al., 2005; Loewenstein et al., 2001), and economists have begun to incorporate emotion into models of individual choice (Bernheim and Rangel, 2004; Caplin and Leahy, 2001), scientists still lack a mechanistic account of how emotion might influence choice. Understanding such mechanisms might help theorists to specify more accurate models of individual decision-making, which could ultimately improve the design of economic institutions so as to facilitate optimal investor behavior.

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Here, we sought to examine whether neural activation linked to anticipatory affect would predict financial choices. At least two hypotheses have been put forth regarding the role of affect in decision-making. According to one account, undifferentiated arousal might be related to both risk-seeking and risk aversion (Lo and Repin, 2002). However, according to a second account, positive aroused feelings associated with anticipation of gain (e.g., “excitement”) may promote risk-taking, whereas negative aroused feelings associated with anticipation of loss (e.g., “anxiety”) may promote risk-aversion (Knutson et al., 2005; Paulus et al., 2003).

Recent evidence from human brain imaging implies that affect evoked by the anticipation of gain and loss may carry distinct neural signatures. Specifically, the nucleus accumbens (NAcc) of the ventral striatum shows proportional activation during anticipation of monetary gains (Breiter et al., 2001; Knutson et al., 2001), and this activation correlates with positive aroused affect (Bjork et al., 2004; Knutson et al., 2005; Martinez et al., 2003). Neural markers of anticipatory negative affect have not been as clearly delineated, but the anterior insula provides a candidate substrate for a number of reasons. First, brain imaging studies have consistently reported activation of the anterior insula during anticipation of physical pain, which correlates with self-reported state anxiety (Buchel and Dolan, 2000; Chua et al., 1999; Ploghaus et al., 1999). Second, the anterior insula shows activation during anticipation of aversive visual stimuli (Simmons et al., 2004). Third, the anterior insula shows activation during risky choice in games involving nonmonetary incentives, which correlates with subsequent risk-aversion and trait measures of negative aroused affect (Paulus et al., 2003). Although the anterior insula is also sensitive to attentional and other demands (Phan et al., 2002), a recent review suggests that activation in this region is more common under negative than positive affective circumstances (Wager et al., 2003).

The goals of this experiment were first, to determine whether anticipatory activity in the NAcc and anterior insula would differentially predict risk-seeking versus risk-averse choices, and second, to examine whether activation in these regions would precede both suboptimal and optimal choices. Two studies have correlated anticipatory neural activation with choice, but both involved choices that occurred in the context of social interactions (which might prove more susceptible to affective biases) rather than financial decisions (Fehr et al., 2004; Sanfey et al., 2003). Another study demonstrated a correlation between neural activation and immediate versus delayed reward choices, but did not investigate risky choices (McClure et al., 2004).

To investigate the influence of anticipatory neural activation on financial risk-taking, we combined a dynamic investment task with event-related fMRI. We compared subjects’ actual investment choices during the task to those of a rational risk-neutral agent who maximizes expected utility. Suboptimal choices were defined as deviations from this model, and included both “risk-seeking mistakes” (in which people take risks when they should not) and “risk-aversion mistakes” (in which people do not take risks when they should).

We designed a novel task to elicit a range of investment behaviors, including risk-seeking and risk-averse financial choices. The Behavioral Investment

Allocation Strategy (BIAS) Task consisted of 20 blocks of 10 trials each. During each trial, subjects first saw two stocks and a bond (Anticipation), and then chose one when the word “Choose” appeared above the assets (Choice). Then subjects waited for a brief period (Wait), after which their earnings for that trial and total earnings were displayed (Outcome). These were followed by a display of the outcomes of all assets on that trial (Market), and a fixation cross (Fixation).

At the beginning of each block (indicated by a cue), one of the two stocks was randomly assigned to be the “good” stock, while the other was assigned to be the “bad” stock, without the subject’s knowledge. The good stock dominated the bad stock in the sense of first-order stochastic dominance (Huang and Litzenberger, 1988). Specifically, outcomes of the good stock (i.e., +\$10 with 50% probability; +\$0 with 25% probability; and -\$10 with 25% probability) were better than outcomes of the bad stock (i.e., +\$10 with 25% probability; +\$0 with 25% probability; and -\$10 with 50% probability), on average for each trial. The bond paid \$1 with 100% probability on each trial. Earnings were drawn independently from these distributions for each trial, and subjects were informed about the distributions before playing the task.

Based on prior research, we first predicted that gain versus loss outcomes would activate the NAcc and mesial prefrontal cortex (MPFC) (Knutson et al., 2003), and that loss versus gain outcomes would instead activate the anterior insula (Paulus et al., 2003). We then examined whether NAcc activation preceded both optimal and suboptimal stock (i.e., risky) choices, as well as whether anterior insula activation instead preceded both optimal and suboptimal bond (i.e., riskless) choices.

## 2. Results

Analyses of brain imaging data focused on changes in activation during outcome, market, and anticipation periods prior to a given choice. Analyses proceeded through two stages. In the first “localization” stage, we constructed group statistical maps to identify foci of interest and then verified the predicted patterns of activation with multivariate regressions. In the second “prediction” stage, we used activation extracted from these foci during the anticipation period to predict both optimal and suboptimal subsequent investment choices with logit regression models.

In localization analyses of the outcome period, stock gain versus loss outcomes were associated with NAcc and MPFC activation at both the small volume corrected and global thresholds, as predicted (Knutson et al., 2003). Although the anterior insula did not show significant deactivation at the global threshold, bilateral foci did show the only deactivations in the brain for this contrast that passed the small volume corrected threshold (TC=-39,19,7; Z=-2.99; TC=38,19,11; Z=-2.99). Other regions that passed the global threshold included right orbitofrontal cortex, left anterior cingulate, left precuneus, and left posterior cingulate, replicating prior findings (Knutson et al., 2003). Multiple regression of VOI data (hemodynamic lag=4 sec) verified that after prior stock choice, gain outcomes were associated with increased NAcc and MPFC activation ( $p$ 's<.05;).

In analyses of the market period, relative gain outcomes (i.e. larger difference between the outcome of the chosen versus unchosen stock) were also associated with NAcc and MPFC activation at the small volume corrected and global thresholds, as predicted. Other areas that passed the global threshold included left middle frontal gyrus, bilateral caudate, left putamen, and dorsomedial thalamus. Multivariate regression of VOI data verified that after a stock choice, relative gain outcomes increased NAcc and MPFC activation. Conversely, relative loss outcomes increased anterior insula activation. After a bond choice, relative gain outcomes (i.e., either of the stocks performed worse than the bond) increased MPFC activation.

While not the focus of this study, uncertainty correlated maximally and negatively with bilateral anterior cingulate foci, easily exceeding the global threshold (TC: +4,16,45,  $Z=-5.37$ , -4,16,45,  $Z=-6.99$ ). Further analysis of anticipatory activation extracted from these foci revealed that activation was not greatest with maximal uncertainty (i.e., uncertainty=.5, corresponding to minimal information about which stock to choose), but rather with maximal conflict (i.e., uncertainty=.3, corresponding to minimal information about whether to choose the stock or the bond). Specifically, activation in this region was  $-.08 \pm .01$  (mean $\pm$ SEM,  $n=2100$ ) when uncertainty was less than .25;  $-.05 \pm .01$  ( $n=868$ ) when uncertainty was between .25-.35; and  $-.15 \pm .02$  ( $n=832$ ) when uncertainty was greater than .35. Additionally, anterior cingulate anticipatory activation robustly predicted subjects' subsequent reaction time ( $t(3718)=7.92$ ,  $R^2=.15$  in a linear regression model that included subject fixed effects). Thus, anticipatory anterior cingulate activation correlated most robustly not with uncertainty, which was greatest when it was unclear which stock to choose, but rather with conflict, which was greatest when it was unclear whether to choose a stock or the bond. However, anticipatory anterior cingulate activation did not correlate with subsequent choice, as described below.

In prediction analyses, we included anticipatory NAcc, MPFC, and anterior insula activation (lag=4 sec) in logistic regression models of subsequent choice, after incorporating relevant behavioral variables. Adding activation from control regions (i.e., bilateral anterior cingulate, orbitofrontal cortex, medial caudate, and amygdala) did not increase explanatory power, and so data from these regions were not included in subsequent prediction analyses.

Logistic regressions indicated that anticipatory NAcc and anterior insula activation were correlated with subsequent choice, and that these associations critically depended upon prior choice. For all choices, anticipatory NAcc activation increased the likelihood of choosing a stock only when the prior choice was a bond (a 0.1% increase in NAcc activation led to a 0.06% increase in the odds of choosing a stock;  $p<0.05$ ). When the prior choice was a stock, anticipatory anterior insula activation increased the likelihood of choosing the bond (a 0.1% increase in anterior insula activation led to a 0.08% increase in the odds of choosing a bond;  $p<0.05$ ). MPFC activation did not correlate with subsequent choice. Thus, high NAcc activation preceded switching to risk-seeking choices, while high anterior insula activation preceded switching to risk-averse choices.

Logistic regressions also indicated that anticipatory NAcc and anterior insula activation were correlated with the types of mistakes that subjects made. When the prior choice was riskless (i.e., the bond), anticipatory NAcc activation increased the likelihood of making a risk-seeking mistake (a 0.1% increase in NAcc activation led to a 0.07% increase in the odds of making a risk-seeking mistake;  $p < 0.05$ ). Also, anticipatory NAcc activation decreased the likelihood of making a risk-aversion mistake (a 0.1% increase in NAcc activation led to a 0.06% decrease in the odds of making a risk-aversion mistake;  $p < 0.05$ ). When the prior choice was risky (i.e., a stock), anterior insula activation increased the likelihood of making a risk-aversion mistake (a 0.1% increase in insula activation led to a 0.11% increase in odds of making a risk-aversion mistake;  $p < 0.05$ ). MPFC activation was not correlated with subsequent mistakes. Thus, anticipatory neural activation correlated with both optimal and suboptimal subsequent choices, even after controlling for behavioral variables that should have been the primary determinants of those choices.

Finally, we investigated whether individual differences in average anticipatory activation correlated with subsequent choice, after establishing that average anticipatory activation varied across individuals. Because regression of anticipatory NAcc activation on subject fixed effects yielded no significant differences, relationships between individual differences in anticipatory NAcc activation and choice were not examined further. On the other hand, regression of anticipatory anterior insula activation on subject fixed effects did yield significant differences in 8 ( $p$ 's  $< .05$ ) of 19 subjects, suggesting some individual differences in anticipatory insula activation. Individual differences in average anterior insula activation during anticipation were significantly correlated with the frequency of choosing a bond after having chosen a stock ( $t(17) = 2.14$ ,  $p < .05$ ;  $R^2 = .21$ ). Additionally, individual differences in average anterior insula activation during anticipation were also significantly correlated with the frequency of risk-aversion mistakes after having chosen a stock ( $t(17) = 2.10$ ,  $p < .05$ ,  $R^2 = .21$ ). Thus, individual differences in anticipatory anterior insula activation were related to making subsequent riskless choices and risk-aversion mistakes.

### 3. Discussion

While NAcc activation preceded both risky choices and risk-seeking mistakes, anterior insula activation preceded both riskless choices and risk-aversion mistakes. These findings are consistent with the hypothesis that NAcc represents gain prediction (Knutson et al., 2001), while anterior insula represents loss prediction (Paulus et al., 2003). This is the first brain imaging study to operationalize optimal choices, which by extension allows the identification of suboptimal choices. According to financial models, one can define risk-neutral choices based on Bayesian updating as rational, and deviations from these choices as irrational. The results therefore indicate that above and beyond contributing to rational choice, anticipatory neural activation may also promote irrational choice. Thus, financial decision-making may require a delicate balance – recruitment of

distinct circuits may be necessary for taking or avoiding risks, but excessive activation of one mechanism or the other may lead to mistakes.

While the observation that NAcc activation is correlated with subsequent risk taking and risk-seeking mistakes agrees with a gain prediction account of NAcc function (Knutson et al., 2001), the current findings are not as consistent with alternative accounts. Motor preparation accounts predict equal activation prior to motor acts of equal force (Mogenson et al., 1980), and so cannot explain the NAcc's prediction of risk-seeking but not risk-averse choices, since both required active choices indicated by button presses. Similarly, a saliency account predicts equal activation during anticipation of both large gains and losses (Zink et al., 2003), and so cannot account for the NAcc's prediction of risk-seeking but not risk-averse choices. Finally, a behavioral switching account predicts that NAcc activation will increase prior to any switch from a repeated behavior to a novel behavior (Robbins et al., 1986). While the influence of the NAcc in biasing choice was most pronounced when subjects switched from risk-averse to risk-seeking choices, NAcc activation did not predict switches in the opposite direction (from risk-seeking to risk-averse choices). The same arguments apply in reverse to the anterior insula predicting risk-averse choices. In either case, theories that fail to include the anticipated subjective value of an outcome cannot easily account for the observed pattern of results.

Although both actual and relative gain outcomes increased activation in the MPFC, MPFC activation did not predict subsequent risk-taking behavior, consistent with its proposed role in representing gain prediction error rather than gain prediction (Knutson et al., 2003). Gain outcomes also activated other regions implicated in decision-making (e.g., orbitofrontal cortex, medial caudate, anterior cingulate cortex), but activation in these regions also did not predict subsequent risk-taking behavior. While activation in these regions do not correlate with subsequent risk taking, these regions may still play other important roles in decision-making (O'Doherty et al., 2003). For instance, anterior cingulate foci showed increased activation under conditions of increased response conflict, consistent with the postulated role of this region in conflict monitoring (Ridderinkhof et al., 2004).

The BIAS task offers a number of advantages in eliciting financial choice behavior. First, because the BIAS task utilizes monetary incentives in a dynamic setting, our findings may generalize to real-world trading scenarios. Second, the BIAS task enables identification of both optimal choices and suboptimal choices. Third, the BIAS task elicits a range of behaviors from each individual, including both risk-seeking and risk-averse choices. Fourth, the event-related design of the study allowed us to correlate anticipatory rather than concurrent neural activation with choice by temporally isolating anticipatory activation and controlling for key antecedent behavioral variables (i.e., earnings, uncertainty).

While the event-related analyses ensured that both anticipatory activation and decision-making occurred prior to actual choice, the dynamic nature of the BIAS task leaves open the question of whether anticipatory activation preceded decision-making or the reverse. Some of the present findings support the idea that activation

preceded decision-making. Specifically, the link between activation and subsequent choice critically depended upon prior choice. For example, if NAcc activation simply reflected the decision to pick a stock, then the relationship between NAcc activation and the likelihood of choosing a stock should not depend upon prior choice. However, anticipatory NAcc activation significantly predicted the likelihood of subsequent stock choice only if the bond was picked on the previous trial. The same argument also applies to insula activation. Future research that specifically manipulates anticipatory activation could further establish whether such activation influences decisions.

The dynamic nature of the BIAS task may have obscured stable individual differences in NAcc activation, which might influence subsequent choice, but are more evident in stationary tasks (Knutson et al., 2005). However, even during this dynamic task, significant individual differences were evident in insula activation during anticipation, and these predicted switching from risky to riskless choices as well as the likelihood of making risk aversion mistakes while doing so. The link between individual differences in anterior insula activation and subsequent risk-averse choices replicates and extends prior findings (Paulus et al., 2003).

While experts and nonexperts who differed in terms of prior coursework in finance and statistics did not significantly differ in behavior in this experiment, future research should also examine the influence of individual differences in trading experience on financial risk taking, since psychophysiological evidence suggests that experienced traders may show less emotional responsiveness to market events than inexperienced traders (Lo and Repin, 2002). While many psychophysiological measures (e.g., skin conductance, heart rate, pupillary dilation) index anticipatory arousal, the current results suggest that measures that probe anticipatory valence will also be necessary to predict the likelihood of subsequent risky choice.

Overall, these findings suggest that risk-seeking choices (such as gambling at a casino) and risk-averse choices (such as buying insurance) may be driven by two distinct neural circuits involving the NAcc and the anterior insula. The findings are consistent with the notion that activation in the NAcc and anterior insula respectively index positive and negative anticipatory affective states, and that activating one of these two regions can lead to a shift in risk preferences. This may explain why casinos surround their guests with reward cues (i.e., inexpensive food, free liquor, surprise gifts, potential jackpot prizes) – anticipation of rewards activates the NAcc, which may lead to an increase in the likelihood of individuals switching from risk-averse to risk-seeking behavior. A similar story in reverse may apply for the marketing strategies employed by insurance companies.

Consideration of risk necessarily involves weighing potential gains against potential losses. The notion that distinct neural mechanisms anticipate gain versus loss suggests a novel componential view of risk taking. Combined with such a view, these findings provide neural targets for investigating complex risk phenomena such as loss aversion, in which people weigh losses more than gains of equivalent size (Kahneman and Tversky, 1979). These findings further imply that neuroeconomic research may foster a more comprehensive theory of individual

decision-making than the rational actor model and thus, may ultimately yield new insights relevant to economic policy and institutional design.

#### 4. Experimental procedures

Nineteen healthy volunteers (10 females, mean age=27, range=24-39 years, right-handed) participated in the study. Prior to entering the scanner, subjects played a practice version of the investment task for at least 10 minutes, minimizing learning effects. Subjects were then shown the cash they could earn by performing the task successfully, and correctly reported believing that they would receive cash at the end of the experiment contingent upon their performance. Subjects received a fixed compensation of \$20 per hour, as well as a tenth of their total task earnings. They were also informed that it was possible to lose money on the task, and that any losses would be deducted from their total payment.

To elicit a range of investment behavior, subjects included both “experts” and “nonexperts,” depending on whether they had taken prior graduate coursework in statistics and finance. Experts included Ph.D. students in Finance, Economics, or Accounting; while nonexperts included Ph.D. students in Humanities at Stanford University, to equate age, socioeconomic status, education and intelligence. A 2 (expert versus nonexpert-between) X 20 (block-within) analysis of variance revealed a main effect of block ( $F(19,323)=2.35, p<.005$ ), indicating that subjects chose the bond more often as the experiment progressed. However, experts and nonexperts did not significantly differ in choice of stocks versus bonds, either overall ( $54\pm 6\%$  vs  $53\pm 6\%$ ) or across blocks. Experts and nonexperts also did not significantly differ in the proportion of risk-seeking mistakes ( $26\pm 6\%$  vs.  $35\pm 8\%$ ;  $t(17)=.88, n.s.$ ) or risk-aversion mistakes they made overall ( $23\pm 6\%$  vs.  $29\pm 6\%$ ;  $t(17)=.67, n.s.$ ; calculated as percentage of mistakes made on trials where mistakes of that type were possible), suggesting more of a performance continuum than distinct groupings. Since choices and mistakes did not significantly differ between experts and nonexperts, we combined groups in subsequent analyses.

Behavioral analysis. In the context of the BIAS task, the optimal strategy of a rational, risk-neutral agent is to pick a stock if he or she expects to receive a dividend that is at least as large as the bond earnings. Since the actual monetary amounts at stake in each trial were small (-\$1 to \$1), we used risk-neutrality as the baseline model of investor behavior (Rabin, 2000), a model which assumes that individuals maximize expected return. A rational actor should also update his or her beliefs about the probability of each stock being optimal according to Bayes’ rule. Based on these assumptions, we derived the optimal portfolio selection strategy, which was the same for all trials.

For each trial, the objective probability of each of the two stocks being dominant can be computed using Bayes’ rule. We refer to the minimum of these two probabilities as “uncertainty” for that trial. Uncertainty is highest (and equal to 0.5) at the beginning of a block, when the probability of either stock being optimal is 50%, and decreases as more information about dividends is revealed, clarifying which stock dominates. On trials where uncertainty was 0.3 or lower, the optimal



choice was one of the stocks – otherwise, the optimal choice was the bond. Thus, when uncertainty is close to the threshold value of 0.3, it is most difficult for subjects to determine the optimal strategy (i.e., whether to choose a bond versus stock), leading to maximum conflict. Thus, uncertainty is maximal when subjects cannot distinguish which of the two stocks is better, while conflict is maximal when subjects cannot distinguish whether it is better to choose a stock or the bond.

For each trial, we compared subjects' investment choices to those of a rational, risk-neutral agent. Deviations from this model were defined as different types of "mistakes." These mistakes fell into three categories. Subjects might:

- pick a stock when the bond was the optimal choice ("risk-seeking mistake");
- pick the bond when a stock was the optimal choice ("risk-aversion mistake"); or (3) pick a stock when the other stock is the optimal choice ("confusion mistake"). Confusion mistakes occurred in less than 1% of the trials and thus were not considered in subsequent analyses. We used logit models to predict the likelihood of choosing a stock or make either type of mistake conditional, as well as unconditional, on prior choice.

We predicted that several behavioral variables would influence subsequent choice (i.e., prior choice, prior outcome, relative earnings of chosen versus unchosen assets, cumulative earnings, and uncertainty). Logistic regressions indicated that when the prior choice was a stock, lower relative earnings reduced the likelihood of choosing a stock again. When the prior choice was a bond, lower relative earnings increased the likelihood of switching to a stock. Moreover, as predicted and independent of prior choice, increasing uncertainty increased the likelihood of choosing the bond. These predicted findings provided behavioral evidence for the validity of the task.

Additionally, and independent of prior choice, increasing cumulative earnings increased the likelihood of choosing a bond. When the prior choice was a stock, increasing cumulative earnings also decreased the likelihood of making a risk-seeking mistake. When the prior choice was a stock, decreased relative earnings increased the likelihood of making a risk-aversion mistake. On the other hand, when the prior choice was a bond, decreased relative earnings increased the likelihood of making a risk-seeking mistake. Outcomes also influenced subsequent choice. When the prior choice was a stock, increasing outcome increased the likelihood of choosing a bond as well as the likelihood of making a risk-aversion mistake. Because behavioral variables including prior outcome, relative earnings of the chosen versus unchosen asset, cumulative earnings, and uncertainty all influenced subsequent choice, we included them as covariates in prediction analyses.

fMRI acquisition. Images were acquired with a 1.5-T General Electric MRI scanner using a standard birdcage quadrature head coil. Twenty-four 4-mm-thick slices (in-plane resolution 3.75 X 3.75 mm, no gap) extended axially from the mid-pons to the top of the skull, providing adequate spatial resolution of subcortical regions of interest (e.g., midbrain, ventral striatum). Functional scans of the whole brain were acquired every 2 sec (TR=2 sec) with a T2\*-sensitive in-/out-spiral pulse sequence (TE=40 ms, flip=90°) designed to minimize signal dropout at the

base of the brain (Glover and Law, 2001). High-resolution structural scans were subsequently acquired using a T1-weighted spoiled grass sequence (TR=100 ms; TE=7 ms, flip=90°), facilitating subsequent localization and coregistration of functional data.

fMRI Analysis. Localization analyses were conducted using Analysis of Functional Neural Images (AFNI) software (Cox, 1996). For preprocessing, voxel time series were sinc interpolated to correct for nonsimultaneous slice acquisition within each volume, concatenated across runs, and corrected for three-dimensional motion. Visual inspection of motion correction estimates confirmed that no subject's head moved more than 2.0 mm in any dimension from one volume acquisition to the next. Preprocessed time series were submitted to a regression model that included three regressors indexing residual motion, and six regressors modeling baseline, linear, and quadratic trends for each of the two runs.

Regressors of interest were convolved with a gamma-variate function that modeled a canonical hemodynamic response prior to inclusion in regression models (Cohen, 1997). Maps of t-statistics for regressors of interest were transformed into Z-scores, coregistered with structural maps, spatially normalized by warping to Talairach space, slightly spatially smoothed (FWHM = 4 mm) to minimize the effects of anatomical variability, resampled at 2 mm<sup>3</sup>, and combined into a group map using a meta-analytic formula (average  $Z \cdot \sqrt{n}$ ) (Knutson et al., 2000). Thresholds for statistical significance within the predicted volumes of interest (i.e., NAcc, anterior insula, and MPFC) were determined by a local small volume correction (3 4 mm radius spheres or 12.56 4 mm<sup>3</sup> voxels corrected at  $p < .05$  yields a threshold Z of 2.88,  $p < .004$  uncorrected), and required a minimum cluster of 4 contiguous voxels. Thresholds for statistical significance outside the predicted volumes of interest were set using a global family wise error rate that corrected for gray matter volume in subcortical and mesial prefrontal cortical regions (approximately 500 4 mm<sup>3</sup> voxels corrected at  $p < .05$  yields a threshold Z of 3.88,  $p < .0001$  uncorrected (Knutson et al., 2000)), and required a minimum cluster of 4 contiguous voxels.

As indicated by behavioral analyses, all fMRI analyses included covariate regressors representing cumulative earnings (defined as current wealth earned during the task, updated at each outcome period) and uncertainty (updated at each market period). For outcome analyses, regressors of interest contrasted stock versus bond choice, as well as gain versus loss outcome predicated on stock choice. Because the BIAS task is a dynamic reward learning task, we predicted that gain versus loss outcomes would activate both the NAcc (gain prediction) and MPFC (gain prediction error) (Knutson et al., 2003) and deactivate the anterior insula (Paulus et al., 2003). For market analyses, the regressor of interest contrasted amount earned on the current stock choice versus possible earnings from the unchosen stock, predicated on prior stock choice. As with actual outcomes, we predicted that better relative earnings during the market period would also activate the NAcc and MPFC.

Volumes of interest (VOIs) were specified as 8 mm diameter spheres centered on foci identified in the outcome analysis in the NAcc, MPFC, and insula,

thereby ensuring that equal amounts of data were extracted for each subject in each region. Visual inspection confirmed that VOIs encompassed only gray matter for each individual subject (Knutson et al., 2004). Additional control volumes of interest of the same size and shape were specified in the bilateral anterior cingulate at foci correlated with uncertainty (TC: +/-4,16,45), in the bilateral orbitofrontal cortex at foci correlated with outcome (TC +/-26,36,-8), and in the bilateral amygdala (TC: +/-22, -10,-26), and bilateral medial caudate (TC: +/-10,7,10) based on the Talairach atlas, in order to verify local specificity of predicted effects.

Prediction analyses were conducted on activation timecourse data that was spatially averaged and extracted from these VOIs. Prediction analyses tested whether NAcc activation during anticipation was associated with subsequent stock choice as well as risk-seeking mistakes, after controlling for potential behavioral confounds. Prediction analyses also tested whether anterior insula activation during anticipation was associated with subsequent bond choice as well as risk-aversion mistakes, after controlling for potential behavioral confounds. Additional analyses utilized identical models, but substituted data extracted from control VOIs.

Individual differences analyses were conducted by first using logistic regressions to determine whether subject fixed effects alone had a significant influence on VOI activation during anticipation. Given sufficient variability across subjects in activation during anticipation (e.g., fixed effects were significant in over 25% of the subjects), logistic regressions were conducted that examined the effects of individual differences in average VOI activation during anticipation on the frequency of choosing the stock versus the bond, as well as on the frequency of making risk-seeking or risk-aversion mistakes.

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# BASEL III – A NEW APPROACH TO IMPROVE INTERNATIONAL FINANCIAL STABILITY

**Claudia Gabriela BAICU**, Lecturer Ph.D.  
Faculty of Marketing and International Affaires  
Spiru Haret University

## ***Abstract***

*In its first part, the article highlights the factors standing at the basis of the modification of the general framework of development of the banking activity in the last decades and the main trends that manifested on the international banking market until the global financial crisis. Thenceforth, the main lessons learned from the global financial crisis for the regulation and supervision authorities are presented. The final part of the article concerns the Basel Committee answer to the global financial crisis, concretised in a reform programme regarding the regulatory framework of the banking activity. The improvements and news brought by the Basel III reform programme take into account the flaws revealed by the global financial crisis and have the purpose to strengthen the stability of the international financial system.*

**Key-words:** *international banking regulation, global financial crisis, financial stability, sub-prime mortgage crisis, securitisation*

**JEL Classification:** G<sub>15</sub>, G<sub>21</sub>

## **Introduction**

The sub-prime mortgage crisis, which transformed into a global financial crisis, raised a series of questions for the regulation and supervision authorities around the world regarding the reform of the current regulatory system of the financial and banking activity. This must comply with the tendencies manifested on the financial markets and take into account the lessons learned from the global financial crisis that was compared with the Great Depression from 1929-1933 due to its amplexness and bad consequences.

In this context, consistent to its mission, the Basel Committee elaborated a set of reform measures regarding the banking activity regulation, known as Basel III, which brings an improvement of the regulatory framework established by the Basel II Accord. The new elements brought to the regulatory system of the banking activity are modalities to improve the international financial stability.

Determining the measures meant to improve the current regulatory system of the international financial activity represents one of the most important dimensions of a more ample package of measures necessary in order to increase the international financial stability.

## Literature review

The global financial crisis gave birth in the speciality literature from the entire world to numerous publications regarding the causes that triggered the crisis, the consequences that followed the crisis, its lessons, and last but not least, the reform measures to be made to the current regulatory system of the financial activities.

Borio (2008) makes an assessment of the financial crisis that started in 2007. Mauri and Baicu (2009) mention the main causes that triggered the crisis, the particularities of the crisis and some lessons regarding the regulation of the financial activity. Martin (2009) and Keys, Mukherjee, Seru (2008) point out the role that the securitisation process had in triggering the sub-prime mortgage crisis. IMF (2009) analyses the initial lessons of the crisis. Davies and Green (2008) mention some deficiencies that were noted in the regulation of the financial-banking activity until the crisis began.

In this context, the Basel Committee adopted a series of reforms meant to improve the current regulatory system of the international banking activity. In 2009, the Basel Committee elaborated the document entitled “Strengthening the resilience of the banking sector”, which was submitted to an ample consultative process.

As a result of this process, in July 2010, the Group of Central Bank Governors and Heads of Supervision, the oversight body of the Basel Committee, adopted the main elements of the reform programme.

Besides the improvement of the prudential regulation, Caruana (2010) also specifies other aspects that must be considered in order to ensure the financial stability.

### 1. Tendencies manifested on the international banking market

Under the influence of many factors, among which the most important were the *deregulation* and the *liberalisation of the financial markets*, the *financial innovations*, the *increasing competition* in the financial and banking sector and the *technology development*, during the last three or four decades, the general framework in which the banks developed their activity suffered substantial changes, leading to the decline of the traditional banking activity in many countries of the world. For example, if in the USA, in 1974 the commercial banks held 40% of the total lending to the non-financial debtors, in 2005 the market share of the commercial banks had dropped to less than 30% (Mishkin, 2007, p. 257).

In this context, the last decades were marked by profound changes in the contemporary banking systems, concretised in:

- Consolidation through mergers and acquisitions;
- Disintermediation and growth in the off-balance sheet business;
- The development of the securitisation process;
- The intensification of the internationalisation and globalisation process in the financial-banking system.

The above-mentioned processes manifested with different intensities depending on the banking system. Initially, many of these transformations have resulted in the international banking activity and the developed countries market, then other countries including.

In the new context, banks have increasingly turned their attention to providing services and charging fees for such services, whose share started to rise in their total income. Products and services have been diversified, including, in addition to deposits and loans, transactions in securities (investment banking), insurance, investment funds etc. The competition in the banking sector increased and the regulatory process took new forms, emphasising on prudential supervision. Customers began to be increasingly more sophisticated and less loyal, opening accounts at several banks, being also able to transfer their accounts from one bank to another by a simple click on the computer. Moreover, they not only have the possibility to choose among the different local banks, but they can also choose foreign banks and other financial intermediaries. The banks have changed their attitude, being market oriented and client demand oriented and developing marketing strategies regarding the product and services range, as well as regarding the price, the promotion and the delivery channels. The electronic bank concept developed, the ATMs, Home-banking and Internet banking competing and coexisting with the traditional banking subsidiaries. The large companies benefit from cash management services that allow them to manage their liquidities more efficiently.

If traditionally the banks originated credits and kept them to maturity, assuming the non-payment risk (originate-to-hold model), the innovation process and the technological evolutions allowed the development of a new model of banking activity. According to originate-to-distribute model lenders who originated the loans didn't hold them to maturity.

The changing factors created the premises for the banking system to be more and more instable and the propagation of the financial crisis from a country to another to be more rapid and easier. The global financial crisis raised a series of questions regarding the future of the banking activity and the opportunity to return to the traditional financial intermediation based on deposits and credits.

## **2. Lessons learned from the global financial crisis**

According to the IMF (2009) the initial lessons of the crisis have three dimensions: financial regulation, macroeconomic policy and global architecture. With regard to the financial regulation, an important problem revealed by the crisis refers to the shadow banking system (investment banks, mortgage brokers/originators, hedge funds, securitisation vehicles etc.). These institutions have always been lightly regulated, in contrast to deposit taking institutions. In this context, in order to circumvent capital requirements, banks, stimulated by the development of the financial innovation and technology, transferred risk to affiliated entities in the shadow system. Consequently, the perimeter of the

financial regulation should be extended to all the financial institutions, which may threaten the financial stability (IMF, 2009).

Development of financial integration process must inevitably lead to the creation of a single regulator for the entire financial system. The promoting of a single regulator for the entire financial system is determined by: minimising the differences between services offered by various financial institutions, increasing the number of financial conglomerates, achieving economies of scale in the regulation (Casu, Girardone, Molyneux, 2006, p. 175).

Davies and Green (2008) point out that in recent years, supervisors have given insufficient attention to liquidity supervision and the relationship between the real economy and developments in the financial plan. Another issue highlighted by the two authors refer to the need to reform the composition of groups and committees with responsibilities in international financial regulation in order to increase the presence of countries with significant weight (first of all, China and Australia, whose banks are increasingly active internationally).

Sub-prime lending crisis has revealed many irregularities in the activity of rating agencies, whose reputation has been severely affected as a result of having overly generous rated securities resulting from the securitisation. Their action has been determined, on the one hand, by the inability to obtain a correct assessment, and secondly by the desire to gain profits even if there was a conflict of interest between them and their clients.

A major cause that triggered the crisis of 2007 was the compensation policy practiced in the financial field. More specifically, the lack of correlation between short-term generous bonuses to employees and medium and long-term risks they imposed on their financial intermediaries. A living proof is that, motivated by the desire to get as many bonuses as possible, employees were not encouraged to make a correct assessment of customers' creditworthiness. Moreover, the financial managers' salaries reached very high levels. Such unsound compensation practices, especially in the major financial institutions, may have adverse consequences on the stability of national and international financial system.

In this context, both national and international supervisors began to pay attention to compensation practices in the financial system to enhance stability. The importance of establishing sound principles for compensation in the financial system is demonstrated by the fact that currently a number of international bodies are involved in this process (the Financial Stability Board – FSB, the Basel Committee, the European Commission, etc.). In international bodies, the Financial Stability Board (FSB), established in April 2009, as successor of the Financial Stability Forum is crucial to establish sound principles of financial compensation. Building on its mandate to promote financial stability, the FSB has developed a set of principles and standards to implement sound compensation practices. Principles set out by the FBS are considering a number of issues among which may be mentioned: the need for financial institutions to constitute a committee (Board Remuneration Committee) in order to oversee the design and operation of compensation; criteria which must satisfy the variable component of remuneration,



the importance of transparency on compensation policy. To be effective, these recommendations should be incorporated at the national level (FSB, 2009).

### **3. Reform measures of the regulatory system of the banking activity. Basel III**

In 2009, the Basel Committee advanced a document meant to improve the current regulatory system of the banking activity. The document, entitled “Strengthening the resilience of the banking sector” comprises provisions meant to surmount a series of flaws revealed by the global financial crisis. After the end of the consultative process (in April 2010) and as consequence of the suggestions and comments made by the banking and academic community, in July 2010 the Group of Central Bank Governors and Heads of Supervision – GHOS, the oversight body of the Basel Committee, approved the main elements of the reform programme. The July 2010 Accord was reconfirmed in Switzerland on September 12, 2010, being due to be approved in November as well, at the G20 meeting in Seoul.

The measures proposed by the Basel Committee have both a micro-prudential dimension, as they aim at strengthening the resilience of each bank and a macro-prudential dimension aiming at the risks existing at the level of the whole banking system.

The main reform measures comprised in these documents have in view:

- 1) the raise the quality, consistency and transparency of the capital base. This measure is based on the fact that banks can better absorb the losses if the elements composing the banking capital are qualitatively superior and the level of capitalization is high. To this purpose, the new package reform introduces a new definition of capital;
- 2) the better risk capture (especially the risks concerning the capital markets activities);
- 3) the introduction of a leverage ratio. The purpose of this measure is to contain the build up of excessive leverage in the banking system;
- 4) the introduction of measures meant to build up of capital buffers in good times to be drawn upon in periods of stress;
- 5) the introduction of a global minimum liquidity standard for internationally active banks. This measure was taken starting from the premise that besides the minimum capital requirements, the international financial stability can be provided also by adequate requirements regarding the credit institutions liquidity.

According to the provisions established by the Basel Committee, these standards will be gradually introduced, over a long period of time until year 2018, so that the banks have the capacity to comply with the new measures.

The reform programme established within the Basel Committee constitute only an important facet of the more ample measures that must be taken for strengthening the financial stability at a global level. For that purpose, the Financial Stability Board is very important, as it has the role to coordinate the global reform

programme. Besides the improvement of the prudential regulation, the financial stability can be promoted taking into account other dimensions as well: the macroeconomic policies (both monetary and fiscal); the market discipline and the financial sector itself (banks, shareholders, investors, other operators). The financial crisis highlighted a series of flaws regarding the governance, the risk management, due diligence, etc., that must be remedied by the private sector. In order to have the expected effect, these measures imply cooperation and international acceptance (Caruana, Jaime, 2010).

## Conclusions

Under the influence of many factors, during the last three decades, the general framework in which the banks developed their activity suffered substantial modifications that led to the decline of the traditional banking activity. By the process of securitisation, the credits were no longer kept in the banks' balance sheet, but were converted in securities and sold on the market.

Besides the opportunities offered to the banks, the change factors created the premises for the financial-banking system to be more and more instable, and the propagation of the financial crisis from a country to another be more rapid and easier. The most recent proof was the global financial crisis that revealed a series of lacks both regarding the macroeconomic policies and regarding the regulatory framework of the financial-banking activity.

In this context, the Basel Committee's answer to the global financial crisis concretised in the adoption of a reform programme regarding the banking activity regulation – Basel III, that aims at being an efficient instrument in strengthening the international financial stability. The concrete implications that the application of these measures presupposed for the banking system represent the starting point for further studies.

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### **III. MARKETING – DIVERSITY AND DYNAMISM**



## SPECIFICS OF THE MARKETING AUDIT IN THE FINANCIAL-BANKING SECTOR

**Corrado De CECCO** Management Consulting Professional  
Friuli Trening Services, Trieste Area, Italy, ESOMAR Member

**Iuliana CETINĂ**\*, Professor Ph.D.

**Violeta RĂDULESCU**\*, Lecturer Ph.D.

\* Academy of Economic Studies, Bucharest, Faculty of Marketing

**Mircea DRĂGHICI**, Lecturer Ph.D.

Faculty of Marketing and International Affaires

*Spiru Haret University*

### ***Abstract***

*Broadly speaking, the literature on the marketing audit and marketing of services has developed on a separate track. The prerequisite for a particular framework in developing the marketing audit of services is that it does not take sufficient account on the services features, even if the marketing audit is similar with the one in services, too. This thing does not allow the company of services to benefit from the advantages of the audit marketing.*

**Key-words:** *marketing audit, marketing in financial-banking sector, services marketing*

**JEL Classification:** M<sub>30</sub>, M<sub>31</sub>

### **1. Marketing audit: concept and development**

As seen in Table 1, the concept of marketing audit was introduced in the specialty literature around the 50's.

<b>Author/Definition</b>	<b>Contributions</b>	<b>References to services</b>
Schuchman (1959) – marketing audit (MA) is a revision and an appreciation of the marketing activities, objectives and policies, as well as of the methods, techniques, strategies and activity of the staff that are focused on reaching the objective.	<ul style="list-style-type: none"> <li>• Introduction of the concept of ,marketing audit'.</li> <li>• Definition of the purpose of marketing audit.</li> </ul>	<ul style="list-style-type: none"> <li>• None.</li> </ul>
Tirman (1971) – MA is presented as a method to support management in assessing efficiency within a company.	<ul style="list-style-type: none"> <li>• Showing three stages of the MA development: the assessment of the marketing environment, the assessment of the marketing system and the</li> </ul>	<ul style="list-style-type: none"> <li>• None.</li> </ul>

<b>Author/Definition</b>	<b>Contributions</b>	<b>References to services</b>
	detailed assessment of the fields in the first two stages.	
Kotler, Gregor, Rodgers (1977) – MA is a statistical and exhaustive examination of the marketing activity in a company (marketing environment, objectives, strategies), with the purpose of deciding upon the opportunities and to suggest a plan of action, targeting improving the marketing performance.	<ul style="list-style-type: none"> <li>• Delineating six marketing components: environment, strategies, organization, systems, profitability, functions.</li> </ul>	<ul style="list-style-type: none"> <li>• None.</li> </ul>
Kotler (1977) – there is no definition for MA. The article focuses on the MA efficiency, which depends on five elements: the needs of the consumer, the marketing organization, marketing information, strategic orientation and the operational efficiency.	<ul style="list-style-type: none"> <li>• Applying the audit principles to the marketing efficiency.</li> </ul>	<ul style="list-style-type: none"> <li>• None.</li> </ul>
Bercowitz, Flexner (1978) – similar to Schuchman (1959).	<ul style="list-style-type: none"> <li>• Introducing the concept of MA into the literature of medical social services.</li> <li>• Pointing out at the MA role in the development of marketing direction in a company.</li> </ul>	<ul style="list-style-type: none"> <li>• It concentrates on the specifics of the medical social services.</li> </ul>
Naylon, Wood (1978) – the MA system is built in such a way to notice whether the marketing resources of a company are efficiently used.	<ul style="list-style-type: none"> <li>• Providing practical solutions for the MA conception and designing.</li> </ul>	<ul style="list-style-type: none"> <li>• None.</li> </ul>
Wilson (1982) – no explicit definition for the MA concept.	<ul style="list-style-type: none"> <li>• Presenting a method that will facilitate the identification, gathering and evaluation of the information referring to the marketing resources, as well as to the strengths and weaknesses in a company.</li> </ul>	<ul style="list-style-type: none"> <li>• None.</li> </ul>
Wheatley (1983) – similar to Schuchman.	<ul style="list-style-type: none"> <li>• Extending the MA concept to the area of professional services.</li> </ul>	<ul style="list-style-type: none"> <li>• It focuses on professional services.</li> </ul>
Payne (1988) – no progress in defining MA.	<ul style="list-style-type: none"> <li>• Presenting assessment methods/opportunities of the marketing efficiency.</li> </ul>	<ul style="list-style-type: none"> <li>• None.</li> </ul>

Source: adapted from Berry Leonard L., Comanit Jeffrey S., Parasuraman A., *A Framework for Conducting a Services Marketing Audit*, “Journal of Marketing Service”, vol. 19, no. 3, 1991.



Upon a brief examination of the chart above, we notice: (1) generally speaking, the authors have converged on the concept name; (2) the literature is conceptual and normative; (3) the services features are often overlooked.

In conclusion, even though the concept of marketing audit has had a sufficient number of approaches to make it clear, the services features are neglected, in spite of the fact that they are essential within the marketing strategies.

## **2. The features of the audit in the marketing of services**

The audit objectives, as a function in the risks management, may be as such:

- to support the executive management in identifying and managing the risks;
- to evaluate the efficiency of the bank operations and transactions;
- to evaluate the way in which the laws, regulations and the bank-operations procedures have been complied with;
- to check the information included in the accounting documents and computer-based systems;
- to evaluate the activity of risks management (independent of management).

The basic concept that helps the marketing activity in a company be regularly evaluated, in a comprehensive and objective way, applies to both the material goods and the services.

Most part of the literature on marketing relies on the implicit presupposition that the factors bringing success in the marketing of the goods producing company are identical with the ones in the services company.

Upon considering that the services marketing is different from the goods marketing and that the services company are not the same, it is good to know what are the specifics of the marketing audit in services.

What needs to be done is to approach the marketing audit in such a way that will take into account the services features, but at the same time to have enough flexibility to be applied to as many as possible categories of services, looking at their heterogeneity.

There are four concepts we should concentrate on for the marketing audit in services, such as: the organization of the marketing department, the marketing towards the current consumers, the internal marketing and the quality of services.

### *The organization of the marketing department*

As said earlier, the services provider enters into a direct relation with the consumer, for most services. The financial institutions are not able to take care of most services unless the consumer is physically present.

The production inseparability and the services consumption lead to a 'decentralization' of the service. Similarly, the services inseparability changes the role of the marketing department into a services company. The 'classic' position

and role of a marketing department in a goods-producing company is ,to build and develop the company marketing'. For the services company, the providers become sale people and marketing specialists.

The services providers who have a direct relation with the consumers are the best positioned to fulfil this role of marketing staff; they listen to the consumer, support the advertising message, they adjust the desired service to the consumer's needs. A crucial role of the management in the banking services companies is to train the personnel to become marketing representatives, to explain the importance of this thing for the company and, at the same time, to give enough authority in achieving its tasks.

The marketing audit of the financial-banking institutions needs to evaluate the efficiency of the marketing activity by means of how the management has succeeded to involve the staff 'in the front line' to comply with the bank marketing policies. A marketing audit that does not have the attention of the staff to the point that they feel motivated, appreciated and able to take care of the marketing tasks is not complete.

After 1980, practice has shown that, for the banking services sector, the marketing is not only the responsibility of the department in itself, but the marketing activities need to be incorporated into the entire institution.

The status of most clerks within the services company is complex, as they have double responsibility.

First of all, it is obvious that the counter clerks, the insurance agents have to fulfil their primary tasks. But all have to understand that the way they perform must rely on the marketing concept. Very often, the clerks with double responsibility (doing marketing activities, too) are more numerous than the company marketing specialists.

In this context, for most cases, the term of marketing compartment is mistaken for the marketing one, which is much larger.

The marketing function includes all the resources and activities that have a direct or indirect impact on the initiating, maintaining and consolidating the relations with the company environment, irrespective of which organizational form is in.

The marketing compartment, on the other hand, is an organization form that aims to concentrate on some activities of the marketing function in an organizational unit.

To initiate a marketing compartment represents an organizational solution that allows solving marketing issues and, to a certain extent, is an efficient solution. Thus, the leaders create an interest, at least theoretical, in the marketing activities. For long-term, though, this solution may act as a trap, which will make difficult to perform the activities from a marketing perspective.

For goods, the overlapping of the marketing function over the marketing compartment is normal, since the marketing compartment is the one also involved in public relations very often. It is only those tasks related to sales that fall under the jurisdiction of the trade function and belong to the outside of the marketing compartment.

For most services, the situation is vice versa. Normally speaking, only the tasks of the traditional marketing (promotion, prices) are solved by the marketing compartment, whereas the others are taken care of on the outside.

Anyhow, most banks tend to develop their marketing compartment, instead of maintaining and improving their marketing orientation. The long-term effect is the reverse of the desired one.

A traditional marketing compartment may not be held responsible for fulfilling all the marketing function of a services company. Its launching negatively influence the company culture, since the personnel in other compartments is not interested in the obligations that it has within the customer services and only concentrates on the basic tasks. It considers that the company has specialists who work in a marketing department. This will steer the company more towards services supply and less towards the market, to the consumers' wishes. This is the reason why the solution of organizing the marketing activity by a specialized department is a real trap.

The negative effects of organizing a marketing department may be amplified by a system of evaluation and compensation, based more on services supply.

Therefore, it results that, for the services companies, the organization of the marketing activity by a specialized department is good when the market-orientation is lacking or is not sufficient. Sometimes, it may be used as an intermediary solution. There are financial-banking institutions that have become competitive on the market.

The marketing department is useful in drafting marketing research of the company strategies and of performing the marketing programs.

At the same time, special efforts should be made to introduce the marketing perspective into the entire company organizational structure, especially for the sectors with direct responsibilities in services. The marketing department needs to be carefully initiated, having specific tasks within the company. The organization of a marketing department does not need to lower the number of activities performed by the rest of staff in their relation with the clients.

The efficiency of a services company is high when the management does not involve itself in the daily organizational decisions, at the provider-consumer level (only for special cases), but gives a strategic support and necessary resources for reaching the company's objectives.

Systematically, the reports among various decisional levels within the traditional and modern organizational structure, as for the services company, are shown in fig. 1.

The changes in the organization of a company are the result of the modifications in its strategy and rely on the management principles. As seen below, even the priorities are changed. The nucleus of the core management is not in the top of pyramid and does not represent the defining element of organizational structure, essential for the company success or failure. Instead, the staff in the area of contact with the consumers is on top of the pyramid.

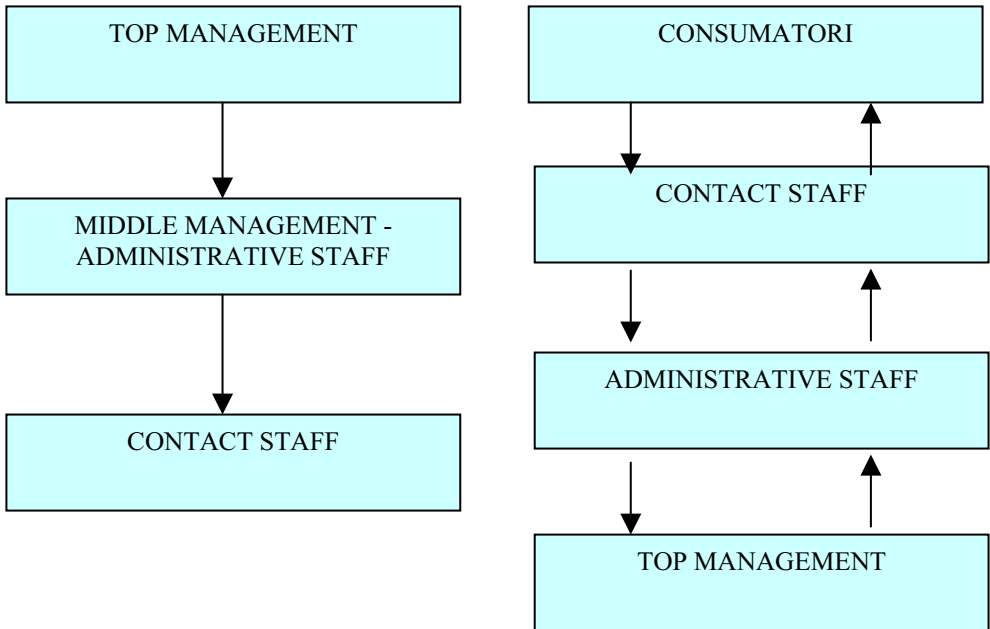


Fig. 1. Report among the various decisional levels within services companies

The results derived from the ‘front line’ staff proves the company’s profitability. The administrative personnel and the company management are only the prerequisites for services of a superior quality. On the other hand, the responsibility for the relations with customers and the operational decisions are transferred from the management and the administrative personnel to those who have a direct contact with the customers and are directly responsible for services supply. The new approach also involves an organizational structure where the horizontal relations are more developed than the vertical ones, i.e. the pyramid is flattened. As a matter of fact, this is how the transfer of the tasks and authority takes place, from the administrative personnel and management to the staff with operational functions.

The starting point in drafting an efficient and viable organizational structure in a financial institution is the identification of a formula to provide the orientation towards market, to satisfy the customers. As already shown, the initiation of a marketing department, at a certain level of the company development, even useful for a long term, represents a braking factor, which will trigger an interactively or inexistent weak management, which deteriorates the company image and loses consumers.

The activity of a services company are structured on three categories: traditional marketing activities (central level), administrative activities and activities that are directly involved in providing services.

The traditional marketing activities include the marketing research, the designing of the company development strategy and the marketing mix, the company communication system. They are initiated at the central level as they show a strategic importance for the company. The administrative activities comprise finance-accounting services, research-development and other activities that support the optimum fulfilment of the basic services. The last group includes the activities that have a direct relation with providing services and are included in the interactive marketing area.

These three categories of activities are subordinated to the institution central management, which has the role of marketing coordinator and is responsible for the entire marketing activity of the company.

The management capacity and performance are mainly evaluated in terms of the following factors:

- a. The involvement level of the decisional factors in providing optimum conditions of carrying out the company's activity.
- b. The ability of the decisional factors to appropriately manage the risks that may derive from changing the business conditions or initiating new activities or products.
- c. The adjustment of the internal policy in regards to the basic activity and the risks derived from it.
- d. The adjustment of the audit and the internal control targeting the financial operations, the regular reporting in compliance with the internal policies, regulations and laws.
- e. The accuracy and the opportunity of notifying the management, as well as the experience of certain risks administration systems, in accordance with the complexity and risk profile of the institution.
- f. The reaction (receptivity) of the decisional factors to the recommendations of auditors and supervision authorities.
- g. The depth of management and its succession.
- h. The extent to which the administration council and management are affected or sensitive to the dominant influence or the authority concentration.
- i. The institution performance and its risk profile.

This model gives an important role to the organizational unit that has direct relations with the consumer. Since the services are activities and not objects involving qualified personnel, the best place to apply the marketing conception is the provider-consumer contact zone. In this place, the bank staff informs and give consultancy about the bank product and services, the insurance agents present the offer of the society they represent, etc.

The company 'gives life' to the product, confirms or destroys the promises linked to advertising, where will gain or lose credibility in front of the consumers, by improving the relations with them.

### *Marketing to the current consumers*

The final consumers for goods do not, as a rule, enter a direct relation with their manufacturers. On the contrary, due to the inseparability of the production and consumption, in case of majority of services, the provider and the client meet each other. This thing gives to the services company the opportunity to build and develop preferential marketing relations with the clients. Of course the possibility to establish marketing relations is not equally valid for all the categories of services, for all decisions. The conditions to develop such relations are optimum when the consumers have a relatively constant request for the services of a company, when the provider-client relation is absolutely necessary to achieve that service or when the company carries out multiple services (giving the possibility to strengthen this relation).

In conclusion, most companies providing services to its consumers at regular intervals of time, for long periods of time, will have the opportunity to develop the marketing relations after the consumers have already benefited from the company services.

For these companies, the marketing audit has to directly evaluate the efficiency of the marketing actions upon the present clients of the company, since it is known that they represent the most important source of profit increase. The exclusive evaluation of the services company only based on the number of new consumers is not sufficient and irrelevant for the company activity.

### *The internal marketing*

In the marketing literature, the focus has been placed on the distribution of the products to 'the right place', and at 'the right time.' For the services, because of the provider-customer interaction, the service delivery must be done 'in a right manner'. The provider is not only the service seller, but for the consumer he represents the service, most of the time. The decision of the consumer to turn to the company services depends on how the provider behaves, how he acts, what he does not say, by his entire attitude and the way he looks.

The decisive role of the staff performance in the services sector leads to the increase of importance of the internal marketing, which involves:

- the hiring of the best specialists in the field and keeping them;
- the development of a permanent system of training and professional improvement;
- the team work;
- the adoption of a system of evaluation and distinction of the services provider activity.

### *The quality of services*

A larger concept than the internal marketing, but determined by this one, is the quality of services. The consumers evaluate the quality by comparing the service that they have benefitted from with the one that they have desired to get. In other words, the quality of services is the result of the confirmation of the consumers' expectations that they have during the reception of the service. Upon this comparison, we have the following possibilities:

- unsatisfactory service;
- acceptable service;
- very good service;
- beyond-expectations service.

An acceptable quality is, for all cases, mandatory. But if a company intends to excel in the services sector, it needs to provide services that will exceed the expectations of the consumers. To obtain a very good quality should be the objective of any company targeting a solid reputation. This thing would persuade the consumers to develop long-term relations with the company and build a favourable image via their impressions.

### **3. The Index of Evaluating the Marketing Activity in Services (IEMS)**

A correct evaluation of the marketing activity in an organization requires the use of certain criteria that will reflect the basic features of the services. Such criteria are found in the four categories earlier mentioned: the organization of the marketing department, the marketing to the current consumers, internal marketing and the quality of services. For a complete evaluation, it should include two other elements of the audit, valid for both the goods and services: the marketing orientation and the potential clients.

The marketing orientation is given by the degree in which the activities and decisions taken in an organization mirrors the orientation towards consumer. The evaluation of the marketing orientation involves marketing research made by the company, the designing of a marketing program and its implementation, the control of achieving carrying out that activity, as well as the way how the managers communicate with the company staff and the staff with the consumers.

In this case, the marketing audit should include mentions regarding the attitude to the staff to the consumers, more precisely towards their involvement and responsibility.

The marketing to the new consumers consists in the evaluating of the degree in which the attraction of clients is a priority in the company development program.

This component may be evaluated by looking at the designing strategies to attract consumers and by a correct distribution of the resources to efficiently implement these strategies.

The marketing to the current consumers implies the methods used by the company to maintain and develop relations with its clients. Similar with attracting new consumers, the designing of an appropriate strategy and the distribution of optimum resources are crucial for the success of this component. But for the current consumers, the building of preferential relations is a major concern for the services companies.

The internal marketing is the extent to which an organization succeeds to attract, maintain, improve and motivate the personnel. The final purpose of the internal marketing is to present a marketing perspective in such a way that the employees will wish and be able to bring faithful clients to the company.

As far as defining the concept of the internal marketing, opinions still vary; but the 'internal marketing represents the attraction, improvement and keeping the personnel of the company in the positions that will assure the maximum and efficient use of their abilities and as well as a system of motivation that will allow the satisfying both the material needs and the professional aspirations of the company staff.' (Berry L., Parasuraman A., 1989, p. 171).

The quality of the banking services is the result of comparing the consumer's expectations with the experience during his performance. Quality is defined by the consumers. They are the ones who finally appreciate the good, mediocre or low quality of services. The rest of the appreciations is irrelevant or insufficient anyway. The starting point in the perception of the service is given by the extent to which the provider supplies the service in compliance with the consumer's desire. Quality is not a purpose per se, but it has to rely on the consumers' wishes and necessities. Moreover, these desires are most of the time objective and it is difficult to base the quality of services on objective criteria.

The desiring and expressing IEMS are different from the traditional framework of the marketing audit as such:

- It explicitly includes a number of evaluation criteria that reflect the differences between the goods and services, where these differences are essential in a correct assessment of the marketing activity;
- It does not directly include the environment factors at a macroeconomic level, which are always part of the traditional marketing. Moreover, it takes into consideration the factors of the micro-environment, which more strongly influence the marketing performance level. It should be mentioned that the use of a services company within the evaluation of the marketing activity is helpful for the completion (and not the replacement) of the issues of a macroeconomic level.

#### **4. Indicators of bank performance**

Generally speaking, the management of the entire portfolio of a financial institution may be called the management of assets and liabilities.

The management of assets and liabilities is an integrant part of the administration process within a bank company or financial institutions (Hempol G., Coleman A., Simson D., 1991). The management of assets and liabilities is perceived as a short-term component of the complex administration process, focusing on the management of the daily or weekly balance sheet, in order to fulfil the short-term financial objectives.

The objectives of the management of assets and liabilities consist in the increase of the bank revenue from placements, along with the decrease of the sources costs to be attracted while maintaining an acceptable risk and complying with the current regulations concerning the bank agreement and liquidity.

Thus, the results of the banking activity need to be determined both in the form of absolute values and relative values, in order to make comparisons.

We present below a few indicators that are most used to evaluate the banks economic and financial status (Dedu V., 2001, p. 253).



1. **The net interest margin (NIM).** The management of assets and liabilities focuses on the net interest margin of the financial institution, which is expressed by the interest derived from financial investments and the interest paid for the attracted sources.
2. **Return on capital (ROC)** is the net profit derived for the unit of the invested share capital. The higher the value of this indicator, the higher the rentability of using the shareholders capital, thus giving the possibility to the banks to develop in the future.
3. **Return on assets (ROA)** represents the net profit derived from the assets unit available to the bank. The higher the value of an indicator, the more efficient the use of the assets by the bank.
4. **The net profit rate (NPR).** Starting from the fact that the numerator of the 'net profit rate' indicator is calculated by deducting the expenses and taxes from the revenue, where this indicator measures the bank's ability to decrease the costs. The higher the value of this indicator, the more successful the bank in limiting its costs.

*The audit may and should be used as an important tool in supporting the top management in the identification and coverage of the risks that are inherent in the banking activity.*

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# HOW THE MARKETING RESEARCH AFFECTS THE IMPROVEMENT IN THE DENTAL DOCTOR-PATIENT RELATION

**Petronela Iuliana GEANGU\***, Lecturer Ph.D. Student

**Daniel Adrian GÂRDAN\***, Lecturer Ph.D. Student

**Iuliana CETINĂ**, Professor Ph.D.

Academy of Economic Studies of Bucharest

**Elena GURGU\***, Lecturer Ph.D.

\* Faculty of Marketing and International Affairs

*Spiru Haret University*

## **Abstract**

*The relation between provider and customer in the services area, mainly medical, represents a fundamental desideratum. This type of relation derives from a two-way involvement of both parts at the entire marketing mix level. The base of new marketing strategies that imply effective relation models can only be built by setting out an ample time related investigation process of the mechanisms pertaining to the customer's perception of the quality and the coordinates of the relationship with the provider. The article aims to investigate the mechanism leading to customer retention in the case of dental offices, both from the perspective of customers and providers.*

*The authors conducted an in-depth interview-type qualitative research, which identified and pointed out the extent to which the marketing activity, as seen from the perspective of specific principles and scientific methodology, is implemented in the dental offices in Bucharest.*

*The research was also focused on the perception of specialists, dental office/clinics managers or owners regarding the concept of customer retention, elements which could lead to keeping customers, and the image of the ideal office from the perspective of services adjusted to consumers.*

**Key-words:** *in-depth interview, dental marketing, consumer perception, relation strategies*

**JEL Classification:** M<sub>30</sub>, M<sub>31</sub>, I<sub>10</sub>, I<sub>11</sub>

## **Introduction**

The article provides an excursion into a field of great importance, both internationally and nationally, at the level of speciality literature. Studies about methods for implementing marketing in the organizations providing medical services are welcome in the context of organizational and structural changes of health insurance systems.

At the same time, the research area related to methods of implementing the marketing activity in medical services is a generous one, and also of relevance from the perspective of the thorough changes that affected consumers in the last decade.

The use of information technology nowadays is also present in the medical field, the existence of operational information systems in ministries and territorial organizational structures being already an everyday reality in many countries. For some years, in Romania, the national health insurance system, along with the infrastructure of the Ministry of Health District Offices, and the network of medical institutions in the territory have already benefitting from a computerized system of the patients accounts.

By implementing these databases, together with the application of e-government principles for health systems as well led to the emergence of the e-health concept, promoting not only the large-scale use of the latest information technologies, of up-to-date medical technique and of high speed communication provided by the Internet, but also considerable changes in the behaviour and habits of medical services consumers.

Thanks to the much easier access to medical information with a large degree of scientific specialization, to more diagnostic sources for the same illness, the way in which patients react to treatments and build their own habits for maintaining health is much more different compared to 20-25 years ago.

In this context, the evolution of applied marketing in the medical field in general and the development of customer retention techniques in particular cannot be conceptualized without adapting the both theoretical and practical instruments of marketing activity to those essential changes in the perception and behaviour of the medical services consumers.

The present article aims to investigate, in an experimental manner, the way managers and/or physicians in key positions in Bucharest dental offices conceptualize loyalty and the customer retention process, as well as the essential features of medical activities specific to dental offices. At the same time, the article will investigate the defining elements for the marketing activity of these offices, i.e. elaborating marketing policies and implementing organizational structures specific to the marketing activity.

### **Literature review**

Recently, studies in health services marketing have become more and more numerous, deriving from a series of relevant marketing research.

Most works published abroad, as well as the ones published in Romania, emphasize the social part of marketing those services, and the great role that the state has in providing health services in general. In the field of dental services, even in Romania, upon the privatization of offices and granting practice licences after graduation, as well as to the fact that the number of specialists in dentistry graduating every year from the Faculty of Dental Medicine is higher than in any other medical specialty; hence, the increased competition, where services are mainly provided in private offices.

At the level of marketing of every new area, where the medical one is no exception, it is extremely important to study the consumer behaviour. The consumer of medical services represents a constant source of innovation for the

marketing managers and its perception of the service provided has its own dynamics within the conditions of the present changes of consumer culture.

The double condition of the consumer of medical services – both as consumer and as patient – ‘the person with health dysfunctions’, implies a set of attributes referring to the complex of consumption satisfaction, compared to other services.

Research conducted by specialists in the well-known consulting firm McKinsey Quarterly Company (Kurt D. Grote, John R. S. Newman, Saumya S. Sutaria, 2007) revealed a series of unexpected aspects about the defining attributes for patient satisfaction, for their decision of changing the medical institution (the hospital), which offers them the necessary medical services at a given time. Thus, it was revealed that two attributes are extremely important in this process: on the one hand, the ability of the institution to inform the patient extensively, in an accessible and complete manner about the service offered, both during and after the stay in the hospital, and on the other hand, the shortening of the waiting time and fully complying with the appointments for different services.

It is surprising the fact that, for the global consumer decision, these considerations related to the non-clinical aspects of services matter more than the purely clinical aspect of the quality of the services offered.

In other words, even in the case of patients on a private insurance, the decision is more influenced by these aspects, collateral to the clinical medical activity. Research referring to doctor’s opinion, both the MP and the specialist, on the recommendations for hospital admissions that they operate, has revealed the same position – doctors are willing to recommend hospitals well positioned from the point of view of the information capacity, where appointments are complied with and there is a coherent flow of appointments, the patient registration process is easy; thus, they are reluctant to recommend hospitals well equipped at the level of clinical operation capacity.

The crossed results of those researches conducted on a sample of 2,000 patients and 100 physicians, representative for the whole range of hospitals in the USA, revealed aspects that cannot be ignored in building a viable marketing strategy for the medical institutions under investigation. Since the advertising expenses increased by circa 13% in the 2002-2006 interval, for all the medical institutions on the US market, the choice of communication objectives, doubled by a policy of services which really fulfil the consumer needs becomes a compulsory requirement for winning competitive advantages.

Another important article based on marketing research was written by *Ram Misra, Avinandan Mukherjee, Richard Peterson* (2008, p. 321-337), and presents the importance of creating websites and discussion forums for a health services organization.

Upon the emergence of the internet cafes, chat rooms, instant messaging, special interest for e-groups on blogs, people do not have to be physically close in order to change ideas. The participants who share their experiences could have the same concerns and meet instantaneously, starting from the natural need of people to meet others with same interests. The members of those virtual communities share their knowledge, cooperate to solve problems, but have to feel responsible for

them. Internet-based technologies greatly facilitated the emergence of the virtual communities. In the sector of high-involvement medical assistance, patients seek more and more online information and counselling, by taking part in virtual communities. In this context, it is important to know the process of creating consumer value in virtual communities. It is important to find out the discussion topics of interest in the medical field, as well as the people who offer credibility to the other discussion partners, and the time period assigned for the group conversation. The building of discussion groups moderated by doctors could have a great impact on public education about timely prevention and treatment of different diseases, and it could finally lead to the improvement of organization image to which the doctors belong.

From the publishing perspective, the field of marketing applied to dental health services stands out by a more accentuated development after the year 2000, in a series of speciality works, both PhD theses [Clouse Bradley Alan (Kentucky 2003)] and miscellaneous articles.

Zhengyuan Wang, Swinder Janda, C.P. Rao (1996) used the method of the multiple linear discriminant, trying to point out the differences between segments in the dental market, differentiating customers from the point of view of different reasons which trigger the choice of a dentist.

Most articles on health services marketing start from research that mentions the factors essential in the consumer satisfaction with such services (Alessandra Mazzei et al, 2009, pp. 365-381). The purpose of this article, according to the authors, is to establish the most qualitative factors and communication activities that are adequate for increasing the competitiveness of the dental services organizations.

The authors founded their article on a research based on a model which focuses on the reciprocal influence between patient satisfaction and the dentist's reputation. The model underlines that experience/behaviour, explicit communication and mouth-to-mouth communication among patients are the most important factors leading to patient satisfaction. This research is based on interviews with different dentists, on surveys conducted on patients who used to benefit from dental services, or still are.

The most important factors leading to patient satisfaction are the doctor-patient relationship and the transparency of the information about cost and treatment. The essential communication mechanisms are, formerly, the implicit communication coming from successful treatments and from the quality of services in general, and, latterly, the explicit communication resulting from the interpersonal relations with the dentist and the auxiliary personnel, as well as the recommendations from previous patients.

The practical implications could be the improvement of the dentist-patient relationship and, subsequently, the greater dental service consumer satisfaction. In order to acquire competitive advantages, the dentist has to determine an average patient satisfaction level, starting from the knowledge of the factors contributing to it; he should also pay special attention to 'strategic factors' and to explicitly communicate the 'opportunity factors', as patients are usually aware of their value.

Dentists should also improve interpersonal relationships, and at the same time look at the communication of third parties with patients (auxiliary staff – nurses, people who accompany patients, etc.).

A Romanian article about dental services quality and user satisfaction with this type of services in the Bihor area, based on survey-type marketing research, shows that, despite the presence of dental offices in the rural environment as well, dental offices in Oradea have a large number of patients of rural origin (54%). (Bodog Simona Aurelia et al, 2008, pp. 120-129) The explanation is the patients' general opinion regarding the quality of dental services provided in urban dental offices, regarded as superior to rural ones. We can also notice an increased confidence in the professionalism of dentists who work in urban environment, regarded as significantly superior to those working in villages. The patients' attitude toward the expectations or appreciation of the dental services received is influenced by the information about the environment where the dentist comes from, as well as his age and studies.

In Romania, as in all the countries in a transitional period of time, competition is not always and everywhere noticed, as it should be, according to the experience of its functionality in highly industrialized countries. At the same time, there is an acute lack of scientific literature and methodical works regarding the methodological aspects of evaluating and ensuring competitiveness. Therefore, a conceptual approach of the problem, which takes into account the world experience, becomes useful, allowing the drafting of a direction and possible ways of having and developing economic competitiveness in Romania.

### **Theoretical background**

The decision-making problem which lies at the foundation of conducting an in-depth semi-guided interview-type research is the successful implementation of marketing concepts, in order to offer the necessary framework for improving the dentist-consumer relationship, starting from the increase of satisfaction and subsequent customer retention.

The semi-structured in-depth interview will focus on identifying the extent to which the marketing activity, from the perspective of specific principles and scientific methodology, is implemented at the level of dental offices in Bucharest.

The sample will be rigorously selected, both because of the characteristic of the in-depth interview as a qualitative research technique, and of the specificity of the research theme and of the professional qualification of the respondents. The criteria for building the sample, which will be eloquent for the diversity of the possible cases, are the following: Gender; Age (26-35, 36-50, over 50); Basic field of expertise: dentist, economist, others; Decision-making capacity in the dental office: owner dentist, practice manager, specialist physician with more duties in organizing the medical services.

As for the sample sizing, an equal number of respondents, both men and women will be considered. The proportion of persons included in relation to the decision-making capacity in the dental office is also approximately equal. The total

sample size is 30 persons, a sufficient number for the aim and objectives of the research, in relation to the corresponding market in Bucharest.

According to the president of the Dental College in Bucharest (dr. Alexandru Brezoescu), there are 2,370 private dental offices in the city at present. The number of dentists working in their own offices, in hospitals, clinics and school offices is 4,000, which means a dentist for 480 patients. So, for the Bucharest market, competition is great and almost every area is already covered.

### **Information analysis and results presentation**

After the analysis of the audio-video transcripts, a series of conclusions emerged from the in-depth interview-type research.

As a first observation, the subjects' willingness to take part in the interview is obvious, most of them being co-operant and willing to thoroughly discuss the topics proposed by the moderator (researcher).

In the finally interviewed sample, the main categories studied – specialist physician with more decision-making tasks in the dental office, specialist physician and office manager, physician manager and owner – were represented almost equally; most respondents belonged to the 35-55 age group.

The first discussion topic, the degree of familiarity with concepts and notions specific to marketing in general or to dental marketing in particular revealed the fact that most respondents were lacking specialized marketing knowledge. Younger generations, who had attended dental management courses at the university, had the opportunity of a brief introduction to marketing concepts and terminology.

The perception on marketing is structured on two basic levels, as follows: for doctors with more decision-making tasks in the dental office, who are not managers or owners, the prevailing perception associates marketing with sales, the promotion of a product or service on a market. The medical activity that implies the offer of the dental medicine service is seen separately, as a particular doctor-patient relationship. For doctors who are also managers-owners of the practice, a more developed entrepreneurial spirit is noticeable, leading to the perception of the marketing concept in terms of efficiency of the office activity and its intensive promotion in a strongly competitive environment. However, they too agree with the idea that the doctor performs first a medical act and only afterwards he provides a service.

The second discussion topic revealed the fact that the utility of the marketing activity in the dental office is conditioned by the doctor's experiences in this area over time. Some specialists regard the marketing activity as generally useful, but most physician owners do not; on the one hand because of the not relevant results derived in time, after applying marketing techniques, and on the other hand because of the lack of a complete and correct understanding of the ways marketing strategies operated in a dental office.

For the individual offices, the marketing activity is completely absent, but for larger clinics, there are 3-4 employees who have duties in the area of supply, relations with suppliers or 'customer service'.



Also, in the case of most individual offices, nurses have the role of public relations personnel, managing the relationship with the patient before and after the services were performed.

Other categories of marketing activities with a certain continuity are the ones in the online promotion, advertising through flyers, relevant journals in the office.

Any type of professional marketing research is zero, although there were sporadic attempts of building customer databases, in spite of the fact that there are medical records for every patient in each office.

As for the degree of concern about the competition activity, respondents have no relevant market information about the competition, but they are generally aware of its existence, mostly in the immediate proximity of the office. For the sources of information on the dental services market in general, respondents pointed out the two international medical congresses held in Bucharest and the Information Bulletins issued by the Dental College. Some doctors also have subscriptions to a series of specialist journals talking about the latest medical technologies – not necessarily information about the market itself, or studies conducted on consumers, etc.

From the point of view of client segmentation, each respondent, regardless of his quality of physician and/or manager, was able to outline relatively easily the customer variety of the office. However, a natural concern, a conscience of the importance of using their rigorous segmenting is totally lacking, even in the case of offices or clinics that conducted more elaborate promotion activities (radio/press), those that were not initiated based on information about segmentation.

Customer variety is relatively large, depending on the office location, equipments, the doctors' specializations (orthodontics, pedodontics, implantology, etc), price, age, education.

It is interesting to see the distinction that some doctors make from their perspective on the quality of patient and dental service consumer, respectively. Thus, the quality of 'patient' belongs to people who actively follow a dental treatment, come regularly to check-ups, while the quality of 'consumer' belongs to people who ask for auxiliary services (cosmetic dentistry, etc) and are not actively involved in a course of treatment.

As for the dynamics of needs and consumer behavior, or the degree of concern about dental hygiene, we can outline a series of conclusions which are generally valid at the urban level for most dental offices or small clinics. Thus, young people and educated people (university studies) are more diligent in following the treatment, more co-operant, have a better prophylaxis, an increased preoccupation with dental hygiene – it is also noticeable the observation according to which, from the doctor's perspective, women are more concerned about prevention than men.

As for the customer flow, one could notice, for all dental offices, a greater flow before the winter holidays, and a smaller one in summer, on holidays, this flow being related to the socio-demographic characteristics not only on age categories but also for the urban population segment with above-average incomes, active, the segment which, in fact, accounts for more than 90% of the clients of urban dental offices in Romania.

Most respondents are not fully aware of the office/clinic position on the market, and here one can notice differences between specialist physicians and manager/owner physicians, the latter having a considerably clearer image related to the attributes that position their offices or clinics on the market. Thus, the main attributes identified by them are: office location, price, service quality, the quality of materials and equipment, contact personnel, environment.

The opportunity of resorting to marketing specialists is seen differently, doctors involved in management see it as a waste of resources, are not convinced of its efficiency (unfortunately, managers/owners who declared they worked with specialists did not contact marketing professionals, but only media channels – magazines, radio, etc.); doctors involved only in medical activities regard the use of marketing specialists as beneficial.

The category of personnel which was, in most cases, indicated for an effective communication with customers is represented by medical nurses, both in the office (in the case of individual offices) or at the front-desk (in the case of clinics).

There is an overwhelming unanimous view that the nurse has the role of a real public relations and customer service specialist, her communication with the patient before and after the service provided by the doctor preparing the environment necessary for its optimal performance.

The questions about ways of measuring feed-back from customers revealed the fact that this is conducted empirically, without specially designed instruments for this purpose, that there is only a natural dialogue between the doctor and the patient – they are different as feedback – some are co-operant, while others want to change the treatment, pay less and try to have a ‚little negotiation’ with the doctor.

The doctor’s perception about the opportunity of education in marketing is also fragmentary, there is, however, the synthetic opinion according to which they are open to the possibility of training in this field, provided the existence of highly specialized dental marketing, and not general marketing theory, presented at international dental congresses or online.

As for the opportunity of knowing the dynamics and structure of customers, as well as their needs – it is important the knowledge of customer dynamics and structure, and as well as the dynamics of their needs, on condition that the customer’s privacy is complied with. It is essential to reveal the aspects related to the evolution of needs in two categories of customers: patients and dental services consumers, the way their quality changes over time, as a patient becomes a loyal dental service consumer for the office after the treatment is finished.

The ways of attracting customers were not included in a unified promotion strategy, with objectives, budget, resources, etc, more frequently were used ‚mouth-to-mouth’ advertising, investments in ensuring the attributes of the office related to the total quality of services provided, materials and equipment used, the accessibility of the location, the environment and the waiting room, the client service personnel behavior, direct communication as well as the doctor’s charisma.

There were sporadic classical promotion efforts – flyers in mailboxes, radio and advertising in specialist journals. Without a strategic foundation, the messages

sent, their formulation, the layout choice and the choice of the target audience were done empirically without resorting to professionals, which led to an almost total failure from the point of view of communication efficiency. Two of the offices investigated even tried to retain and attract customers by offering a fidelity card, but, again, the defective management of this promotional tool led to extremely weak results – no customer was effectively attracted by the card itself.

A promotional effort common to all offices is online promotion, creating sites and posting them on servers dedicated to the offices. Here the lack of coordination and specialist knowledge were also felt, leading to a decreased efficiency of the capacity of attracting customers. The creation of the site itself was not realized starting from the basic requirements of a successful web design (the characteristic indicators, – 7C of web design, etc.), the contents, structure, menus, ease of navigation were not adjusted to the concrete needs of potential customers who surf the Internet. Moreover, the creation of websites was not accompanied by an effective SEO (Search Engine Optimization) policy, by cross-promotion with other sites or speciality portals, so site visibility and effective traffic were extremely reduced.

In the analysis of the reasons for customer return, from the perspective of the subjects interviewed, some elements emerged, such as: the high quality services, the creation of a dependence between patient and doctor – an attachment which determines patients not to change their doctors for long periods of time (years) and to follow the doctor, regardless of the office where he is working, office location and reputation.

An excessive emotional involvement was also noticed at some doctors, as they do not agree that a patient should come into their office, 'test' the services provided, and then go to another office and, finally, after the comparison, should return to their office. The doctor would refuse to treat such a patient.

This suggests the fact that the doctor sees himself, first of all, as somebody who performs a medical action, a noble one, who builds a deeply emotional human relationship, and less, or not even at all, as a simple service provider, who can be replaced with somebody else's offer in a classical competitive market.

From the perspective of the evolution of the Romanian dental services market, this observation is very important, because the diffusion of this perception among all medical staff, and even among customers, could lead to essential changes of the relationships on this market, to a superior model for the satisfaction of needs.

In most cases there are no customer databases, although every office has the obligation to make and keep medical records of all patients. Both specialist physicians and manager/owner physicians agree that databases would be necessary, but the ignorance of methods suitable for their organization and management is obvious. Also, for those who conducted more elaborate promotion efforts, there was no connection between the notion of their efficiency and the use of customer databases, which obviously contributed to the failure of the promotional efforts.

Most subjects interviewed declared that the method for approaching customers was the same, that there were no differences in the treatment received by

customers – this is another characteristic which indicates the perception of the service as a medical act, as opposed to its ‘cosmeticizing’.

Even for doctors who develop, in time, more personal relations with their patients, the protocol and method, as well as the willingness of approaching the patient, is the same as on the first visit.

From the point of view of the ways for managing unhappy customers, the perception is that apparently some customers will always belong to the ‘forever dissatisfied’ category – whether they want a smaller fee, or because of their snobbery. Justified complaints can be addressed in different ways – dental work restoration, using other materials, free check-ups, etc. The perception was also revealed according to which some customers who are also patients can only be unsatisfied by a certain stage in the treatment, or with some auxiliary services – they cannot be unsatisfied by the service itself, or else they wouldn’t be patients.

All doctors interviewed declared themselves willing to educate their customers about dental hygiene, moreover, most of them already perform constant and concrete actions for this purpose.

The definition of loyalty concept from the doctor’s perspective in relation to the services of a dental office is also nuanced, however, a series of conclusions can be drawn, regarded as relevant:

- The degree of return is an indicator of loyalty.
- The degree of return should be accompanied by the exclusivity that the patient gives to the doctor (office) – sometimes this is enough to define loyalty.
- Patients will become loyal to the doctor, less to the dental office exclusively.
- A loyal patient implies a patient who completes a treatment.

As for measuring loyalty, respondents consider that it is given by the rate of return in time, and especially by the exclusivity of return to the same dental office.

From the point of view of the elements which, in the doctor’s opinion, could lead to retention, we can mention: environment, friendly atmosphere, service quality, the doctor’s professionalism and charisma, the doctor’s PR, his professional explanations, his renown, the material used, location, price. As far as prices are concerned, we can appreciate that offering discounts can be dangerous, at least for some customers, as offices are obliged to increase prices, even though they had previously reduced them by cutting down material costs. The discount was greeted reluctantly, as customers believed an inferior material was used, not necessarily a cheaper, more technologically advanced one.

The image of the ideal office was described, from the doctor’s point of view, as being ‘a small, pleasant, intimate office, which should be like a waiting room, which didn’t look like an office, in vivid, warm colours, which reduce stress. The environment should make patients relax – aquariums, posters, pictures, videos, etc., also respecting their privacy.’

## **Conclusions**

The conclusions we arrived to can be resumed mainly at the dimension of marketing activity initiated and conducted in dental offices from Bucharest, and on the second place, at the perception of doctors/managers on the process of customer retention and on the elements which could lead to the loyalty of the dental service consumer.

Thus, for the marketing activity, we can point out, first of all, to its lack of a proper organization, of management culture specific to marketing at almost all interviewed decision factors, the sporadic use, with no strategy, of some isolated marketing instruments (promotion through flyers, street banners, advertising inserts in magazines and online promotion by websites), the lack of operational customer records, the existence of a hypothetical anti-competition strategy without a scientifically founded base, and also the lack of information and/or market studies in the field.

Also, for those who conducted more elaborate promotional activities, there was no relation between the concept of their efficiency and the use of customer databases, which obviously contributed to the failure of the promotional efforts.

The perception about marketing is structured at two basic levels: for doctor with more decision-making tasks in the dental office, who are not managers or owners, the opinion according to which marketing is associated with sales, promoting a product or service on a market prevails, while the medical activity of a dental service is seen separately from this activity, as a particular relationship between the doctor and the patient.

For doctors who also have the quality of manager-owner of the office, we notice a more developed entrepreneurial spirit, which led to a perception on the concept of marketing in terms of efficiency of the office activity and its intensive promotion in a strongly competitive environment. However, they cultivate the idea according to which the doctor performs first a medical act and only second provides a service.

Thus, from the perspective of initiating and developing a unified, correctly founded marketing strategy, a series of recommendation need to be made, such as: the development of marketing knowledge at the level of decision factors, their involvement in training system which emphasize the use in conditions of simulation of real situations of marketing principles and tools specific to the medical field, and the development of the global vision on the marketing policy of the dental office; encouraging decision factors to resort to the specialized services of marketing consultants – the development and implementation of a marketing strategy, adapted and customized to the requirements of every office.

As for the implementation of instruments specific to customer retention, it is important to emphasize again the fact that the patient-provider relationship will be, in our opinion, decisively influenced by their own perception on the performance of physicians/managers of medical offices.

Thus, the research pointed out to an excessive emotional involvement of some doctors, who do not agree that patients come into the office to 'test' the services offered, then go to another office and, finally, after the comparison come back at the first office, in most cases the doctor refusing to treat the patient.

This suggests the fact that those doctors see themselves as being, first of all, people who perform a noble action, a medical treatment, who build a deeply emotional human relationship and less, or even at all, as simple service providers who could be replaced with other people's offer on a classic competitive market. Therefore, creating and maintaining a real relationship will require a profound involvement, both from the doctor and the patient.

If, in other situations (different products markets and services), the lasting involvement of the provider is enough for customer retention (at least at an acceptable level), for the dental services, the provider's initial effort followed by the consumer's emotional attachment is not sufficient; we are here talking about a real need for the provider-physician to be given a fast and strong feedback from the patient (inter-human communication), which overcomes the economical considerations.

In order to talk about real customer loyalty and about building long-term relationships, in the Bucharest dental offices, it is necessary to draft a strategy that also emphasizes the development of integrated channels of communications with the patients, the selection and management of the categories of customers who adhere to the same values based on the high quality of services and the development of a 'person to person' bond.

Future research should corroborate the data gathered from similar longitudinal research with other data obtained from research conducted on representative consumer samples, research that should also investigate the perception, both of doctors and of patients, on the long-term relation and retention.

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# METAPHORICAL CONCEPTUALIZATIONS OF *MARKETING*

**Raluca Gabriela BURCEA**, Lecturer, Ph.D. Student  
Department of Specialized Languages, Faculty of Letters, Bucharest  
*Spiru Haret* University

## ***Abstract***

*Currently, the centrality of marketing to enhancing the prosperity of businesses, individuals and even society is an undeniable fact. Marketing has emerged as a field worthy of being investigated by both marketing theorists and practitioners and specialized discourse researchers.*

*Since the apprehension of the highly complex and abstract marketing notions cannot be achieved spontaneously, metaphor represents a valuable tool for providing a better understanding of the domain in question. In this context, our paper aims to explore three of the most relevant conceptual metaphors used in relation to marketing, namely the *MARKETING IS MOVEMENT*, the *MARKETING IS MILITARY CONFLICT* and the *MARKETING IS A RELATIONSHIP* conceptual metaphors. Relying on a corpus formed of two notable works on marketing, we highlight the main linguistic realizations of the above-mentioned metaphors, with a focus on their emergence and prominence in close connection with the shifts in the conceptual paradigm of marketing.*

**Key-words:** *metaphor, marketing, cognitive theory, movement, military conflict, relationship*

**JEL Classification:** A<sub>12</sub>, M<sub>31</sub>

## **Introduction**

In the early 21<sup>st</sup> century, the contribution of marketing to business performance is generally acknowledged. Despite the proliferation of works on marketing, the (still young) marketing discourse holds yet many aspects to be unveiled. The marketing discourse is widely permeated by metaphors, most of which have become so common in the marketing jargon that their metaphorical origin is no longer visible. Nevertheless, their importance as vehicles facilitating the understanding of and providing new insights into the abstract domain of marketing cannot be denied.

In this context, our paper aims at raising awareness on the relevance of metaphors to the marketing discourse. More specifically, our focus is on highlighting the most frequent metaphors used in relation to *marketing*, as well as on examining the connection between the various marketing orientations and the conceptual metaphors that underlie them. We advance the hypothesis according to which the emergence and

prevalence of certain conceptual metaphors at a given time is much dependent on the dominant marketing orientation at that specific time.

In our attempt to detect the major conceptual metaphors that reflect the shifts in the conceptual paradigm of marketing, we shall rely on a corpus formed of two notable works on marketing, namely Kotler's *Principles of Marketing* and Baker's *The Marketing Book*. Besides investigating the implications at the cognitive level of the main conceptual metaphors thus identified, we shall also explore their linguistic realizations at the text surface.

It is worth mentioning that the specialized literature comprises very few works that discuss the metaphoric dimension of the marketing discourse. While retaining some of the distinctive features of marketing metaphors, as formulated by Viot (2006) and O'Malley et al. (2008) and acknowledging the importance of the *marketing metaphor* framework as described by Kitchen (2008), our paper provides an original insight into the metaphorical conceptualizations of *marketing*, primarily delineating their role as indicators of the shifts in the conceptual paradigm of marketing.

### **Literature review**

While the economic discourse represents a fertile research field for specialized discourse theorists, researchers and linguists, the marketing discourse has only recently emerged as a distinctive sub-type of economic discourse that is worth investigating from a linguistic perspective. Accordingly, there are very few studies exploring its metaphoric dimensions.

The most notable contributions to the analysis of marketing metaphors are Durö and Sandström's (1988) comprehensive research on the military strategies, as they are transposed into the field of marketing via military metaphors, Viot's (2006) thorough analysis of the correlations between the metaphor of the *personality of the brand* and the scales of human personality and O'Malley, Patterson and Kelly-Holmes's account of the evolution over the time of the *marketing as relationships* framework.

Probably the most complete work on marketing metaphors so far is Kitchen's<sup>1</sup> *Marketing Metaphors and Metamorphosis* (2008). In his study, the author explores a vast inventory of marketing metaphors, such as *the globalization of markets*, *market segmentation*, *viral marketing*, *the product life cycle*, etc., as well as the metaphor of *marketing* itself, envisaged as exchanges and relationships.

### **Theoretical background**

The theoretical framework of cognitive linguistics has provided us with a valuable tool for the analysis of the main metaphors that underlie the

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<sup>1</sup> Philip J. Kitchen holds the Chair of Strategic Marketing at Hull University Business School. He is the Founding Editor of the *Journal of Marketing Communications*. In 2003 he was listed as one of 'the top 50 gurus who have influenced the future of marketing' (*Marketing Business*). He is a Fellow of CIM, the RSA and Member of the Institute of Directors.

conceptualization of *marketing*. More precisely, our study is based on the *cognitive theory of metaphor*, as developed by George Lakoff and Mark Johnson in their 1980 work *Metaphors we live by*.

The cognitive theory of metaphor centers upon the cognitive aspect of metaphor, which is envisaged as a matter of thought (hence the term *conceptual metaphor*) rather than a simply linguistic phenomenon.

According to the cognitive perspective, metaphor is conceived in terms of *cross-domain mappings* in the conceptual system. The mappings take place from one conceptual domain – the *source domain* onto another conceptual domain – the *target domain*. As a rule, conceptual metaphors employ a more abstract and complex concept as target and a more concrete or physical concept as their source domain. A systematic set of correspondences is established between constituent elements of the source and the target domain respectively. This facilitates the understanding of abstract target conceptual domains such as life, death, time, economy or society in terms of relatively concrete and familiar source domains of experience, such as spatial movement and orientation, substances or human entities, etc. As Lakoff and Johnson put it, *The essence of metaphor is understanding and experiencing one kind of thing in terms of another*<sup>2</sup>.

The cross-domain mappings are named using mnemonics which typically have the form A IS B, where A is the name of the target domain and B is the name of the source domain.

For instance, the ARGUMENT IS WAR metaphor favours the establishment of a set of ontological correspondences between certain entities in the target domain of *argument* (e.g., the interlocutors who are arguing, their verbal behaviour, etc.) and certain entities in the source domain of *war* (the opponents, the war strategies, etc.).

Lakoff and Johnson also propose a distinction between *conceptual metaphors* (that refer to the conceptual mapping) and *linguistic metaphors* (or *metaphorical expressions*), which are individual linguistic expressions that emerge as surface realizations of conceptual metaphors. Thus, the conceptual metaphor ARGUMENT IS WAR underlies metaphorical expressions such as *Your claims are indefensible*, *He attacked every weak point in my arguments*, etc. As the authors argue, “[...] ARGUMENT is partially structured, understood, performed, and talked about in terms of WAR.”<sup>3</sup>

### **A conceptual metaphor framework for *marketing***

Over the past century, the marketing conceptual paradigms have evolved from the production, product and selling to the marketing and societal orientation. Each of these approaches to marketing finds its linguistic reflection in specific metaphorical conceptualizations of marketing.

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<sup>2</sup> George Lakoff and Mark Johnson, *Metaphors We Live By* (Chicago: University of Chicago Press, 1980), 6.

<sup>3</sup> *Ibidem*.

## MARKETING IS MOVEMENT

At the beginning of the 20<sup>th</sup> century, as it emerged as a distinct domain of activity, marketing was pretty much assimilated to an exchange activity, focusing on production and products and involving, as the National Association of Marketing Teachers argued, *the performance of business activities that direct the flow of goods and services from producers to consumers (1935)*.

In accordance with this early perception of marketing as primarily involving the transfer of goods from the producer or seller to the consumer or buyer, the marketing discourse was marked by the emergence of the MARKETING IS MOVEMENT conceptual metaphor.

Since any form of exchange or transfer typically implies the movement of an object from a location A (the source point) to another location B (the end point/destination), the MOVEMENT conceptual metaphor authorizes the following ontological correspondences between the source domain of *movement* and the target domain of *marketing*:

- The producer/seller is the source point (of goods/services).
- The consumer/buyer is the destination point/target.
- The distribution channels are the path.
- The products/services are the object to be moved from one location to another.
- The salespersons are the vehicle that enables the movement.
- The intermediaries are the stops along the path.

At the linguistic level, the MARKETING IS MOVEMENT conceptual metaphor is signalled by means of directional prepositions such as “from ... to”, “towards”, motion verbs of the type “launch [a product]”, “flow [goods to certain locations]”, “direct [goods/services from a location to another location]”etc., or nouns/nominal phrases such as: “distribution channels”, “distribution circuit”, “merchandise circulation”, “flow of goods”. Perhaps the most relevant linguistic metaphor circumscribed to the movement metaphor is that of the *target*. This metaphor is encountered in nominal constructions such as *target-market*, *target-customers*, *target-public*, etc. The conceptualization of the customer as a *target* has major implications at the cognitive level, acting as a downgrader that helps depriving the customer of human attributes such as volition and rationality and turning him into a passive object of commercial manipulation, a mere profit generator tool.

On another level, the MARKETING IS MOVEMENT conceptual metaphor may be interpreted in connection with the process of positioning a company on the market, in which case the correspondences are established as follows:

- the current position of the company on the market is the source point;
- the position the company aims for is the destination point;
- the object to be moved is the company itself;
- the resources mobilized (new product development, product improvement, increasing sales, penetration of new markets, promoting products, etc) are the vehicle to reach the destination.

Within the movement metaphor framework, there is one variable that needs to be taken into account: the duration of the movement. This reinforces the idea that marketing is not a punctual event, but a process that develops in time.

## **MARKETING IS MILITARY CONFLICT**

In the post-War years, the advances in production technology, as well as the customers' preferences gradually moving away from standardized products led to increasing competition among companies. Their priority shifted from production to selling.

The increasing awareness of competition and the orientation toward aggressive selling are characteristic of the selling orientation of marketing. This orientation created the premises for the emergence of the **MARKETING IS MILITARY CONFLICT** conceptual metaphor, which mediates the apprehension of any company/marketer confronting tough competition.

The mapping between the source domain of *military conflict* and the target domain of *marketing* enables the activation of the following system of ontological correspondences:

- marketers/companies are warriors/enemies;
- marketing activities are war strategies and tactics;
- the markets are territories to be conquered;
- low prices, personalized, high quality products and services, innovation, advertising, selling techniques, etc. are weapons.

The broad metaphoric scenario based on the **MARKETING IS MILITARY CONFLICT** conceptual metaphor envisages the marketers/companies as warriors/enemies waging a war for market share. They either fight for existing territory – the already established markets – or mobilize their resources in order to conquer new territories – the newly established markets. Their actions directed toward ensuring the success of the company on the market can be assimilated to authentic military strategies and tactics. Companies/marketers engage into marketing campaigns, similar to war campaigns, they make incursions into the competition's territories, attack the enemy companies and defend themselves. Price, quality, service, distribution, marketing activities, innovation, advertising and selling techniques become as many powerful weapons for increasing the appeal of the company's products, helping it to win the market share battle. In this war for markets companies may win or lose.

The marketing discourse is widely permeated by military metaphors. Metaphorical constructions organized around military terms include “marketing strategy”, “offensive/defensive strategies”, “counter-offensive”, “competitive attacks”, “flank position”, “marketing weapons/arsenal”, “strategic marketing”, “combat marketing”, “guerilla marketing”, etc.

## **MARKETING IS A RELATIONSHIP**

The early 1970's came with the awareness that the success of a company does not rely on increasingly aggressive and expensive selling and advertising, but

rather on being more sensitive to the customers' needs and wants. It was the advent of the so-called "marketing concept" orientation: this concept holds that being more effective than competitors in creating, delivering and communicating superior customer value in a chosen customer segment is essential for achieving an organization's goals.

With the marketing concept orientation, the customer was placed at the core of the marketing process: the focus was on responding to, serving and satisfying the customer. This rethinking of marketing was accompanied by the introduction of the concept of *relationship marketing*. Relationship marketing focuses on the establishment, reinforcement and development of long-term relationships with the customer, obscuring the idea of short-term transactions that was characteristic of the previous approaches to marketing.

This stage in the evolution of marketing can be successfully accounted for by the **MARKETING IS A RELATIONSHIP** conceptual metaphor. The main correspondence that derives from this major conceptual metaphor sets a connection between the companies/marketers and the customers as potential partners in a relationship.

Like any ideal relationship, the company-customer relationship proves mutually benefic for both parties involved: on the one hand, the customers derive satisfaction from fulfilling their needs through acquiring the goods/services provided by the company; on the other hand, the company benefits from this relationship by obtaining a profit as well as the acknowledgement of its value. Moreover, to make the relationship work, it is essential that both partners be involved. The level of involvement can be accounted for in terms of loyalty to the partner. That is why relationship marketing systematically revolves around the strategies designed for managing and nurturing a company's interactions with clients and sales prospects, with a focus on their retention and loyalization.

To the difference of the customer metaphorically conceptualized as a passive inanimate *target*, the customer envisaged as a *partner* in a relationship regains his status as an active human being, capable of making conscious buying decisions and of providing feedback to the company/marketer.

The relationship may enhance the attachment to the company/company's products to such a degree that the customer may feel the need to "adopt" a product. Similarly, the company can be envisaged as a parent for the customer, "nourishing" and "nurturing" the client's expectations and needs and pursuing the client's happiness and safety.

It is worth mentioning that the **MARKETING IS A RELATIONSHIP** conceptual metaphor can evolve into several directions, helping reflect the relationship between the company and the individual customers (the relationship marketing proper), the relationship between organizations (industrial marketing), and even the relationship between marketing and the society as a whole (the more recent societal marketing orientation).

## Conclusions

As stated at the beginning, our paper aimed at making an incursion into the most relevant conceptual metaphors that are employed to conceptualize the domain of marketing. By using the tools of cognitive linguistics, we have examined the main conceptual metaphors as they reflect the evolution of the marketing paradigms in time and highlighted their most common linguistic instantiations in specialized marketing texts. The study of our corpus has revealed the following facts: the early perception of marketing in simple transactional terms is metaphorically conceptualized by means of the *MARKETING IS MOVEMENT* conceptual metaphor. The shift from production to selling and the increase of competition for market share have led to the apprehension of marketing activities in terms of *military conflict* (via the *MARKETING IS MILITARY CONFLICT* conceptual metaphor). More recently, the centrality of the consumer to all marketing activities has favoured the development of the *MARKETING IS A RELATIONSHIP* conceptual metaphor.

Our findings have confirmed our hypothesis, holding that the metaphorical conceptualizations of marketing emerge in close connection with the marketing conceptual paradigm prevailing at a given time. Nevertheless, it is worth emphasizing that the three conceptual metaphor frameworks of marketing discussed above are not mutually exclusive. Their co-occurrence in the marketing discourse testifies of the fact that the various approaches to marketing represent mere tendencies, which add on like as many facets to an integrated perception of the marketing domain.

In this context, further research could try to determine the extent to which each of the above-mentioned conceptual metaphors holds valid in the light of the most recent marketing evolutions.

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**IV. MICRO AND MACROECONOMIC  
MANAGEMENT IMPROVEMENT  
UNDER THE IMPACT OF QUICKENING  
POST-CRISIS RECOVERY**



# POSITIVE EVOLUTION IN ECONOMIC FORECASTING. CASE STUDY: THE EVOLUTION OF A COMPANY'S CAPITAL

**Ion POPESCU**, Professor Ph.D.

**Laura UNGUREANU**, Lecturer Ph.D.

**Viorel MATEI**, Associate Professor Ph.D.

Faculty of Financial-Accounting Management, Craiova

*Spiru Haret* University

**Victor VELTER**, Ph.D. Student

Valahia University, Târgoviște

## **Abstract**

*For the economic sciences, mainly for the planning and organization disciplines, the models display a range of varieties. For the last decades, though, the mathematics-based models seem to be the trend, partly because of their ability to rigorously concentrate the essentials and also to be programmed via the computer-based techniques, thus creating together an unheard of instrument of scientific investigation, a resourceful 'extension' of human intelligence.*

*The article herein presents certain medium-term prognosis, via the dynamic modelling, elements of bifurcation theory and the Xpp software. The case study has been the object of a research contract with the business environment.*

**Key-words:** *economic modelling, forecasting, dynamic analysis*

**JEL Classification:** C<sub>53</sub>, C<sub>61</sub>, O<sub>21</sub>

## **1. Forecasting by dynamic models**

There is a similarity between the telescopes that widen our horizon without necessarily invalidating the previous discoveries in the close universe and mathematics that imparts new landscapes, while it is evolving from the current existence. Perspectives may change but not the truths.

The new theories discover the change reality once again. Time is no longer the reiteration of certain identical things, but becomes the carrier for differences. This means that the state of a system, at a certain point in time, is not included in its previous state, but there is a qualitative jump between two states. The sudden transitions, the 'catastrophic' bifurcations do not occur in an uncertain manner. On the contrary, they derive from the conjunction of a multitude of factors that push the system in a specific direction and not in another one.

The dynamic models follow to highlight the temporal relations. The model operates with events and states that express the value of an attribute identifying the events occurrence. The databases will help building diagrams of transition of the

states that indicate all the operations that are specific to each type of object and relevant class.

As the research facilities fluctuate, the econometric studies have shifted from analysing the intervals to the dynamic models that may be studied via the latest theories.

The model, as an instrument of scientific knowledge, is used in multiple theoretical and practical disciplines. The knowledge derived from working with models and the attempt to implement them may unfold valuable concepts related to a certain issue and to the types of decisions that deem necessary. The simple recognition of the decision areas may be a major progress in many circumstances. Plus, using the models, there may come a recognition of the variables that may be controlled to influence the system performance, the relevant costs and their size, as well as the connection between costs and variables, including the options for important costs.

There is also a large number of factors that may affect the success opportunity within modelling. Some of them depend on the environment conditions, others on the modelling process management and still some more are associated with the nature of the model to be achieved.

The modelling of an economic process is a scientific means of finding the decisive factors that may intervene within the phenomenon. In order to set the importance level of such factors for the process, it is imperative to insert the most significant of them into the already built model in such a way to allow the mathematical conduct for them to be quantified, anytime possible.

Starting from the idea that any model is based on real data and parameters, it becomes crucial the fact to obtain trustworthy data that will allow a convenient representation of the reality via the model. Thus, the cyclical or periodical nature of the phenomenon is being studied, as case may be, along with the time horizon it is referring to.

The dynamic modelling is based on the fact that a system performing is represented by the knowledge of the interaction among the information flows, commands, human and material resources, etc. A dynamic model shows the behaviour of the complex systems, making apparent how their structure triggers the path and the behaviour in time.

The implementation of the dynamic models is mainly a simulation drill. Whether someone studies the cyclical behaviour, the alternative strategies, history interpretation, the evaluation of the model errors or anything else, the numerical simulation is the best instrument for them. For the small or the linear systems, many questions may be directly answered to, sometimes including mathematical expressions; thus, for the general cases, mainly for the large size systems today, the numerical simulation is the only method to be used. Nevertheless, only one type of model simulation is considered as the 'queen' of them, i.e. forecasting (Popescu I., Ungureanu L., 2003).

## 2. The presentation of the company

The **Statia de utilaje pentru Constructii si Productie Industriala** – SA company has over 40 years of experience in concrete manufacturing, mortar, mineral units for pit ballast, metallic products of all kinds, furniture of double melaminated plywood and carpentry works and also in car rental – construction equipment. The company, due to the quality management policy, of the technical rigging and to the best quality products and services, has become one of the first suppliers for products and services on the civil constructions market, industrial and road infrastructure in Craiova city and Dolj County.

Financial year	Turnover (RON)	Chart	Profit (RON)	Chart	Employees
2008	13 475 976		260 528		186
2007	10 825 579		309 358		166
2006	10 146 632		203 666		173
2005	6 708 331		163 344		166

## 3. The extrapolation method

Extrapolation is an explorative method and the most widely used in the quantitative forecasting. It consists in an inertial development of certain elements of the processes and phenomena where the future shows as an argued extension of the present. The anterior evolution of a process – if there is an upholding of the conditions that have given a certain dynamics, conditioned by certain elements saving themselves or presenting future variations that are predictable – will equivocally trigger the future development of this process itself.

In other words, within this method, the future shows as an extension of the evolution monitored in the past. It is assumed that there will not be any fundamental mutations in the evolution of the phenomenon under study that would modify the structure of the precedent evolution. In this context, the use of extrapolation is recommended in the forecasting of the phenomena that keep their development pace and direction for a longer period of time. This method provides only an orientative image upon the future, a reason for which other methods should be used simultaneously.

The analytical extrapolation starts from a series of data, i.e. from a series of values in the dynamic series; these data are being processed during the dynamic series analysis and, based on this analysis, the future behaviour of the phenomenon is being estimated (the phenomenon described by the corresponding series).

In a nutshell, it is based on the models of prediction theory within the dynamic series (a chain of data that are derived from monitoring the quantitative features of a monitoring unit, during certain successive moments).

The extrapolation itself includes: the forecasting of the values in the parameters that interfere with the analytical expression of the curve describing the phenomenon – via economic and mathematical methods, as well as by reasoning or even analogies, the reporting of the present level of the phenomenon in the corresponding chart and the identification of the value present in the chart; the calculation of the values for the future (with some corrections), by using the curve in the process.

Thus, the method gives an overview upon the status of evolution of the phenomenon under study. This overview has to be, afterwards, well defined, corrected, supported with other methods. Then, a global analysis of the phenomenon will be carried out: after that, the laws governing the variable of the phenomenon will be set up and, thus, the essence of the phenomenon evolution will be grasped and correlations and hypotheses of the future evolution will be represented.

Together, we will go through the following stages: the **graphic representation of the series** and the calculation of the mathematical function that approximates the best the capital evolution.

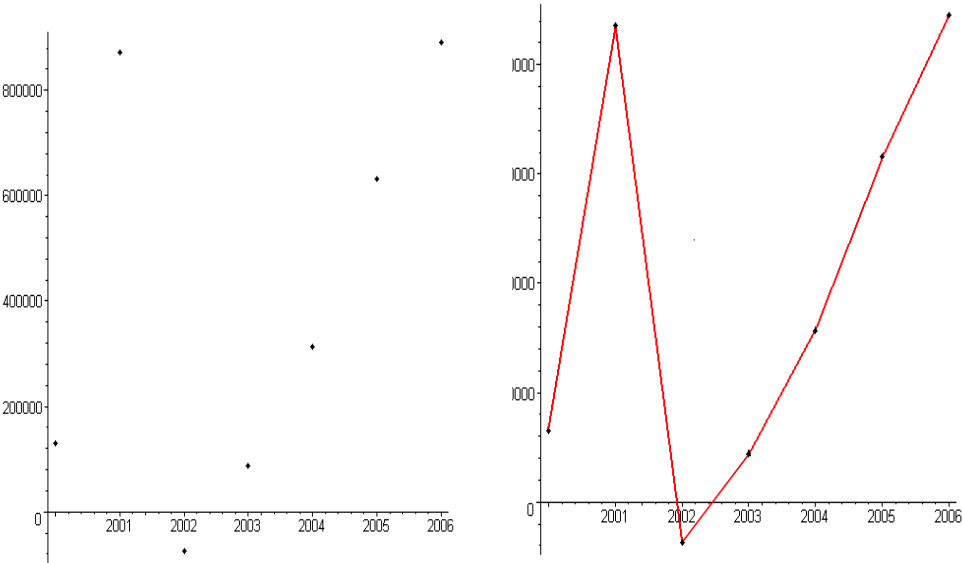


Fig. 1. *Graphic representation of the series*

According to the graphic representation, the evolution of this indicator is not well defined, thus we have to turn to calculation. It seems that the closest forms might be:

- a parabolic trend such as:

$$y = a + bt + ct^2$$

- a Tornqvist function-like trend:

$$y = bt \frac{t - c}{t + a}$$

We will be approaching each trend in itself and we will consider correct the only one where the sum of the deviation between the real values and the adjusted values is minimum:

a) the parabolic trend below:

$$y = a + bt + ct^2$$

The parameters  $a$ ,  $b$  and  $c$  will be determined by using the smallest square method, where we obtain the following set of equations:

$$\begin{cases} na + b \sum t + c \sum t^2 = \sum y \\ a \sum t + b \sum t^2 + c \sum t^3 = \sum yt \\ a \sum t^2 + b \sum t^3 + c \sum t^4 = \sum yt^2 \end{cases}$$

The auxiliary calculation table will be:

Years	$y$	$t$	$t^2$	$t^4$	$t^2 y$
2004	872746	-2	4	16	3490984
2005	-75151	-1	1	1	-75151
2006	88192	0	0	0	0
2007	312507	1	1	1	312507
2008	630865	2	4	16	2523460
Total	1829159	0	10	34	6251800

In order to solve the system, we have the requirement  $\sum t = 0$  and, then, the system becomes:

$$\begin{cases} na + c \sum t^2 = \sum y \\ b \sum t^2 = \sum yt \\ a \sum t^2 + c \sum t^4 = \sum yt^2 \end{cases}$$

The solution is:

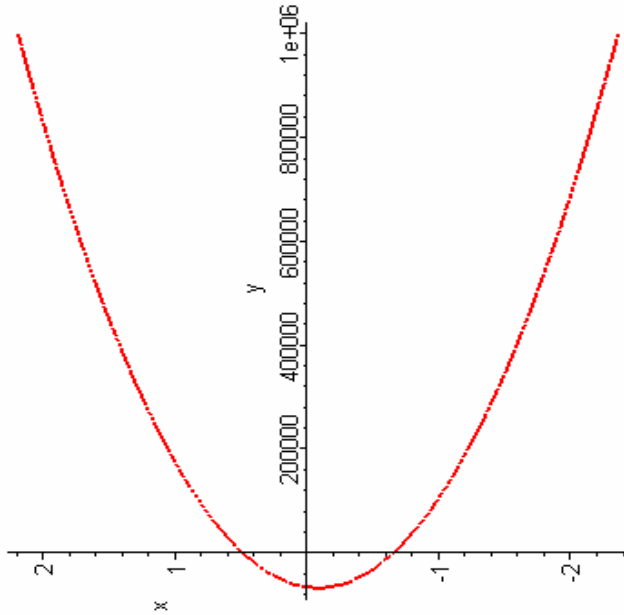
$$a = -67614,408$$

$$b = 35565$$

$$c = 206413,857$$

The parabolic function reads like below:

$y = 206413,857t^2 + 35565t - 67614,408$ , and its graph is



b) Törnqvist function-like trend, in the form of:

$$y = bt \frac{t - c}{t + a}$$

The transform of this function is

$$y(t + a) = bt(t - c) \Rightarrow yt + ya = bt^2 - cbt \quad cb = d$$

$$yt = bt^2 - ay - dt \mid : t \Rightarrow y = bt - a \frac{y}{t} - d$$

And the system of equations to determine  $b$ ,  $a$  and  $d$ :

$$\begin{cases} \sum y = b \sum t - a \sum \frac{y}{t} - nd \\ \sum yt = b \sum t^2 - a \sum y \cdot d \sum t \\ \sum \frac{y^2}{t} = b \sum y - a \sum \frac{y^2}{t^2} - d \sum \frac{y}{t} \end{cases}$$

The results:  $a$ ,  $b$  and  $d$ ;  $c = \frac{b}{d}$ .



The calculation chart will be:

Years	$y$	$t$	$t^2$	$y/t$	$y^2/t$	$y^2/t^2$	$y^2$
2004	-0.075151	1	1	-0.075151	5647.672	5647.672	5647.672
2005	0.088192	2	4	0.044096	3888.914	1944.452	7777.828
2006	0.312507	3	9	0.104169	32553.541	10851.180	97660.625
2007	0.630865	4	16	0.157716	9949.766	24874.415	397990.65
2008	0.891392	5	25	0.178278	158915.94	31783.188	794579.69
Total	1.847805	0	10	34	300503.74	65334.843	

By replacing in the system and solving them, we have:

$$a = -0.46$$

$$b = 0.28$$

$$c = 0.64$$

The final function has the following form:

$$y = 0.28t \frac{t - 0.64}{t - 0.46}$$

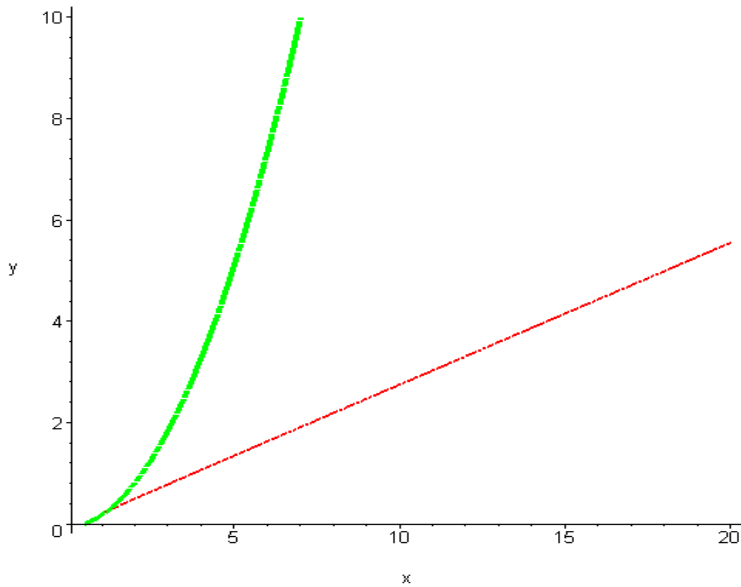
To select between the two variants of the best function, we will calculate the sum of the deviation in absolute value between the real and the adjusted values and will choose the function with a minimum value, i.e.:

$$\sum |y - Y| = \min$$

The deviations are calculated in the table below:

Years	Initial data	Törnqvist trend $ y - Y_1 $	Parabolic trend $ y - Y_2 $
1	-0.075151	0.01	0.01
2	0.088192	0.1	0.1
3	0.312507	0.23	0.53
4	0.630865	0.14	0.94
5	0.891392	0.45	1.36
Total		0.92	2.94

Since  $0.92 < 2.94$ , it means that the **Törnqvist function** is the most appropriate for adjusting the series.



The forecasting of the capital value, based on this function, is:

$$y_{2010} = 0.28 * 8 \frac{8 - 0.64}{8 - 0.46} = 2.186 \text{ mil lei}$$

$$y_{2011} = 2.466 \text{ mil lei}$$

$$y_{2012} = 2.747 \text{ mil lei}, \text{ etc.}$$

The mean square deviation is:

$$\begin{aligned} \sigma &= \sqrt{\frac{(y_i - Y_1)^2}{5}} = \sqrt{\frac{0.01^2 + 0.1^2 + 0.23^2 + 0.14^2 + 0.45^2}{5}} = \\ &= \sqrt{0.05702} = 0.238788 \text{ mil.lei} \end{aligned}$$

and we may state the limits of the forecast values will be:

$$Y_L = \tilde{Y} \pm t \frac{\sigma}{\sqrt{n}}$$

#### 4. Dynamic modelling

From an econometric perspective, the classical models, based on continuity, linearity and stability have proven inadequate to be able to represent economic phenomena and processes of a higher complexity. The researchers are compelled to dynamically follow-up these processes, to study the quantitative changes that occur between the involved economic values, as well as the results derived from them. Besides other features, the mathematical models allow the introduction of an

isomorphism between the real and ideal economic system, represented by the model. Thus, it becomes possible to approach the unstable behaviour of the non-linear economic systems, underlining more often that the linearity and stability are actually particular cases of the economic evolution.

The modelling consists in building a representation of a variable fidelity degree for the real world or for a part of it. The understanding of the phenomenon or the reality segment under scrutiny, the deep knowledge as well as the action upon the phenomenon above motivate the rationing to turn to such representations. The most widely used language is the mathematical one. The use of the mathematical modelling helps to fundament a decision in efficiency conditions, giving the opportunity to think faster and better, without harming reality.

Starting from the idea that any model is based on real data and parameters, it becomes crucial the fact to obtain reliable data that will allow a convenient representation of the reality via the model. Thus, the cyclical or periodical nature of the phenomenon is being studied, as case may be, along with the time horizon it is referring to.

The non-linearity of the evolution of a quite large number of phenomena in Physics, Biology, Ecology and Economy has led to shaping some modern and structured sciences, which are trying to approach, conceptualize and use another face of the reality, more fluctuant and dynamic. Such sciences are the result of integrating some models, theories and solving techniques of the non-linear, differential equations, of a change in perspective that generate new starting points for better understanding the phenomena herein. If the models are adequate, then the knowledge of their solutions will help us deduce the behaviour of the modelled phenomena. Even if every non-linear model has its own theory, they share some features, their strange behaviour of their solutions has a correspondent in the modelled phenomenon aspect. The fact that this behaviour has not been pointed out, it is because the complexity of the non-linear issued, which systematic study started only a few decades ago.

The dynamic modelling is based on the fact that the operation of a system is represented by knowledge in the interactions among the information flows, orders, human and material resources, etc. A dynamic model captures the behaviour of the complex systems, highlighting the way how their structure determines the trajectory and the behaviour in time.

The emergence of the non-linear dynamic theory has allowed the understanding and development of certain processes and methods that will bring us closer to the phenomenon in reality. The development of the singularity theory and the bifurcation theory has completed the multitude of means that we have in order to analyze and represent more and more complex dynamics, providing the possibility to examine certain systems that were difficult, if not impossible, to approach by traditional methods. The study of the non-linear dynamics is of a great interest, since the economic systems are non-linear by excellence. Many of them include multiple discontinuities and an inherent instability, as they are constantly subject to external and internal shocks and perturbations.

For small values of parameters, visible changes of the variables may occur, i.e. bifurcations emerge that will steer the system to other trajectories.

The theory of bifurcation is a step forward, due to the fact that it owns a well-defined mathematical apparatus, which studies both the existence and the stability of the balance solutions, since an unstable balance one may not be noticed in reality.

Generally speaking, the models of economic growth explain the increase in products and income, thanks to the joint contribution of two production factors: capital (K) and labor (L). This increase dynamics or pace depends, on the one hand, on the capital and investments accumulation rate – hence, the K increase – and, on the other hand, by the technical progress (which allows to reduce the L percentage, as a result of the labor productivity increase). We will be exploring only one of the economic system models, its reply to the variations of the model data, of the parameters. By means of the data structures, diagrams of transitions will be drawn for the states that point out to all the operations specific to each type of object and relevant class.

#### 4.1. *The mathematical model*

Among all the models that govern the evolution of the economic processes, we will take a look at one that consists in a Cauchy problem for a system of two ordinary first order differential equations in a real field. It describes the evolution of the capital in a company and of the workforce involved in it.

Let's say that  $K_t$  is the capital at the time  $t$  and  $L_t$  the workforce (number of the employed people). Then, the company turnover is  $y_t$  given by the production function  $y_t = F(K_t, L_t)$ .

The capital evolution is the function of the company development policy, by the income interests meant for investments,  $(1 - \delta_t)\pi_t$ , where  $\pi_t$  is the net profit derived in the year  $t$ , a profit that may be entirely or partially distributed to the development, i.e. the amount left after the company stakeholders cover the dividends, in a percentage  $\delta_t$ . Consequently,  $\delta_t\pi_t$  is the dividends mass and  $(1 - \delta_t)\pi_t$  is the volume left for investments. By taking into account the capital depreciation with the average coefficient  $\mu_t$  and by the income derived from the liquidation of the fading out assets to the fair currency value  $\lambda_t$ , the mathematical model of the company development thus results, where the basic equation of the capital evolution is below:

$$\dot{K}(t) = (1 - \delta_t)\pi_t - \mu_t(1 - \lambda_t)K_t$$

We have  $\gamma_t$  the growth rate of capital, expressed as a percentage. Since  $\pi_t = \gamma_t y_t$ , the result is

$$\dot{K}(t) = \gamma_t(1 - \delta_t)F(K_t, L_t) - \mu_t(1 - \lambda_t)K_t$$

We will also suppose that the variation of the workforce is

$$\dot{L}(t) = \alpha_1 K_t + \alpha_2 L_t - \alpha_0$$

and the company is characterized by a Cobb-Douglas production function type equation,  $y_t = AK^\alpha L^\beta$ . Should we consider that the production growth is stronger than the increase of the other factors, as a result of the efficiency increase (a characteristic fact for the more dynamic activity fields), i.e. a production with a growing physical outcome ( $\alpha + \beta > 1$ ), we can consider the particular situation  $y_t = AK^2L$ .

In this context, we will have the following system of equations:

$$\begin{cases} \dot{K} = A\gamma_t(1-\delta_t)K^2L - \mu_t(1-\lambda_t)K, \\ \dot{L} = \alpha_1 K + \alpha_2 L - \alpha_0. \end{cases} \quad (1)$$

For this system,  $K$  and  $L: \mathbb{R} \rightarrow \mathbb{R}$  are unknown functions that depend on the independent variable  $t$  (time).

We have the simplifying hypothesis regarding the consistency of the coefficients in (1) and obtain:  $a = A\gamma_t(1-\delta_t)$ ,  $b = -\mu_t(1-\lambda_t)$ .

In light of the above, the evolution of the company's capital is governed by the Cauchy problem  $K(0) = K_0$ ,  $L(0) = L_0$  for the system:

$$\begin{cases} \dot{K} = \alpha K^2 L + bK, \\ \dot{L} = \alpha_1 K + \alpha_2 L - \alpha_0. \end{cases} \quad (2)$$

While changing the variable  $x = \beta_1 K$ ,  $y = \beta_2 L$ , where  $\beta_1, \beta_2 \neq 0$  and  $\beta_1 = \alpha_1 / \alpha_0$ ,  $\beta_2 = 1 / \alpha_0$ , if  $\alpha_0 \neq 0$  and  $\alpha_1 \neq 0$ , (2) thus becomes

$$\begin{cases} \dot{x} = cx^2 y + bx, \\ \dot{y} = x + \alpha_2 y - 1, \end{cases} \quad (3)$$

where  $c = \alpha\alpha_0^2 / \alpha_1$ . In this context, the equations include only three parameters,  $b$ ,  $c$  and  $\alpha_2$ . This reduction will trigger, in the economic area, the highlight of certain expression, functions of primary economic parameters, which interfere with the capital and workforce evolution in a company. Thus, the same value of a new parameter corresponds to a large variety of value for the old economic parameters, which will obtain classes of equivalent economic situations.

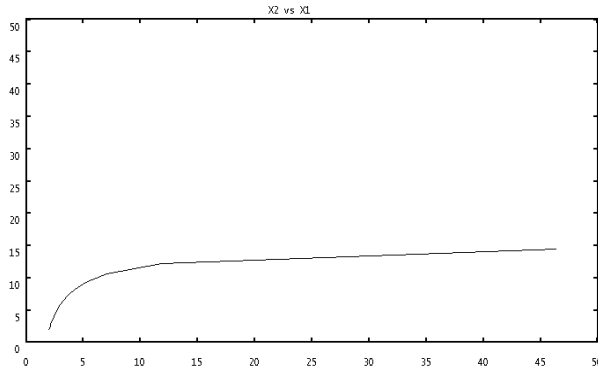
## 4.2. Capital evolution

This model shows a Cobb-Douglas type production function, with non-complementary elasticity coefficients, and a surging output of the population.

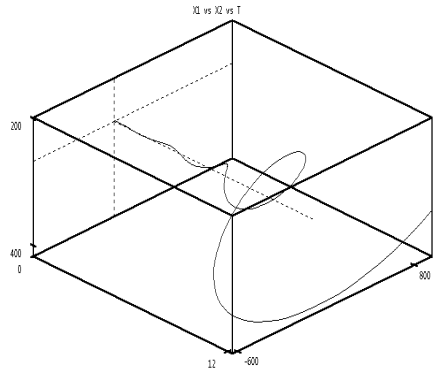
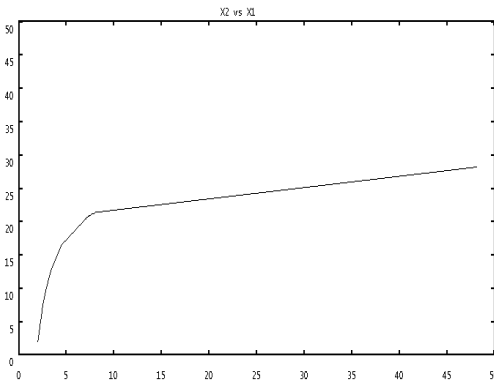
For the company under scrutiny, the capital depreciation does not occur, so the average coefficient is zero  $\mu=0$ , the dividends coverage share of the company stockholders is  $\delta=50\%$ , the net profit percentage in the turnover is  $\gamma=4\%$  and the income derived from the liquidation of the depreciated assets have the fair currency value  $\lambda=0.6$  mil.lei. The initial data for the year of 2006 are  $K_0 = 0.892$ ,  $L_0 = 173$ ,  $Y_0 = 1.36$ .

By replacing these numerical data in the model, we will have  $b=0$ . For  $\alpha=0.1$ , we will have the parameter  $c$  variable and study the evolution of capital  $K$ .

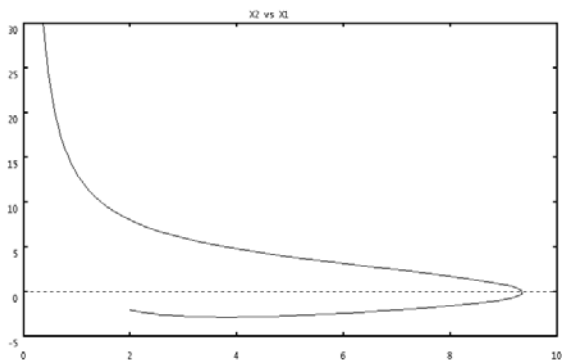
1.  $c>0$ . Here, in this context of balance of the system, there is an unstable point, saddle type. Starting from the initial data, the beginning interval sees a slow increase, which reaches then 15 mil.lei.



2.  $0 < c < -1/4$ . Here, the balance point is an attractive knot, where the capital has a calm state, and then it asymptotically goes towards 30 mil.lei.



3.  $c < -1/4$ . For this case, we notice a slow increase of the capital, then a short time of prosperity. Simultaneously, the workforce registers a very small growth. A crisis is possible, which may lead to a capital decrease, to bankruptcy (negative values).



The next chart shows the diagram of the dynamic bifurcation related to the system in use.

## 5. Conclusions

In the long-term, the company has not registered the emergence of a crisis, of a steep decrease to lead to bankruptcy or to massive layoffs of the workforce.

It is possible that, at one point in time, to have the economic activity stagnates and the production continuously slow down and unemployment rise. A reduction in the volume of the current production will take place.

The refreshing of the economic activity is closely linked to the renewal of the fixed capital, mainly its assets, leading to the exceeding of the determined minimum value. The revigoration of the economic activity in the investment process, in building new capacities and refreshing the current ones, fuels the demand for the production means.

As a conclusion, the company will be characterized by a general increase of the income. In such context, more and more favourable, business is getting better, with a perspective of consolidation. An investment process may be initiated, which will help update the current production abilities and create new ones. The process triggered by the surging demand for consumption goods is the decisive factor of production increase and of the employment percentage.

The economic forecasting has a theoretical and practical finality only by using modern, competitive methods of analysis and cuantification, able to catch the essence of the economic phenomena and processes being examined, to realistically evaluate their size, their future trends, as they are in an inter-conditioning relation with various factors.

Generally speaking, the more complex the activities are, the greater the need is for planning, search for strategies and formal and systematic actions. The economic field presents a high degree of uncertainty, where planning is essential for lowering it.

In a nutshell, the drafting of strategies in this field involves a clear and systematic structuring of the methods used to reach the desired objectives, via a correct distribution of the resources, long- or short-term. Any action in this area should take into account the most important aspects of planning, i.s. the familiarity with the product and with the consumer needs, as the ‘decisional act represents a compromise between objectives and restrictions.’

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# THE EVOLUTION OF ROMANIAN DEMOGRAPHIC PHENOMENA IN TERMS OF GLOBALIZATION

**Mariana BĂLAN**, Ph. CS II

Institute for Economic Forecasting, Romanian Academy

**Emilia VASILE**, Professor Ph.D.

University „Athenaeum”, Bucharest

## ***Abstract***

*Globalisation and demography are the main forces modelling the development of societies at large and of each nation in particular.*

*The paper aims to identify and synthetically present some factors of influence which triggered by the end of the 20<sup>th</sup> century and the beginning of the 21<sup>st</sup> century a series of characteristics defining the changes of the demographic model and structure of population on age brackets.*

*The paper presents the results obtained by using the Markov-type model, for studying the development of demographic indicators in Romania, and their forecasting as well.*

**Key-words:** globalization, demographical evolution, Markov model

**JEL classification:** C<sub>13</sub>, C<sub>15</sub>, C<sub>32</sub>, C<sub>35</sub>, J<sub>11</sub>, J<sub>13</sub>, J<sub>60</sub>

## **1. Introduction**

The intensified globalization represents the fundamental feature of the world economy at the beginning of the 21<sup>st</sup> century. Globalization is characterised by the pervasive trend of barriers' reduction and melt-down between national economies, and increasingly stronger links between economies.

The multiple processes implied by globalisation are inter-conditioned on a wide scale, and these processes generate and develop certain dimensions within globalising policies and strategies which have not all been defined and formalised accordingly yet.

Globalisation has, as well, its own *demographic model*: swift acceleration of individuals' movement from the rural area and the agrarian lifestyle to the urban area which is more closely related to global trends in fashion, foods, markets and leisure.

Globalisation and demographics are the two main forces modelling/driving the development of societies in general and, in particular the European development. Globalisation and demographics provide for opportunities and challenges, based on their particularities and trends in development.

Demographic trends at world level and, implicitly, at European level show increased opportunities of longer and healthier life-spans, yet new questions arise such as the new costs of an aging society, the issue of inter-generational equity, along with other issues posed by family and household life, respectively: higher importance granted to child nurturing and to ensuring balance between the working and personal life by fostering family life values, better inter-generational relations, and alleviating the new poverty threats.

Globalisation, next to the new technologies, provides a huge growth potential. Yet, individuals should be able due to their studies and professional training to take full advantage of these opportunities and adjust to the disappearance of some traditional industrial trades.

The paper intends to analyse the impact of globalisation on the development of the main demographic phenomena. The new technologies driven by and complementary to globalisation provide for a huge growth potential. Yet, for individuals, in order to take full advantage of the opportunities provided, intensive studies and vocational/professional training are required for reaping benefits and adjusting to the disappearance of some traditional industrial trades. In our paper we intend to analyse the impact of globalisation on the evolutions recorded by the main demographic phenomena.

## **2. Interdependencies: globalisation – evolution of demographic phenomena**

The last decades witnessed the redesign of the world's economic map due to spectacular changes on the international political scene and to the influence of unprecedented technological shifts occurring at the same time. One of the certainties was the triumph of market economy all over the world. On this background of substantial changes, two basic trends could be outlined. One of them refers to the economic globalisation favoured, among others, by the diminished transportation costs and speedier communication means.

The other confirms the attempt of various nations, connected to their own territory to organise within some regional frameworks defined by geographic and historical proximity connections. In this new context, the power relationships changed under the influence of shifting the heavy weight of world output, meaning the localisation of the latter, determined in its turn by the strategic games implemented mostly by multinational companies acting at present under the power of attraction of national territories. The other trend was influenced by the attempt of various nations residing on their territories to form and organise some regional cooperation frameworks as defined by the geographic and historical proximity links.

### *2.1. Brief presentation of the demographic evolution in Romania*

The political, economic and social changes which Romania underwent after December 1989 have left a heavy imprint on population's development, hence on the demographic phenomenon. Several quasi-simultaneous evolutions such as the swift and significant decrease of births' rate, the recrudescence of mortality, the

negative impact of external migration of unknown dimensions have all contributed and altered dramatically the demographic landscape of the country.

The 19<sup>th</sup> year of demographic decline was 2008, when Romania lost almost two million inhabitants that is 8% of the population existing in the records by the beginning of the nineties.

Romania's demographic variables are no exception from the general trend of evolution when considering the entire European population. We might say that the general European trend is of decreasing values for births, marriages and mortality, while on the other hand the average age of the first marriage, of giving birth to a first child, and the frequency of families' dissolution along with consensual unions are all on an increasing path.

Yet, the main difference between European populations with respect to these shared developments resides in the rate at which they take place and the depth of changes. One of the outcomes is that differentials also may be identified regarding the social issues facing them – with respect to their emergence swiftness and their volume – triggered by the aforementioned developments of the demographic landscape. Therefore, socio-economic determinism plays an important role in influencing them.

The decrease of Romania's population is triggered particularly by the low fertility rate and by the high external migration rate (approximately 2 million Romanian individuals are legally abroad and the number of those illegally emigrated is still unknown).

Additionally, if we take into account also the potential loss of young population as result of the emigration of women of fertile age, then we may appreciate that the total potential negative balance of population could be doubled (emigration to which is added the number of children that could have been born if the women remained in the country). In the period 2002-2008, the share of women in total emigrated population was of about 68.9%, and the number of possible children to be born at a fertility rate of 1.3 children/woman would have represented 90% of the total effectively emigrated population for the respective period (about 10 thousand persons per year).

If we assume that only two-thirds out of the emigrated women would give birth to at least one child, the annual numbers with respect to population loss by births abroad would vary between 3879 persons in 2002 and 7714 persons in 2006, that is the year with the highest level of emigration since the beginning of the present century (14197 persons in total, from which 62.4% were women).

Yet, at the same time Romania records an average mortality rate and of increased life expectancy which triggers a significant population aging. If, currently, from the 21.6 million inhabitants, 10.5 millions are adults, 5 millions – young persons and children and 6 millions are aging persons, over 50 years the demographic picture will differ completely: pensioners will represent more than half of the country's population, the number of adults and children will decrease and the ages' pyramid shall significantly narrow its basis.

Latest data available about Romania provided by the National Commission for Prognosis show that the employment rate of working age population (15-64 years) was 40.9% in 2008 and under the conditions of the financial crisis it is estimated to decrease at 40.6% in 2009. This trend implies an evolution which is opposite to the targets set by the Revised Lisbon Strategy. Moreover, the employment forecasts with respect to the working age population indicates a decreasing trend by 2013 for the total working age population, which is estimated to number 14974 thousand persons against the 15046 thousand persons registered in 2008, hence a loss of 72 thousand persons.

In other words, the danger of severe demographic imbalances emerges for the country triggering harsh economic and social imbalances as well. These economic and social imbalances shall impact on the labour market, on the pensions' system, on the health services, education, and overall, on the social protection system, and on the incomes' and budgetary expenditures system as well, to mention just few aspects. The determinant factor in defining and structuring a viable strategy meant to ensure sustainable development within the country, is population – core element on which should be focused the entire attention of the decision factors and of the Romanian society as a whole as well.

### 3. Models for analyzing the impact of globalization on demographic evolutions

Specialized literature makes use of various models by which attempts are made to determine the impact of globalization and climatic changes on the demographic evolution. These models are used for quantifying the evolutions within the socio-economic development of countries with differing conditions from the viewpoint of their endowment with natural resources, material and human capital, technology and population in a world with particular dynamics of goods, persons, and capital movement, and flexible economies' structures, etc.

By developing scenarios the aim is to quantify the impact of globalisation on various countries depending on the actual conditions in the respective country. The model includes the following important segments: i) the global economic system; ii) the system of natural environmental resources which refers to quality of environment, the capacity of the natural resources to ensure welfare, the output and consumption within the economy; iii) the changes triggered by the population increase and its distribution on age groups for each of the countries taken into account (international migration being also included here).

The model with fundamental discrete time in the dynamics of a feminine population is the matrix determinist model:

$$\mathbf{m}(t+1) = \mathbf{A}\mathbf{m}(t), \quad t \in \mathbf{N} \quad (1)$$

developed by P.H. Leslie and where:  $\mathbf{m}(t)$  is an  $r$ - dimensional vector for which the rank coordinate  $-i$  represents the number of individuals of the  $i$ -type (=age group of rank  $i$ ) at the moment in time  $t$ ,  $1 \leq i \leq r$ ,  $t \in \mathbf{N}$ . The  $\mathbf{A}$  matrix contains the specific fertilities to various age groups and the survival parameters. Because population growth is influenced by random factors, the introduction of stochastic

models was not unexpected. Hence, Z.M. Sykes took into consideration an additive model having the following form:

$$\mathbf{n}(t+1) = \mathbf{A}\mathbf{n}(t) + \boldsymbol{\varepsilon}_{t+1}, \quad t \in \mathbf{N} \quad (2)$$

where:  $\mathbf{n}(t)$  is a random  $r$ - dimensional vector the components of which indicate the number of individuals of the  $i$ -type at the moment in time  $t$ ,  $1 \leq i \leq r$ ,  $t \in \mathbf{N}$ , and  $\boldsymbol{\varepsilon}_t, t \in \mathbf{N}_+$  is a random vector of null-average.

Initiated by Markov, the use of the dependencies called after him in the shaping of some real phenomena has known after the war a proliferation hard to imagine; given the wide range of uses of the Markovian chains they've known an explosive increase in their use in the science about mankind and issues challenging it: demography, theory of social mobility, education systems, ecology, pollution, biology and medicine.

In general, for studying demographic evolutions deterministic demographic models are used. The stochastic models used for this purpose are generated under two forms: a first category using the variable discrete "time" and discrete age scale, and another category in which time is a continuous variable as the age scale.

### 3.1. Analysis and forecasting of demographic evolutions through Markovian techniques

In general, for the study of demographic evolution are used determinist demographic models. Stochastic models used for this purpose are elaborated in two forms: a first category that uses the variable "time" discreet and a discreet scale of age, and another category in which time is a continuous variable as the age scale.

Applying the discreet stochastic model requires a series of *assumptions*, namely:

- i) evidence of female population is carried out at intervals of discrete time,  $n=1, 2, 3, \dots$ ;
- ii) the female population is divided into age groups  $k$ ,  $k \in Z^*_+$ ;
- iii) the number of women in age groups, while the  $n$  is given by the random variable  $\eta_n(j)$ .

Therefore, the time and dispersion variable string may be written in the form of:  $E\eta_n(j) = M_{j,n}$  and  $D\eta_n(j) = D_{j,n}$

- iv) the probability  $p_j$  that a person of the age group  $j$  at the moment  $n$  will be in the age group  $j+1$  after a unit interval of time, is fixed and  $p_j > 0$  for  $j < k$ , and  $p_k = 0$ . These probabilities are assumed independent, so  $q_j = 1 - p_j$ ;

- v) the processes of birth and death are supposed to be independent;
- vi) the changes in masculine population structure are assumed to be consistent with the assumption of the constant measure of fertility  $\{b_j\}$ ;
- vii) multiple births are ignored;
- viii)  $\lambda$  and  $\mu$  are discrete random variables with full positive values;

ix)  $\lambda'_1$  and  $\lambda'_2$  random variables with binomial distribution  $B(\lambda, p_1)$ ,  $B(\lambda, p_1)$  and subject by  $\lambda$ .

Using the relations

$$\begin{cases} \mathbf{E}\lambda'_1 = p_1 \mathbf{E}\lambda \\ \mathbf{D}\lambda'_1 = p_1^2 \mathbf{D}\lambda + p_1 q_1 \mathbf{E}\lambda \end{cases} \quad (3)$$

$$\begin{cases} \text{Cov}[\lambda'_1, \lambda'_2] = p_1 p_2 \mathbf{D}\lambda \\ \text{Cov}[\lambda'_1, \mu'] = p_1 p_3 \text{Cov}[\lambda, \mu] \end{cases} \quad (4)$$

where  $q_1 = 1 - p_1$

the Markovian demographic model becomes:

$$\begin{cases} \mathbf{E}\eta_{n+1}(0) = M_{0,n+1} = \sum_{j=0}^k b_j M_{j,n} \\ \mathbf{E}\eta_{n+1}(1) = M_{1,n+1} = p_0 M_{0,n} \\ \mathbf{E}\eta_{n+1}(2) = M_{2,n+1} = p_1 M_{1,n} \\ \dots\dots\dots \\ \mathbf{E}\eta_{n+1}(k) = M_{k,n+1} = p_{k-1} M_{k-1,n} \end{cases} \quad (5)$$

Using the relations (3) and (4) we obtain

$$\begin{cases} \mathbf{D}\eta_{n+1}(j+1) = D_{j+1,n+1} = p_j^2 D_{j,n} + p_j q_j M_{j,n}, j \geq 0 \\ \mathbf{D}\eta_{n+1}^{(j)}(j+1) = b_j^2 D_{j,n}^2 + b_j d_j M_{j,n}, j \geq 0 \end{cases} \quad (6)$$

$$\begin{cases} \text{Cov}[\eta_{n+1}(j+1), \eta_{n+1}(h+1)] = p_j p_h \text{Cov}[\eta_n(j), \eta_n(h)], j, h \geq 0, j \neq h \\ \text{Cov}[\eta_{n+1}^{(j)}(0), \eta_{n+1}(h+1)] = b_j p_h \text{Cov}[\eta_n(j), \eta_n(h)], j \neq h \\ \text{Cov}[\eta_{n+1}^{(j)}(0), \eta_{n+1}^{(h)}(0)] = b_j b_h \text{Cov}[\eta_n(j), \eta_n(h)], j \neq h \end{cases} \quad (7)$$

If by definition,  $\eta_{n+1}(0) = \sum_{j=0}^k \eta_{n+1}^{(j)}(0)$  then

$$\begin{aligned} \mathbf{D}\eta_{n+1}(0) &= \sum_{j=0}^k \mathbf{D}\eta_{n+1}^{(j)}(0) + \sum_{j \neq h} \sum \text{Cov}[\eta_{n+1}^{(j)}(0), \eta_{n+1}^{(h)}(0)] = \sum_{j=0}^k (b_j^2 D_{j,n} + b_j d_j M_{j,n}) + \\ &\quad \sum_{j \neq h} \sum b_j b_h \text{Cov}[\eta_n(j), \eta_n(h)] \end{aligned} \quad (8)$$

hence:

$$\begin{aligned} \text{Cov}\left[\sum_{j=0}^k \eta_{n+1}^{(j)}(0), \eta_{n+1}(k+1)\right] &= \text{Cov}[\eta_{n+1}^{(j)}(0), \eta_{n+1}(h+1)] + \sum_{j=0}^k \text{Cov}[\eta_{n+1}^{(j)}(0), \eta_{n+1}(h+1)] = \\ &\quad b_h p_h D_{h,n} + \sum_{j \neq h} b_j p_h \text{Cov}[\eta_n(j), \eta_n(h)] \end{aligned} \quad (9)$$

Equations (8) - (9) completely define the relations for the recurrence mean, variance and covariance of the sample study subject. In a matrix form they can be written:

$$\begin{pmatrix} \mathbf{M}_{n+1} \\ \mathbf{V}_{n+1} \end{pmatrix} = \begin{pmatrix} \mathbf{A} & \mathbf{O} \\ \mathbf{B} & \mathbf{AxA} \end{pmatrix} \begin{pmatrix} \mathbf{M}_n \\ \mathbf{V}_n \end{pmatrix} \quad (10)$$

where vector  $\mathbf{V}$  contains elements variance and covariance  $D_{ij,n}$ , and  $\mathbf{A}$  is a Leslie matrix, defined by:

$$\mathbf{A} = \begin{pmatrix} b_1 & b_2 & \dots & b_{k-1} & b_k \\ p_0 & 0 & \dots & 0 & 0 \\ 0 & p_1 & \dots & 0 & 0 \\ \cdot & \cdot & \dots & \cdot & \cdot \\ \cdot & \cdot & \dots & \cdot & \cdot \\ \cdot & \cdot & \dots & \cdot & \cdot \\ 0 & 0 & \dots & p_{k-1} & 0 \end{pmatrix}$$

This leads to the creation of the following relationships between variance and covariance

$$\mathbf{V}_{[n]} = (\mathbf{AxA})^n \mathbf{V}_{[0]} + \sum_{i=1}^n (\mathbf{AxA})^{n-i} \mathbf{B} \mathbf{M}_{i-1} \quad (11)$$

Observing:  $\boldsymbol{\mu}'_i(n) = (\mu_i^1(n), \dots, \mu_i^p(n))$ , this relationship may be written as a matrix:

$$\boldsymbol{\mu}'_i(n+1) = \mathbf{C} \boldsymbol{\mu}'_i(n) \quad (12)$$

with  $\mathbf{C}$  as diagonal matrix.

Consequently:

$$\mathbf{E}_i(X^{j+i}(n-1)) = \mu_i^{j+i}(n-1) = \begin{cases} 1, & \text{if } j+l=0 \\ in^{j+l-1} + \sum_{r=2}^n \sum_{k=1}^r \lambda_r^{p-1} v_r(j+l) u_r(k) i^k, & j+l > 0 \end{cases} \quad (13)$$

where

$u'_r = (u_r(1), \dots, u_r(n))$  is the independent vector to the left associated to its own value  $\lambda_r$

$v'_r = (v_r(1), \dots, v_r(n))$  is the independent vector to the right

Hence, for  $j > 0$  with respect to shifting probabilities the following expression results:

$$p(n, i, j) = \begin{cases} C_n^j \sum_{l=0}^{n-j} (-1)^l C_{n-j}^l n^{-j-i} \sum_{r=2}^n \sum_{k=1}^r \lambda_r^{p-1} v_r(j+l) u_r(k) i^k, & \text{if } j \neq n \\ \frac{i}{m} + n^{-n} \sum_{r=2}^n \sum_{k=1}^r \lambda_r^{p-1} v_r(n) u_r(k) i^k, & \text{if } j = m \end{cases}$$

### *3.2. Analysis and forecast of the evolution of Romanian demographic phenomena using the Markovian techniques*

In order to study and forecast the evolution of demographic phenomena in Romania by Markovian methods we have used the data from the Statistical Yearbook of Romania 2000-2008 and other publications of the National Institute of Statistics.

*The used database includes:* Romania's population (on July 1<sup>st</sup> annually), population by age group; live births (in absolute data and rate per 1000 inhabitants), deaths (in absolute data and rate per 1000 inhabitants), born dead (in absolute data and rate per 1000 inhabitants), deaths at an age less than 1 year, the general fertility rate (number of children born to a woman during her fertile life), urban and rural population, emigrants, immigrants.

The variables considered in the model were: live-births, deaths, dead-born children per 1000 birth (live-birth and still-births), infant deaths per 1000 live-births, average age of mother at birth, by area, general fertility rate, rural and urban-population, population by age group and gender, emigrants and immigrants.

*The study of evolution and forecasting demographic phenomena by means of the Markov chains method involves several steps, respectively:* the calculation of the structures for considered indicators, the calculation of transition matrices (crossing from one state to another). Each calculated transition matrices highlights the changes in the structure of each indicator in a given year over the previous year, the calculation of the total transition matrix, the calculation of transition probability matrix (transition); determination of structure expected.

The analysis of demographic phenomena has been made on the historical period 2000-2008, and their forecast was made up to 2010.

For instance, the following variables are considered: live-births (X1), deaths (X2), still-born (X3), deaths under 1 year of age (X), urban population (X5), rural population (X6), emigrants (X7), immigrants (X8), population on age groups: age group 0-14 years (X9), age group 15-65 years (X10), age group 65-85 years (X11) and the fertility rate (X12).

The analysis of the projection using Markovian techniques highlights that after a decrease in the live-births rate to 10.5 ‰ in 2000 at 10.0 ‰ in 2007 and a slight increase in 2008 (10.3 ‰) the birth rate reached nearly 10.6 ‰ in 2010.

The comparative analysis of the results obtained through Markovian techniques for this indicator with the results projected by the Centre for Demographic Research (CDR)-NIER, Romanian Academy; underpin the existence of insignificant differences, if the scenario of a medium forecast against these is taken into consideration.

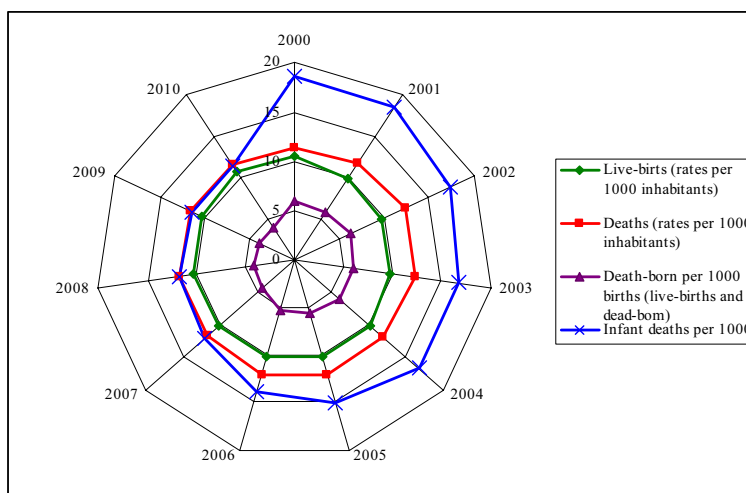
Thus, the CDR forecast, according to the medium version, projects that the population in 2010 will be 21641 thou persons and the number of live births will be 202.1 thou persons. By Markovian techniques applied for that same year, the population will be 21510.154 thou persons and the number of live births will be 215.9 thou persons.



The analysis of the forecast using Markovian techniques for the indicator “deaths rate” points out that after an increase at 11.8 ‰ in 2008, it decreased at 11.49 ‰ in 2010 (to 12.6 ‰ determined by the Centre for Demographic Research in medium scenario). In absolute data, this means that, for example, in 2010 the number of deaths should be of 251.6 thousand persons.

In terms of mortality rate at birth, by applying the same technique from both the historical and the forecast period viewpoint a downward trend results. If in 1990 the record was of 2231 born-dead, the number decreases in 2008 to 993, and in 2010 to 832.

For the indicator “infant deaths per 1000 live-births” the scenario developed according to the Markovian model highlights a downward trend, the share of this population segment decreasing from 26.9 ‰ in 1990 to 18.6 ‰ in 2008 and 11.34 ‰ in 2010 (Figure 1).



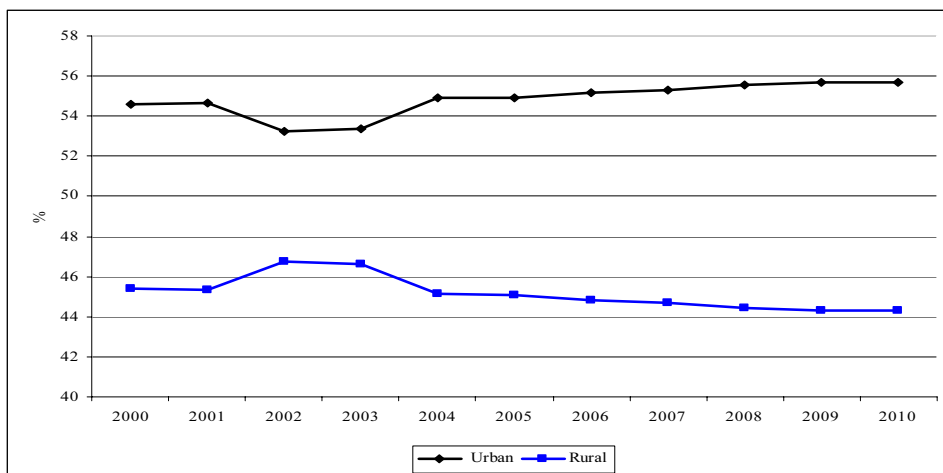
Source: *Statistical Yearbook of Romania 2000-2008*; for other years – the author’s calculations.

Fig. 1. *The evolution of some demographic indicators of population during 2000-2010*

Population growth was recorded in 1997 for the urban areas (among others also as result of the opening of the main cities) as it reached 55.02% of total population, after which a reverse trend is registered, the share of population in urban areas decreasing in total population to up to 53.26% in 2004.

Since 2004, an increase in the share of population in urban areas was underpinned, reaching in 2006, 55.19% of total population. Also, for the period 2007-2010 the results of the evolution of urban populations show small oscillations of their respective shares in total population (Figure 2), but with a general growth trend, and in 2010 it will represent 55.4%. The population of rural areas (Figure 2)

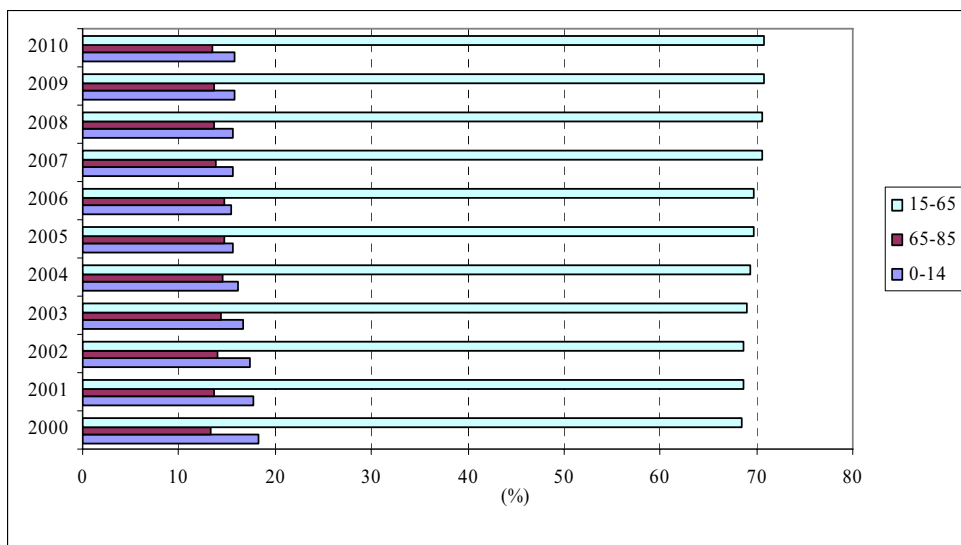
is complementary to urban population, and as the scenario develops, it will represent 44.6% of the total population in 2010.



Source: *Statistical Yearbook of Romania 2000-2008*; for other years – the author’s calculations.

Fig. 2. *Structure of population by areas during the period 2000-2010*

Regarding the evolution of large population groups by age, in the historical period 2000-2008, was recorded a decrease of approximately 815.763 thousand people in the group aged 0-14 years, 312.21 thousand people in the group aged between 15-65 years, and in the group aged between 65-85 years there is an increase by around 398.5 thousand people (Figure 3).



Source: *Statistical Yearbook of Romania 2000-2008*; for other years – the author’s calculations.

Fig. 3. *The evolution and forecasting of population by age*

For the forecast period, the segment of the population aged 0-14 years registered a slight increase in 2008, trend that is maintained during the forecast period. Thus, in 2010, the population aged between 0-14 years will represent approximately 15.75% of the total population (Figure 3).

The evolution of the trend of this segment of the population determined by Markovian techniques is the same as that obtained by CCD, both in the lower and the medium forecast variant.

In the segment of the population in the age groups between 15-65 years of age, both the historical and forecast period highlight an increasing trend. In 2008 it represented 70.56% of the total population of the country, and in 2010 it will be of about 70.72% (Figure 3).

The number of the individuals with ages between 65 years and over had during the historical and forecast period an oscillatory evolution but with a general growth trend. After a slight decrease in the numbers of this segment of the population in 2008: 2713.013 thousand compared to 3191.446 thousands of people registered in 2005, it shall record a value of 2900.934 thousands in 2010 (Figure 3).

This indicates that both on short and medium term, the ageing of the Romanian population shall continue.

The structure of migration flows for the forecast period shall contribute to the ageing of the Romanian population, as well.

As exogenous variables in the model, were included the information on the number of emigrants and immigrants, but as historical data on the evolution of these are available only from official bulletins, the forecast on the future evolution of these indicators of population's movement must be considered from the quality viewpoint and not from the one regarding quantity.

In terms of overall fertility rate (number of children born to a woman during her fertile life), during 1998-2002 this indicator had a decreasing trend, with a marked „drop” in the period 2000-2002 followed by an even more noticeable increase in 2003-2006, and thereafter a moderate growth could be observed.

In the current conjecture, for 2008 the indicator shows a decrease, from 39.6 in 2006 to 38.9 in 2008, a trend underpinned by the forecasting scenario.

Using Markovian models to analyse and forecast demographic indicators can provide useful information to state bodies in developing policies and decisions with respect to population growth, employment, etc.

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# THE STRATEGIC ANALYSIS IN THE MODERN MANAGEMENT OF THE COMPANY

**Iosefina MOROȘAN**, Prof. Ph.D.  
The Faculty of Accounting and Finance, Câmpulung  
Spiru Haret University

## ***Abstract***

*The present study addresses the strategic analysis within the modern management of a company. At first we presented the principles of the strategic analysis and then we exposed its role and characteristics. In the end we compared it with other types of analyses.*

*The present paper purpose is to present the role and the importance of the diagnosis analysis. At first, we exposed the principles of the diagnosis analysis. Secondly, we separated the financial diagnosis generally speaking and the diagnosis analysis of the companies in difficult situations. Then we presented the elements involved in determining a deeper diagnosis, as being: the products, the clients, the employed, the production process, the rivalry and the suppliers.*

**Key-words:** *strategic analysis, modern management, marketing, diagnosis, company, financial diagnosis*

**JEL classification:** O<sub>12</sub>

## **1. Introduction**

The word “strategic” is used in a broad sense in order to describe the manner the decisional process transforms the information into action; it can also be found in the specific literature as “rule for decision”.

The strategy is defined as „the assembly of the decisions and actions for the means choosing and necessary resources assigning for realizing an objective”. To say it in other words, the strategy represents the choosing, depending on the rivalry and the future environment, of the domains the company will engage itself and of the intensity of the engagement. So, it reflects the way the company invests its resources, in order to take advantages, increase or stabilize a rivalry situation, depending on the frequent changes of the environment.

The strategic elements of the strategy, as they were presented by the Harvard Business School are the following:

- the environment analysis;
- the studying of the strong and weak points;
- the delimitation of the possible actions, after the confrontation of the competences with the environment;
- the comparison of the possible actions with the general objectives.

## 2. Literature review

Michael E. Porter (1990, p. 78), a great specialist in the field of the company strategy, considers the basic objectives of it are: the economic growth and the surviving.

In order to reach these objectives, the company must consolidate its market position so that be less vulnerable against its straight opponents, against the clients, the suppliers and the substitute products pressure. Thus it is necessary for it to assure a technologic leadership, to differentiate the products, to integrate upstream and downstream, to consolidate the relations with the favourite clients. The same author considers a good strategy consists in adapting the company to its proper situation and obtaining a good profitableness.

In a concrete way, the strategy of a company comprises an assembly of determined rules, with the purpose of realizing the proposed objectives, which must be formed on the hierarchy system, quantified, realistic and especially coherent.

The process of the strategic analysis has three stages:

- the diagnostic of the current situation;
- the analysis of the new opportunities resulted from the first stage;
- the analysis of the used procedures in order to realize the opportunities.

During the displaying of the strategic analysis, one can take into account that every situation implies a financial effort, which cannot be neglected; the ignoring of this fundamental connection among the economic objectives and their financing resources can lead to wrong decisions, with major repercussions on the company situation. The strategic decisions depend on the cost, the duration, the abundance or the penury of the financing. Thus, the portfolio of activities of a company must be balanced so that to assure its co financing; one can keep in mind that some activities generate liquidities, but others consume them. The methods of strategic analysis are conceived, by observing this principle, that of balancing the portfolio of activities, in order to assure the co financing.

## 3. Theoretical background

BCG Method, elaborated by Boston Consulting Group is used to balance the portfolio of activities, depending on the market share and the rate of the economic growth. The method of Boston Consulting Group integrates two dimensions: finance and marketing; it is used for forecasting the products evolution and for the analysis of the report between the maximum increasing rate and the increasing of the products market share.

McKinsey method is conceived on the same principle, that of the company performance measure with the help of the cash-flow<sup>1</sup> and it is used in the analysis of the strategic activity domains named DAS<sup>2</sup>.

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<sup>1</sup> The term cash-flow represents, in the vision of Ion Stancu, *Gestiunea financiara a agentilor economici*, Editura Economica, București, 1994, the increase of the net treasury, during the accounting exercise, otherwise the net monetary flux at the exercise:  $CF = TN_1 - TN_0$ , where TN represents the net treasury.

<sup>2</sup> DAS represents a strategic activity field, formed of a group of products of a company, characterized by the same technology, the same markets and the same opponents.

The PIMS analyzing method (Profit Impact of Marketing Strategy) offers answers to the following questions:

Which are the profitableness and the cash flow for a given activity, in specific market conditions and using a certain strategy?

How the investments profitableness and the cash flow can be affected, as a consequence of the strategic changes?

Which are the directions to be exploited, with the purpose of improving the performance of a given activity?

In order to answer these questions, one resorts to regressive models, which help us connect the performance variables (profitableness and the cash flow) with the influencing factors (the rate of the economic growth, the market share, the degree of the vertical integration, the quality of the product and so on).

The Porter method is a classic method for the strategic analyze, enriched with a number of concepts and elements in the industrial economy. M.E. Porter (1992, p. 195) considers that the profitableness of a company does not depend, then partially, on its strategy. The performance of an activity depends, mainly, on the characteristics of the sector the company belongs to, on the strategic group<sup>3</sup> and its place, on time. The above mentioned specialist says the state of the rivalry in a specific sector of activity leads to the potential profit of the sector; it is influenced by the following forces: the threatening of entering new opponents, the substitution products pressure in other sectors, the power of negotiations of the buyers and the suppliers. Depending on these forces, the weak and strong points of the company, Porter considers that one can establish three typical strategies which can offer a competition advantage, on a long term, to a company:

- the global domination, through costs;
- the products differentiation;
- the specialization on a strategic segment.

Within the methods of the strategic analysis we must integrate those methods that refer to the determination of the companies market shares.

The methods of evaluation of the companies in the process of becoming LTD-s are grouped into two categories: classical methods and scholar methods. The former, in their turn, are shared depending on the way of approaching a company into: methods of patrimonial evaluation, methods of evaluation through profitableness and combined methods.

#### **4. Paper content**

The strategic analysis is characterized by the following aspects:

- it describes existing relations among diverse variables which describe the performance and the specific influencing factors;
- it is realized on domains of strategic activity and products.

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<sup>3</sup> The strategic group is formed of companies characterized by the same dimensions of the following characteristics: the mark, the specific of the activity, the product quality and others.

The main advantage of using the strategic analyzing methods consists in the integration of the most important aspects of a company: finance and marketing. Their limits consist in the fact they do not indicate through the obtained results, one should be done for improving the performance of the company activity. Here is the role of the forecasting analysis, which operates on probable variables. It differs from the other types of analysis through the time difference between the moment of study and the moment of the development of the economic phenomenon.

The word *diagnosis* comes from the Greek term “diagnostikos”, which is “capable to discern”. Within the Robert dictionary (1993, p. 295), it is defined as “the action of determine a disease after its symptoms”. Larousse dictionary (2010, p. 316), contains the same definition, with the following explanations: “a judgment oriented to a specific state, after which the essential features will be detached”.

Within the economic administration, the diagnosis is effectively a judgment oriented to a situation or a company. J.Y. Eglem and A. Mikol (1991, p. 429), consider that diagnosing a case is to discover and take into consideration the factors which influence the evolution of the company, the strong and weak points, the opportunities and the risks.

The diagnosis can be general that is it can study the company and its environment on the whole; in this case it also needs a financial evaluation. In a current way, the diagnosis can be limited to one function of the company or it can be limited to specific needs.

Any diagnosis begins with a general knowledge of the company and its environment, and then it follows a static analysis of the strong and weak points, a dynamic and strategic analysis of the company potential and risks.

The diagnostic analysis has to follow the discovery of the possible objectives for each and every function of the company. The dynamic analysis of the opportunities and risks stresses the forecasting consequences the company had already taken and the effects the environment changes have on it.

The results of a diagnostic analysis are used for the realizable studies<sup>4</sup>. The diagnostic analysis is also made in special situations: when the company is in a difficult situation and it is under observation.

The financial diagnosis has as a main objective the static, dynamic and comparative study of a company activity. It allows the expert pronounce himself as concern the obtained results, the financial balance, their resources and destination as well as the productivity of the invested capital.

The financial diagnostic is based on the results obtained from the sector diagnoses, the accounting methods and the principles peculiar to the data sector involved.

In order to determine a diagnosis, at the level of a company, there is need for some beforehand operations:

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<sup>4</sup> The objectives of a realizable study are the following: the reorganizing of the companies, according to the market requests, the orientation and dimensioning of the investments, the assimilation of new products, the increasing of the rivalry capacity, the increase of the efficiency of the whole activity.



- the realization of a financial-accounting audit;
- the grouping and reorganizing of the positions within the annual accounts, comprising: the balance sheet, the results account and the balance annex.

The audit, a Latin word, comes from “hearing”; in the financial-accounting way it means the accounts revision, as a rule by independent experts, in order to state an opinion on their regularity and sincerity.

The conclusions of the financial diagnosis are exposed as strong and weak points of the company. There are also evidenced the tendencies for the main aspects of the company activity, taken into consideration for the elaboration and foundation of the microeconomic forecasts.

The establishing of a diagnosis of the company financial situation represents, in the opinion of J.P. Latreyte (1993, p. 2), the purpose of the microeconomic financial analysis. The results of the financial analysis and of the financial diagnosis are used to foresee the main economic-financial indicators of the company.

Within the present conditions in our country, the implementation and extension of the area of usage the financial analysis, as a continuation of the economic analysis, is required by a series of factors, such as:

- the operations of restructuring of the companies and the economic branches;
- the development of the financial markets;
- the importance of the financial analysis in the modern management of the company.

In the case of the companies in difficulty, financially speaking, their situation may come worse rapidly, so a laborious diagnostic analysis can be of no sense. Thus, the diagnosis in such a case must be determined rapidly and contain the following steps:

- the analysis of the treasury situation and its evolution foresee on a short term;
- the rapid detection of the principal causes of the situation and the presentation of the means of their elimination;
- the going deeply into the diagnosis, in the case when the company situation seems to be re established;
- the determination of the necessary funds;
- the appreciation of the business value;
- the answering to the question: has the company an economic sense? Does it respond to the real needs of a profitable clientage?

For every exercise, it is calculated the percent of external coverage of the treasury<sup>5</sup> reported to the Revenue. If the external coverage of the treasury increased more rapidly than the Revenue and if the short term credits were not used to finance the immobilizations; it is very probable that the respective increase should come from an increase of the hidden damages.

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<sup>5</sup> The external coverage of the treasury = The banking coverage of the treasury

- Fiscal or social carry-forwards
- Suppliers carry-forwards
- Other date of payment carry-forwards

In order to detect the main causes of a difficult situation, the analyst will study the characteristics of the activity, the company products and the rivals' policy. He also has to interview a few representative clients, suppliers, rivals, bankers and officials of the syndicates. The purpose of these investigations is to notice the key factors for the success of the analyzed activity.

If the situation is re established, the diagnosis is went deeply and the analyst will examine the potential for development of the company, reflected by the following elements:

1. The products
  - the measure of the products range;
  - the life cycle of the products;
  - the position on the market;
  - the contribution to the company results.
2. The situation of the employed
  - number of working days per year;
  - the productive output reported to the total output;
3. The production process
  - the state of the production equipments;
  - the fixed costs;
  - the variable costs;
  - the profitableness threshold;
  - the typical costs of the sector;
  - the duration of stocks rotation;
4. The rivalry
  - the financial situation;
  - the activity dimension;
  - the strategy;
  - strong and weak points
5. The clients
  - the cyclic or seasonal character of the request;
  - the price elasticity;
  - the market rate expressed quantitatively and as a valour, on products;
  - the repartition of the Revenue on the clients;
  - the geographical repartition of the clientage;
  - the clientage satisfactions and discontents.
6. The suppliers
  - the repartition of the acquisition on the suppliers;
  - the payment terms offered by the suppliers.

## **Conclusions**

The great majority of the companies in difficulty do not have the possibility to obtain new credits, so the new leaders or owners have to bring capital, in order to face the immediate necessities. These finance necessities have to be covered by the permanent capitals – own and borrowed funds, on short terms.

If the reforming of the company seems to be accessible, the company value can be determined after the relation presented below:

The business value = the real value of the active – the redressing cost

If the redressing cost is hard to be calculated, the potential buyer of the company can appreciate the necessary time for redressing the situation. In this case,

The business value = the real value of the active – the deficit in the redressing period

The business value = the real value of the active – the redressing cost

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# THE IMPACT OF THE ECONOMIC CRISIS ON THE HUMAN CAPITAL

**Nedelea Chira PĂRĂLUȚĂ**, Associate Prof. Ph.D.  
Faculty of Marketing and International Affaires  
*Spiru Haret University*

## **Abstract**

*The dissertation refers to the impact of the economic crisis on the human capital. In order to underline the wide range of aspects related to this subject, I have analysed the labour market quantitative and qualitative indicators during the economic crises. The human capital is analysed having in view the evolution of the actual society towards an informational one, a process imposing qualitative and quantitative transformations in education and professional training.*

**Key-words:** *human capital, competences, adaptability, education, continuous training, employment crisis*

**JEL Classification:** J<sub>21</sub>, O<sub>20</sub>, G<sub>01</sub>

## **Introduction**

World economy is facing one of the most serious post-World War II crisis. Romania, in exchange, is facing the second serious crisis in the last 20 years, having in view the economic regression over one decade, reflected in the decrease in the GDP. In 1999, the GDP value is only 73,6% of the one recorded in 1989. After 2004, the economic recovery takes shape. The current world crisis deepens the Romanian economic instability, questioning the institutions' capacity to restore the short-term balance.

Theoretically and practically, analysing the underlying causes and factors of the current crisis raises the issue of quantifying the market's role in regulating the economic life in order to avoid serious imbalances. According to some economists, the „invisible hand” market demonstrates once again the incapacity to maintain in the long run the relative balance at national and global level, through self-regulation. The states act more firmly, implementing macroeconomic procedures in order to avoid the severe consequences of the current crisis which may be comparable to the ones generated by the 1929-1933 downturn. Moreover, the state takes partial responsibility for the financial risk facing the banking sphere and the productive units, without avoiding serious bankruptcy cases. The states non-involvement, on the export background, would have entailed severe imbalances at

both macroeconomic and world level, impacting the goods and labour market. The crisis impacts also the social field, following downsizing.

The important changes in the contemporary economic landscape, as a result of the domination of the strong transnational companies have influenced the labour market at national and world level, quantitatively, qualitatively and in point of flexibility. Their financial and economic potential, comparable to the GDP of some small but developed countries has been the determining factor for extended and productive activities. The transnational companies undergoing bankruptcy would have hardly measurable consequences both economically and socially by impacting the human capital, therefore deepening the instability on the world labour market. Such effects are by far more significant than the ones generated by the insolvency of small and medium-sized enterprises. Therefore, avoiding major economic and social risks determined by the employment crisis and by the instability on other markets, either from the origin or the destination country, requires the state's involvement. The Secretary-General of the OCDE highlights: „we must admit that the markets need to be better monitored and regulated and the state shall be bound to allot funds to this end”<sup>1</sup>. The current crisis, through the negative consequences at economic and social level, has brought into discussion the state's role as a market regulation authority. Anticipating the potential serious imbalances on the current crisis background, the governments have implemented a series of procedures, from subsidizing the economic, monetary units, to becoming shareholders – co-owners of large banks and companies.

The crisis has impacted the labour market variables, the relative balance in point of employment and remuneration. Downsizing takes a new shape, the salaries have been frozen in many countries and are on the decrease, the future employees are in the position to accept lower salaries, although the quality demands are increasing. The labour market in Romania as well as worldwide experiences serious contractions resulting in the employment crisis following the output decrease and a large number of units facing bankruptcy. The employment crisis is marked by quantitative and qualitative imbalances, the latter taking shape especially during the post-crisis period. According to the statistics in point of assessing the crisis impact on the employment quantitative variables, there are major demand/supply imbalances. The pre-crisis boom, although facilitating job increase, is marked by high unemployment rates even in some EU developed Member States.

In a short time, the labour market quantitative indicators experience a decrease following the financial and economic crisis. If in 2008 the employment rate (between 15 and 64 years old) at the EU level (27 countries) is 65,9%, by 4,1% lower than the level provided in the Lisbon Strategy, in 2009, it reaches 64% and is estimated to go down in 2010 as well. The EU employment rate is expressed individually from one country to another and, consequently, the unemployment rate has different values. In Romania, the employment rate in 2008 is 59,0%, one year later it falls to 58% and nowadays it continues to be on the decrease. A supply >

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<sup>1</sup> L'Observateur de L'OCDE Nr. 270-271, 2009

demand case highlights the contrast between reality and the Lisbon Strategy objective on reaching a high employment level (70%) in accordance with the knowledge-based society demands and a low unemployment rate. In January 2010, 23 million people from the Euro zone remain unemployed, out of which 3 millions lost their jobs in 2009. Relating to the EU level (27 countries), in February 2010 the unemployment rate reaches 9,6% and is on the increase. Some countries experience higher values. At world level, a 10% unemployment rate would yield in 57 million unemployed – the entire population of some industrialized countries. The following statement is conclusive: „an important part of the economic and financial crisis cost will be incurred by millions of people not enjoying the recent economic growth”<sup>2</sup>.

In Romania, the massive downsizing covering industry, constructions and other sectors following the imperishable goods market contraction and the decreasing number of industrial products orders from inside and outside the country, increases considerably the unemployment level which reaches 8% in April. Compared to some EU countries, the unemployment rate is estimated to be at a low level. These statistics do not include the long-term unemployed and the immigrants who lost their jobs or those who want to join their families. Presently, the Government is focused on downsizing. No employment programmes and strategies are elaborated which will deepen the employment crisis. An increasing unemployment level entails massive firing, even among highly-trained people excluding them from the post-crisis competition. Long-term unemployment generates insecurity, increased poverty and economic and social inequities as well as the human capital marginalization.

Restoring the relative balance on the labour market depends mainly on the economic strategies elaborated by each state, on the economic and political interests at community and world level and on the international institutions' contribution to the economic growth. Reality has proven that the states mainly centred on the economic recovery have allotted funds and encouraged private investments. This approach reminds us of J.M. Keynes's recommendation to the states to take steps in order to mitigate the consequences of the 1923-1933 crisis translating in an unemployment rate reaching 20, even 30% in most countries. In the light of this view, J.M. Keynes believes that „investments are the only means towards full employment”. (John Maynard Keynes, 1970, p. 380) According to Keynes, although lower interest and tax rates may stimulate private investments, on the crisis background, however, they wouldn't translate in important public investments meant to stimulate consumption and employment. What Keynes outlooks is the state's fortuit involvement by purchasing private shares, therefore becoming shareholder within banks in order to prevent them from undergoing bankruptcy and creditor of famous automobile industry companies, as it is the case of the USA and of other states. The national and world markets structure has changed; consequently, crises may be generated by the changes in the states' economies. Nowadays, the business environment includes a wide range of companies which, through their size and through the necessary means and

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<sup>2</sup> *Rapport mondial sur le travail*, Geneve, 2008.

instruments to make them competitive at world level, gain an independence which exempts them from the central control in many respects. The administrative steps taken by some states have created the premises for the economic recovery, a positive yet modest progress in employment is recorded.

Table 1

**The GDP evolution (%) in some EU Member and non-Member States, compared to the previous year**

	2006	2007	2008	2009	2010*
EU (27 countries)	3,2	2,9	0,7	-4,2	0,7
Austria	3,5	3,5	2,0	-3,6	1,1
Germany	3,2	2,5	1,3	-5,0	1,2
France	2,2	2,3	0,4	-2,2	1,2
Italy	2,0	1,5	-1,3	-5,0	0,7
Poland	6,2	6,8	5,5	1,7	1,8
Spain	4,2	3,6	0,9	-3,6	-0,8
Romania	7,9	6,3	7,3	-7,1	0,5
The United Kingdom	2,9	2,6	0,5	-4,9	0,9
Hungary	4,0	1,0	0,6	-6,3	-0,5
The USA	2,7	2,1	0,4	-2,4	2,2
Japan	2,0	2,4	-1,2	-5,2	1,1

\*Estimated statistics

The data indicate a slow economic growth in 2008, compared to the previous year; in 2009, all the surveyed countries, except for Poland, record a significant fall in the GDP on the economic crisis background. According to the estimated statistics, 2010 will be marked by a modest economic growth involving a slow and long-term recovery of the labour market fostering long-term unemployment. Romania, compared to the other surveyed countries, records the highest decrease in the GDP: -7,1% in 2009 and -0,8 in 2010. After such a drastic fall, a short-term solution towards a sustainable growth is hard to find. This translates in the effects of the failure to implement an economic recovery strategy. This will delay the coming out of the crisis and will maintain high unemployment rates. Compared to other EU Member and non-Member States, the Romanian Government has failed to implement efficient employment strategies. The Government's core objective is to come out of the crisis with a low budget deficit which is counterproductive on the crisis background when public and private investments are required. Keynes's recommendation for Romania has been overlooked, which exposes our country to a deep crisis with immeasurable consequences in point of the economic and social development.

To be post-crisis competitive requires an economy which envisages the future directions of the informational society. Along history, the society has evolved by combining and efficiently using the workforce adjustable to the material and technical changes. The current society entails labour market transformations, in point of the human factor quality. Presently, the human resource faces new challenges generated by the production sector improvement, the economic changes and by a new management. Coping with such challenges resides in the human capital professional training. The country understanding the need for technical and



scientific progress will be post-crisis competitive. This objective can be attained through investments – the engine of research and innovation development.

Table 2

**Research and development expenses (%) from the GDP**

	2000	2008
EU (27 countries)	1,82	1,90
Bulgaria	-	0,49
The Czech Republic	1,21	1,47
Italy	1,05	1,18
Hungary	-	1,0
Romania	0,37	0,58
Great Britain	-	1,88
The USA	-	2,76
Japan	-	3,44

Source: Eurostat 2009.

In 2008, Romania allots only 0,58% from the GDP for research and development, compared to 1,90% – the average value at the EU level. All the surveyed countries, except for Bulgaria, allot considerable funds for this sector. The more and more restrictive investment strategy following the budget deficit and a decreasing economic activity impacting the profits entails limited costs for research and development. Presently, the Economic Commission strongly recommends the EU Member States to increase the investments in research and development. The Lisbon Strategy, as amended, sets increased investments in knowledge and innovation as a major objective. In order to attain this objective and to shape a green economy, the labour market needs improvement, flexibility and adjustment to the changes in industry, information and energy. Therefore, the quality of the human factor depends on the acquisition of knowledge and on permanent improvement according to the society dynamics. Only through a proper training related to the new challenges, the workforce becomes human capital and ensures competitiveness at the economic unit and country level. The attainment of this objective requires long-term investments in education and continuing training. For some states, including Romania, investing in human capital is a way too high cost and on the crisis background, such an investment becomes unsustainable. This explains the increasing gap on the human factor quality, at regional and world level.

Table 3

**Public funds for education in 2006 (%) from the GDP**

EU (27)	Bulgaria	The Czech Republic	Denmark	Germany	Spain	Poland	Romania
5,0	4,23	4,60	7,98	4,20	4,20	5,25	3,6
Sweden	Great Britain	France	Italy	Portugal	Hungary		
6,8	5,48	5,5	4,70	5,25	5,9		

Source: The 2007 Statistical Yearbook.

Compared to the other surveyed countries, Romania has the poorest funding programme for education. This explains the delayed improvement of the technical and material resources, infrastructure and of the education programmes which impacts the future generation professional training and long-term employment. We add the modest remuneration, non-stimulating for the human capital. For a complete analysis, funding must be assessed both quantitatively and qualitatively.

During the crisis, the labour market may be efficiently managed through the balance-centred programmes and strategies elaborated by the central and local institutions and by the business environment. Increased employment and, implicitly, reduced unemployment implies at least two conditions: a) the human capital getting involved in the recon version process in accordance with the society's future coordinates; b) employment, depending on the strategies to stimulate the business entities in this direction.

Investing in the human capital is a determining factor but, as any investment, it involves a risk as well in the sense that the outcomes do not meet the individual and the society's expectations. A high employment level and turning to good account the human capital in accordance with their training, depend on whether we experience an economic recession or an economic boom. Nowadays, the economic crisis has shaken the relative balance of the labour market and fighting the recession won't lead to a considerable short-term decrease in the unemployment level. An increased employment rate will only depend, to a certain extent, to the increase in the GDP. The type of economic growth will be the result of the economic changes following the introduction of new sophisticated techniques and technologies. Therefore, part of the people will become long-term unemployed. The long-term quantitative and qualitative labour market imbalances involve social costs and insecurity at the individual and the society level. Mitigating these imbalances depends on the active strategies meant to contribute to the medium-term increase of the human capital adjustment capacity and professional reconversion. The countries understanding the role of the human capital investments and of the implementation of the latest techniques and technologies which meet the challenges on energy saving, a reduced pollution level and, least but not last, on increased product competitiveness on the national and world market will become post-crisis competitive.

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# AMBIENT INTELLIGENCE AND INTELLIGENT ENVIRONMENTS FOR MANAGERS' WORK SUPPORT\*

**Peter MIKULECKY**

Faculty of Informatics and Management,  
University of Hradec Kralove, Czech Republic

## ***Abstract***

*One of the most developed and evolving areas promising for the future, which is already recently a subject of intensive research, seems to be the area of ambient intelligence. We present some recent results and contemplations about how this area could be exploited also for creating intelligent environments capable of managerial work support. Besides some general discussion we present also some of our views on the privacy concept which seems to be especially delicate in relation to the intelligent environments concept. Some notes about possible positive social acceptance of this phenomenon are concluding this work.*

**Key-words:** *intelligent environments, ambient intelligence, privacy issues*

## **1. Introduction**

The recent Knowledge-based society should be enabled also by existence of such environments which are rich of knowledge and thus in a well defined sense supportive to people surrounded by the environment. Such environments (known also as smart spaces or intelligent environments) have been particularly studied in the scope of the area of ambient intelligence, mainly from the enabling technologies point of view.

Ambient intelligence approaches and technologies are more and more matured to be able of creating an environment that is intelligently helpful to users surrounded by such an environment. Besides a number of well known applications of this concept in various areas, like smart home environment, or smart support to elderly or handicapped people (Augusto and Shapiro, 2007), we may consider it also as being very suitable for intelligent workplaces development.

An intelligent workplace can be, among its other features, also helpful in managing knowledge which can be usefully needed by the users working in the workplace. Such knowledge can be used not only for solving various problems requiring some expert knowledge to be properly solved, but also for learning at the workplace when creating decisions or looking for solutions of difficult tasks. In this view we may consider the evolving approaches based on ambient intelligence technology as one of the recent ways towards increased productivity achieved via better utilization of knowledge.

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In this paper, based on our recent research (Bureš and Čech, 2007a, b, c; Bureš and Čech, 2008; Mikulecký, 2007; Mikulecký and Olševiřová, 2007), we wish to stress the possible role of such intelligent environments for managerial work support. Such environments inevitably need to be rich of knowledge; therefore, a synergy of approaches and techniques from ambient intelligence as well as from knowledge management is necessary. We present some views on what are the basic features of intelligent environments, what are the key problems related to individual privacy as well as other problems which could influence the social acceptance of the presented approach.

In our paper we advocate the concept of such an intelligent workplace, which can be helpful in overcoming some barriers and stressful situations typical for managerial decision making. Such a workplace should, among its other features:

- ensure broad but focused (and personalized) access to relevant information and knowledge resources, supporting thus both learning needs of the manager as well as creation of his/her decisions;
- offer as much relief from stress as possible by avoiding all the usual stressful situations (or more precisely their potential sources);
- ensure broad and up to date technical support for all main activities in the workplace.

## **2. Materials and methods**

It is well known, that managers, in order to be able of producing the best possible strategic decisions, should have the right information in the right time. However, without having the appropriate knowledge, the production of good decisions would not be easy, if not impossible. It is, therefore, quite sensible to think about such a managerial workplace, where the manager would have the best possible working conditions in various meanings of this formulation. What are the most natural aspects of managerial work? First of all, a manager has to have an access to all the necessary information on which the best decision can be built. In order to ensure it, it is necessary to be aware of having as good information as it is possible, and moreover, this information must be supported by knowledge relevant to the application or exploitation of particular information. According to (Turban et al., 2006) management is a process by which organizational goals are achieved through the use of various resources. All managerial activities revolve around and are carried out through continuous decision making, and are very much knowledge based, or knowledge rich. The managerial decision making or support involves the following steps:

- Identifying and defining the problem (a decision situation: an opportunity or trouble).
- Classifying the problem into a standard category.
- Constructing an abstract model that describes the real-world problem.
- Finding potential alternative solutions to the modelled problem and evaluating them.
- Selecting and recommending a good enough and appropriate solution to the problem.

The nowadays decision making environment is changing very rapidly, because business and its environment are more complex today in the global market. The decision making function has become more complex for several reasons. First, the number of available alternatives is much larger today than ever before because of the improved technology and communications systems, especially the availability of the Internet and its search engines. Second, the cost of making errors can be very high because of the complexity and magnitude of operations, automation, and the chain reaction that an error can cause in many parts of the organization. Third, there are continuous changes in the fluctuating environment and more uncertainty in several impacting elements. Finally, decisions must be made quickly. Factors causing complexity of managerial decision making are mainly as follows (Turban et al., 2006):

- More alternatives of managerial decisions because of growth and advancement in ICT, as well as advancement and diversity in technology in general.
- Larger error cost because of increased competition, as well as increased structural complexity.
- More uncertainty because of increased consumerism, as well as decreased and fluctuating political stability.
- It is a need for quick responses because of decreased and fluctuating political stability, as well as growing, complicating and fluctuating market economy.

As a result of such complexity, managers must either become more sophisticated or must have the tools to overcome increased complexity. In our opinion, the later case is the promising direction that should be expected from the ambient intelligence (AmI) approach as a collection of sophisticated intelligent tools for managerial decision support. We do believe that the AmI principles can be considered as being very suitable for creating a really usable learning environment, as a part of more general intelligent environment for managerial support. Usage of the AmI principles is in this case concentrated not only on solving managers' profiling problem, but it is more complex, with a number of equally important issues (e.g. customization, context-based services, privacy issues, applications of AmI algorithms, intelligent interfaces, smart learning objects, etc.).

In one of our previous papers (Olševičová and Mikulecký, 2008), we have explored the possibility of introducing and evaluating different ambient intelligence sub-solutions and scenarios and experimenting with them inside particular web-based applications, so-called Learning Management Systems (LMS) that were developed to enable the way of education supported by advanced information and communication technologies, known as e-learning. This approach is in our recent research developed into a more general one, leading towards a more powerful environment capable not only to support and fulfil educational needs of managers (taking into account the original idea of smart spaces for learning), but also to support their work more generally and intelligently.

Roughly speaking, a smart space (or intelligent environment) is a region of the real world that is extensively equipped with sensors, actuators and computing components. In effect the smart space becomes a part of a larger information system: all actions within the space potentially affect the underlying computer applications, which may themselves affect the space through the actuators. Smart space technologies are evolving very rapidly, driven by factors including improvements in Internet access to the home, the increasing importance of teleworking and other Internet mediated business and entertainment activities, as well as the increasingly aging population.

An interesting technical solution represents e.g. the SmartOffice developed by INRIA (Gal et al., 2001). We share the belief that a computer should not require a new way of working; it should simply augment current working modes. So, computers should be invisible, not demanding user adaptation, while at the same time offering the benefits of data-processing power. For instance, in the SmartOffice, the user can work as in a normal (even computer-free) office. Intelligent environments are designed to facilitate computer use by making computers aware of humans and enabling voice and gesture commands. Another and a bit older direction towards smart spaces concept was described firstly by Abowd (1999) and others at the GATECH. They proposed the development of a unique experimental facility for the exploration of large-scale ubiquitous computing interfaces and applications that are aware of the context of their use and can capture salient memories of collaborative experiences. The proposed system provided several types of assistance for users: access to information, communication and collaboration support, capturing everyday experiences, environmental awareness, automatic receptionist and tour guide. The research by Abowd (1999) and other research directions use the name smart space mainly in the meaning of an “intelligent environment”. Usually the intention behind is to design and deploy an intelligent environment capable to communicate with the user surrounded by the environment, and to support him/her in fulfilling of some rather complicated activities.

### **3. Results and discussion**

In our recent research project AmIMaDeS (Ambient Intelligence for Managerial Decision Support) we tried to analyze the nature of managerial work and reflecting the results of the analysis to improve managers’ workplace environment by designing and implementing at least some features of the ambient intelligence approach into the environment. Our goal has been oriented on creating such an intelligent environment that is capable to support managerial decision making as well as to fulfill managers’ educational needs, simultaneously trying to educate them by an unobtrusive and natural manner, in relation to the area where the core decisions are made. One of the practical goals of the project is to create a collection of sophisticated intelligent tools for managerial decision support (IMDSS – an intelligent managerial decision support space) based on the AmI approach.

These intelligent features are mainly oriented on an enhancement of the human contact with an IMDSS that consist of numerous variable activities and can be understood from the perspective of optional application of different AmI sub-solutions. Here we present some of the main areas of meaningful utilization of AmI principles and technologies in the developed architecture:

- user identification and logging;
- context-based services, customization, personalization and omnipresent monitoring;
- application of new programming principles and AmI algorithms;
- innovated hardware and new types of devices;
- intelligent interfaces, processing implicit inputs and interactions;
- support of communication inside the community;
- involving new types of smart learning objects;
- invisible file systems;
- affective computing;
- privacy issues;
- interaction of AmI subsystems.

Recently, the multi-agent approach based architecture is tested as the most appropriate for modelling the basic functionalities of the smart space designed. First experiences seem to be promising.

Let us devote some attention to the notion of privacy, because privacy and its content in an intelligent environment seem to be a very delicate as well as complicated problem. Some authors have already mentioned possible problems and risks in the area (see Bohn et al., 2005; Mikulecký et al., 2007). As a matter of fact, the main common objective against the AmI concept seems to be that it is possibly a basis for a very sophisticated and potentially dangerous surveillance system, in a sense a kind of a new “Big Brother”. The personal privacy can be viewed from various standpoints, as Bohn et al. (2005) analyzed. Privacy is considered to be a fundamental requirement of any modern democracy. According to Lessig (1995) it is possible to distinguish among the following motives for the protection of privacy in today’s standards:

- Privacy as Empowerment – privacy mainly as informational privacy, giving people the power of controlling the publication and dissemination of information about themselves. From the AmI point of view, especially the right to control the dissemination or exploitation of the information about a particular person, collected about him/her by the intelligent environment, could be endangered seriously. New legal norms in this direction are necessary.

- Privacy as Utility – the focus is on minimizing the amount of disturbance for the individual (no unsolicited emails or phone calls). Technologically it is feasible to tailor an intelligent environment so that it is not disturbing for the human surrounded by the environment. However, there could be a complicated task of tailoring the environment to be suitable for two, three, or more persons at the same time.

- Privacy as Dignity – this is not only about being free from unsubstantiated suspicion, but also about equilibrium of information available between two people. The balance (equilibrium) of information between a person and the surrounding intelligent environment could be a serious problem because of their conflicting aims: the environment in a sense “wishes to know” everything about the human in order to serve him efficiently, while for the human it is usually not necessary to be aware what the environment is about. The problem of unsubstantiated suspicion seems to be much more serious one, as the vast information about the concerned person will be collected somewhere in the common memory of the intelligent environment, which can be considered, from the previously mentioned point of view, to be a sophisticated surveillance system. New legal norms are here more than necessary.

- Privacy as Regulating Agent – privacy laws and moral norms can also be seen as a tool for keeping checks and balances on the powers of decision-making elite. In an intelligent environment it will certainly be easy to gather information of certain type enabling to limit or prevent the society from certain type of improper behaviour. On the other hand, there should be a subtle borderline between the information necessary for the social prevention and information potentially endangering the human right for privacy.

#### **4. Conclusion**

As Bohn et al. (2005) pointed out, the fundamental paradigm of ambient intelligence, namely the notion of disappearing computer (computers disappear from the user’s consciousness and recede into the background), is sometimes seen as an attempt to have technology infiltrate everyday life unnoticed by the general public in order to circumvent any possible social resistance (Araya, 1995). However, the social acceptance of ambient intelligence will depend on various issues, sometimes almost philosophical ones. The most important issue seems to be our changing relationship with our environment.

We would not be surprised by a broad social acceptance of this new, recently developed phenomenon in a short horizon of a few years. According to Dryer et al. (1999) “our inevitable future is to become a machinelike collective society. How devices are used is not determined by their creators alone. Individuals influence how devices are used, and humans can be tenaciously social creatures.” Actually, based on our experience, we cannot agree more, however, social consequences that ambient intelligence may have will certainly be addressed in a broad debate and a deep and focused research.

Our approach based on rather wide employment of ambient intelligence technology opens also a number of related ethical and privacy questions which must be solved simultaneously with introducing of the technology. We have to analyze the most important from a big variety of such questions. Nevertheless, we believe that the approach chosen will lead eventually to creation of a modern and supporting working environment especially suitable for organizational learning (on workplace) and knowing (ensuring an access to all the organizational knowledge



any time, when necessary). On the other hand, it promises also a number of interesting theoretical results.

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## OFFSHORE JURISDICTIONS, CONTROVERSIAL TOPIC OF THE MODERN BUSINESS WORLD

**Roxana-Daniela PĂUN**, Lecturer Ph.D.  
Faculty of Law and Public Administration, Bucharest  
*Spiru Haret University*

### ***Abstract***

*This article aims to present synthetically the off-shore jurisdiction issues in the context of the globalisation of our lives and automatically of the business world facing new issues and challenges regarding the business in the international area, starting from defining elements and approaching some of the practical challenges offered by the widespread use of such offshore jurisdictions known as “tax havens”.*

**Key-words:** *jurisdiction offshore, offshore companies, trusts, tax haven*

**JEL Classification:** Z<sub>11</sub>

### **Introduction**

Strictly speaking, each country can be considered a tax haven, because one way or another, companies or individuals are given incentives to encourage investment and to promote their growth. The United States as well can be considered a tax haven for people who invest in the American economy.

Confusion may arise in using the term by combining the financial and banking secrecy and commercial operations, carried on state territory, which may be associated as a “tax haven”, although all states require some level of protection for banking and commercial information.

Tax haven is an area with a privileged tax correspondent to English words: “tax heaven”, the German phrase “tax oasis”. In a 1987 OECD report on international taxation it is still stated in the introductory part: “that no single criteria, clear and permanent objective to identify a country as a tax haven.”

Tax haven business is defined in the dictionary: ([http://www.rubinian.com/dictionary\\_details](http://www.rubinian.com/dictionary_details).) the country practice of low taxes, including foreign income, respectively, country tax policy that encourages the exercise of its territory called the specific economic activities. The term originally appeared in the island tax havens, remote and exotic, and then was extended to “tiny” European countries, such as the Principality of Andorra, Cyprus, Gibraltar, Principality Leichtenstein, Monaco, so on.

### *Features*

The main features of tax haven can be summarized as: low taxes, the secret of the operations in the territory and jurisdiction of that State, the banking activity with separate legal regime for national citizens and foreigners, encouraging of the foreign banking systems, excellent communication telephone cable, telex, Internet, direct air service lines, non-stop, between various countries and some of these tax paradises (i.e.: direct flights Miami-Cayman Islands), promotional advertising, through aggressive advertising, in which the advantages offered by the state, considered a tax haven, the use of English as the main language in the Caribbean jurisdictions, America's proximity make these tax paradises be very attractive for U.S. and Canadian residents.

The term offshore\* (According to The Economist magazine's annual dictionary, offshore companies are businesses registered in certain countries or jurisdictions that are either tax-free or the taxes are very low as long as the companies do not operate in the countries where registered.) The British specialist language designates the territory located beyond the shore. In U.S. economic jargon, "offshore" means businesses and companies operating outside the national territory of the State where they reside.

In other words it is not companies doing business in the country where registered and which, in terms of trade acts committed, are regarded as foreign companies. An offshore company does not have income in the country that has been registered.

Theoretically, offshore companies may be set in any country in the world, but not everywhere and can get tax benefits. Tax Haven (English) – in free translation means the port finance, fiscal refugee, tax heaven. With this term were designated those political units that provide very favourable conditions for capital development and operation of offshore companies.

The offshore company, a firm registered in a country or a territory called "tax haven", because it is tax free or the taxes are very low. These lands offer foreign investors, in addition to exemption/reduction of taxes on income firm and the person, the inheritance and gift tax, etc., and a well-developed monetary sector (banking, insurance, stock exchange transactions), liberalization of foreign exchange transactions, etc.

Typically, a requirement for tax exemption is that the applicant company does not conduct business in that territory (condition imposed by the defence economy off the external influence).

Depending on operating conditions, the territories where they can register offshore companies are divided into three groups:

- Group 1 – Bahamas, Jersey, Isle of Man, Delaware (USA) (not registered capital base, balance should not be applied to any authority, annual profit company is charged only with a flat tax).
- Group 2 – Ireland, Hong Kong (companies have a duty to balance the authorities legalized by a certified accountant).

- Group 3 – Madeira, Cyprus, Switzerland, Liechtenstein, Hungary (1994) (the foundation of the company's capital base must be noted, deposit balance is required, but business profits are taxed rates – a rate from 0 to 4.25%).

It happens frequently that the purpose of setting up an offshore company is not only tax exemption, but also the start out on behalf of a company registered in a recognized country (as a means of enhancing the credibility of the business).

*Advantages of offshore companies established* (<http://companiioffshore.trade-romania.biz/htm>):

These advantages are:

- anonymity and confidentiality;
- supports low taxes and help better the international tax planning;
- lack of currency controls;
- operating in a stable political and economic system;
- operating in a well organized and developed system;
- the possibility of diversification of the field without restriction;
- lax regulations; possibility of better expansion;
- the concealment of the origin of goods processed in free zones adjacent to other offshore financial centres;

### **Theoretical background**

#### *Anonymity and confidentiality*

Anonymity and confidentiality are cited as the main advantages of offshore companies, where taxes are low or even lack thereof. Among the reasons for such a choice are:

- In most cases the offshore company is used as a third party carrying out transactions on the local market. In this case, the two companies should not have the same director (s) as the same person cannot sign an agreement between two companies as a director of both.
- In many countries the obligation to pay administration charges is linked to the company location. If it is clear that directors and shareholders of foreign companies are registered on the local market, foreign business income will be treated as income for local owners and are therefore taxable.
- The business people want to maintain anonymity regarding activities, accumulated profits, investment.
- Anonymity can be achieved once the company was registered under her real owners, and the documents where shareholders and directors are recorded are filed. By contrast, when the company is registered as a liability, and the owners, at a time, do not wish this anymore, the structure can be changed anytime.
- The public has access to files containing shareholder certificates, a company's articles of incorporation, etc.

Worldwide over 95% of owners use an offshore structure of anonymity, the rest preferring an open structure.

Employees are bound by oath to keep secret the name of non-beneficiaries. Only general data are presented from time to time to inform the government and the public about developments in this field. Depending on the willingness of the beneficiary company, its identity can be known only to those directly employed, such as general manager and deputy.

*Supports lower taxes and helps better international tax planning*

The existing tax jurisdictions in the world are divided into two categories:

- those characterized by a high level of taxes (income tax, VAT, payroll tax, dividend tax, municipal tax, road tax, property taxes, etc.) and
- those who do not charge at all or they are very small. In jurisdictions that do not levy taxes, such as the Bahamas, Gibraltar, none of the above fees is charged. A company registered in such jurisdiction does not pay any such tax.

If we consider a low-tax jurisdiction, we talk about company profit tax. The jurisdiction of such taxes is Cyprus, which applies a 4.25% tax on gross income. Gross profit is calculated by subtracting the income of all expenditures made by a company for doing business. This includes the cost of goods sold, salaries, travel expenses, accommodation and protocol, professional fees, commissions and so forth.

There are no limits in respect of these charges than common sense. Moreover, wages are not taxable. However, other jurisdictions, such as the Isle of Man, impose a flat fee (750 pounds, or \$ 1,200 for the Isle of Man) to any company, regardless of its profits or losses.

As for international tax planning, international companies are using offshore entities to direct profits to them and to operate so as to pay less tax. No wonder that thousands of businessmen and companies are using offshore companies for international tax planning, among them the renowned companies worldwide such as Pepsi Cola, Tetra Pak, Barclays RJR Nabisco and others. The existence of double taxation treaties with international low taxes provides huge opportunities for tax planning.

*Lack of foreign exchange controls*

Many business people are trying to avoid setting a base where there are foreign exchange controls or where formalities relating to such operations are intentionally complicated. Offshore companies are not subject to any currency controls. They can receive funds either in cash or otherwise, in any currency and may also make payments to any person in any country, or make withdrawals of funds without any explanation or documentation required by the bank. Thus, the company operates in an unrestricted banking system.

Offshore companies can maintain accounts in any currency in the form of current accounts, accounts with notice or fixed term deposits and interest payments are similar to those prevailing internationally. Funds from these accounts may be

transferred abroad without any restriction and without the demand for documents or permits.

#### *Operating in a stable political and economic system*

Every businessman, every investor wants to operate in a country that has these characteristics. Nobody wants to see money lost due to changing governments, government system or because of economic instability that can bring inflation, economic regression and many other issues. The emergence of new independent states of former Soviet bloc economic restructuring process has inevitably led to financial crises (bank failures, pyramid schemes, etc.) that caused people to lose their savings.

One of the biggest advantages of Cyprus as offshore centre is the economic and political stability in a region vulnerable in this regard. The Civil war in Lebanon gave the first advantage to Cyprus in 1970, followed by the 1990 Gulf War and the collapse of Yugoslavia. Many companies came to a temporary shelter remained when they saw that this country offers more than that.

#### *Operating in a well organized and developed banking system*

This is one of the priorities that all offshore financial centres have to fulfil. The world's big banks that have established centres operating in these areas and have raised the standard of conduct of this activity. Given how business is conducted today, it is inconceivable that an offshore financial centre does not have a well-developed banking system. This is one more reason to use these tax havens for business conduct in the context of the globalised world in which we live.

#### *The possibility of diversifying the objects without any restriction*

Offshore financial centres often allow diversification of the objects of a company, operation that is not possible in the investor's home country. Companies with taxation and restrictions in their origin countries can find countless business solutions in offshore centres, thus escaping many of the problems.

For example, Japanese or U.S. banks cannot engage in certain securities issues prohibited by law in their countries, they enter this delicate area with offshore entities. And it should be noted that formalities for business diversification of a company are met without too much bureaucracy.

#### *Lax regulations*

Fear of excessive regulations is a major attraction to this area and is why the registration of banks, insurance companies or shipping companies has become an important pillar of the offshore industry. A new wave of financial tools is moving to the offshore area for the same reason. This wave includes closed funds, payment instruments, Euro trade.

#### *Possibilities for expansion are much better*

Offshore centres see large corporations as something indispensable for their expansion into new markets at competitive costs. For example, offshore financial centres dominate several international activities such as shipping, air transport, financial and captive insurance companies. Lately, there were about one million

worldwide offshore companies and many of the famous corporations in the world market operate through them. I noted here Dublin IBM and Microsoft, the Orient Express and American Airlines in Bermuda, the Isle of Man Scholarship, GE and CNN in Cyprus.

Thus a company can more easily enter a market or it could open a subsidiary or branch in another country as it would be perceived as a foreign company and will be eligible for incentives granted by the government of that country. We give here an example of country– Romania, providing facilities to foreign investors who place their money in our country.

*The concealment of the origin of goods processed in free zones adjacent to other offshore financial centres* (<http://companiioffshore.trade-romania.biz/htm>)

Business people can hide the origin of the goods they sell through free zones. So they can bring the goods in free zones where they can change the packaging, process them and hide the origin as the goods will have the free zone and the country that has organised it as source, and therefore the goods can be chosen easier by the consumers

### **Conclusions**

The fiscal policy of a State may encourage or not the Finance, Business and Banking. A recent example was Bulgaria, that by the fiscal measures adopted at the end of 2006, just before accession, became, in the opinion of the experts, the “tax haven of Europe”, along with Cyprus. Bulgarian Parliament adopted the income tax reduction from 15% to 10%, starting with the date of accession. The Bulgarian law makes it a so-called “tax heaven” of the European Union. Taxes in Bulgaria and Cyprus are the lowest in the EU. This change in taxation was made to stimulate investment seeks to spur further growth in Bulgaria, which came on the first three quarters of 2007 to 6.3%.

It is expected that Bulgarian action will attract more companies from countries like Germany and Italy, where income tax is almost four times higher, as expected. Business people from developed countries have every reason to expand or relocate in Eastern Europe, even in the current global economic crisis.

In 2002 and 2003, Bulgaria has managed to attract foreign investment volume comparable to that of our country, in the circumstances in which the country has a population almost three times lower. In the last three years, results of economic reforms in our country have attracted increasingly larger investments. In the past 16 years, Romania has attracted foreign investment worth 26 billion euros, while Bulgaria has attracted only 16 billion.

Business representatives believe that foreign investors will continue to come to Romania, even if the tax is higher, since they are interested in the large size of the domestic market and high growth rate.

These estimates were valid until the outbreak of the global financial crisis and its expansion throughout the European single market.



Romania has attracted investors because of its large market and the six percent profit tax will not produce significant diversion of foreign investments to Bulgaria.

In the current context of the interface, unfortunately many of the foreign companies who did business primarily in Romania and other Eastern European countries and businesses have moved to countries where labour is cheaper and the business environment more stable, even in crisis conditions, with a stable legislative and predictability possibility of a business plan into a more stable economy.

Until the outbreak of the crisis, the hypothesis was confirmed by the particular foreign investment in Eastern Europe. Thus, the largest amounts have been brought so far, both in Romania and Bulgaria, to corner resources or consumers, not to use cheap labour. The areas that have shown a great interest for investments were the financial services, telecommunications, real estate and oil. The Bulgarian strategy is probably to convince investors interested in particular to produce cheaper, especially companies that prefer to work in loan.

The level of 10% corporate tax gives Cyprus and Bulgaria the tax haven status of the European Union. Highest taxes in the community are recorded in developed countries. Compared with countries of Central Europe, Romania is the lowest. The figures speak for themselves: 47.5% is the level of taxation on employment in Romania and in Bulgaria social contributions represent only 36.4% of gross salary, while the EU average is 34.5%.

Although the global economic crisis has disrupted all mankind and its effects are insurmountable especially on developing economies, the global financial and economic world is seeking solutions to the crisis and taking measures to redress the economies of all affected States.

Tax havens remain a concrete solution if economic, financial and banking policies of the states fail to find concrete solutions to attract investment performance in their countries, through tax incentives and the same advantages of tax havens.

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# THE IMPACT OF THE FINANCIAL CRISIS ON THE CURRENCY AND THE MONETARY SYSTEM

Petre DEACONU, Lecturer Ph.D.  
Faculty of Finances and Banks, Bucharest  
*Spiru Haret University*

## **Abstract**

*The present-day economic and financial crisis (depression) appears unprecedented in the last half century. The international financial crisis has been extended to the Romanian economy. However, in terms of direct impact, the Romanian banking system was less affected by not being exposed to toxic assets, and because of prudential and administrative measures taken by the NBR.*

*Indirectly, however, the international financial crisis and especially its obvious consequence – the recession in developed countries - has expanded to the Romanian economy, on several channels. The shopping channel slowed export growth and even reduced them. The financial channel has limited the access to external financing, and thus restricted the lending volume, generating private external debt service difficulties.*

*On the exchange rate channel, the reduction in external financing reflected in national currency depreciation. On the confidence channel, there was a withdrawal of investors from Eastern Europe countries.*

*Among the measures adopted by the central bank, the most notable were targeting inflation and currency interventions. By adopting inflation targeting, the central bank opted to make more room in establishing foreign exchange market, and after the onset of the current international financial crisis, including the 2009-2010, adopted a controlled floating exchange rate. This does not mean intervention in the forex market on a discretionary basis.*

*NBR policy on foreign exchange intervention has been guided by the philosophy that high exchange rate volatility is harmful for both the inflation target and the financial health of the real and financial sector.*

**Key-words:** *financial crisis, targeting inflation, currency interventions, monetary system*

**JEL Classification:** G<sub>01</sub>, G<sub>18</sub>, G<sub>28</sub>

## **1. Introduction**

The scientific communication is a measure related to the drives of the international financial crisis, mainly the one in Romania. They are of macro-economic and micro-economic nature, as specialists like Altman (2008) and Blachard (2009) pointed out.

The profound reason of the international financial crisis has been the abundant amount of cash created by the main world banks (FED, BOJ) and the desire of the oil-exporting countries to limit the currency appreciation.

Likewise, there was an oversaturation with savings, derived from the surging integration into the global economy of some countries (China, South-Eastern Asia) with high accrual rates, and also a global distribution of the assets and income to the goods exporting countries (oil, natural gas, etc.)

A series of micro-economic causes seemed menacing in this environment, namely the rational externalizations from a private point of view, but socially insufficient, and the international competition, known for de-regulations.

The issue under scrutiny is important, as the international crisis has affected Romania too at various levels: commercial, financial, exchange rate and, last but not least, the trust – the European investors have withdrawn from our system.

The paper will continue with presenting the RNB measures that have been adopted, in order to lower the impact of the crisis upon the currency and the monetary system – the most crucial is the inflation and the foreign currency interventions.

The author gives his opinions about the RNB policy, mainly in agreement with them, but also states his personal views, supported by pertinent arguments.

## **2. Specialist literature**

The works in this field are indeed diversified and, most of the time, sides with the topic, as a result of its interests, proven by how the specialists put down or praise the RNB policy.

One thing is certain: during this harsh time of a profound economic and financial crisis, including the post-1989 interval, RNB has proved itself as a stable pillar (especially by its foreign currency policy), able to involve in limiting the crisis effects upon the national economy.

## **3. The content of the article**

The present financial and economic crisis seems to have no parity for the last half century. The economic recession has expanded to the USA, Europe and Japan and it models as even more painful than the economic downturn in 1981-1982. A massive trust drop at both the business and the consumers' level, translated into expenses lowering, is in full swing. The government of USA and some executive bodies in Europe, have nationalized parts of their financial sectors, in their attempt to regain stability, a contradiction for the modern capitalism. The entire world seems to go a different direction, where the state role will be higher than the private sector's.

Many people believe that the current financial crisis is rooted in the dramatic fall of the housing price in the USA or of the credit market for housing. This vision is quite incomplete. The fundamental causes of the financial crisis are even deeper, macroeconomic and microeconomic in nature, as specialists think: Altman (2010),

Blanchard (2009). The two types of causes have intertwined in bringing about the crisis.

The profound reason of the international financial crisis has been the abundant amount of cash created by the main world banks (FED, BOJ) and the desire of the oil-exporting countries to limit the currency appreciation. Likewise, there was an oversaturation with savings, derived from the surging integration into the global economy of some countries (China, South-Eastern Asia) with high accrual rates, and also a global distribution of the assets and income to the countries exporting goods (oil, natural gas, etc.) The plenty amount of cash and the oversaturation with savings have generated resources available for investments, including sophisticated financial tools, which some investors do not grasp very easily.

The consequences of all that cash were the very low interest rates and their reduced volatility. Together, such consequences have triggered desire for assets with great earnings. Plus, the low volatility on the market has created the trend of under-estimating the risk and a true lack of vigilance on the investors' side.

The risk margins have also been very low and non-discriminatory. All these, the low interest rates, the appetite for assets with great earnings, the lack of vigilance towards risk and the small margins have somehow hidden the signals of prices on the financial markets and brought not enough understanding of the risks involved.

The consequence of the frantic securitization was that, once the crisis derived from failing in payment of the credit instalments for housing, the financial market became non-transparent. The investors' distrust has quickly placed the titles issued by the special vehicles (VSP) in the high-risk category (the quality of the assets being finances was not clear anymore) and the refinancing has become impossible. Due to the difference between the maturities on assets and liabilities, these VSP have started relying on financing lines from the sponsoring banks. Lastly, the liquidity request, along with the lack of trust in banks, has triggered the cash rush and, therefore, the actual interest rate has started going up.

In a nutshell, the main challenge is to find the solutions to re-establish the trust of the investors and consumers.

On a long term, the core issue is to adjust the principles guiding the reform of the international financial system, mainly referring to transparency, improvement of the regulations concerning the titles accounting, assurance of the financial markets integrity (in terms of market manipulation and fraud) and strengthening the cooperation among the financial institutions in the world (the updating of the IMF and World Bank governance structures). The business ethics is still on this list.

The international financial crisis has also touched the Romanian economy. Still, from the point of view of direct impact, the Romanian banking system was not deeply affected, as it had no exposure to toxic assets, due to the prudential and administrative measures adopted by the RNB.

But, indirectly, the international financial crisis and its obvious outcome – the recession in the developed countries – has extended upon the Romanian economy

on various channels. For the commercial channel – exports have slowed down. The financial channel – access to foreign financing has been limited, therefore the crediting volume has reduced, generating difficulties in the private foreign debt service. As for the exchange rate, the lowering of the foreign financing has reflected into the depreciation of the national currency. For the trust, the investors have withdrawn from the eastern European countries.

The result was the emergence of panic and speculative attacks on the currency market (see the one in October in Romania, which required the RNB intervention). Finally, for the channel of wealth and balance effects, the net assets of population and companies have lowered, as a consequence of the increased percentage of foreign-based credits (correlated with the national currency depreciation) and of prices decreasing for the estate assets from speculative, non-sustainable values (*'bubble' type*).

The spread of such effects makes the uncertainty degree of the economic variables evolutions be extremely high. Therefore, the crisis is being increasing the diligence degree at the level of consumers and economic agents.

In Romania, the answer to the crisis adverse effects cannot be similar to the one in other European state or the USA. There are differences among these economies, which do not simply allow copying the measures packages from one country to another. In essence, we are talking about the fact that the Romanian economy has a large deficit of the checking account, which indicates its dependence on the foreign financing. We do have to choose between the orderly reduction of this deficit or its reduction via the market within this mistrustful and diffidence environment, with dramatic consequences for the exchange rate and the economic improvement.

Even if the development of the economic landing process cannot be planned in detail, the promotion of several coherent and credible economic policies might prevent from a hard landing. Thus, the government should avoid an emotional approach of the crisis, under the pressure of labor unions and patronages, which would lead to adopting some measures of stimulating the internal demand, and making more complicated the action of bringing the checking account deficit to a sustainable level. It is only a concentration of the combination among macroeconomic policies on the landing process of the foreign imbalance (the checking account deficit) and internal (budget deficit) that may support a soft adjustment of the economy and an improvement of the foreign investors' perception.

In essence, it is necessary to have a significant strengthening of the fiscal and wage policy (to a large extent, it includes the bonuses and the quasi-salary awards).

To this purpose, the 2010 budget, recently approved, is a wonderful step taken, mainly due to the distribution of some relatively high funds for investments that have the potential to create 'spill over effects' upon the other sectors in economy. As it is being implemented, the possibility of gradual relaxation of monetary policy will emerge. Thus, a sub-optimal combination for the last years (less severe budget and wage salaries, i.e. a very 'tight' monetary policy) will be replaced with an optimal combination where all the policies (budget, wage and

monetary) have a similar restriction degree and take to the economic activity to labour and productivity.

Moreover, the government may also contribute to the improvement of how the foreign investors perceive the situation, by measures aiming the enhancement of absorption ability of the European funds and the replacement of the private foreign financing with public foreign financing or by creating new employment places in underserved fields (infrastructure, tourism, agrifood) that will later turn into the engine of the economic growth. Generally speaking, the conclusion of several financial contracts with international organisms, starting with the European Commission and the European Bank of Investments, which will cooperate in order to greatly diminish the private capital input is very welcomed.

If all these steps are going to be followed, there is a high probability that the investors improve their opinion about Romania and prefer investing here rather than somewhere else in Central or Eastern Europe. The high probability does not equal certainty: it is quite impossible to avoid the scenario where the foreign investors will not react positively and they will still treat Romania discriminatorily, even if the local authorities are doing the right thing. But the awareness about such possibility should not lead to abandoning the so-necessary landing measures.

A danger in implementing a such coherent strategy of orderly adjustment of the foreign imbalance is in the more and more gloomy forecasting, issued by various institutions in regards to the economic upturn in the 2010 Romania, even to predict a negative increase. The real threat is the fact that the political factor, upon believing such forecasting, might handle the issue in an emotional way and adopt measures of fiscal and wage easing, which only worsen the crisis.

Even if it is obvious that some areas, former drives for the economic progress until 2009 (real estate, financial-banking, car imports, metallurgy industry, chemical industry, car building industry) will witness a decrease in 2010, there are still some, like IT, telecommunications, food and pharmaceutical industry, public services) that may see some growth. At the same time, we need to consider an effort of regaining the consumers' trust in the economy progress, trust that was dramatically lost (as shown by the trust indicator in economy, published by EC), due to an emotional handling of the crisis.

As a conclusion, the private sector has already reduced the last year external deficit, which still stays high. The prediction is that the adjustment will be constant in 2010 as well. Similarly, the fiscal policy has been procyclical and contributed to the deepening of the external deficit of the Romanian economy. Right now, we need several measures that will provide an orderly adjustment cutback of the checking account deficit to sustainable levels, by reducing the budget deficit and a better adjustment of the policies mix to the limits of deficits. The percentage of the public expenses for investments should go up.

Likewise, the absorption of the European funds and adoption of financing agreements with international organisms (European Commission and the European Central Bank) should be looked closer at. The private sector needs to re-establish the relation between the wages and labour productivity, which will provide foreign

competitiveness. Such policies will decrease uncertainty and will give back the trust in the future of economy.

Among the measures adopted by the RNB, the inflation targeting and the currency interventions are worthwhile to mention.

The option for adopting the inflation targeting has been justified by the need to achieve a sustainable disinflation. The implementation of the inflation targeting strategy has not been easy either before the emergence of the financial crisis, when the massive capital input, the position of net debtor of RNB towards the banking system and the mechanism of the monetary policy distribution have combined themselves and thus, between 2005 and 2007, there was a co-existence between inflationist forecast and currency strong appreciation. This was a serious issued for the central bank. The Increase of the interest rates, required to bring the anticipations in line with the inflation target, was attracting even more foreign capital, making the national currency more appreciated.

Since July 2007, along with the financial crisis, some of these requirements have disappeared. Today, RNB has the tendency to be a net creditor of the banking system, and the foreign capital input has slowed down a lot. But this will not make the monetary policy simpler. On the contrary, the financial crisis has increased the volatility on the monetary and currency market and had the tendency to amplify the deceleration of the economic activity. On the one hand, the reduction of the external financing and the existence of the high foreign imbalance have triggered the national currency depreciation, which fuels the inflation and makes necessary a relatively high interest rate. Moreover, the people with debts in EUR or other currencies are vulnerable to a significant depreciation of the national currency. On the other hand, higher interest rates would tend to prevent the economic growth and more, it would create costs for the people in debt, thus risking to unbalance the financial sector.

In these circumstances, the issue of the compromise between the monetary policy objectives emerges: the assurance of the prices stability and of the financial stability.

Phelps (1968) has shown that there is no long-term compromise between inflation and unemployment. Hence, the long-term objective of the monetary policy has to be reaching a low and stable inflation. One has noticed that the low and stable inflation helps the sustainable economic growth on a long term. Therefore, the low and stable inflation represents a purpose per se and a means of achieving a sustainable economic growth.

The efficiency of the monetary policy in reaching this objective is limited though, unless there is a financial stability. One of the basic macro-economic principles has stated that the divergence in the financial area substantially influences the business cycle. Today, this thing is obvious worldwide. The world central banks attempt to maintain the financial stability and avoid the recession and the economic depression.

The previous experiences seem to confirm the opinion that inflation is the main source of financial instability. On a usual basis, high inflation intervals are characterized by severe financial instability and banking system crises or followed



by recession – as the authorities have adopted inappropriate measures of inflation smoothing.

Still, the recent specialist literature highlights the fact that a low inflation level is not a sufficient requirement to provide a long-term financial stability (Crockett, 2003). For the present economies, a low and stable inflation level has led to a new economic climate, which requires a thorough rethinking of the relation between the prices stability and the financial stability. To this purpose, the experience of several countries in Asia between 1997 and 1998 and the current economic and financial crisis are taking us to the reconsideration of the measure where the central bank holds the ability to provide a simultaneous stability of prices and financial one, where hypothetically speaking their achieving requires the adoption of contradictory measures.

The experience of Romania shows that the financial stability has a special importance in the prices setting. Romania has been deservedly criticised for delays in disinflation, due to the insufficient structural reforms. Our country had an average disinflation rate of 5.8% per year for 2000-2007, in parallel with maintaining the stability of the financial system. If RNB would have covered this lack of reforms by steeper increase of the interest rates, the companies' and households' financial situation would have deteriorated. And so would have the banking system. Lastly, the disinflation pace itself would have been smaller than the one being achieved. The lesson that we should learn is that, on a long term, the inability of maintaining the financial stability will only lead to a rekindling of the inflation.

Upon adopting the inflation targeting, RNB has opted to make a larger room in setting the exchange rate. Still, there were times when the leu fluctuations were way outside the limits justified by the exchange rate fundamentals. This thing happened after the present international financial crisis emerged, including 2010.

These are the reasons why RNB has adopted a controlled push-up of the exchange rate, which is not similar to the discretionary intervention on the currency market.

The RNB policy concerning the interventions on the currency market has been guided by the philosophy that a high volatility of the exchange rate is dangerous both for the inflation-related objective as well as for the financial health of the real and financial sectors.

Following this philosophy, RNB has promoted a fluctuant exchange rate, which allowed it to use the free market valences and to discourage the speculative behaviours and avoid the excessive appreciations.

The consistent implementation of such philosophy required from RNB a relatively important currency purchase from the market for the 2004-August 2007 interval. Upon the currency purchase, RNB was criticised for not letting the rate appreciate in step with the market requirements. Today, this step proved to be right. The current financial crisis has introduced a steep inversion of the leu appreciation trend, with noteworthy episodes of volatility. As it happened in the past – the currency input over-appreciated the leu much more over the level indicated by the fundamental factors of the exchange rate, so did today – the decrease of the foreign

financing and uncertainty are prone to determine the leu depreciation, not justified by the fundamental factors of the exchange rate.

The reserves that have been bought on the currency market during the over-appreciation moments are now useful for slowing down the leu depreciation.

#### 4. CONCLUSIONS

Even the world economic growth continues, the dangers are still ahead. The effects of the profound crisis that affected Greece seem to impact the debts of the European states in arrears but going up and place in doubt the stability of the entire European Monetary Union.

The so-called contagion of the public debt crisis among the PIIGGS countries (Portugal, Ireland, Italy, Greece, Great Britain and Spain) worries Washington and Tokyo, the deepest in debt non-European governments. The EUR exchange rate has had a new depreciation and the international investors have withdrawn their money in Europe.

The critical situation of the EUR zone is the consequence of the so-called anti-crisis policies adopted by the European governments in the last two years. These governments have large budget deficits and public debt level, i.e the most vulnerable macroeconomic imbalance on the continent. As characterized by an overweight welfare state, a low productivity, asset bubbles, high current account deficit and a non-sustainable increase of the governmental expenses, the PIIGGS countries seemed to be, on the verge of crisis, in a situation somewhat similar to the EU member states (macro/economically speaking) in Eastern Europe. Still, the membership to the EUR zone or the traditional trust of the market in the London government economic wisdom, have succeeded to hide all these weaknesses of the PIIGGS countries. But, once the economic crisis begun, the macro-economic stability of these countries was shattered, as a result of the Keynes policies resuscitation of ‚fiscal stimulation’.

Even though the public expenses in use were already non-sustainable, the governments in the PIIGGS countries simply wrote down the losses in the private sector into the public sector, concluding that the entire crisis is only a sin of capitalism, nonchalantly overlooking the ‘obsolete’ rules mentioned in the Stability pact 20 years ago. Thus, the private sector in great debt, on the verge of bankruptcy, has been substituted by a public sector in a similar situation.

The EUR zone is now in an unprecedented situation and risks an implosion. The states with a better financial situation have to save from bankruptcy the ones that are about to be declared insolvent, and BCE – opposed to its own status – might have to turn to a direct monetization of the budget deficits.

The RNB representatives appreciate that Romania has continued to register an economic downturn for the first 3 months of this year, the main challenge for the economy being the budget deficit that needs to be lowered by speeding up the structural adjustments. Mugur Isarescu, the Governor, says that the economy recovery is not desirable, as long as the public sector fails to reduce the enormous deficit, either via drastic expenses cuts or taxes increase. This speaks indirectly

about the need of implementing harsh measures of costs decrease by layoffs and cost cuts in the public sector.

The cuts in the public sector employees' salaries by 25% since June 1st, the decrease in the unemployment benefits and pensions by 15%, the dramatic lowering of the budget subventions, these are the main reform measures that the government has used to persuade IMF to drop the VAT and the single quote increase – where these reforms supplement the monetary policy measures of RNB with the purpose to go back to an economic progress, to reduce the deficit and to have Romania come out of recession.

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## LEADER AND LEADERSHIP IN THE INTERNATIONAL COMPANIES

Mădălina MILITARU, Lecturer Ph.D.  
Faculty of Marketing and International Affaires  
Spiru Haret University

### **Abstract**

*Within the actual global economy context, competition will be complex, challenging and full of competitive opportunities and threats. Effective leadership practices can help international corporations improve performance while competing in turbulent and unpredictable environments. Leadership has been defined in many different ways, but most definitions share the assumption that it involves an influence process focused on facilitating the performance of a collective task.*

**Key-words:** *international corporations, competition, leader, leadership, bussines environment*

**JEL Classification:** M<sub>16</sub>

### **Introduction**

In the economic context today, each company needs to reinvent itself versus its clients and be aware of the fact that we live in a global society, of information, inter-culturality and inter-communication. The rapid pace of changes in all activity fields is one of the defining features of the present economy and, in order to have a high performance, the companies have to be able to constantly adjust themselves. The efficient communication, the strengthening of relations among employees, the involvement, mutual support and teamwork spirit are essential in developing the activity of the international corporations as for the more or less predictable changes on their markets.

Leadership emerges every time a group of people put together and harmonize their efforts in an attempt to reach a common objective. As there is a formal and an informal organization in each corporation (greatly different), the informal leaders may not be the same ones as the managers, i.e. the leaders in the company hierarchy. Under these circumstances, it is obvious that a good manager will also be a good leader, but a good leader is not always a good manager.

The economic crisis was quite an unexpected event and the impact on several sectors was really great. A leader with real competencies will assume responsibility, takes decisions related to the group under his command, keeps calm and gives trust to the employees. The economic crisis moments are the best occasions when the managers may practice and prove their leadership qualities.

## **Literature Review**

Hilarie Owen, Vicky Hodgason, Nigel Gazzard (2010) have written about leadership and considered that building of the leadership ability is a learning process that takes many years and involves a combination of study, reflection, practice and knowledge acquisition. Likewise, it implies the building of an organizational culture that stimulates autonomy and teamwork spirit. The leadership handbook is a good starting point in this process, since it places leadership in the dynamic and complex context of the organization nowadays.

Similarly, Dean Williams (2010) talks about the fact that many of leadership concepts spread all over the world do not suit anymore the present challenges.

Real leadership is not having strong opinions to impose on the group. It is not either attracting 'loyal followers' to show them the 'way ahead'. Real leadership is when people are made to answer to the adjustable challenges, which may not be approached by managerial solutions or procedures but only by a move into the system of values and mentalities.

A psychological approach is that of Mielu Zlate's (2008) – a synthesis of the controversial theories about the 'art/science of leading.' The author examines theories, concepts and methods in the leadership and management areas, and provides a critical perspective upon a vast and pressing issue of the social life and practice.

### **The general problem and the principles of leadership techniques**

For the last decades, we have been witnessing the development of the leadership concept, a component of management that focuses on the relation among employees. A more and more talked about topic, leadership is now the platform for numerous ideas on the management phenomenon.

The relevant literature includes a number of definitions for leadership. This is the process that allows a person sets an objective for one or more people and makes these people act together, in competence and full dedication, in order to reach it. Also, leadership is the ability of a leader to organize a group of people who, based on the operative and affective involvement, work together to reach a joint objective. Leadership comes from the teamwork spirit, which is defined as the desire of the individuals to think, feel and act in harmony in order to achieve joint purposes. It is obvious, then, that a good team will obtain the desired results faster.

Leadership means 'to bring the people vision to a superior level, to increase their performance to a higher standard, to build their personality over normal limits' (P. Drucker, 2001). On the whole, it is perceived as the activity 'to create a vision which some people aspire to and become stimulated to fulfil that vision' (Anita Roddick, 2005). Or, it is described as 'a dynamic process in a group, where an individual influences the others to voluntarily contribute to the group tasks in a given situation' (G.A. Cole, 1994). This leader attitude who tries to mix the organization objectives to the individual ones is called leadership in the literature.

Leadership takes into account the human dimension of management in the process of involving or stimulating the group of people by the leader. Without any

teamwork spirit, there is no leadership. The leadership content and efficiency depend on the characteristics of the organization involved in it and on the leader ability to understand and consider things. From the efficiency perspective, it involves the ability of a person to build a vision, to orient the actions, to bring the individuals together, to follow up on the project and to obtain results via organizing, controlling and problems solving.

The importance of leadership within international corporations is obvious. Their management has to react at the same time with the environment changes and integrate such changes into the activity of the companies in such a way to keep its stability. Besides the professional and management knowledge, a leader needs to have the ability to make the employees acquire maximum results. If people have competent leaders, with real abilities in organizing the team and distributing the work, employees gain more trust in their capacities, find work more interesting and understand the importance of maximizing the achievements. Leaders stimulate the change and lead people to a vision. This thing means that leaders face many challenges and, thus, are coerced to adventure to new directions. A competent leader needs to have a vision for the organization and the passion to turn this vision into action.

Leadership is the key of success for individuals, organizations, regions and countries where we live. Currently, the organizations need effective leaders and managers for carrying successful actions. A leader must be able to walk an unbeaten path, have the courage to take decisions within the group and manage both success and failures. Also, he needs to stay 'uncorrupted' in any situation, and his actions should be transparent. It is important for a leader to create opportunities so that the employees can develop professionally.

The main characteristics of leadership are:

- it is a process that involves influence and is in a direct relation with the ability to influence the people behaviour;
- it is present in a group context (at least two people are necessary);
- it contributes to creating a general vision upon the company activity;
- it produces changes, progress and helps setting the strategies;
- it sets the direction and increases the engagement of people involved in achieving the objectives;
- it builds teams; the leader has to know the way how the members contribute, quantitatively and qualitatively, depending on their personality;
- it contributes to maintaining an efficient interaction, involving the focus of the group on the desired objectives and achieving a balance of each member's participation into the work task;
- it creates a work environment that stimulates the continuous improvement of the individual and group performances;
- it motivates, inspires and transmits positive energy, gives inspiration and makes each individual feel important and valued;
- it respects the values and behaves ethically.

In order to better understand the leadership importance within the international companies, we need to be aware of the 21 irrefutable laws governing it:

1. **Law of the lid** – Leadership determines a person’s level of effectiveness. The ability to lead is always triggered by the personal freedom and organizational efficiency. No matter how hard a person would like to achieve within a company, this is limited by the leadership ability.
2. **Law of influence** – The true measure of leadership is influence. In order to be able to make changes within the organization, you need to have a great influence upon the people involved in the objectives-fulfilling activities. You have not this influence, you will never be able to lead. Leadership is not about the position within the organization, but about the ability to influence the individuals.
3. **Law of process** – Leadership develops daily, not in a day, it is learnt in time and consists in developing and improving the leaders’ abilities. The successful leaders always learn.
4. **Law of navigation** – Leaders have the vision of their destination; they understand what they need to get there, whom they need to reach their purpose and foresee the obstacles way before they emerge.
5. **Law of addition/EF Hutton** – When the true leader speaks, people listen. It is very important to find the reactions of the people around him.
6. **Law of solid ground** – The trust of people is the foundation of leadership. In order to build trust, a leader needs to exemplify certain qualities: competence, connection and character. Character makes people trust possible and trust make leadership possible.
7. **Law of respect** – People naturally follow leaders stronger than themselves. People do not follow other people without a reason, but people whose leadership style brings about respect.
8. **Law of intuition** – Based on facts, besides instinct and other non-corporeal elements. A leader needs to understand the situation and instinctively know what decision to take. Leadership is more art than science.
9. **Law of magnetism** – Leaders are always in search for good people and are looking for employees who have the same qualities as they do. The better the leader is, the better employees will attract.
10. **Law of connection** – The efficient leaders know that they have to touch people’s heart before asking for help. In order to connect with people in a group, the leaders must interact with them at an individual level.
11. **Law of the inner circle** – A leader’s potential is determined by those closest to him.
12. **Law of empowerment** – Only secure leaders give power to others. The people ability to achieve objectives is determined by the leader’s ability to empower.
13. **Law of the picture** – You need a leader to raise another leader. The potential in an organization depends on how leadership increases.
14. **Law of buy-in** – People buy into the leader, then the vision.
15. **Law of victory** – Leaders find a way for the team to win.
16. **Law of the big mo** – There is a need for a person to motivate the people around him.



17. **Law of priorities** – Leaders understand that any activity is important and brings accomplishment.
18. **Law of sacrifice** – A leader must give up many things to go up. Sacrifice is a constant in leadership.
19. **Law of timing** – When to lead, is as important as what to do and where to go. Only the best-timed action will bring you success.
20. **Law of explosive growth** – The key of the economic growth is leadership. To reach the top level, a company needs to have competent leaders.
21. **Law of legacy** – A leader's lasting value is measured by succession.

### **Principles of leadership techniques**

Leadership turns to a varied range of methods and techniques that it operates differently, depending on the parameters of the managerial situation in progress. The most frequent are: a precise definition of the objectives to be achieved via leadership; distributing the awareness information, of knowledge, attractiveness, persuasion, inspiration, acting of the subject depending on the leadership objectives; the frequent choice of delegating tasks, competencies and authority; mentorship (a specific technique used by managers to promote leadership) that consists in regular meetings between manager and his subordinates, where they openly talk about their potential and professional evolution, via the company opportunities.

Some of the underlining principles of leadership are:

- **Modelling the behaviour that a leader wants from other people.** It is very important that a leader walks the walk and talks the talk. If his words are different than what he does, people will notice it and lose trust. The best way to encourage an exemplary behaviour is to model the people's habits.

- **Thinking should be both strategic and tactical.** The overall image is essential and the alignment of efforts to its level, but always look at details. Non-efficient leaders are always too much oriented to details, which leads to the employees' micromanagement and loss of the general image. On the other hand, to superficially look at objectives reaching means no results. It is ideal to find the optimum point between strategy and tactics.

- **Appreciates the people responsibility and skills.** Those leaders who do not have clear responsibilities will become stressed out and will carry out activities that do not increase efficiency at all.

- **Result-centred.** Highlighting the results over people is the best short-term tactics. To place people ahead the company outcome will support the company long-term development. Paying the same attention to people development and the company outcome is to secure the company success for a longer period of time.

- **Administers complexity and cooperates with ambiguity.** Lack of tolerance for ambiguity and complexity lead to inefficiency, incorrect definition of problems, solutions and roles to be played by each employee. Leadership will have

to search into content summaries and process them more frequently in order to avoid ambiguity.

- **The need to control is understood and diminished.** The disfunctionalities of many leaders may be found in their strong urge to control. Leadership may be stressful if a leader does not trust his team.

### **Leadership of the international companies within the world economic crisis context**

The present crisis has had an impact both upon the international and national companies. The economic circumstances nowadays are limited to the changes and restructuring at an organizational level, either they target reduction in certain directions or concentration on others. The optimal administration of such changes is the concern of the managers at all levels. Even since the onset of the crisis, the companies have focused on reorganization, outcome increase and sales.

The changes that occurred has major influence upon the human resources. Any modification within organization means to break the routines. People will manifest resistance, in a way or another, wishing to maintain their status. Also, changes create confusion, as the employees find themselves in an ambiguous environment and they do not know how to react.

In a turbulent environment, to forecast the future events is difficult – or to set the objectives to be reached. As a result, the most difficult task of those who initiate the change is to develop a vision, which will later on they will turn into a viable strategy to be implemented into the organization. It is quite risky to generate a major change in an organization – but the companies have no other choice and managers will become agents of change with the purpose to control the variables that have a potential to influence the organization evolution.

During the latest economic exigencies, it has become obvious the need to fill in the leader role – because a totally different range of skills is required during crisis. As defining elements for the leader, we mention the strong urge of self-determination, the desire to work to align own values with the behaviour, satisfaction for the decisions taken, clarity in terms of values, priorities, preferences. The most important feature for a leader is the skill to be quick and determined. He needs to have the ability to evaluate the company position and take the difficult decisions.

Nothing will test better the qualities of a leader than a crisis. The way how the leader handles the emotions, behaviour and skills of people who are in the middle of a crisis will reveal quite a lot about his character profoundness. Obviously, the leaders will have to lead themselves too during crisis, and they have to face their own emotions and needs. For some leaders, this is the biggest challenge. The management of a crisis and provision of leadership are not the same thing. The former refers to operational issues, while the latter will mainly deal with the way how leaders handle the human reactions, including their own. During a crisis, the leaders concentrate very often on the emotional outburst of the organization members, but it is quite equal that they take care of themselves then.

A crisis may have a huge impact upon the human needs, emotions and behaviour. This is the reason why a leader must always think in present, talk to people whom he trusts and consider their opinion, set priorities and focus on the positive side.

## Conclusions

A company may have all the possible advantages: large financial resources, an excellent position in the world, state-of-the-art technology – but if it lacks leaders, all the above will vanish.

Any organization is ready for leadership, but not necessarily any manager is ready to take the step to become a leader. Leadership may be considered inherent to the management the moment management becomes a natural and inspired process, where people follow their professional objectives from their principles and not from obligation. This ‘inspiration’ is due to the challenge and the attractiveness level of the mission, and not to the fact that people are told what to do.

Companies will differentiate each other in terms of size, intentions, approach (local or global) and the ability to change, to adjust for the future – essential for any company. Any organization should start by getting ready for leadership, since this approach is beneficial, irrespective of its type.

At present, there is an urgent need for leaders and managers, ready to start building the future of their own companies, based on the new business realities.

Within companies, change has to be brought about and not only managed – therefore, the management will prove this is the best way to come out of the economic crisis-generated blockade.

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## **BOOK REVIEWS**



## CHRISTOPHER A. SIMS

### Macroeconomics and Reality

*Econometrica*, Vol. 84, No. 1 (Jan., 1980), pp. 1-48

Two main ideas derive from a careful reading of the *Macroeconomics and Reality* study. The former one targets the appropriate nature of the methods used in macroeconomics and how they report to the economic reality. In this direction, Sims' opinion looks radical. The *mentions of the macroeconomic models (variables and equations) should rely on a set of data (empirical approach) or an analytical relation among different variables (theoretical approach)*. Sims explicitly excludes the mentions derived from purely statistical and econometric restrictions or other simplifying presumptions.

The latter has a methodological reasoning. Sims considers that the *unrestricted use of the VAR<sup>1</sup> type models provides superior opportunities of understanding the empirical relations among the macroeconomic variables, compared to the structural models*. Its objective is thus to determine a *coherent and realistic methodology* that will correctly interpret the *empiric relations among the macroeconomic variables*.

In compliance to this idea, the study focuses around two main parts:

- the *analysis of the flaws in the structural models*;
- the *introduction and exemplification of an alternative* that has the potential to overcome the issues that are specific to the structural models.

The flaws in the structural models come from three sources:

- *The imposition of unrealistic restrictions, purely statistical and econometric, without any empirical or theoretical reasoning: the equation should include orthogonal error terms: the coefficient of the endogenous variables matrix should be triangular.*

– *The inability of the structural models to manage the dynamic relations among the macroeconomics variables*. The dynamic relations are reflected by the presence of the dependent variables that emerge after the independent variables or by the existence of the inter-temporal correlations among the error term<sup>2</sup>. The structural models *imply* that such temporal distances are very well known prior to specifying the model. In reality, the model could be used just to measure the temporal distance between the times when the independent and the dependent

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<sup>1</sup> Vector Autoregressions notion (VARs) is found in the special literature from our country under many forms such as: VAR processes, VAR type models or autoregression models. In our review we will use the VAR type models.

<sup>2</sup>  $e_{t-K}$  error term of the K year is calculated using  $e_{t-K}$ , error term of the year t-K.

variables occur. For Sims, such presuppositions are unrealistic and, implicitly, inadmissible for defining the macroeconomic model.

– *Difficulties related to handling the future values of variables.* Even if Sims accepts the necessity of including a rational behaviour into the macroeconomics models that will derive rational expectancies or forecasting, he opposes to the practices that reduce this principle to *distributed lag* type models.

In the light of the flaws in the structural models, Sims suggests for the second part of the study *an alternative for understanding the empirical relations among the macroeconomics variables*. Particularly speaking, the author supports the idea that the macro-models with a large number of variables should be analyzed:

– *without any restrictions or unrealistic presuppositions* about the temporal distance between the variables occurrence;

– *in a reduced form* and

– *handling all the variables as endogenous*.

For Sims, the use of the VAR models represents the practical solution that meets the exigencies above. The rest of the study exemplifies the use of the VAR type models to analyze the temporal series for six types of data – *the monetary offer, real GDP, unemployment, salaries, prices level and the level of import prices*. Sims' empirical study concentrates on the results but mainly on how the use of the VAR models (non-restricted) solves the flaws of the structural models.

The ideas herein turn Sims' study into an important contribution, both from the *epistemic and methodologic* perspectives. These two angles are examined in detail further on.

*Macroeconomics and Reality* fulfils the requirements imposed by a highly regarded international publication as **Econometrica**. This occurs thanks to the fact that the article transcends the logic of a simple research study, as it is an innovative article (methodologically speaking), whose purpose is to re-establish the macroeconomics practices on relatively new conceptual bases.

Thus, the abstract and the introduction describe the problem in a concentrated form and anticipate the results. Browsing the literature becomes more necessary as the problems in the study target the whole research direction and philosophy, not only the usual unbeaten path. Likewise, the references are completely listed at the end of the article and properly numbered.

The two major objectives of the articles are clearly presented in the introductory paragraphs:

– the argumentation of the idea that the restrictions imposed for identifying the variables and the equations within the structural models are not essential for building a model;

– the presentation and the exemplification of an alternative approach of specifying and identifying a macroeconomic model.

Both objectives have been reached.



The study has a *logic exposition, clear and easy to be followed*. Its logic nature derives from a classical approach of the problem, where the author firstly identifies the issues related to the previous literature, the *flaws in the structural models* and then he provides practical solutions – the *non-restricted use of the VAR type models*. The simplicity of arguments structuring, the paragraphs' ordering are the ones responsible for the manuscript clarity.

*Macroeconomics and Reality* contributes to the literature development in two separate directions. Formerly, as for the science philosophy, Sims includes himself into the category of the authors who are concerned with *empirical and/or theoretical reasons* in defining the macroeconomics models and not only with *purely statistical and econometric* ones. Sims contribution (1980) may be better judged in the light of the previous similar works. Keuzenkamp (2000) considers that the best predecessor of Sims is Liu (1960). The last one thought that the macroeconomic models imposed numerous restrictions, where many of them were the result of statistical definitions and did not originate in a *theory* about the economic reality and the way it operated. Liu's main idea (1960) is that, as long as the purpose of an economic model is prediction and forecasting, the researcher should concentrate upon the *reduced* models, which do not specify other variables than the ones derived from theory. Before Sims (1980), Liu's ideas did not seem to have an immediate impact in the literature. *Macroeconomics and reality* thus brings back many of Liu's ideas, but also a great deal of originality in terms of his ideas statistical operationalization. The non-restricted use of VARs is the latter direction for Sims' contribution, which proves in fact its novelty.

The innovative elements of the article are the original ones. Per our opinion, the *Macroeconomics and Reality* article may be classified in the category of the studies that combine *consecrated techniques of analysis*. As said earlier, Sims' project or vision does not aim to methodologically revolutionize the macroeconomics science, but rather to settle it on solid epistemic bases.

This is why Sims' purpose is to use the methodological tools already in use, in order to grasp the epistemic subtleties of his project.

As a matter of fact, after circa 15 years, Sims was explaining his methodological ideas in another famous article, *Macroeconomics and Methodology* (1996). In other words, without being too methodological, *Macroeconomics and Reality* uses already consecrated techniques (e.g. VAR – vector auto-regression) in order to support and demonstrate ideas that are more important and logical compared to the methodological ones, i.e. *epistemic* – ideas that express the way how the econometric techniques grasp (or not) the subtleties of the economic realities.

In our opinion, the relevance of the study methods derives from the possibility of their use or implementation in the *decision-making act* and

*establishing the macro- or micro-economic policies.* On the other hand, the *quality* of the methods is given by the ability of the model to provide *solid* and trustworthy results. We will give below a short analysis of the two aspects.

Generally speaking, an econometric model may be used within the decision-making process or establishing the macroeconomic policies in at least two ways: (a) the use of the model for forecasting and (b) the use of the model to handle certain macroeconomic variables. In other words, a model can have at least two functions: a *forecasting* function and a *control* function.

The *forecasting function* involves not only the study of the *statistical association* between two variables (the dependent and the independent variables) but also the prediction of the former one based on the values of the latter. The *control function* goes beyond the statistical association and implies the existence of a *causality relation* between the two variables. Thus, if  $x$  causes  $y$ , then variable  $y$  may be handled by *controlling* its cause, or the variable  $x$ .

Sims' study (1980) exclusively refers to the forecasting function of the macroeconomic models; his paper is as explicit as relevant for the decisional process and of the one that sets up the economic policies: *as long as an econometric model is being used from forecasting reasons, then the model has to use a reduced form, which only utilizes independent variables, data-determined or derived from the theory underlying the model.* The specifications that result from statistical and econometric compromises are not admitted. As earlier said, the same idea had been suggested two decades before by Liu (1960). The merit attributed to Sims is that he has recommended the combination of certain traditional methods (eg., auto-regression vector) and their use in a special way (eg., with no unrealistic restrictions), in order to avoid any issues related to the statistical stiffness (for eg., the issues that are linked to the variables dynamics). Hence, from the solid nature of the results we will have the *quality* of the Sims' methods. Him and his study are granted with consideration since he has supported a subtle and demanding epistemic position, such as the *determination of the macroeconomic model in an empirical or theoretical manner, with no technical simplifying and fully unrealistic technical compromises.* And his advantage is that the staging of this idea enjoys a *rigorous methodological manner* but still traditional, which does not involve but the skilful use of the already known econometric techniques.

In a nutshell, *Macroeconomics and Reality* represents the classic example of a study that excels both in the *relevance of the presented idea* and also in terms of the *methodological consistency*. We do not think that we exaggerate by saying that only a few authors and studies in the field have ever reached such excellence standards.

As far as the organization, presentation, grammar and style, they are all impeccable and suitable for the exigency criteria formulated by **Econometrica**

editors. From the perspective of language, we notice two essential aspects. Formerly, we think that the language is appropriately used. Sims' ability to optimally combine the *technical language* (absolutely necessary to avoid ambiguities) with the *usual language* that makes the reading easier and the manuscript more legible and, thus, more accessible. The short and precise sentences also contribute to the improvement of the text accessibility and understanding. Latterly, we should notice the regular use of the sophisticated mathematical tools. Thus, the author does not spare anything in terms of notation and formulas. This decision has been made in light of the tensions between the number of potential readers and the message accuracy. Apparently, Sims' decision to sacrifice the interest of the non-specialist readers to favour the *accuracy, precision and validity of the scientific message*. But Sims does not overdo this language, as most of his ideas are expressed in a clear and simple English, which does not exclude but address to both the expert and the non-specialist. Even if the expert is privileged, the message can be still understood by an outsider, as the paper does not require a prior knowledge of the methodological subtleties, but a minimum in terms of empirical-type research.

As a conclusion, our overall opinion is that the presentation, grammar and style in the *Macroeconomics and Reality* study do not reach extremes. Subject to purely economic thinking, Sims seems to have found the *balance* between the complexity (which gives the accuracy to the text) and the language simplicity (which makes the paper accessible to a wider range of readers). It is worthwhile mentioning that this balance will be lost in the 1996 article, *Macroeconomics and Methodology*; here, Sims completely drops the mathematical models to more clearly and precisely explain to a larger number of readers the subtleties of the relation between the *economic reality, theory and methodology*.

At first, we notice the absence of the key words – easy to explain as **Econometrica** does not have the habit in enumerating the key words. The title of the study includes two terms (*macroeconomics* and *reality*) – even if they do not have a technical equivalent, they anticipate the content of the article – the *link between the macroeconomics and the economic reality under study*.

Another observation, quite interesting from the deontology perspective, is in Keuzenkamp (2000). This one states that the title of *Macroeconomics and Reality* originates in the chapter 5 of Robbins' paper (1932) *Economic Fluctuations and Reality*; this paper is surprisingly absent from Sims' references list (1980). The reason would be that Sims' vision goes further than Robbins'. Thus, Keuzenkamp (2000) states that, while Robbins is a full sceptical being, rejecting the econometry in its entirety, Sims (1980) denies the econometric practices of his time but, instead, suggests a remedy. Thus, besides the similarities in the title (which Sims might have used on purpose), the two studies are completely different.

On the other hand, the impression left by Sims' manuscript (1980) is that of a deeply deontologic paper, where the contributions of the before authors are acknowledged and explicitly mentioned both in the text and in the references list at the end of the study. As a matter of fact, such attitude is characteristic to the greatest research schools and University of Minnesota (Sims was teaching there) could not be an exception from the rule.

As for the constructive suggestions for improving the article, the limited relevant experience in research in general and macroeconomics in particular will obviously stop us from formulating concise and pertinent recommendations. Studies like Runkel's (1987) is one of them. We somehow dare to suggest that lack of concession vis-à-vis the use of the mathematical tools will reduce the number of possible readers.

We consider that a *softer* version of the article, where ideas get a less formal presentation would be more useful for training the young PhD candidates. Even if we are aware that the mathematical tools are required to provide the precision and accuracy of the scientific side, we believe that a less formal version would better help the young researchers. Such an approach would give a simple and clear representation about the *empirical research*, about the *identifying of a macroeconomic model* and, lastly, about the subtleties in the relation among *reality, data, theory and method*.

20 August 2010

**Miha STERE**, Lecturer Ph.D., University College Dublin  
**Ecaterina GICĂ**, Ph.D. candidate, Academy of Economic Studies, Bucharest

## FILIPE CARRERA

### **Networking. Survival guide for professionals. How to be successful through networking**

JCI Târgu Mureş, R&S Rentrop & Straton,  
Editing group and business counselling, 2010

Filipe Carrera is a first rank professional: he was awarded the “Most Outstanding Trainer in Europe” and the “Most Outstanding Trainer in the World” titles in 2008 and is currently a Marketing Management Ph.D. Professor within the Portuguese Institute of Marketing Management in Lisbon. His book is not a simple course without an anchor to reality, but a book expressing the personal experience and reading, it has an immediate practical applicability.

*Networking* is a very useful topical book, as we are living in this “global village” where it is important to be in contact with as many specialists or colleagues in our field or in the connected fields as possible, to update our professional information periodically, using the highest professional standard sources and especially to self-promote ourselves, to leave a personal touch in order to be distinguished among professionals.

The author begins with basic advice, going towards the most complex, concerning the successful professional, detail-oriented conduct. You will find rigorous receipts regarding the promotion modalities on the social sites, professional sites, blogs; in essence, he teaches self-promotion in the world of specialists.

As networking is translated by the work to create a connections network, the author tells us that this work must be done professionally from all points of view, but above all, constantly.

Carrera treats the person, the specialist, as a freestanding business with its inter-connected departments: the financial one, the marketing, human resources, with a real marketing plan but especially with the methods to implement it. He explains why a connections network in the field you work is necessary, regardless of the field. As any respectable company has its own website, conferring it visibility, a top professional needs a self-promotion page, regardless of the field he works in. Due to the facts that the world we live in is continuously changing and raw information no longer means power, as the access to information is only a click away, the interpretation of the information is the real key to success. In order to correctly understand a piece of information, it is sometimes necessary to interact with other persons in the same field or in different ones. That is why qualitative connections are absolutely necessary – those specialists you can apply to when necessary. For example, the qualitative connections can spare the active search of another job, because they make you visible not only to the other professionals, but to the recruitment companies as well.

Today, in Romania, the most wanted jobs are probably the ones abroad and for that we have to show our availability, qualities and mobility, things we can do daily and this book shows us in detail how to do that from our own homes.

Carrera speaks about a concept not very familiar to Romanians, the mentorship system. Having a mentor means having the privilege to be guided in the choices one has got to make, benefiting from a professional's experience, learning from the best the things one cannot find in any books. This can be done with persons located thousands of kilometres away and it is the way to have an objective analysis of one's performances.

Carrera offers useful resources, for example a site where conferences of even courses from notorious universities such as Yale, UCLA, Berkley or Princeton can be accessed free of charge according to one's interests.

The simple things such as downloading certain conferences, lessons, tutorials show how time can be valorised for the benefit of professional update.

Here, one can also find the necessary "ingredients" for the elaboration of an online CV where the competences, studies and especially the personal touch are made public in an advantageous and well thought manner in the world of professionals from different fields, at an international level. Practically, a real advertising campaign can be done, the only investments being one's work and perseverance.

The book is very accessible, being easy to read, follow and apply, the information being concise and well-structured. It teaches how to use the traditional contact models, such as the visit card, but especially how to use the modern methods – the Internet, I-pod or videos at a very high professional level.

Being connected means belonging to a community with a certain professional standard and being informed about the latest news in the field.

Filipe Carrera proves that "for the first time in the history of mankind, building commercial, friendship or even love relations is NOT conditioned by SPACE and TIME".

15 July 2010

**Dragoş Gabriel POPESCU**, Lecturer Ph.D.

## **NOURIEL ROUBINI, STEPHEN MIHM**

### **Crisis Economics: A Crash Course in the Future of Finance**

Publica, Publishing House 2010

Many years ago, professor Nouriel Roubini got the Dr. Doom nickname. He was one of the few economists warning that the entire world economy was on the verge of a major recession, unseen since the Great Depression. As immediate cause, he identified the speculations spreading in the United States that finally led to the bankruptcy of the investment banks. In 2007, his predictions came true. Suddenly, Roubini's voice started to be heard.

In the "crash course in the future of finance", written together with journalist and history professor Stephen Mihm, Roubini explains the origins of the crisis, analyses the anti-crisis measures adopted in time and their flaws, proposes immediate and long term remedies and evaluates the perspectives of the world economy.

In the beginning, the authors demonstrate that financial crises must not be seen as rare events. They are older than capitalism and have first occurred in China in 1072.

Next, a summary of ideas of the main economics schools referring to the crises issues is presented. Many contemporary economists (among whom Alan Greenspan) see the market economy as a self-regulatory entity that stabilises at full labour force occupancy and a low inflation when left free. Marx, on the other side, considered capitalism as being fundamentally instable. It was going to crash as consequence of the continuous cost reduction by the owners, reduction that was leading to overproduction and an insufficient occupancy and finally, to a revolution of the working class. Keynes asserts that in case of salary reduction and workers dismissal, deflation would occur and the demand will crash. The Keynesian solution consists in the creation of demand by the government. Milton Friedman and the other representatives of the Chicago school explained the Great Depression as direct consequence of a quantitative decline of the bank deposits and reserves, combined with the fail of the Federal Reserve in reducing the interest rate and saving the banks. Hyman Minsky reinterprets Keynes and claims that the financial system making capitalism possible has the potential of an unbound expansion, potentiated by the investor's burst. Challenges occur due to a loan excess that cannot be returned. Irving Fisher comes with the idea that the government needs to "reflate" a stagnant economy, flooding it with money easy to obtain (as the US did in 2007 and 2008) Finally, the Austrian school (Schumpeter among others- the author of the theory referring to the creative destruction) considers that this kind of actions only lead us towards a worse situation, assuring the survival of the banks and weak companies. The authors' opinion is that even though on the short term

they are wrong, on the long term the representatives of the Austrian school are right.

Referring to the current crisis' causes, the book identifies 4 main causes. A first would be the financial innovation. High-risk stock and shares are considered secure, because of different subterfuges. The impossibility to correctly evaluate the financial instruments by conventional measures led to the usage of complex mathematical models based on too optimistic hypothesis (for example, the fact that there will be no decrease in the real estate value). A second cause was the existence of the moral hazard. The excessive bonuses and the belief that if anything went wrong, the central banks would intervene encouraged some excessive risks. As seen previously, the central banks did intervene. The existence of a shadow banking system constituted the third cause. These institutions looking like banks, functioning like banks, but that do not obey the banking regulations were at the centre of the financial crisis. Finally, the fourth cause was the deregulation of the financial derivatives market, these bond papers (worthing over 60 trillion dollars in 2008) becoming one of the most important systemic risk sources.

The **Crisis Economics** recommends a more efficient intervention from the government, especially by the consolidation of the existent agencies and by introducing a more restrictive legislative frame that would end the regulations arbitrage (all the financial institutions should obey the same regulations). It also recommends the division of the financial conglomerates considered "too big to be allowed to fall".

Although they do not state it clearly, the authors do not seem very optimistic with regard to the implementation of these measures, the financial system seeming to go back to the habits previous to the crisis. Nonetheless, as many economists admit, "it is a shame to waste a crisis".

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**Uță Cristian**, Lecturer Ph.D.



Redactor: Mihaela N. ȘTEFAN  
Tehnoredactor: Marcela OLARU  
Coperta: Magdalena ILIE

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e-mail: [editurafrm@yahoo.com](mailto:editurafrm@yahoo.com)

