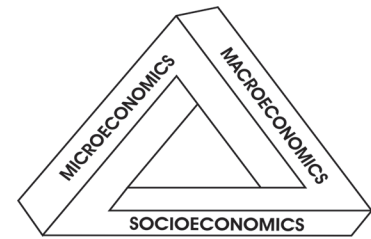


The Economical Tribar

“I consider that the economists have done in the past years an immense harm – to society in general and to our profession in particular – by pretending that we can offer more than we are capable of.”

Milton Friedman



It is said that when a theory no longer pays attention to the evolutions of reality, it is in crisis. Economics has been showing for a few decades symptoms of the insufficiency of the explanations regarding the tendencies of the economic processes and phenomena. The coexistence of growth with inflation and unemployment, for instance, has forced the relativization of the logical senses of the correlated processes in order to lend credibility to the explicative models. The limits of natural unemployment have slipped upwards, the inflation has drawn for itself zones of acceptability and growth had insured itself an endogenic pedestal. The change of behavior followed by assertive modification was the only solution of an epistemic nature.

However, the conceptual relativization seems to have been pushed to the brink of losing the relevance of the correlations. And this not only where the emergence lays between parentheses the assumptions of classical economics. There is no doubt that not only the tensions of transition turn standard correlations opaque, such as the one between the rise in wages and the rise in productivity, as well as some perverse Balassa-Samuelson effects in the integrative systems brought about by the emergent economies. The speculative coalitions and their sophisticated methodological arsenal lead to the relativization of the senses of concepts beyond the Economics' power of description.

Economics feels at ease on the levels of microeconomics and macroeconomics, even continuously showing logical consistency and explicative force. Only that both levels suffer from self-referentiality and, ever more visibly, from self-legitimacy. The problems of inconsistency appear on the level of socioeconomics or of institutional economics.

In fact, today, the epistemic triad of economics forms a tribar for the perception of which the economists lack the necessary genes. The explanation has relevance when it is fixed on one dimension of the three-dimensional economic space, but starts to show failures when it extends to the second dimension and it collapses when it ambitiously tries to close the meanings of the tribar of economic theory. The analysis is coherent on the microeconomic level, becomes hesitant when it relates to the macroeconomic level and becomes opaque if it adds the socioeconomic references.

In anyway, the socioeconomic dimension of the tribar of economics now has numerous ideological turbulences, especially those attached to the concept of property interpreted as a substantial fundament to the concept of freedom. The alteration of the logical consistence on this

level nullifies the tribar and, obviously, the essential interstices which underlay the conceptual unity of economics.

If microeconomics and macroeconomics remain strictly within the framework of consistency of the empire of necessity (and therefore have no unsolvable problems of conceptual complementarity), socioeconomics navigates in the empire of liberty, interpreting wealth as a fundament of liberty, mixing the concepts or using substitute concepts (generating problems of rejection or of epistemic falsification of the complementarity of micro and macroeconomics).

Alarmingly, the socioeconomic level of economics did not manage until now, in various approaches, to name its fundamental postulate in sync with the epistemological principle of the unity of meanings together with the other two – microeconomic and macroeconomic – levels. The Gordian knot introduced by the option for the preeminence of the empire of liberty in relation to the empire of necessity and to the conceptual subsuming of wealth, by liberty, has closed by way of microeconomics the path of the epistemic consolidation of economics.

The resonance of the inconsistency – even in a logical sense, not just intra-system – of socioeconomics is perceived at the level of the strategies and the ensemble of economical policies forced to operate with hybrid, inadequate or even false concepts. Managerial prescriptions indicate, however, determinist medication to crises which do not show the cause-effect relationship. We are talking about a crisis of the three-dimensionality of economics, in the first place, generated by the fact that the socioeconomic perspective induces solutions of a political and ideological consistence to problems based on the intercorrelation of concepts in the micro-macro-socioeconomic triangle.

In a surprising way, socioeconomics is captive to an abstract scheme which refuses the norm, the principle and the measure. The truth is socioeconomics removes from its essential equations the relevance of the anthropic principle with the goal of being natural, objective. The fatal step, about to be made, relates to testing through experiment. The physicism way, for instance, of approaching economy in general or the metaphysical way of explaining the functions of the economy, as well as the path of failure in the institution of the values attached to the perimeter of power, all indicate precisely enough the epistemic impasse of economics.

Refinding unity in the meaning of the tribar which is economics, is not only a normal operation but a mandatory one in order to rebuild the explicative power of this science.

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The Processual Programming Essentials – Criticism and New Options

■

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Abstract. *The Process Programming Basics: Priorities, Heuristic or Genetic Algorithms? This paper analyzes methods to optimize process programming, starting with the heuristic algorithms, then reviewing the current method previously advanced by the authors, the quantitative priorities, and finally approaches the problem with an innovative and promissory concept: the genetic algorithms and the “total costs and risks” optimization criterion, which is an alternative to both optimization with constraints and optimization with Lagrange multipliers. This new method emulates natural systems, thus borrowing from their robustness and adaptability. The method proves particularly useful in a turbulent and changing environment, requiring a realistic simulation model and also parallel processing in a high power computing grid.*

Key words: operations management; aggregate programming; master scheduling; multidisciplinary optimization; genetic algorithms.

■

JEL Classification: C61, D81, L23, M11.

The heuristic algorithms have been very popular with the operations management literature and practice, until the priority quantitative measures took their place (which we have advanced and sustained). It is the time though for the next step in our opinion, which may well be the genetic algorithms within the biologic rational model, used as a better representation of the artificial world.

1. The research objective and the criticism of the current situation

The objective of the research is to provide more efficient methods for aggregate programming, master scheduling and operational programming. Thus, the

aggregate programming is an operational management tool aimed at balancing processing or supply (Q_t^S) with the demand level (Q_t^D), by introducing additional costs such as: inventory cost, overtime cost, inactivity cost, shortage cost, hiring and firing cost etc. (C_i).

The managers act to achieve:

$$\min f = \sum_{L=1}^n C_i$$

where:

n is the number of additional costs used in the decision making process.

However, the aggregate programming has limits, which are not enough revealed by the users in practice, such as:

- Both the demand forecast, and the aggregate programming use equal time intervals (months, quarters), and not with a small time step (on-line), which may generate methodical errors, greater time intervals incurring proportionally bigger errors; for instance, a Q1 demand dated 1st of January is quite different from one dated 31st of March.

- The inventory and other costs are considered variable, i.e. proportional with the quantity of products. Both the variable and the fixed costs are abstract, all costs being in fact combinations of variable and fixed.

- In practice, the shortage is a hybrid between the two ideal hypotheses, reporting and lost sales.

- The high productivity variance is ignored, using the average productivity of an employee, taken as constant. In reality, the productivity varies from an employee to another, from a shift to another and within a week, month or year even for the same employee. For instance, it is notorious the case of the automotive industry, where the daily productivity is lower in the third shift, as well as in the days of Monday and Friday, and in the months of December, January and June, for all shifts.

- There is no account for the working days within each month, equal months and equal quarters being considered.

- The methods are adequate for undifferentiated products (commodities such as sugar or wheat). For the majority of products, which are differentiated, even though the fabrication cycle takes the same amount of time for every variety, there is an important reduction in productivity if the demand is fragmented over a wide span of differentiation variables.

- Many applications assume that D manufactured units are enough to satisfy the demand D , ignoring a percentage of rejected units, which may be important in some industries, such as microelectronics, due to the silicon raw material imperfections. In fact, $\frac{D}{1 - \frac{\text{rejections}[\%]}{100}}$ units

should be produced to satisfy the demand D .

- The methods ignore the fact that some clients are dominant in the total demand, and a negotiated sequencing of deliveries may be used by the manufacturer to flatten the demand curve. Other methods of flattening are also used by the managers, whereas the aggregate programming methods assume the natural demand, taken as ineffable.

- It is assumed that the number of workplaces changes with the number of employees, which does not hold true for the majority of the real manufacturers. The hiring and firing costs should include these workplaces adjustment costs as well. Moreover, often the additional

workplaces have access to less productive assets, thus the production vs. number of employees is not always a linear function.

- Many classical applications do not account for the reductions in costs as an effect of producing quantities multiple of the optimum batch dimension (for instance, in the steel industry the steel quantity should be a multiple of the charge mass).

- The classical methods may not work for those industries where the produced quantity is not strictly controllable (e.g. in agriculture, horticulture, fishing and extractive industries).

- Many methods do not account for a good practice of organizations during the gaps in demand: vacations for employees. If the vacations are uniformly distributed all year long, the methods are correct, but the managers usually take the opportunity to concentrate vacations in the demand gaps.

- Applications do not allow for the experience curve, which severely limits the productivity of a freshly hired workforce as a consequence of a peak demand.

- Although the methods accept the shortage hypothesis, assessing the cost of shortage is a problem with uncertain and variable solutions. The current management avoids the shortage by overestimating this cost, because it has been noticed that the deficit hits hard the very loyal customers segment.

- As a summary of some of the previous points, we may notice that classical aggregate programming methods assume all *the functions which model the processes as linear*. In practice, many of these functions are in fact non-linear and the managers are compelled to adjust the results with their experience, flair and intuition. On the other hand, computing with non-linear functions lead to discouraging calculus complexity.

In the step subsequent to the aggregate programming, the master scheduling (calendar central plan), which constitutes a planning norm strategy, has as an objective function:

$$(\max/\min)f(x) = \sum_{i=1}^n \sum_{j=1}^m \sum_{k=1}^p q_{ij}^k \times x_i \times C_i$$

where:

q_{ij}^k is the quantity of goods, works, services etc. of the type i , with the attribute j , processed in the time interval k ;

x_i is the price used to express the value of products, works, services of type i ;

C_i is the efficiency criterion, which may be expressed as the unitary profit, when we search to maximize the function, or alternatively as the unitary penalty due to failing to meet the contractual obligations with respect with terms, quality or quantity, when the maximum of the function is sought;

p is the number of programmed time intervals;

m is the number of priorities used by the decision making factor in the programming process;

n is the number of products works and services programmed and considered by the manufacturer.

The realities in the Romanian organizations suggest the use of the loss minimizing functions from not meeting the contractual obligations.

However, the question is what instruments are adequate for this purpose, and we need to focus on them further.

To the level of the master scheduling, the multicriterial decision theory, and the vague sets theory provide the possibility to align criteria such as the traditional customers' priority, the maximum profitability activities, direct exports, high value products, reduced adaptation costs (reaction speed to change). However, after the global and detailed alignment between resources and objectives, after the load and workforce utilization factors calculations, after determining the breakeven point, the assumed master schedule must respond primarily to the requests made by the clients and not to the manufacturer's preferences.

To the level of the structural (operational) subunits, the instrumental resources provided by the "priority rules", the programs are fed to a leading processing center, which may control a larger system. Thus, the rule "first come, first served" in the processing center (FIFO) is a democracy rule in operations programming, typical to superior systems (with a high degree of organization). Yet, the activity first to arrive in the actuator center may be undesired in the following stream. We stand definitely for the "pull" concept here, and not for the "push". In these circumstances, we may resort to another rule, such as the "shortest activity", which frees operators promptly, but all clients have to be served, internal as well as external.

From the test we have accomplished, we drew the conclusion that a very useful rule is the following: "first to be processed is the product with the least time reserve for the current operation". However, none of the recommended, "rational" rules is able to solve all the demands of the processing system, in all cases. A prioritization of those in practice may be done through the estimation of the mean processing time, and the advance or the delay time. Also, we suggest more ways of implementing, such as:

- i) singular;
- ii) additive combinative;
- iii) multiplicative.

The later implementation method leads to the greatest benefits, but requires a large effort, which makes it inoperative. Yet, the singular implementation method proved during the experiments enough benefits.

The ordinance instrument layout provided by the priority rules is enhanced by the procedural or the heuristic algorithms, generously offered by operational research.

This instrument layout is not an universal solution though, because it has enough limitations, such as:

- it operates with restricted realities (the case of Johnson, Next-Best, Branch and Bound algorithms);
- it uses static data, which in reality are dynamic, such as: operator and machine release times, internal delivery terms etc. (the case of sequential upstream-downstream programming);
- the use of objective functions to minimize the final term of execution, the immobilization time for the work in progress, the delay or advance factors, which are difficult to operationalize, with lots of efforts in practical cases.

The conclusion is that this operations management instrument layout, although useful sometimes, fails to reveal its practical utility, especially in the current, turbulent environment, with low predictability and high volatility, with the need to a real-time strategic response.

2. The first advance: priorities and not deadlines

Our experience in the field allow us to formulate the priority as a numerical measure resulted from calculations, including the intermediate deadlines or the final fabrication ones, the size of the asset immobilization and the incurring loss thereafter, the time of the execution cycles etc. We reached a practical format for the priority measure:

$$p_{ivt} = T_{livi} - d_{devans,ivt}$$

where:

p_{ivt} is the numeric (quantitative) priority measure for the product i , structural subunit v and operation t ;

T_{livi} is the time interval to the deadline of supplying the product i ;

The $d_{devans,ivt}$ is a function of the lead time, which is expressed in working days or calendar days as well; putting it in mathematical form:

$$d_{devans,ivt} = f(d_{cicluproces})$$

The resulted numbers are grouped on subunits and are ordered in strictly increasing strings. At the end of these relatively simple calculations, which work on sets like the number of parts of a product, augmented by the number of operations, the numeric priorities measures are recorded in the programs. For instance, the priority 20.8 is recorded in the January master schedule, the third decade operational plan, for the subunit which processes the product i . An alternative method from the literature to quantify the priorities is the following:

$$p_{ivt} = T_f - T_c - \alpha \times d_{cilcuproces,ivt}$$

where:

T_c represents the calendar date for which the “priority” is determined;

a is the coefficient to increase the processing cycle time.

If the numbers resulted from calculations are negative, they mean delays, with the highest delay having priority, whereas if the numbers are positive, they are advance times, and the lowest advance having priority. We recommend caution on the d_c , which is dynamic even in narrow intervals, and it leads to restructuring the priority system, especially by its action on the resources of all types. This dimension has the greatest implications upon the priority measure, as our simulations suggested.

In practice, it is essential for implementing the priority numerical measures to codify the products, the structural subunits and to set up a data bank with the quantitative measures which will supply the operation programs.

Practical considerations

The formulas presented above rely on a linear model and work with static measures. In reality though, the measures are rather dynamic. Thus, the lead time is a variable with respect to the level and the structure of the processing capacity. This is a general situation in operations management. Another overused static model is the breakeven analysis, with fixed costs and unitary price, and yet these fluctuate with the quantities of goods or services purchased by the customers, particularly in killing competition environments.

To narrow the gap between the theory and practical calculations, we suggest a proportion between the demand of every resource and its corresponding supply, at the level of each processing link, according to the following relationship:

$$\frac{\frac{1}{K_{nv}} \sum_{i=1}^{nv} \sum_{j=1}^{mv} Q_{ij,v}^k \times t_{ij,v}^k}{\frac{1}{K_{nv+1}} \sum_{i=1}^{nv+1} \sum_{j=1}^{mv} Q_{ij,v+1}^k \times t_{ij,v+1}^k} = \frac{F_{tdispv}^k}{F_{tdispv+1}^k} = C$$

where:

K_{nv} , K_{nv+1} represent the coefficients of fulfillment of the norm in the links v , and $v+1$ respectively;

$t_{ij,v}^k$, $t_{ij,v+1}^k$ is the time required to process the products i with the priority j , in the link v , and $v+1$ respectively;

F_{tdispv}^k , $F_{tdispv+1}^k$ are the available time resources in the link v , and $v+1$ respectively, in the time interval k ;

C – constant which, under circumstances of ideal efficiency, is going towards 1.

The other notations are similar to the ones used previously. To be noted that the relationship above would generate equality between priorities and calendar dates, but this is a desired rather than an effective situation. Moreover, the contingency and not the configurative concept is used in reality, to generate answers efficiently and effectively.

All these considerations lead to a new idea, that of studying and at a later stage implementing, of the genetic algorithms, in the context of our recent advances, reflected in both literature and business practice.

3. The next generation methods: TCR and heuristic algorithms

3.1. The total costs and risks - an alternative optimization criterion

The use of the *total costs and risks* function (*TCR*) represents an attractive alternative to the use of arbitrary constraints in the optimization process. The function is expressed directly in currency units (for instance •), being additive and allowing the aggregation in complex systems optimizations, with as many hierarchy levels as desired.

The implementation of the multidisciplinary optimization based on the total costs and risk criterion (*TCR*) has been presented in a number of papers (Moldoveanu, Pleter 2006, 2007, Pleter, 2004). As this method is a clear advance in the line of rationalization of the decisional system, we may attempt its implementation in the operations management too.

The multidisciplinary optimization is a non-linear optimization model to minimize an objective function or a comprehensive cost function (comprising as many variables and criteria as possible concerning the phenomenon under analysis, corresponding to all relevant aspects from all disciplines, both technical and economical). To add up more simple single-disciplinary cost functions, which make up the multidisciplinary cost function, these have to be expressed in comparable units, for instance in the same monetary units. Thus, the *TCR* is different from the classical optimization approaches: the optimization with constraints, and the optimization with Lagrange multipliers, which are used to introduce the constraints as penalizing costs. *TCR* allows the problem to be treated as an optimization without constraints, like the Lagrange method up to a point, but it avoids its problem with the multipliers, which are non-dimensional variables, lacking obvious significance in the problem space, with subsequent arbitrary choice based on trial and error. *TCR* approaches constraints in a more natural way. In fact, in nature there are no definite, net constraints. These are rather

the result of abstract thinking. In nature, the limits of a system may be better modeled as costs and risks in every scenario. For instance, if we wish to optimize the trajectory to exit a building, instead of putting a constraint that the trajectory passes through the location where the door is placed, we may do an exhaustive model: passing through the door costs close to zero (just the energy to press the handle to open and then to close the door) and the risks are also nil. The exit through the windows at the ground floor costs more and poses some risks, the exit through the windows at the upper floors poses risks which may be quantified as the probability of injury multiplied by the costs of injury integrated on the entire life time of the subject. The exit through the wall is costly (breaking the wall) and presents the risk of injury and loss of time. Under normal circumstances, this example seems insignificant, but let us assume, that we run a multidisciplinary optimization to evacuate a building collapsing in fire, by more individuals, through a single exit door. In these circumstances, the outcome will include more evacuation routes, even the riskier ones. As obvious from this example, we need to simulate the building as accurately as possible. *TCR* may be applied only on accurately simulated environments, but nowadays engineering is based on such thorough simulation, even with buildings.

The risks are translated into costs, by the method used in the financial management (the probability of the undesired event multiplied by the resulted damage). The name “total costs and risks” indicates just that, that an exhaustive and complete definition of the problem is required, in both space and time dimensions (for instance, we need to account for the costs and risks over the entire life span of the elements which generate them). Consequently, we are not working with draft or approximate reality any more, but the computation power of the current high power computing grids, as well as the fitness of the genetic algorithms to parallel computing, lead to the conclusion that such a natural modeling method, without constraints and Lagrange multipliers may be implemented, as the above-mentioned papers have ascertained.

The multidisciplinary optimization of a subsystem k will consequently pursue the minimization of the following function:

$$TCR_k = \sum_i C_{i,k} + \sum_j p_j \times R_{j,k} = \min$$

where:

TCR_k represents the value of the total costs and risks for the subsystem k ;

$C_{i,k}$ are the costs generated in the subsystem k in the considered scenario;

$R_{j,k}$ are the estimated damages to the subsystem k ;

p_j are the probabilities of damage occurrences as a function of the scenario considered.

The most interesting feature of the *TCR* function is the additivity, which is adequate to its implementation to complex systems. Thus, the multidisciplinary optimization for a system made of N subsystems will be carried on through minimization of the cumulated objective function:

$$TCR = \sum_{k=1}^N TCR_k = \sum_{k=1}^N \left(\sum_i C_{i,k} + \sum_j p_j \times R_{j,k} \right) = \min$$

The idea to use the *TCR* method in programming and planning processes is believed to be useful because the thorough analysis in time and space yields “routes”, “ways” or variants to reach a planning strategic goal.

The programs are clear examples of equal achievement lead us to the idea to use the *TCR* method, as an alternative to the instrumentation recommended in the economic theory and practice.

Besides avoiding some simplified assumptions described earlier, a *TCR* simulation environment could include valuation of the options in the delivery contracts, quantifying the risks of serious consequences with respect to non-delivery to certain clients within certain time limits, as well as all other risks and threats for all contracts pending.

After the optimization calculus, the best aggregate planning and master scheduling solution would be generated, and yet another crucial asset would emerge: if any initial condition would change (for instance a contract cancellation), the optimization process would continue with a gradual approach to the new optimum.

3.2. The genetic algorithms (GA) - a challenging proposition

“The genetic algorithms are search methods based on the natural selection and genetic mechanisms, abstracted from the algorithms used by living beings to adapt to a large variety of environments in perpetual change. We looked for the robustness of the natural systems; they are robust in an efficient and effective manner.” (Goldman, 1989).

Based on research of Charles Darwin (1871), Holland (1975) and Goldberg (1989) we tried a GA approach to the economic processes, where the operations management is a generous research field, particularly in the areas “research space”, “crossover and mutation operators” (Moldoveanu, Pleter, 2007, Moldoveanu et al., 2007, Pleter, 2004). Moreover, based on Goldberg book, we started studies to

implement GAs with simple “fitness” functions, through cost efficient procedures (Moldoveanu, Pleter, Dobrin, 2007), the immediate perspective being that of “computer implementation”, the authors looking for a computing grid to demonstrate the power of the method. Some encouraging conclusions may be underlined:

- i) in nature there is no “optimum”, just “better”;
- ii) in nature as well as in economy, the objective function changes dynamically with the environment;
- iii) the genetic algorithms are performing very well if the objective function keeps changing during the process.

From our simulations using the crossover and mutation operators, better adapted individuals (solutions) emerged, with further good probability of perpetuation (enhancement).

The population of a generation $i+1$ (each individual being represented by a finite string of symbols called *genome*, coding a possible solution in the given space of a problem) is more adapted than the previous generation i , although some $i+1$ individuals may be less adapted than those in i , a consistent and robust approach to economic improvement.

The process repeats itself forever with new “generations” of solutions, but we may choose to stop it when the best solution found is fair and the benefits of the search are obvious.

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“Globalisation of Corruption” and Development of the Binom “Corruption – Public Integrity” in the Context of Romania Integration into the European Union

■

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Abstract. *In the context of globalisation, the issue of corruption acquires specificity, deriving, on one hand, from the diversification of the modalities to corrupt or to be corrupted and, on the other hand, from multiplication of the means to fight against this phenomenon. The binom corruption-public integrity becomes a motto of the speeches held by politicians and generally those invested with leadership functions by the society.*

It is unanimously recognised the fact that a relevant indicator of an ethical leadership refers to the level and social perception of corruption. Speaking about “the devastating effect of globalisation on the developing countries and especially on poor populations”, J. Stiglitz (2002) allocates large spaces to corruption, referring to “the cases of foreign investments”, “capitalism based on favouritisms and mafia-typed connection” or “privatisation”. Including integration into the European Union as a form for expressing globalisation in the European area, it is worth to analyse some consequences of this process on the evolution of the binom corruption-public integrity. When we speak about “globalisation of corruption” we refer to some conclusions emphasized by the specialized literature and studies.

Without trying to make a hierarchy of those conclusions, we shall refer, first of all, to its multiple facets that, by chance or not, are overlapping the modalities for expressing globalisation on economic, cultural, political level and as well as on the public sector reform. If we analyse an outstanding paper about corruption of Rose-Ackerman (1999), we shall find out that three from the four basic chapters focus on approaching corruption as an “economic, cultural or political problem”⁽¹⁾.

Key words: binom corruption – public integrity; globalisation of corruption; globalisation consequences; public sector reform.

■

JEL Classification: H26, E26, F15.

1.1. Globalisation and corruption in the public sector. General aspects

In that paper, situating corruption in the public – private interface, the sub-themes aim specific topics for the public sector, out of which it is worth to mention the following: corruption at top civil servants level, public programmes reform, civil service reform, pressure on public administration

etc. At the same time, it is worth to emphasize the endemic characteristics of corruption in various regions as well as the relations between democracy and corruption with its various modalities of expression, i.e. buying the votes and political influence or even control by political power.

In the above briefly described context, the public sector reform, or better said the public management reform becomes an issue on the working agenda of governmental authorities.

We find these preoccupations both in the developed and developing countries. For the first category, an eloquent image about those preoccupations is provided by the reports and studies achieved by OECD Public Management Service, published in the paper: "Governance in Transition: Public Management Reforms in OECD countries" (1995). "A performance-oriented and consequently customer-oriented public administration represents the key focus of any strategy of reform." (OECD, 1995, p. 17).

It is obvious that implementation of this principle gets characteristics of globalisation, being undertaken also in the strategies of reform for the public sectors in the developing countries.

Another perspective, interesting for the proposed study is provided by E.J. Stiglitz's paper, stating about "the devastating effort of globalisation on the developing countries, and especially on the poor populations", awarding, in context, large spaces to corruption phenomena, referring to "cases of foreign investments", "capitalism based on favouritisms and mafia-type connections" or "privatisation" (Stiglitz, 2002, pp. 9, 121-123, 206-272).

Based on the analysis concerning the relations between market, state and social opportunity, Sen (2000) presents "the social services provision and incentives", emphasising a series of possible distortions due to information asymmetry, i.e. "the administrative costs, immense losses and corruption". The phenomenon, described as "power asymmetry, by which the «bureaucrat monarchs» have the power to grant benefits for which the beneficiaries are disposed to pay" will lead, consequently to "a greater possibility of corruption".

The author presents a more profound approach concerning the ethical values, policy-making, for the latest asserting the following:

- "justice is a central concept in identifying the objectives of a public policy and decision about the adequate instruments in order to achieve the targets;
- all public policies depend on how individuals and groups behave in society. Those behaviours are influenced by understanding and interpreting the needs of social ethics".

The perspective of social ethics and the relation with corruption in the public sector provide to Sen the opportunity to extend the analysis on the causes and consequences of corruption. "Dominance of corruption", as defined by the author is really seen as one of the greatest obstacles for the economic progress. The high corruption level could provide negative effects on public policies effectiveness" (Sen, 2000, pp. 171-338). Specific for the public sector, a series of attitudes are identified, by which some legislative regimes encourage corruption, providing discretionary power to the civil servant, who may award favours, representing a large amount of money.

At the same time, as asserted by some authors, the temptation to be corrupt is more powerful when the civil servants hold great power. In fact, the above-mentioned authors achieve their analysis within a framework taking into consideration political stability and corruption, emphasising two effects (Campante et al., 2005, p. 2):

- *the time horizon effect*, namely greater instability leads to higher corruption for those holding the power, taking advantage of this short opportunity;
- *the demand effect*, namely the private sector is more eager to bribe the politicians who are politically more stable.

Coming back to Sen (2000) paper, he associates to the civil servants holding the power the material situation, relatively modest, leading to increase of corruption temptation. "It happens at inferior levels of administration, explaining why corruption infiltrates at the basis of the democratic system, involving both middle civil servants and those on superior levels".

Prevention and fight against corruption become up to date. The direct motivation of corruption is to have a certain profit, thus its eradication becomes very difficult.

The specialised literature emphasises the possible partial efficiency of the organisational reforms and systems for inspection and sanctions for cutting off corruption. Their coverage area is relatively limited. It is worth to reiterate the example described by the Indian political analyst from the 4th century B.C. Kantilya, who made the difference between forty different ways in which a civil servant may be tempted to become corrupt from the financial point of view and he described how a cash payment system, followed by sanctions and rewards can prevent those activities (Bruno, 1996, pp. 7-8).

These arguments together with other assertions lead to supporting the opportunities to promote national or supranational strategies for the fight against corruption, or better said for ensuring public integrity.

I.2. Political determinations of corruption in Central and Eastern European countries. Corruption profile

Continuing the above-mentioned analyses, we can reveal an important conclusion, namely political determination of corruption phenomenon.

To the arguments derived from specialised literature, we may add those from analyses and reports of important forums or international organisations, such as the World Bank (WB) or Transparency International (TI). The latest asserts an important conclusion: the areas and institutions most affected by corruption remain the political parties, parliaments, police or judiciary (Table 1).

Without trying to ignore the details, the situation could be interpreted as worrying, because, at least during the last years, the main actors perceived to be most corrupted remain the political parties and parliaments. Table 1 presents the evolution of the sectors and institutions perceived to be most corrupted.

A comparison between the world level and that of South – Eastern European countries reveals the exceeding of the indicators for quasi majority of the sectors or institutions, varying between 0.2 for media, reaching 1.0 for the medical services, 0.8 for education services or registry and permit. Romania, as country in South – East Europe records, for 2006, lower values than the regional average, excepting the political parties, where it exceeds the regional level with 0.1.

Unfortunately, the above situation is associated to a negative appreciation about the effects of the governmental authorities’ actions concerning the fight against corruption.

Thus, as it results from TI reports, on South – East Europe level, that only 27% of the population appreciate those actions as effective or very effective and an important part of the population (9%) consider that those actions even encourage corruption. In Romania case, the perception about the effectiveness of the actions under discussion reveals even a lower percentage (16%) of those appreciating as “effective” those actions, 11% considering that those actions even encourage corruption.

Transparency International Romania has achieved analyses and comments concerning the current situation in Romania, showing the following:

- The Government’s efforts in the fight against corruption are perceived as less effective by 39% of the public. The appreciations are similar also for Bulgaria, while in Turkey, only 25% of the respondents say that the fight against corruption is ineffective and 29% appreciate it as effective.

- Romania is doing better than the European Union, taking into consideration the perception, where 42% represents the average of negative perception related to the effectiveness of EU Member States Governments actions. Those results may be explained in this way: in the context of the pressures of accession into the European Union on 1 January 2007, in Romania, great efforts were done in the fight against corruption; its results, although insufficient were intensely promoted to population by officials.
- Within the framework of the anticorruption measures, Romania ratified United Nations Convention against Corruption (Law no. 365/2004) and on legislative level, there were fulfilled the obligations provided by the Convention concerning the protection of integrity alarm signals (Law no. 571/2004) and conduct codes for the civil servants (Law no. 7/2004). However, TI Romania states: “the implementation of those measures remains in deficit as long as the law on protection of integrity alarm signals is still opaque for most of the employees in the public sector and the case law for sanctioning the civil servants is quasi lacking.”

Coming back to the worldwide considerations, we shall reveal some conclusions from TI report for 2006, formulated under the header: “corruption is a worldwide problem”.

The arguments, although they are not new, are based on the social perception that corruption is a major problem, and at the public authorities level it is expressed by abuse of office for private gains. The practice of bribe influences the poor countries, no matter its forms of expression. The funds embezzlement diminishes the real allowances for public services, health or education. Government actions to stop corruption have been judged as lacklustre and ineffective.

In all countries analysed by TI, the corruption phenomenon greatly affects people lives. And above all, TI report emphasises the fact that political parties are involved in corruption equation.

I.2.1 Evaluating the social perception of corruption

The evaluation of the social perception on the level and coverage area of corruption phenomenon has marked in the last decade and a half, major preoccupations on behalf of international institutions, already mentioned above.

We refer to the World Bank (WB) and Transparency International (TI). By its effects, corruption is not only a problem of public funds embezzlement or obtaining gains by the representatives of the political power; it has more

serious consequences within the governance process and good administration on social, economic level.

Below, we shall focus on the evolution of corruption in some South and Eastern European countries, on one hand, and achievement of a comparative situation with the evolution of the corruption phenomenon in EU Member States, on the other hand. For Romania, country that recently acceded into the European Union, situated in South – East Europe, this analysis creates the premises to determine more realistic measures, aimed to inscribe our country on an ascending evolution concerning the corruption phenomenon.

1.2.1.1. Romania and South-Eastern European countries

Concerning TI index on evolution of corruption for South – Eastern European countries, Table 2 presents the current situation. Figure 1 presents a more suggestive image on the evolution of this phenomenon.

Some relevant conclusions for Romania, in the context of South – Eastern European countries derive from the descending trend of corruption, since 2003, on one hand, and from comparison with the average of TI corruption indices for the mentioned countries, on the other hand.

The second perspective leads to the following conclusions:

- Variance as statistical characteristic for the level of corruption, measured by TI perception indices is 0.031 for Romania and 0.010 for the average of the South – Eastern European countries, revealing a more increased rhythm for cutting off corruption in Romania related to the average of the other mentioned countries.
- Calculating Pearson correlation coefficient, we shall find out for Romania a very good correlation with the average of the South – Eastern European countries (0.917), Serbia (0.903), Greece (0.860) or Macedonia (0.834). With Turkey, the correlation coefficient is lower (0.663), with Bulgaria (0.253) and Albania (0.181) is extremely reduced, even closer to lack of a correlation connection from statistical point of view. The correlation is negative with Croatia (-0.837).

Trying a similar analysis, using KKM index from the available data (Kaufmann et al., 2006), we obtain the data in Table 3 for South – Eastern European countries.

Figure 2 presents a more suggestive image on the evolution of this phenomenon. Table 3 and Figure 2 reveal the consistence of the two methods for evaluating the social perception of corruption. From the prospect of the analysis for Romania, we find out that 2002 marked the starting moment for a corruption cutting off process. At the same

time, we find out that the corruption level in Romania is higher than the average of South – Eastern European countries. Proceeding to a more detailed statistical analysis, we shall rediscover the conclusions previously exposed, when the analysis was achieved using TI index.

Using the input data of KKM indices, we reiterate the following conclusions:

- Statistical variance is 0.013 for Romania and 0.006 for the average of the South – Eastern European countries, revealing a more accelerated rhythm for cutting off corruption, related to the average of the mentioned countries.
- This time, Pearson correlation coefficients for Romania are positive only with Turkey (0.585) and Serbia (0.575), being negative with Greece (-0.973), Macedonia (-0.632) and with the other countries, the coefficient is almost zero, showing practically the lack of a correlation. The correlation with the average of the South – Eastern European countries is also reduced (0.259).

1.2.1.2. Romania and European Union countries

Both the period before accession and the recent accession of Romania into the European Union offer the opportunity for an integrated comparative analysis concerning the evolution of corruption in Romania in the context of the evolution of this phenomenon in European Union countries. Using the available data on <http://transparency.org.ro>, for the period 2001 – 2006, we obtain an evolution for social perception of corruption, as presented in Figure 3.

Obviously, for Romania and the other European countries, the comparison only in regard with corruption level leads to the conclusion that the level of corruption perception is highest. In other order of ideas, we find out that since 2002, the trend for cutting off corruption is ascending, as the average of the corruption indicators for EU countries.

At the same time, proceeding to a more detailed statistical analysis, we find out the following:

- The decreasing trend of corruption for Romania varies faster on a growing scale than EU average, as variance for Romania is 0.031 and only 0.014 for EU average.
- Pearson correlation coefficient is very high in the comparison between Romania and France (0.958), Czech Republic (0.949), Slovak Republic (0.896), Austria (0.890), Estonia (0.843), Germany (0.810), as well as EU average (0.906). Negative correlations for Romania are described by Pearson correlation

coefficient, related to the Netherlands (-0,879), Luxembourg (-0,771), Spain (-0,619), Poland (-0,601), Italy (-0,591), Finland (-0,521), as well as Sweden (-0,209), United Kingdom (-0,103). Related to Lithuania, the model does not capture any correlation connection (0.0).

Similar with the method used for comparative analysis in view of KKM index for all South – Eastern European countries, we shall attempt a similar analysis for all EU countries (Figure 4).

This time, the comparison between the average of EU countries (MEANUE) and Romania reveals the following conclusions:

- At EU level, KKM index signalises a growing trend for corruption since 2003, unlike Romania, where the same index indicates a slight decreasing trend for corruption.
- We may argument the above conclusion also by calculating Pearson correlation coefficients and making their comparison. Thus, the respective coefficient indicates a negative correlation with EU average (-0.334) and at higher levels with Greece (-0.973), Italy (-0.808), Sweden (-0.605), Netherlands (-0.485), United Kingdom (-0.483) etc. Positive correlations are indicated only with Slovenia (0.408), Malta (0.475), Germany (0.227), Belgium (0.209), Austria (0.103).

In our opinion, additional to those presented, other two conclusions are important for a more profound analysis. Thus, when comparing those two indices, different results occur significantly. Therefore, the first idea that could be operational relates to some aggregated corruption indices that cumulate the results regarding social perception. Such index will be presented, with experimental title even in this paper. On the other hand, we consider that in this complex mechanism for evaluating corruption, in the comparative analyses with EU countries a *dual effect* occurs between the real evolution of corruption and social perception in this regard. This effect originates from the stages of EU construction, precisely the periods previous to EU enlargement (we refer to enlargements from 2005 and 2007). On one hand, in older EU countries it is hard to believe that the corruption level has increased and on the other hand, in fact only the social perception has increased, due to social concerns about the effects of integrating new states, where this phenomenon registered more powerful levels and coverage areas. Thus a gap occurs between the real level of corruption and the social perception in this regard. It is obvious in the growing trend of corruption perception for many of older EU Member States. The

situation is different for the countries that acceded recently, where the trend of corruption is decreasing both as perception and real situation, due to insistent anti corruption measures. We shall come back to this analysis when referring to the proposal about an aggregated model for corruption analysis based on KKM and TI indices.

1.3 Decentralization and corruption

The decentralization process represents a direct effect of globalisation in the public sector. Several specialised papers and studies have already approached the connection between decentralization and corruption. Without ignoring Rose-Ackerman's contributions and other outstanding contributions, the core ideas of our brief analysis take into consideration a recent study presented in The Policy Research Working Paper Series, by Anwar Shah (2006). For Romania, Andrei (2007) achieved a relevant study.

In Romania, public administration reform in the area of decentralization and devolution includes three major elements: continuing decentralization by transfer of competences and administrative and financial responsibilities from central to local public administration authorities; continuing the devolution process by delegation of responsibilities in the territory, depending on the needs on local level, within the same administrative structure (the devolved services are subordinated to the ministry that delegated the responsibility); transforming the devolved services in territory, depending on citizens' needs into decentralised services under local authorities' responsibility. It is unanimously recognised the fact that the decentralization process and corruption could determine significant negative effects on economic and social level, on medium and long term.

Andrei (2007) achieves a study aimed to determine some characteristics of corruption in local public administration. The research was achieved on a representative sample of mayors of Romanian localities during November – December 2005. In order to create the sample, a cluster-type technique was used, the volume of the sample representing 9% from the total population of mayors. All mayors from seven counties were interviewed, the counties were randomly extracted. The error for estimating the parameters at the reference population level is plus/minus 1.2%.

The questionnaire comprised questions on measuring the mayors' opinion about actual issues concerning public administration reform, namely: civil service management, civil servants' in-service training, local public administration reform by continuing the decentralization

process, ensuring the training of elected officials on topics specific for local public administration, corruption, changes in the technical body from administration under the pressure of the political factor, quality of communication in the reform process etc. We shall use the database from the prospect of analysing the characteristics of corruption phenomenon in local public administration and identifying some characteristics of the decentralization process. A logistic model will be defined for corruption analysis. The analysis on the database aims to identify the mayors' position related to corruption in local public administration, thus estimating the amplitude and causes.

Within the framework of the study, based on the data recorded for the sample, the corruption phenomenon is signalled especially by the mayors that consider citizens to be directly involved in relevant decision-making on community level. Thus, Pearson correlation coefficient between the two variables is 0.315, significant for a threshold of 1%. This characteristic emphasises a direct cause for occurrence and maintaining of corruption phenomenon, namely lack of transparency in decision-making in public institutions from local public administration. In the context of decentralization, the study states: "corruption together with other factors contributes directly to low quality for service provision by a local public administration. The study defines the derivate variable: "Extent in which local public administration achieves its core functions" (Q5), as average of four variables, defining core functions: a) administrating and managing the public goods and funds at local level (Q1); b) ensuring basic services on local level (health, social security, education, culture, military etc.) (Q2); c) prognosis and economic-social development (Q3); and d) organisation (Q4). In order to quantify the mayors' opinion related to the extent in which local public administration achieves its core functions, a scale of ordinal measure was defined with the following items: 1- very low extent, 2- low extent, 3 – great extent, 4- very great extent. Table 4 presents the characteristics of the four primary variables and derivate variable. In the current study about decentralization, the mayors' vision is that local public administrations can fulfil their core functions only on a low extent; the less favourable situation is the low capacity of prognosis and economic-social development at local level, and ensuring basic public services. The low capacity of local administrations in basic service provision is determined directly by inadequate administration and management of public goods and funds on local level (Pearson coefficient is 0.549) and low organisational capacity (0.563).

I.4. Public Integrity Systems

As known, the country studies entitled *National Integrity System*, achieved by Transparency International are reports of analysis, presenting a detailed evaluation of the national systems for the fight against corruption.

At the same time, in Transparency International (TI) conception, the National Integrity Systems (NIS) comprise "key institutions, laws and practices (the "pillars") that contribute to integrity, transparency and accountability in a society" (TI, 2005, p. 1).

The perspectives of the analysis and modelling the corruption phenomena, aimed by our paper, are supported by the country studies that provide both an overview on NIS, the indicators for measuring the subsequent progresses from those countries, as well as a basis of comparisons among states.

The above-mentioned country study asserts: "when it functions correctly, NIS fights against corruption as part of a broader fight against the abuse of power, law infringement and fraud under all its forms". Ideas and studies about public integrity and description in this context of the role of important "pillars" have been also developed by other institutions. For example, The Economic Development Institute of the World Bank, in 1998 approaches the role of Supreme Audit Institutions (SAI) in promoting the responsibility and transparency within the governance process. Concerning public integrity, Dye and Stapenhurst (1998) appreciate: "building strong institutions is a central challenge of development and is a key to controlling corruption". Within the concept developed by the mentioned authors, "the integrity pillars" are as follows:

- political will;
- administrative reforms;
- "watchdog" agencies (Anti-corruption agencies; Ombudsman; Auditor general)
- parliaments;
- public awareness/involvement;
- the judiciary
- the media;
- the private sector.

Previous to this study, we remark Pope's contributions (1997) on development of the national integrity systems.

I.4.1. Stages in developing the National Integrity System in Romania

The country study on NIS for Romania has been elaborated since 2005. Synthesising the analysis achieved in the study from 2005 in developing the National Integrity System, in Romania, three stages could be revealed up to present:

1990 – 1998

- The period coincides with the first half of the transition period;
- The main exponents of the national public integrity were the Parliament and Government, that did not elaborate a public policy to promote the public integrity;
- The Judiciary had no capacity to adjust the deficiencies of the other 2 powers in the state;
- The social perception on the public pillars reveals a high degree of corruption, just in the interior of most of the public integrity pillars;
- The civil society was not concerned with corruption, focusing on ensuring the basic requirements of democracy, rule of law and respect for human rights;
- The international institutions were concerned about the economic and democratic reforms.

1999 – 2004

- The second stage coincides with the beginning of the negotiations of accession into the European Union;
- The international agencies have expressed their interest towards the Romanian public integrity system (programmes were initiated and political pressures were exerted for reforms);
- The main pillars of integrity – the Executive and Legislative – have realised the seriousness of the national corruption level;
- In 2001, the Government elaborated a National Anticorruption Strategy and the National Anticorruption Prosecutor's Office was set up;
- Other NIS pillars were strengthened, such as Ombudsman or Court of Audit.
- The progresses have determined Romania to become NATO member and closing the negotiations for accession into the European Union;
- The other pillars: Parliament, justice, police have not recorded progresses;
- The civil society was focused on the fight against corruption, adding on the public agenda law drafts, essential for public integrity;
- The public policies designed to ensure the cooperation between pillars were inconsistent, proving a low capacity of implementation and reduced political will.

2005 – present

- The third period coincides with signing the Treaty of Romania Accession into the European Union;

- The main political criteria were fulfilled;
- Romania should implement effectively EU standards in the area of justice concerning corruption level, competition and control in customs.

1.4.2. Social perception of NIS pillars

After Romania accession into the European Union, the National Integrity System has created significantly its own mechanisms of interaction, designed to lead to a better accomplishment of its mission. The research concerning social perception on the efficiency level of NIS pillars was achieved during January – February 2007, on a sample comprising 700 employees from the public sector, based on some characteristics of civil servants corps: age, sex, length in service, current job, level of civil service position.

From the respondents, 34% worked in central administration and the rest in local administration, out of which 26.1% in city halls and 14.1% in county and local councils. Judging the results obtained, on average, by each variable associated to the integrity pillars, the research reveals important issues (Table 5).

Figure 5 presents the variance of social perception on a scale from 1 to 4.

The perspective of a coherent action in the fight against corruption derives from research, using a statistical analysis of Pearson correlation coefficient. Thus, between NIS pillars there are different degrees of correlation, as follows: the most powerful correlation is between Parliament and Government (0.762) or Judiciary System (0.708). A medium correlation exists between Parliament and Control Institutions (0.629) or Ombudsman (0.603) and a lower correlation between the same Parliament and Court of Audit (0.458), Political System (0.485), Media (0.456), Civil society (0.474) or International Organisations (0.493).

Conclusions

The aspects presented in this paper represent a brief synthesis about corruption in the context of economic, social and political development of Romania. The globalisation processes with direct consequences also on the public sector determine a high degree of generality for various forms of corruption, on one hand and impose generalization of mechanisms and means for the fight against corruption, on the other hand.

The National Integrity System represents such a mechanism, of great complexity that becomes operational since Romania accession into the European Union. The analysis on the corruption phenomenon within the framework provided by NIS creates the premises of an

overwhelming action by all actors. Only after few years since application of this mechanism, the social perception is not very high. This fact is revealed also by the sociological research, presented in this paper. The analysis on the statistical correlation determines new directions for NIS development as well as the necessity to create more effective coordination mechanisms. Concerning the social perception of corruption, we come back to an important finding of the current study. It regards the dual

effect induced in the social awareness, where in a first perspective in the older EU countries it occurs the perception of increased corruption, and in other perspective in the recent EU countries, perception is contrary, even not supported by reality. It is worth to pay attention to this effect, for a series of further studies, as well as to conceiving and making operational some aggregated indicators of corruption perception, leading to compatible results, closer to reality.

Note

- ⁽¹⁾ The paper was presented at The Third Transatlantic Dialogue: “Leading the Future of the Public Sector”, University of Delaware, Newark, Delaware, USA, 31 May – 2 June 2007.

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Evolution of the corruption level during 2004-2006

Table 1
(%)

Sector/institution	2004	2005	2006
1	2	3	4
Political parties	4.0	4.0	4.0
Parliament/Legislature	3.7	3.7	3.7
Police	3.6	3.6	3.5
Judiciary System	3.6	3.5	3.5
Tax revenue	3.4	3.4	3.3
Business/ private sector	3.4	3.4	3.6
Customs	3.3	3.3	-
Media	3.3	3.2	3.3
Medical services	3.3	3.2	3.1
Education system	3.1	3.0	3.0
Registry and permit	3.0	2.9	2.9
Public services	3.0	3.0	3.0
The military	2.9	2.9	3.0
NGOs	2.8	2.8	2.9
Religious bodies	2.7	2.6	2.8

Source: TI, "Global Corruption Barometer", 2004, 2005, 2006

Evolution of corruption (TI) in South-Eastern European countries

Table 2
(%)

Country	Year					
	2001	2002	2003	2004	2005	2006
Albania	-	2.5	2.5	2.5	2.4	2.6
Bulgaria	3.9	4.0	3.9	4.1	4.0	4.0
Croatia	3.9	3.8	3.7	3.5	3.4	3.4
Greece	4.2	4.2	4.3	4.3	4.3	4.4
Macedonia	-	-	2.3	2.7	2.7	2.7
Romania	2.8	2.6	2.8	2.9	3.0	3.1
Serbia	-	-	2.3	2.7	2.8	3.0
Turkey	3.6	3.2	3.1	3.2	3.5	3.8
Average	3.19	3.11	3.11	3.24	3.26	3.38

Source: <http://www.transparency.org>

Evolution of corruption (KKM) in South-Eastern European countries

Table 3
(%)

Country	1996	1998	2000	2002	2003	2004	2005
Albania	0.07	0.99	-0.68	-0.86	-0.71	-0.81	-0.76
Bulgaria	-0.71	-0.56	-0.20	-0.19	-0.09	-0.03	-0.05
Croatia	-0.51	-0.39	-0.03	0.23	0.03	0.06	0.07
Greece	0.42	0.78	0.84	0.57	0.57	0.53	0.40
Macedonia	-1.06	-0.36	-0.52	-0.75	-0.73	-0.56	-0.50
Romania	-0.18	-0.44	-0.50	-0.35	-0.29	-0.29	-0.23
Serbia	-0.98	-1.03	-1.13	-0.77	-0.55	-0.55	-0.55
Turkey	0.10	-0.07	-0.36	-0.45	-0.27	-0.25	0.08
Average	-0.36	-0.14	-0.32	-0.32	-0.26	-0.24	-0.19

Source: http://info.worldbank.org/governance/kkz2005/sc_country.asp

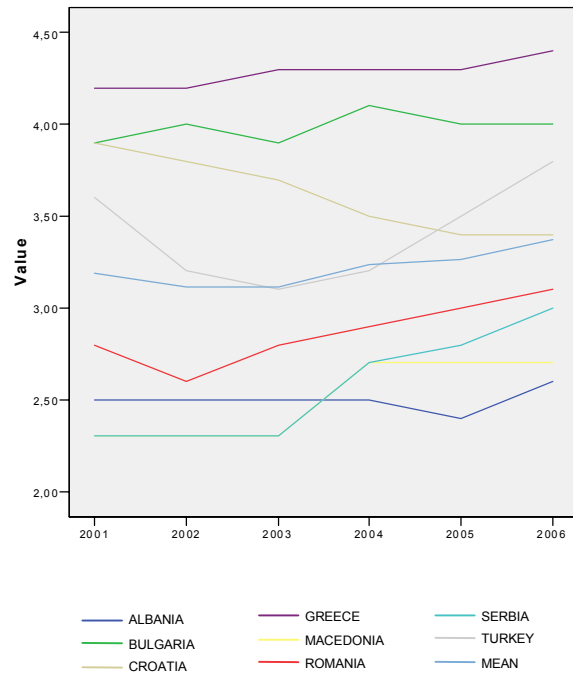


Figure 1. Evolution of TI corruption perception index in South-East Europe

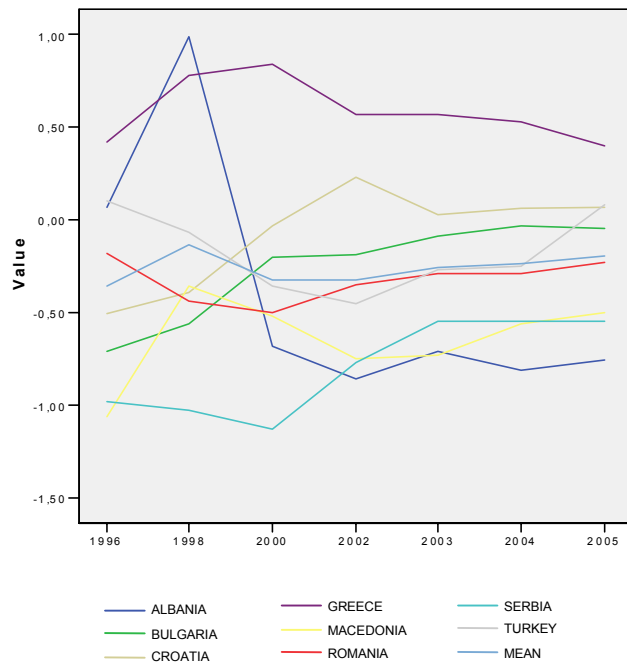


Figure 2. Evolution of KKM corruption perception index in South-Eastern European countries

"Globalisation of Corruption" and Development of the Binom "Corruption – Public Integrity" in the Context of Romania Integration into the European Union

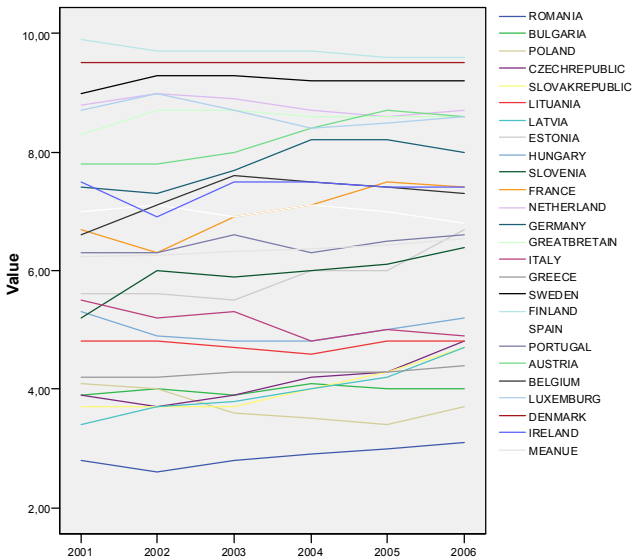


Figure 3. Evolution of IT corruption index for EU countries

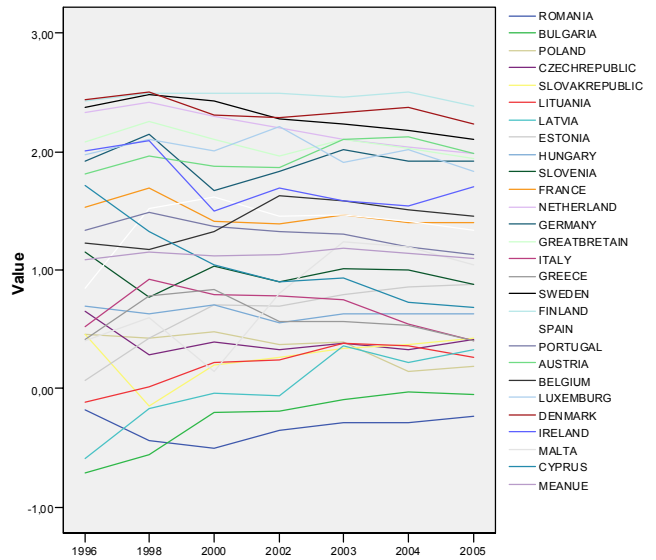


Figure 4. Evolution of KKM corruption index for EU countries

**Characteristics
of the variables Q1... Q5**

Table 4

Variable	Average	Standard deviation	Matrix for correlating the primary variables			
			Q1	Q2	Q3	Q4
Q1	2.79	0.701	1	0.549*	0.317*	0.521*
Q2	2.38	0.755		1	0.534*	0.563*
Q3	2.27	0.798			1	0.515*
Q4	2.70	0.779				1
Q5	2.53	0.600	-	-	-	-

* significant value for a threshold equal to 1%.

**Statistic average for social perception on NIS pillars
(using a scale from 1 to 4)**

Table 5

Pillar	Average	Pillar	Average
Parliament	1.621	Government	1.729
Judiciary System	1.925	Audit	2.338
Ombudsman	1.794	Control	2.028
Civil servants	2.369	Political System	2.516
Political System	2.206	Public Procurement	2.014
Media	2.948	Civil Society	2.928
International Organisations	2.864		

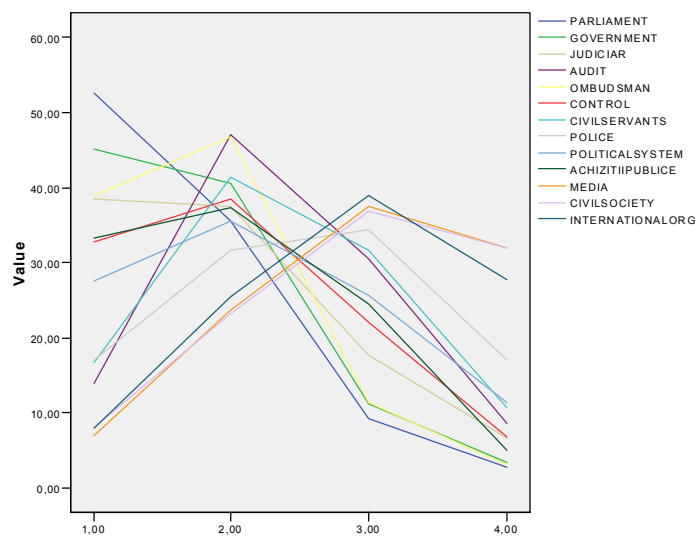


Figure 5. Evolution of social perception on integrity pillars

Fiscal Policy Stance in the Euro Area

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Abstract. *The budgetary position in the euro area and the EU improved significantly in 2007 compared to the previous year. The headline deficit declined to 1.6 % of GDP in 2006 and 1.1 % of GDP in 2007, down from 2.5% of GDP in 2005. The structural budget deficit diminished from 2% of GDP in 2005 to 0.8% in 2007, reflecting a restrictive fiscal policy in euro area. The fiscal policy became pro-cyclically because the economy of euro area is characterized by a slightly negative output-gap (estimated at 0.2% of potential GDP in 2007).*

Key words: euro area; Growth and Stability Pact; output-gap; structural budgetary balance; budgetary elasticity.

JEL Classification: E62, F36.

Fiscal policies in the euro area are national ones, but they have to respect the rules of Stability and Growth Pact, which represents an instrument of fiscal coordination. Its objective is the consolidation of the public finances in the euro area, by which to support the objective of price stability undertaken by the European Central Bank. By the reform of 2005, the Pact has a correction component (reduction of the budget deficit under 3% of GDP) and a preventive one that regards the membership states to assume a medium term objective (MTO) in connection with fixing the settlement of the public finances. In 2006, only two of the member states of euro area registered a deficit over 3% (Italy and Portugal), in comparison with five economies in the previous year. For 2007 year, The European Commission estimated that only Portugal will have an excessive deficit budget, of 3.1% from GDP, and in 2008 no economy will have a deficit over 3%.

The explanations of this favorable evolution of public finances in euro area are the follows:

- the output gap is slightly negative and reduced at beginning of 2006 year; in some economies such Germany and Austria, there is a positive output-gap;
- the labour market situation has improved rapidly. Two million new jobs were created in the euro area

in 2006 and the euro area unemployment rate reached its lowest level in more than a decade. The fall in the unemployment rate is largely attributable to reducing of the unemployment gap. The Commission expects the situation on the labour market to continue to improve in 2008;

- Government revenues have increased much faster than nominal GDP in the last two years. This reflects the effect of favorable growth composition, as GDP has been supported by the dynamism of tax-rich components (domestic demand).

The prospects for continued economic growth are better than they have been for many years. This favorable outlook provides Member States with an opportunity to consolidate government finances and to progress towards sustainable budgetary positions.

The member states have registered progress with reference to the corrective of the Stability and Growth Pact, but not in the preventive arm, because the fiscal consolidation process is still slightly despite of a favorable economic context (*good times*). A possible explanation may be using of the budgetary revenues surplus to finance the budgetary spending increase. In the euro area the

indirect taxes were increased and the corporate tax rate and the tax on the higher salaries were reduced. The social contribution registered a decline followed by the cutting down in the spending of the social assistance. In order to sustain the economic growth process, the budgetary spending for research-development activities, infrastructure and education have increased.

According to the Stability and Growth Pact reform, the increase of structural budgetary balance should be higher than the benchmark of 0.5% of GDP. This variable represents cyclically-adjusted budget balance (CAB), derived as the difference between the nominal balance and the cyclical component of the budget.

It is used for defining the fiscal policy stance, because the budget balance is influenced by cyclical and structural factors. The cyclical factors are related to variations caused by cyclical developments in GDP, while structural component it refers to change of the budget balance, if the economy would produce at potential GDP. Identification of the two components is essential to establish the orientation of fiscal policy makers in the coming years. The cyclical component of the actual budget balance is determined by the sensitivity of the budget balance to the economic cycle, because tax revenues are dependent on the level of national income. In the euro area, approximately 90% of budget revenues are from fiscal taxes, such as tax revenues are automatically lower when reduced economic activity and increase when there is an economic expansion. In terms of public spending, only those on unemployment benefits are sensitive to the evolution of GDP and their share is only 5%. Most public spending such as investments, acquisitions and wages do not depend on the evolution of economic activity, being discretionary ones. It results that the cyclical variation of the budget balance is explained in the highest proportion by the budget revenues change.

The identification of the structural budget balance requires:

- measuring the nature and intensity of an economy's business cycle, as the difference between actual GDP and potential GDP (ie the output gap);
- finding budget balance sensitivity depending on the cyclical evolution of the economy (the change in percentage points of the budget by one percentage point change of the output gap).

In this study, I pointed out the graphic and the analytic way in which the budgetary balance is cyclically adjusted. According to this, I established the nature of the fiscal policy promoted in the euro area between 1999 and 2008.

Understanding the structural budgetary balance

The output-gap is calculated as the difference between actual GDP (Y_a) and potential GDP (Y_p):

$$\Delta Y = Y_a - Y_p \Rightarrow Y_a = Y_p + \Delta Y$$

Actual output includes two components – the potential and the cyclic ones. According to this relation, the decomposition of the actual budget balance can be done, like this:

$$ABB = SBB + CBB,$$

where:

ABB – actual budgetary balance;

SBB (or CAB) – structural budgetary balance (corresponding of potential GDP);

CBB – the cyclical component of the budgetary balance (corresponding of output-gap).

Actual budgetary balance is calculated as the difference between the budgetary revenues (from T - taxes) and the budgetary spending (including transfers), thus:

$$ABB = T - (G+TR)$$

The function of taxes includes an independent component (autonomous taxes – n) and a dependent component ($t \times Y$, where t represents the marginal taxation rate in the economy).

$$ABB = (t \times Y_a - (G + TR - n));$$

$$SBB = (t \times Y_p - (G + TR - n)).$$

In order to explain the decomposition of the actual budgetary balance, I built two graphics, one of them reflecting the situation of budgetary deficit and the other showing a budgetary surplus (both for the economic recession situation).

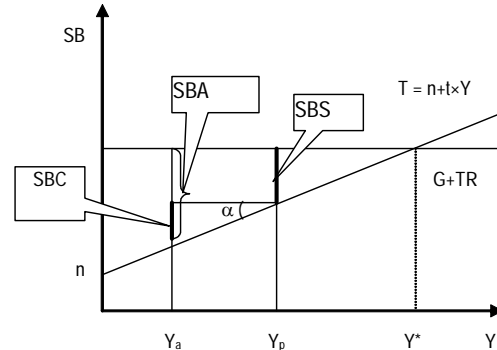


Figure 1. The budgetary deficit

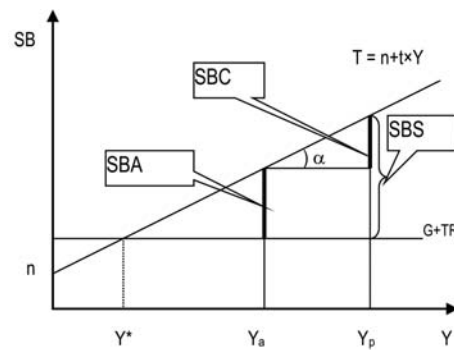


Figure 2. The budgetary surplus

In the following table, I showed the relations between actual and structural budgetary balance, as they result from the figures above.

Actual budgetary balance and structural budgetary balance

Table 1

Budgetary balance (BB)	Budgetary deficit	Budgetary surplus
ΔY		
$\Delta Y < 0$ (economic recession)	Actual budgetary deficit (ABD) is higher than structural budgetary deficit (SBD). The economy is in recession and the budgetary revenues reduce. Thus, the cyclical component of the budget has a deficit.	Actual budgetary surplus (ABS) is less than structural budgetary surplus (SBS). The budgetary revenues corresponding to actual GDP (Y_a) decrease and the cyclical component of the budget has a deficit.
$\Delta Y > 0$ (economic expansion)	Actual budgetary deficit (ABD) is less than structural budgetary deficit (SBD). The economy is in expansion and the budgetary revenues increase. Thus, the cyclical component of the budget has a surplus.	Actual budgetary surplus (ABS) is higher than structural budgetary surplus (SBS). The budgetary revenues increase and the cyclical component of the budget has a surplus.
$\Delta Y > 0$ $\Delta Y < 0$ Restrictive fiscal policy	ABD decrease; SBD decrease; $\Delta SBB > 0$	ABS increase; SBS increase; $\Delta SBB > 0$
$\Delta Y > 0$ $\Delta Y < 0$ Expansive fiscal policy	ABD increase; SBD increase; $\Delta SBB < 0$	ABS decrease; SBS decrease; $\Delta SBB < 0$

The expansive/restrictive character of a fiscal policy results from the estimation of the structural budgetary balance. If a government adopts a restrictive fiscal policy (for example, the increase in taxation), then the structural budgetary balance will increase ($\Delta SBB > 0$). If this registers a decrease, then the stance of the fiscal policy was expansive. The Stability and Growth Pact recommends the adjustment of the economy only by the working of the automatic stabilisers, and so avoiding the promotion of active fiscal measures. In these circumstances, the fiscal policy is considered neutral and the variation of the budgetary balance to the adjustment of output-gap is not statistically significant. Cimadomo (2005) estimated that the fiscal policy is neutral for small variations of the structural budgetary balance (between -0.2 and 0.2 percentage points). The fiscal policy can be considered *pro-cyclical* if it is restrictive in the situation of negative output-gap of economy and *countercyclical* if it is expansive in the presence of positive output-gap.

Structural budget balance (or cyclically-adjusted budget balance) is calculated as difference between actual budgetary balance (ABB) and the cyclical component of the budget (CBB). This one is the α angle's opposed catheter in figure 1 and can be calculated as:

$$\text{tg}\alpha = \frac{\text{CBB}}{\Delta Y} \Rightarrow \text{CBB} = \text{tg}\alpha \times \Delta Y.$$

The tangent represents the budget sensitivity at GDP variation, noted ε . This parameter is given by the difference between the sensitivities of revenues (ε_R) and of expenditures (ε_G).

$$\begin{aligned} \text{SBS} &= \frac{\text{SBA}}{Y_a} - \varepsilon \times \Delta Y; \\ \Delta Y &= \frac{Y_a - Y_p}{Y_p} \Rightarrow \text{SBS} = \frac{\text{SBA}}{Y_a} - \varepsilon \times \frac{Y_a - Y_p}{Y_p} \end{aligned} \quad (1)$$

$$\varepsilon = \varepsilon_V - \varepsilon_G \Rightarrow \frac{\partial \text{SBA}}{\partial Y_a} = \frac{\partial V}{\partial Y_a} - \frac{\partial G}{\partial Y_a} \quad (2)$$

The budgetary sensitivity ε is derived from budgetary elasticities measuring the percentage change in budgetary items associated with a percentage change in GDP:

$$\varepsilon_R = \eta_R \times \frac{R}{Y}; \quad \varepsilon_G = \eta_G \times \frac{G}{Y};$$

where:

η_G, η_R denote, respectively, the elasticities of revenues (R) and expenditures (G) with respect to output produced; $R/Y, G/Y$ – shares of budgetary revenues and expenditures in current GDP.

$$\eta_G \Rightarrow \frac{\partial G}{\partial Y_a} \times \frac{Y_a}{G}; \quad \eta_R \Rightarrow \frac{\partial R}{\partial Y_a} \times \frac{Y_a}{R} \quad (3)$$

The unemployment related expenditures are cyclically-sensitive to output variation; thus, the expenditure elasticity η_G can be expressed as:

$$\eta_G = \eta_s \times \frac{G_s}{G} \quad (4)$$

where:

η_s is the elasticity of unemployment-related expenditures and the G_s/G is the share of unemployment related expenditure on total current expenditure.

The elasticity of budget revenues is influenced by the structure of the tax system and by tax share of each category in total budget revenues. For proportional taxes (such as indirect taxes) elasticity is equal to 1 for the upper unity is progressive and regressive for the lower than 1. Budgetary income elasticity is obtained as the aggregate sum of the four taxes categories elasticities (corporate tax, income tax, indirect taxes and social contributions), weighted by their share in total revenue (R_i/R) as in the relationship (5):

$$\eta_R = \sum_{i=1}^4 \eta_{R,i} \times \frac{R_i}{R} \quad (5)$$

The structural budgetary balance (SBB) has the following formula, using equations (1) – (5):

$$\begin{aligned} \text{SBS} &= \frac{\text{SBA}}{Y_a} - \varepsilon \times \frac{Y_a - Y_p}{Y_p} \\ &= \frac{\text{SBA}}{Y_a} - \left(\left(\sum_{i=1}^4 \eta_{v,i} \times \frac{V_i}{V} \right) \times \frac{V}{Y_a} - \eta_G \times \frac{G}{Y} \right) \times \frac{Y_a - Y_p}{Y_p} \end{aligned} \quad (6)$$

The elasticity of the budgetary revenues estimated in the 2005 year was 1.04, which is the weighted sum of the following tax elasticities: 1.48 for income tax rate, 1.43 for the corporate tax rate, 1.00 for indirect taxes and 0.74 in the case of social contributions. The elasticity of unemployment-related expenditures is negative (-0.15), because the decrease of production is accompanied by the increase of the unemployment and by the growth of these spending. The sensitivities of budgetary revenues and expenditures (ϵ_R, ϵ_G) were calculated taking into consideration their average shares in GDP between 1992 and 2004. The total sensitivity (ϵ) was 0.48 (calculated as the difference between 0.42 and -0.06). It results that the increase with 1 percentage point of GDP generated the improvement with 0.48 percentage points of the actual budgetary balance. The cyclical budgetary balance (CBB) is equal to the product between the precedent sensitivity (\hat{a}) and output-gap estimated at -1.2% of potential PIB, which means -0.6%. In 2005, the structural budgetary balance (SBB) of the euro area was -1.9% and the actual budgetary deficit was 2.5% of GDP. Starting with 2003, the cyclical component of the budgetary balance was negative, which is specific to a negative output-gap (table 1).

The fiscal policy framework in the euro area

In the euro area, the structural budgetary balance grew by 0.9 percentage points (p.p.) in 2006 year from 2005 year and only with 0.3 p.p. in 2007 from 2006 year. The positive evolution of this variable is a proof of restrictive

fiscal policy stance in the euro area. The output-gap of the euro area with 15 members (Malta and Cyprus adopting the euro from 1 January 2008), calculated on the bases of the production function, registered a decrease since 2005. This is maintained slightly negative, being estimated at 0.2% in 2007 and 0.1 of potential GDP in 2008. Under these circumstances, the fiscal policy of euro area, determined by the evolution of the structural budgetary balance, is a restrictive and procyclic one (under the circumstances of a negative output-gap).

In the next diagram I analyzed the fiscal policy stance of the euro area between 1999-2008 (for 2007 and 2008 the dates are estimated by European Commission), depending on the output-gap registered. The variable represented on the vertical axis is estimated as the variation of the structural budgetary balance (in percentage points from the preceding year). Its evolution represents a sign of the fiscal policy stance that was adopted in the euro area. Thus, the structural budgetary balance decreased in 2001 and 2002, which corresponds to an expansive fiscal policy. Starting from 2003, the character of the fiscal policy was a restrictive one, the structural budgetary balance increasing with 2 p.p. between 2003 and 2008. The fiscal policy stance promoted in the context of a negative output-gap (from 2003 year) was first neutral and after pro-cyclical. In 2001 and 2002 it had a pro-cyclical character because it was promoted an expansive fiscal policy in the context of economic expansion.

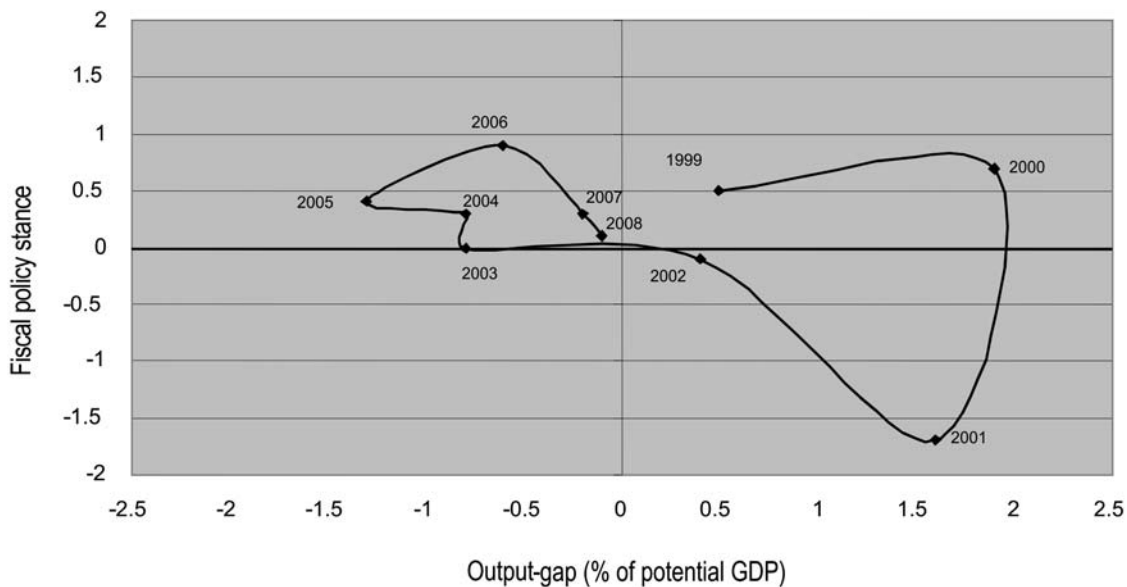


Figure 3. The fiscal policy stance in the euro area and the evolution of the output-gap

The restrictive and pro-cyclical stance of the fiscal policy is influenced by the application of the rules of Stability and Growth Pact. Thus, the most important economies of the euro area have promoted restrictive fiscal policies (the increase of taxes, the decrease of the social transfers) to eliminate the excessive budgetary deficit

(Germany between 2002 and 2005, France between 2002 and 2004, Italy between 2003 and 2006 registered budgetary deficits higher than 3%).

Cimadomo (2005) estimated the fiscal policy stance in the euro area and observed that Growth and Stability Pact seems to have strengthened the pro-cyclicality of the fiscal

policy. This tendency slightly increases in the euro area in periods characterized by recession (sensitivity of SBB with respect of output-gap decreases from -0.03 between 1981 and 2005 to -0.07 between 1999 and 2005) but it was not statistically significant. Thus, he labeled the fiscal policy as neutral. In the periods characterized by large expansions (with output-gaps higher than 3% of potential GDP), he found that the stance of euro area fiscal policy has still been neutral between 1981 and 2005 years but has turned clearly and significantly pro-cyclical after the 1999. In this interval, for each percentage point increase of output gap, the structural balance deteriorated by 0.26 percentage points in the euro area.

Analyzing the fiscal policies stance in the member states of the euro area (EMU-12), I found that the most of economies have promoted a restrictive and pro-cyclical fiscal policy between 2004 and 2006. All the countries, excepting Greece, have registered a negative output-gap in this period, which would have implied an expansive fiscal policy, for stimulating the internal demand, in the context of restrictive monetary policy of European Central Bank. For 2008, European Commission estimated that only Germany, Finland and Netherlands will have a pro-cyclical fiscal policy, the first two being characterized by a positive output-gap.

The fiscal policies stance in the member states of the euro area

Table 2

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Belgium	E. P.	N. (DI)	R.A.	E.P.	R.P.	E.A.	E.A.	R.P.	E.A.	N.(DI)
Germany	R. P.	R.A.	E.P.	N.(DR)	R.P.	R.P.	R.P.	R.P.	R.A.	E.P.
Ireland	E. P.	R.A.	E.P.	E.P.	R.A.	R.P.	N.(DR)	R.P.	E.P.	E.A.
Greece	R. P.	E.A.	E.P.	N.(DR)	E.P.	E.P.	R.A.	R.A.	E.A.	R.A.
Spain	R. A.	N. (DI)	R.A.	R.A.	R.A.	N.(DR)	R.P.	R.P.	N.(DR)	E.A.
France	R.A.	E.P.	N. (DI)	E.P.	E.A.	R.A.	R.P.	R.P.	N.(DR)	N.(DR)
Italy	R.A.	N. (DI)	E.P.	R.A.	N.(DR)	R.P.	N.(DR)	E.A.	R.P.	N.(DR)
Luxembourg	E. P.	R.A.	R.A.	E.P.	E.A.	E.A.	R.P.	N.(DR)	R.P.	N.(DR)
Netherlands	R.A.	R.A.	E.P.	E.A.	N.(DR)	R.P.	R.P.	R.P.	E.A.	R.P.
Austria	E. P.	R.A.	R.A.	N.(DR)	E.A.	N.(DR)	E.A.	E.A.	N.(DI)	N.(DI)
Portugal	N.(DI)	E.P.	E.P.	R.A.	R.P.	E.A.	E.A.	R.P.	R.P.	N.(DR)
Finland	N.(DI)	R.A.	E.P.	N.(DR)	E.A.	E.A.	R.P.	R.P.	R.A.	E.P.

Note:

E.P. – expansive and pro-cyclical fiscal policy;

E.C. – expansive and countercyclical fiscal policy;

R.P. – restrictive and pro-cyclical fiscal policy;

R.C. – restrictive and countercyclical fiscal policy;

N.(E, R) – neutral fiscal policy in the context of economic expansion (E), respectively economic recession (R)

Database: European Commission, DG ECFIN, 2007.

Even if starting with 2006 year the most of euro area member states have registered a favorable economic evolution still the progresses in reduction of structural budgetary deficits are more insignificantly. There is rather a bias for a neutral or expansive fiscal policy in the euro area. Thus, those economies will have difficulties in fulfilling the medium term objective (MTO) of fiscal policy, according to the structural budgetary balance level

(represented on the vertical axis of the figure 4 and expressed in percentage of GDP).

In particular, some Member States which have achieved their MTO seem to be pursuing pro-cyclical fiscal policies while others not yet at their MTO are not pursuing an annual structural adjustment of at least 0.5% of GDP. This runs counter to the spirit and the letter of the preventive part of the Pact.

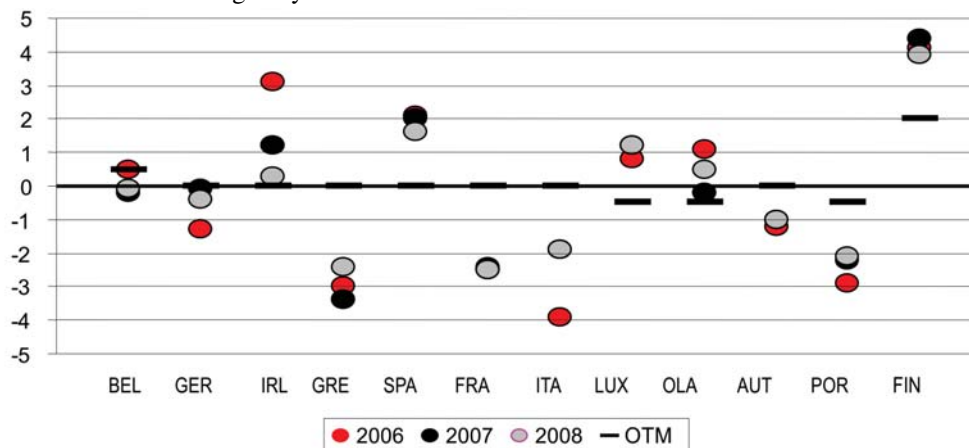


Figure 4. Structural budgetary balance and the MTO in the countries of EMU-12 (2006-2008)

The following classification of the euro area member states results from the figure 4:

a) the member states currently at their MTO are expected to loosen their fiscal stance in 2008 in comparison with 2006 (without Luxemburg). The fiscal stance will be expansionary what generate a worsening of CAB. It will diminish with 0.5 percentage points in Spain (ES), 0.6 p.p. in Netherlands (NL), with 2.9 p.p. in Ireland (IE) respectively;

b) the economies with their CAB less than MTO should adopt a restrictive fiscal policy. According to the European Commission, Italy and Germany registered a significant increase of CAB in 2007 (2 p.p., respectively 1.3 p.p), but for 2008 it forecast a finishing of this positive evolution. In France, in the absence of offsetting measures, the announced tax-reduction measures will generate a slightly reduction of the CAB (0.1 p.p. in 2008). Greece adopted a restrictive fiscal policy between 2005 and 2007 years, which determined reduction both the budgetary deficit

(under 3%) and the structurally deficit (3% in 2006 and 2.4% in 2008).

Conclusions

The budgetary position expected for 2008 year presents common features with the period of economic expansion between 1999 and 2002, because the medium-term budgetary objectives are established on the basis of optimistic expectations on the evolution of the economy, which is reflected in the increase of the future budgetary revenues. Promoting an expansionary fiscal policy, as in 2001 (table 2), it may generate a rapid deterioration of budget balances in the case of the reversals of economic developments trend. To not generate effects similar to those of the recent past, euro area governments should not adopt expansionary discretionary policy, but further fiscal consolidation (by increasing the structural budget balance), leading to greater strength of the economy in the bad times.

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Determining the Efficiency Frontier



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***Abstract.** This article tries to answer an actual issue inducted by the title portfolio management. How do we combine the risky assets with the ones without risk, which are the portfolios selection criteria, which are their performances and the choices of the rational investor.*

Key words: efficiency frontiers; efficient portfolio; assets without risk.



JEL Classification: G11, G14.

Portfolio management allows the achievement of a maximum profitability per risk unit. The manager of a portfolio follows the identification of the efficient portfolios starting from the premise that there is an efficient portfolio at a certain profitability which is preferred among all the other portfolios which have an equal profitability with this one. Starting from this content the efficiency frontier offers us a relation between the profitability and the risk of the dominant portfolios. It allows us to know which are the gain expectancies of the investments for a certain level of assumed risk.

There are two big identifiable categories of efficiency frontiers:

1. The first category is the efficiency frontier built only on risky assets, starting from the premise that the investor makes placements only in risky assets preferring the risk;
2. The second category is the efficiency frontier calculated for the risky assets and the assets without risk, when the investor makes its placements in assets without risk in order to diminish the assumed risk.

The theories that lays at the foundation of determining the efficient portfolios consisting of risky assets are those of Markowitz and Sharpe.

Markowitz considers that the selection process of the portfolio can be divided in two stages, specifically: the analysis of the value titles and the establishment of some scenarios regarding the profitability evolution and that of the future risk, the process of optimum portfolio selection

based on the previous predictions. He does not accept the rule of actualized value maximization of the future benefits because this does not take into account the risk and the investors' attitude towards risk. A criterion is proposed aiming to increase simultaneously the specific profitability of the mobile values and to diminish the risk associated with it. Markowitz suggests that the process of portfolio selection should be approached in connection to previous estimations of the titles future performances. The analysis of these estimations in order to determine a group of efficient portfolios and the selection from this multitude of efficient portfolios that meet the investors' preferences represents the meaning of Markowitz's theory.

This model tries to solve the problem of portfolio management which consists of determining the efficient portfolios. A portfolio is efficient if no other ensures a better profitability for the same risk or the same profitability at a lower risk.

The portfolio analysis requires a large quantity of information and Sharpe was trying to diminish the number of these information using a set of simplifying hypothesis. The diagonal model answers these requirements starting from a simple presentation of the correlation that exists among the profitability evolution and the placement mobile value risk and a macroeconomic factor. Thus, we eliminate the big number of information necessary for grouping the inter-correlations between the titles, taken two by two. The profitability of a title is in a linear relation

with a macroeconomic factor and the associated risk can be structured in specific risk and systematic risk. The specific risk can be taken away through diversification and this is where the investment talent of the portfolio manager manifests and the systematic risk is a characteristic of the economic environment and can not be eliminated through diversification. In Sharpe's model, in contrast with Markowitz's model, the negative balances are admitted too, representing the loan to the interest installment without risk to obtain the funds necessary for the risky assets with big profitability. This model introduces as a coefficient to measure the correlation among the profitability and the risk of the title and the considered macroeconomic factor, the volatility indicator. The introduction in the portfolio of the asset without risk according to CAPM model leads to the appearance of a new efficiency frontier.

A. The efficiency frontier with actives without risk

The portfolio management is uni-periodical which allows the determination of an optimal structure for the period taken into account. The calculations of profitability expectancy and that of variance-covariance matrix correspond to this period.

The profitability of the assets without risk is the one that corresponds to the portfolio structure study period. If the portfolio is restructured at three months, for example, the profitability of the assets without risk can be the interest installment for the thesaurus bills issued at three months. The interest installment is considered unique for all the investors categories and also considers, theoretically, that the interest installment for deposits is equal with the interest installment for loans.

Be the profitability vector N actives:

$$R = \begin{bmatrix} E(R_1) \\ \vdots \\ E(R_n) \end{bmatrix}$$

The vector of the investment proportion in risky assets is:

$$x = \begin{bmatrix} x_1 \\ \vdots \\ x_n \end{bmatrix}$$

Variance-covariance matrix:

$$\Omega = \begin{bmatrix} \sigma_{11}^2 & \dots & \sigma_{1N} \\ \vdots & & \vdots \\ \sigma_{1j} & \dots & \sigma_{1N}^2 \\ \vdots & & \vdots \\ \sigma_{1N} & \dots & \sigma_N^2 \end{bmatrix}$$

The profitability expectancy of the portfolio is:

$$E(R_p) = \bar{R}^T \times x = x^T \times \bar{R}$$

where:

x^T is the transpose of x .

Portfolio dispersion or variance is:

$$V(R_p) = x^T \times \Omega \times x$$

This modality allows the matrix calculation for profitability and risk, using the variance-covariance matrix.

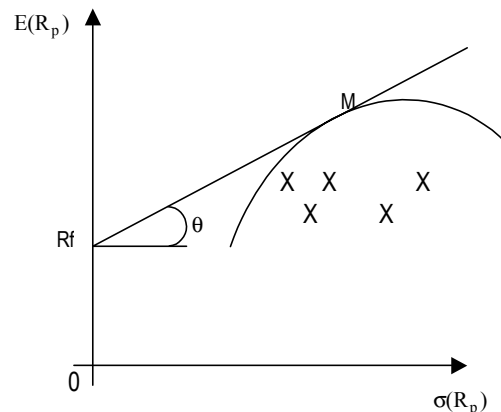
The computation of efficiency frontier with assets without risk

Due to Tobin's studies we know that the efficiency frontier is a line. The problem is to determine the portfolio structure which are situated on this line and to determine the equations of profitability/risk.

a) Graphic solution:

A method to solve the problem consist of:

- identification of efficiency frontier composed by risky assets and risk less assets;
- the determination of the line characteristic for the risky assets which is tangent with the respective efficiency frontier.



His efficiency line (R_f, M) offers a secant of superior profitability to the efficiency curve without asset without risk. The assets without risk ameliorate the relation profitability-risk.

b) A direct mathematical solution:

This consists of direct maximization of the R_f line thus:

$$\text{Max} \theta = \frac{E(\bar{R}_p) - R_f}{\sqrt{V(R_p)}} \text{ cu } \dots \sum_{i=1}^n x_i = 1$$

To introduce the asset without risk profitability in the

objective function we consider that $R_f = \sum_{i=1}^n x_i \times R_f$

$$\text{We will have } \theta = \frac{\sum x_i \times R_i - \sum x_i \times R_f}{\sqrt{\sum x_i \times x_j \times \sigma_{ij}}}$$

$$\theta = \frac{\sum_{i=1}^n x_i (R_i - R_f)}{\sqrt{\sum_{i=1}^n \sum_{j=1}^n x_i \times x_j \times \sigma_{ij}}}$$

For maximization:

$$\frac{\sum x_i (\bar{R}_i - R_f)}{\sqrt{\sum_{i=1}^n \sum_{j=1}^n x_i x_j \sigma_{ij}}} = x^T (\bar{R} - \bar{R}_f) [x^T \Omega x]^{-\frac{1}{2}}$$

The differential of first order is:

$$\frac{d\theta}{dx} = (\bar{R} - \bar{R}_f) [x^T \Omega x]^{-\frac{1}{2}} + \left(\frac{1}{2}\right) 2\Omega x [x^T \Omega x]^{-\frac{3}{2}} (x^T (\bar{R} - \bar{R}_f))$$

where \bar{R}_f is a vector of N dimension

Multiplying the equation with: $[x^T \Omega x]^{-\frac{1}{2}}$ we get:

$$(\bar{R} - \bar{R}_f) - \Omega x [x^T \Omega x]^{-1} (x^T (\bar{R} - \bar{R}_f)) = 0$$

The calculation consist in determining the differences between the column vectors of N dimension:

$$(\bar{R} - \bar{R}_f) - [x^T \Omega x]^{-1} (x^T (\bar{R} - \bar{R}_f)) \Omega x = 0$$

Noting $\lambda = (x^T (\bar{R} - \bar{R}_f)) (\bar{R} - \bar{R}_f) [x^T \Omega x]^{-1}$ the prime of risk per risk unit becomes:

$$(\bar{R} - \bar{R}_f) - \lambda \Omega x = 0$$

A last change of variable leads to:

$$\begin{aligned} \lambda x &= z \\ R - R_f &= \Omega x \\ \begin{cases} R_1 - R_f = z_1 \times \sigma_{11} + z_2 \times \sigma_{12} + \dots + z_n \times \sigma_{1n} \\ \vdots \\ \bar{R}_N - R_f = z_1 \times \sigma_{N1} + z_2 \times \sigma_{N1} + \dots + z_N \times \sigma_{NN} \end{cases} \end{aligned}$$

It is a system in z to find out the investments proportion we make the change of variable:

$$\begin{aligned} x_i &= \frac{z_i}{\sum z_i} \\ \sum x_i \times \lambda &= \sum z_i \Rightarrow \lambda = \sum z_i \text{ dacă } \sum x_i = 1 \end{aligned}$$

The calculation of the efficiency frontier without risk assets

This frontier is hard to compute, because it is not the equation of a line but of a curve of II grade.

The most used method is the Merton method(1972).

He considers the efficiency frontier can be built starting from the combination of two efficient portfolios consisting of risky assets.

We will follow:

$$\text{Min } \frac{1}{2} x^T \Omega x$$

With the conditions:

$$x^T \times \bar{R} = E(\bar{R}_p)$$

$$X^T \times \bar{1} = 1$$

where:

$\bar{1}$ is a column vector of 1.

$E(\bar{R}_p)$ is the expectancy of the fix profitability for the portfolio

It is calculated the langrangian:

$$L = \frac{1}{2} x^T \Omega x + \lambda [E(\bar{R}_p) - x^T \bar{R}] + \gamma [1 - x^T \bar{1}]$$

where the condition of first order:

$$\frac{dL}{dx} = \Omega x - \lambda \bar{R} - \gamma \bar{1} = 0 \quad (1)$$

$$\frac{dL}{d\lambda} = E(\bar{R}_p) - x^T \bar{R} = 0 \quad (2)$$

$$\frac{dL}{d\gamma} = 1 - x^T \bar{1} = 0 \quad (3)$$

From the equation (1) we have:

$$x = \lambda \Omega^{-1} \bar{R} + \gamma \Omega^{-1} \bar{1} \quad (4)$$

Multiplying this equation with \bar{R}^T :

$$\bar{R}^T x = \lambda (\bar{R}^T \Omega^{-1} \bar{R}) + \gamma (\bar{R}^T \Omega^{-1} \bar{1})$$

Replacing $\bar{R}^T x$ in equation (2) we get:

$$E(\bar{R}_p) = \lambda (\bar{R}^T \Omega^{-1} \bar{R}) + \gamma (\bar{R}^T \Omega^{-1} \bar{1}) \quad (5)$$

Multiplying the equation (1) with the linear vector 1:

$$\bar{1}^T x = \lambda (\bar{1}^T \Omega^{-1} \bar{R}) + \gamma (\bar{1}^T \Omega^{-1} \bar{1})$$

And using equation (3):

$$1 = \lambda (\bar{1}^T \Omega^{-1} \bar{R}) + \gamma (\bar{1}^T \Omega^{-1} \bar{1}) \quad (6)$$

The equation system:

$$\left. \begin{aligned} E(\bar{R}_p) &= \lambda (\bar{R}^T \Omega^{-1} \bar{R}) + \gamma (\bar{R}^T \Omega^{-1} \bar{1}) \\ 1 &= \lambda (\bar{1}^T \Omega^{-1} \bar{R}) + \gamma (\bar{1}^T \Omega^{-1} \bar{1}) \end{aligned} \right\} \Rightarrow$$

can be solved by using the determinants method

$$\begin{aligned} \begin{vmatrix} \bar{R}^T \Omega^{-1} \bar{R} & \bar{R}^T \Omega^{-1} \bar{1} \\ \bar{1}^T \Omega^{-1} \bar{R} & \bar{1}^T \Omega^{-1} \bar{1} \end{vmatrix} &= \\ (\bar{R}^T \Omega^{-1} \bar{R}) (\bar{1}^T \Omega^{-1} \bar{1}) - (\bar{R}^T \Omega^{-1} \bar{1})^2 &= B \times C - A^2 \end{aligned}$$

$$\lambda = \frac{\begin{vmatrix} \bar{R}^T \Omega^{-1} \bar{R} & E(\bar{R}_p) \\ \bar{1}^T \Omega^{-1} \bar{R} & 1 \end{vmatrix}}{D} = \frac{B - A \times E(\bar{R}_p) - A}{D}$$

$$\gamma = \frac{\begin{vmatrix} E(\bar{R}_p) & \bar{R}^T \Omega^{-1} \bar{1} \\ 1 & \bar{1}^T \Omega^{-1} \bar{1} \end{vmatrix}}{D} = \frac{B - A \times E(\bar{R}_p)}{D}$$

where:

$$A = R^T \times \Omega^{-1} \times \bar{1};$$

$$B = R^T \times \Omega^{-1} \times R;$$

$$C = \bar{1}^T \times \Omega^{-1} \times \bar{1};$$

$$D = B \times C - A^2.$$

The proportion inside the efficient portfolio is determined starting from the equation (4) by replacing the values:

$$x = \frac{[C \times E(\bar{R}_p) - A] \times \Omega^{-1} \times \bar{R} + [B - A \times E(\bar{R}_p)] \times \Omega^{-1} \times \bar{1}}{D}$$

$$x = \frac{B \times \Omega^{-1} \times \bar{1} - A \times \Omega^{-1} \times \bar{R}}{D} + \frac{C \times \Omega^{-1} \times \bar{R} - A \times \Omega^{-1} \times \bar{1}}{D} E(\bar{R}_p)$$

$$x = g + h \times E(\bar{R}_p)$$

If we consider that $E(\bar{R}_p) = 0$, then g represents the optimum proportion in a portfolio with a null secant of profitability. For $E(\bar{R}_p) = 1$ results that $x = g + h$ is the optimum proportion for a portfolio with the secant of profitability equal to 1.

Presenting the concepts represents just the beginning of the portfolio management analysis. The mirage of low risk investments but with high returns will always exist despite our desire to present the objective, mathematic content of the choice. What I want to underline is that there will always be those that will not have a rational behavior and that will want eventually even to break the rules for an immediate gain. The human nature gives up in front of the wish to get rich making curious choices. Would we be able to quantify these things also? This is a challenge.

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Considerations Regarding the Conflict Management

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Abstract. *The conflict has always been present among people. It arises at the level of human relationships and has a specific form of expression, according to its evolutionary stage. Because of the fact that people are part of an organization, they bring the conflict with themselves. Any attempt of efficiently managing an organization without taking into account the fact that organizational conflicts are inevitable are bound to failure. In order to successfully handle conflicting situations, old habits and empirical pieces of knowledge are no longer sufficient. We therefore witness the birth of new theoretical concepts and innovative practices, as well as the coming into being of different strategies and approaches regarding conflict management which are based on a set of clear ideas that we will develop in the following article.*

Key words: conflict; conflict management; conflict models; culture; strategy.

JEL Classification: M12, M54.

1. The nature of conflict

The conflict always existed and exists between people. Wherever there are people, there are *ideas, values, circumstances, styles and standards* that can be in conflict. This means that anything can be the *cause of a conflict*: objectives, goals, aspirations, unfulfilled expectations, habits, prejudices, personalities and ideologies, competition, sensitivity and offence, aggressiveness and many other things.

According to *Sam Deep and Lyle Sussman*, there can be identified three *causes for perpetuating the conflict*:

- we live in a world that is more and more complex and diverse; different persons that wish different things and *there are few things that can please everybody*;
- no matter where we work, we have something in common with all the other employees; we work with people and *this means confronting inevitably with the conflict*; misunderstandings, incompatibilities, aspirations, offended egos;

- we live and work in a world that imposes *limits on resources*; the conflict appears because of the *scarce resources and organizational constraints*.

Consequently, at any level *the conflict* interferes between people under any circumstances, *it is expressed specifically human* at any stage and the attempts of analysis or solving that do not take into account this truth will fail.

Moreover, like any other social organism, *the existence and the dynamic of any organization* involve both cooperation or dialogue, and *conflict*, because "*conflict is an inherent organizational process*", as *Richard H. Hall* stresses.

Consequently there is no perfect organization because, as *G. A. Cole* states, there are no relations without difficulties and the relations with the employees within organizations are no exception from this rule. In other words, *conflict is an important part of the corporatist*

life, and its main forms are already well known by any person concerned with the organization problems.

Even if the situations when people are conflicting within the organization are almost infinite, there are still some main reasons that favour the conflict.

- *the existence of a dualism* in people's relationships;
- *responsibility* in various situations consists of managing "*the whole*" (the organization objectives and values) by managing the "*parts*" (independent individuals);
- no matter how many people agree with the established objectives, they will have different opinions on the way of fulfilling them.

As a result, the concept of conflict takes into account all antagonist kinds of opposition and interaction, all forms of intolerance, deriving, as Judith R. Gordon specifies, from the attempts with incompatible influence between and within individuals, groups and organizations.

According to other authors, such as Robert E. Callahan and his collaborators, the term of conflict is used to describe:

- *problematic states* (resource crisis);
- *individuals' affective states* (hostility, frustration, struggle, anxiety);
- *cognitive states* (awareness of the conflict situations);
- *behavioral states* (from the passive resistance to open aggression, without forgetting secrecy, pettiness etc.).

All these aspects and many others made Laurie J. Mullins state: "Conflict is a characteristic of the imbalanced nature of the organization life."

Under these circumstances, some specialists in the field, such as Rahim, stress the fact that "conflict management should be understood as the success management". According to other authors, this means:

- to understand why the control of the conflict should be positive and oriented towards obtaining high performance;
- to be aware of the necessity of special analyses in the field of conflicts;
- to be able to put into practice the principles of harmonious relations.

As a result, it must be promoted a culture of understanding and conflict resolution, without neglecting the skills necessary to recognize the existence of a conflict, to understand how serious it is and to be able to approach it in an adequate way.

In order to promote such success strategies regarding the conflict management, it is necessary that the specialist should try, as G. A. Cole states, to enhance the prestige and the reputation of their profession.

In order to reach such objectives, personnel managers have to, according to the *Deontological Code for the professional institution* in Great Britain, comply for example with a series of norms regarding the employees:

- to maintain high standards of accuracy regarding information;
- to make sure that information from personnel will remain confidential;
- to be prepared to act as counselors or negotiators;
- to maintain equitable and reasonable standards in their treatment.

As concerns the issue of the organizational conflict, this has a specific history, because the conflict did not raise a particular interest. However, this does not mean that the subject is less important, but the fact that researches in this field have not paralleled yet the researches dedicated to other functions of the human resources management.

2. Approaches regarding conflict

For a better understanding of the nature of the conflict, one of the first necessities is to know its evolution in time.

Although the specific literature display numerous points of view regarding the nature or the definition of the conflict, eventually there have appeared the following approaches regarding the conflict within organizations: traditional approach; human relations approach; interactionist approach.

■ *The traditional approach* considers conflict as being dysfunctional by definition. This makes its approach negative and many individuals still consider it so. According to Gary Johns, in the day-to-day life there have been stressed especially the negative and dysfunctional aspects of the conflict.

The conflict is perceived not only as harmful, abnormal and useless, but also as an energy and time consumer. Consequently, the traditional approach considers that it is necessary to avoid or eliminate it by removing its causes.

This idea represents a simplistic approach of the conflict and an out-of-date standard for its assessment, because it brings forward the conflict itself and not its management, which can lead to the improvement of performance.

■ *The human relations approach* has as a premise the interpersonal relations established between individuals with different personalities, objectives, mentalities, education value systems and behaviours, which generate conflicts.

The representatives of this school of human relations consider conflict a natural and inevitable result that should not be perceived only as a negative force, but also as a positive force that can influence the performance of the group or organization. As the conflict is inevitable, this idea supports the acceptance of the conflict.

This approach considers the conflict the result of a defective management, this meaning that the manager should not eliminate at any cost any conflict, but only those conflicts that prove to be real obstacles for accomplishing the objectives. Consequently, this approach regards those management strategies focused both on recognizing conflicts and on solving or eliminating them.

■ *The interactionist approach*, which is the most recent one, views the conflict not only as inevitable, but also as absolutely necessary, as an important force that stimulates innovation and changing. In this regard, Gary Johns mentions that such an approach suggests the fact that there are situations when the managers can favour the change by a strategy of stimulating the conflicts. The real problem does not concern the conflict itself, but the ways it can be managed in order to enhance its positive effects and diminish the negative ones. According to such an approach, the conflict is neither good nor bad, it simply exists, but it can be functional or constructive when it is managed correctly.

The main contribution of this approach consists of the fact that it encourages, as Robert E. Callahan and his collaborators mention, preserving a medium or optimum level of conflict, which can be correlated with the evolution of the organizational processes or with the obtained performance. As Townsend states, it should be taken into account the fact that *up to a certain point, conflict can be seen as a sign of a healthy organization*.

Consequently, the approaches regarding conflict evolved in time, together with the changing of focus from the problem that generates conflict to the way of approaching it.

3. The causes of conflicts

Solving successfully the conflict situations requires also identifying and being aware of the causes of the conflicts in order to be able to use properly the positive effects and to reduce as much as possible the negative consequences.

Although the sources of conflict are extremely diverse, according to the managerial theory and practice in the field, the main causes of the conflicts are:

- different points of view on the priorities and on the ways of reaching the objectives;

- differences in the way of perception or in the system of values;
- lack of communication or faulty communication;
- competition regarding the scarce resources or competition for supremacy;
- differences of power, status and culture;
- „trespassing” of the territory, which is not limited to the physical space, but includes also the other scarce resources for which people compete (spaces, investments, personnel, endowments, rewards etc.). According to Laurie J. Mullins, establishing or conferring the territory can be made formally (organizational structure), informally (norms of the group) or by other procedures (committees);
- ambiguity; unclear purposes and objectives, imprecision;
- nature of the activities and interdependence of the tasks;
- a change in the external environment of the organization;
- aggressiveness and stubbornness, because some individuals live their lives as they are permanently searching for competitors, as Sam Deep and Lyle Sussman noticed.

4. Models of conflict

The development of the managerial theory and practice in the field led to drawing up some models of conflict that allow to acknowledge and understand, more or less in detail, the causes and mechanisms of the conflictual situations. The elaboration of such models, with different levels of specificity, involves also formalizing the concepts of various specialists regarding the way to approach the issue of the conflict management.

Being concerned especially with the conflicts issue, W. K. Thomas considers that the models of conflict can be oriented either to the process or to the structure of the conflict situation. At the same time, taking into account the opinion of another group of researchers regarding the so called organizational models of conflict, it results the following classification of the models of conflict: the conflict episode model; the structural conflict models; the organizational conflict models.

The conflict episode model (Pondy) implies identifying the events that characterize a conflict situation and the sequent relations between the various steps. Each step anticipates the conflict episode and prepares the following events in the next steps. According to Pondy’ s model, the process evolves from the latent conflict to the perceived conflict or to the felt conflict and at least to the manifest conflict (figure 1).

According to the model, the latent conflict is determined by the consequences of previous conflict episodes (figure 1) that result in fact from the fundamental conditions of the conflict.

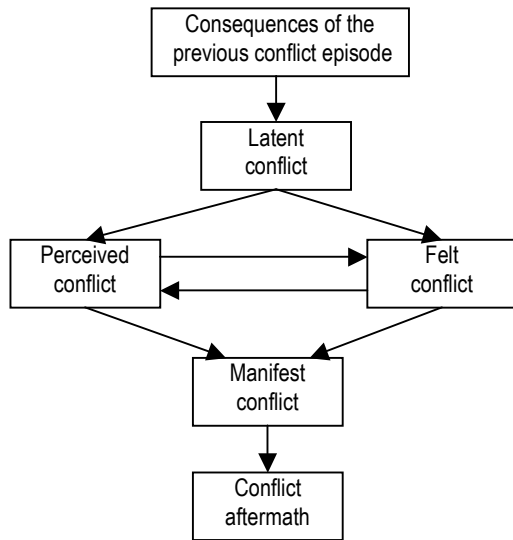


Figure 1. The conflict episode model - Pondy

The way the perceived conflict or the felt conflict becomes manifest conflict (figure 1) depends, according to L.R. Pondy, on the availability of the solving mechanisms. At the same time, the consequences of the conflict situations result then in a factor stimulating the next conflict episode.

The structural conflict model (Thomas) defines the favouring conditions of the conflict and describes the way these influence the conflict behaviour.

According to the model, the circles represents the interacting parties or groups (figure 2). The model suggests the fact that the parties act under certain pressures and constraint that lead eventually to the conflict episode.

Each group manifests certain behavioural predispositions within each conflict episode. At the same time, the groups' behavior can be influenced also by the social pressures. It is taken into account for example the trade union component and the force of its pressures, as well as the management – trade unions relation.

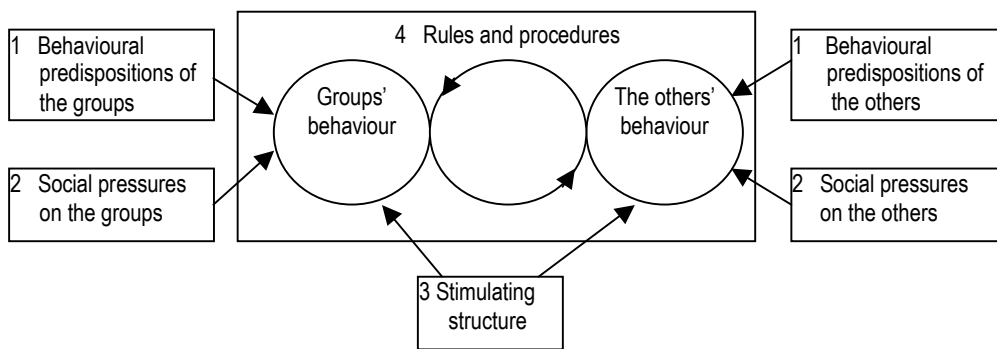


Figure 2. The structural conflict model- Thomas

Another source that influences the conflictual behavior is represented by the *stimulating structure* or the manner in which the satisfaction of a group is connected to the satisfaction or dissatisfaction of another group. The high interests can lead either to competition or to collaboration, according to the level of the conflict of interests. If the interests are insignificant, both competition and any chance to have a conflict are lower.

According to the model, the finale source of the conflicts is represented by the rules and procedures that govern the groups' negotiations. The compliance with the rules and procedures that may be, as W. K. Thomas stresses, formal or informal agreements, can represent an important factor in settling or solving the disputes or the conflict states. In the way the parties involved comply with the established rules and procedures, an essential role is played by the cultural values, tradition and current practices.

The *organizational conflict model* (Robbins) imagines conflict as having the following *main sources*: communication; structure; factors of personal behaviour (figure 3).

Communication. As Stephen P. Robbins mentions, although there is no classification of the sources of conflict according to their importance, it is considered that most of the conflicts are due to the communication problems. There are many situations when there is used partial, ambiguous or threatening information or when it is transmitted a quantity of information that is too high and that cannot be perceived properly.

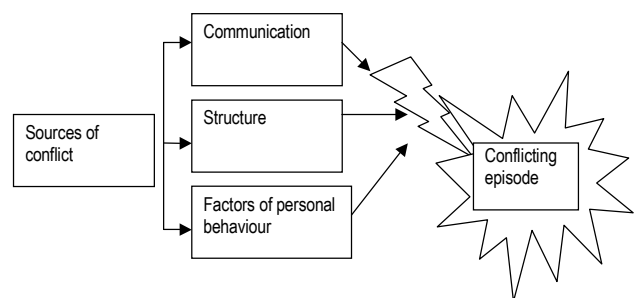


Figure 3. Model of conflict – Robbins

Structure. The author considers that the structural variables, such as the beaurocratic elements, the reward

systems, the interdependence of the tasks and the heterogeneity of the personnel, can create conflicts both between individuals and between groups.

Factors of personal behaviour. According to Stephen P. Robbins, each of the factors of personal behavior (personality, satisfaction, the status or the objectives) can favour or diminish the conflict. For example, it should not be neglected the reaction of the individual confronted with incompatible objectives.

The organizational conflict model (Brown) brings forward the confrontation areas or “territories” which have the larger meaning of those “scarce resources for which people are competing”. As on the confrontation areas the social groups are face to face, they have to interact. In this regard, Brown suggests four types of interferences:

- Department interferences;
- Hierarchical level interferences;
- Cultural interferences;
- Organizational interferences.

5. Conflict management strategies

The managerial theory and practice in this field reveal numerous strategies of solving the conflictual situations within an organization, such as:

- Strategy oriented towards avoiding (avoiding/neglecting);
- Strategy oriented towards accommodation (adaptation/concession);
- Strategy oriented towards competition (authority/power);
- Strategy oriented towards compromise (sharing);
- Strategy oriented towards collaboration (integration).

The strategy oriented towards avoiding (avoiding/neglecting) is characterized by the fact that, although the parties in conflict admit the existence of the conflict, they do not want to have a confrontation. As Jean-M. Hiltrop and Sheila Udall mention, this approach regards conflict as a situation that must be avoided by any means. A similar idea is expressed by Derek Torrington and Laura Hall who think that conflict can be kept under control by ignorance or neglect.

Although avoiding conflicts can offer a certain diminishing of the stress created by the rigors of the conflict, as a matter of fact the situation does not change. This means that the efficiency of this strategy is limited. If there are not taken measures solving the conflict, it is very likely to reappear. As Rodica and Dan Cădea state, the conflict does not disappear “by itself”, but remains in a latent state.

The main *disadvantage* of this strategy is that it ignores the conditions that generate the conflicts.

The strategy oriented towards accommodation (adaptation/concession) is that strategy of solving the

conflicts in which the parties involved do not try to impose their own point of view, but rather to satisfy the others’ needs. This means that “accommodation”, as a way of approaching the conflict, determines the managers to cooperate and to tend to satisfy the others’ needs and at the cost of their own interests, especially when harmony and stability are very important values. Such a strategy can be adopted to obtain and build a social credit social for the future case of more important problems or when situation is simply out of control. Also, this way to approach the conflict is preferred in order to show the common sense, when the aggressiveness of the other party implies an unacceptable behavior.

As Jean-M. Hiltrop and Sheila Udall mention, this approach of the conflict involves maintaining the interpersonal relations by any means, without taking into account the personal objectives of the parties involved. In other words, the parties in conflict overestimate the value of maintaining the interpersonal relations and undervalue the importance of reaching the personal objectives.

Consequently, this strategy can reduce the felt conflict and can be sometimes useful or efficient on a short term. However, on a long term, people cannot be always willing to sacrifice their objectives or their personal needs only to maintain the interpersonal or collaboration relations. More than that, this kind of strategy of accommodation or adaptation can limit the creativity and stop the emergence of new ideas and solutions for solving the conflicts.

Strategy oriented towards competition (authority/power) is in direct opposition with strategy of accommodation and represents that strategy of solving the conflicts that, according to Gary Johns, tends to maximize the weight of the own interest or point of view and minimize cooperation. We have thus the tendency to frame the conflict within a strategy win/loss or “winner-loser” that can have multiple negative consequences and eventually, if the parties have equal forces, they arrive to a dead end and no decision can be made.

That is why Jean-M. Hiltrop and Sheila Udall stress the fact that this strategy represents a way of approaching the conflict oriented towards power, in which it is used any kind of power that seems appropriate to defend a position considered correct or that can win by any means.

This strategy is considered appropriate especially in the situations when it is much power involved, when there is the certainty of the real facts, in vital problems for the success of the organization or when situation is really a win-loss type.

The strategy oriented towards compromise (sharing) represents this type of conflict management that combines in intermediary or medium doses imposing the own interest or point of view and cooperation or satisfying the others’ needs. The parties involved in the conflict, being aware

that the risk of stirring a conflict is too big, take into account both their and the other party's interests. In other words, it is accepted partially the point of view of the other party, this meaning "sharing the difference".

This way of approaching conflicts involves, as Jean-M Hiltrop and Sheila Udall state, admitting the fact that a win-win strategy is not possible. As this strategy usually involves a negotiation, in which it is adopted a position that eventually will lead to a small gain and a limited loss both from the point of view of the interpersonal relations and of the objectives.

The strategy of compromise aims at finding a solution mutually advantageous that should satisfy both parties involved in the conflict. This approach signifies that both parties adopt a position "minimum win – minimum loss". This means that both parties have unsatisfied interests in the same proportion.

Although the compromise is a wise reaction for a temporary balance, this strategy is not always useful, as for example in the case of solving the conflicts derived from the power asymmetry, when the weakest power has much less to offer to the strongest party.

The strategy oriented towards collaboration (integration) represents that way of approaching the conflict

that, as Gary Johns states, maximizes both imposing the own interest or point of view and cooperation or satisfaction of the others' needs in the view of obtaining an integrative agreement or solutions which can satisfy the interests of all the parties involved in the conflict. It tries to combine the opposite opinions or to gain the adhesion of all the parties involved in the conflict in the view of reaching a mutual consensus or reaching the objectives in a peaceful way.

According to Jean M. Hiltrop and Laura Hali, the strategy of collaboration takes into account solving the conflict by maintaining the inter-personal relations between parties and ensuring that both parties will achieve their goals. This strategy requires that both parties should adopt a win-win solution that can lead them to a better position, especially because of the mutually shared values.

Although *the strategy of collaboration* requires time, energy, exercise and creativity, it has obvious advantages that lead eventually to improving the organizational efficiency and efficacy.

All in all, the above strategies regarding the conflict management have some advantages or disadvantages that make them less adequate for a certain conflictual situation, without neglecting the cultural differences influencing them.

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Typological Analysis of Buying Actions

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***Abstract.** The typology of buyers and buying actions contracts are specific categories of consumer behaviour, determining group buyers and buying actions in classes, to fragment the markets. Market fragmentation through buyer typology and/or segmentation is presently characterized by a multitude of theoretical approaches and are especially generated by the common practice in the respective business. These two concepts are used for the same purpose, the essential difference being their starting point: the segmentation fragments the markets as a whole, while the typology of the buyer and of buying actions generate classifications starting from individual cases.*

Key words: buyer typology; buying actions typology; market fragmentation; statistical methods in buying typology.

■

JEL Classification: D11, M31.

On a conceptual basis, specialists distinguish the following main categories when referring to the typology of the buyer and of buying actions:

- the usual buying behaviour;
- the buying behaviour focused on variety;
- the buying behaviour focused on reducing the dissonance;
- the complex buying behaviour.

The usual buying behaviour is represented by that type of buyers who are not too implicated in acquiring

products or services, when there are assortments and brands in the market with no significant differences. In such situations, the consumers are in most cases used to a brand or another as a result of price and promotion and the decision processes is based on habit rather than personal evaluations.

The buying behaviour focused on variety also refers to a reduced consumer implication in acquiring goods and services, but under the conditions that assortments and brands found on the market are significantly different. This

type of consumer frequently changes the bought brands not due to dissatisfaction but rather due to a need of variety.

The buying behaviour focused on reducing the dissonance is characteristic for the consumer type who is strongly implicated in the buying process, while the differences between brands and assortments on the market are vaguely relevant. Such situations are common between expensive products or services, with a reduced buying frequency, which demonstrates a risk of cognitive dissonance.

The complex buying behaviour is associated with the consumers who are very implicated in the buying process and who perceive significant differences between brands and assortments existing on the market. In such cases we speak about expensive goods as well, with a reduced buying frequency, which expose consumers to cognitive dissonance.

From a *methodological* point of view, the approach to the typology of buyers and buying actions can be realized through a multitude of methods, techniques or procedures. In this context an example based on *the analysis of the multiple linear discriminant* is considered as instructive.

The discriminant analysis is one of the statistical methods applied in various studies of typology of the buyer and of buying actions, as well as in classifying problems in general. The interest of experts – statisticians, researchers, marketing people etc. – for the application of this statistical method is thoroughly justified, as markets are exceedingly heterogeneous, and some traditional criteria of segmentation and typology (like statistical data regarding incomes, age, gender or occupation of consumers) have proved to be insufficient for adequately basing complex marketing decisions. Therefore, grouping the population in buyers and non-buyers (of a product or a brand) can be much more attractive and pragmatic for decision takers in real marketing, in comparison to the traditional grouping, according to some purely statistical criteria.

The discriminant analysis thoroughly satisfies such practical needs, because the types of consumers have to present a big internal homogeneity and simultaneously an external heterogeneity (they have to be as diverse as

possible). Using and interpreting the discriminant analysis is very similar to the multiple regression analysis: a linear combination of numerical values of several independent variables is used to predict the behaviour of a dependent variable.

In order to apply the analysis of the multiple linear discriminant several steps have to be followed. In a hypothetical example, these would be as follows:

- Suppose a colour TV producer is interested in knowing the potential demand for a brand he wants to put on the market, on four characteristics considered as relevant: diagonal dimension of 57 cm (X_1), memory for 90 channels (X_2), warranty period of 3 years (X_3) and the sales price of 800 lei (X_4). In other words, the producer is interested to understand the relative importance potential buyers grant to each of the four characteristics. E.g. if a response “I would buy the product” is always associated with a high grade for characteristic “diagonal dimension of 57 cm”, and the response “I would not buy the product” with a low grade of this attribute, we could conclude that the diagonal dimension is a good discrimination for separating buyers from non-buyers. Another characteristic, e.g. the capacity to memorize 90 channels, can have the same level for potential buyers as well as non-buyers, implying a reduced capacity to discriminate this attribute, in comparison to the diagonal dimension of 57 cm.
- A reduced number of potential buyers is requested (e.g. 20) to give a grade between 1 to 10 (10 being the best grade), for each of the four attributes, and to state, based on the given grades, if they would buy such a product or not. The received responses allow calculation of some arithmetic averages for each considered attribute, separately for the potential buyers and non-buyers.
- To determine the multiple linear discriminant equation we first need to calculate the differences between the average of the grades given by the persons who intend to buy the product and the average of the grades given by the persons who do not intend to buy this product, for every considered attribute.

- Further we determine the sums, the squared sum and the multiplied sum for the considered attributes, without taking into account whether these belong to the buyer or the non-buyer.
- Applying the formula:

$$\sum X_i X_j = \sum X_i X_j - \frac{\sum X_i \sum X_j}{N} \quad (1)$$

the squared and multiplied sums can be expressed as deviations from their own average. In this formula, X represents the attributes considered and N the number of persons included in the research.

- Based on the deviations from the average of squared and multiplied sums, the coefficients of the multiple linear discriminant equation (a, b, c, d) are obtained, by solving a system of four simultaneous linear equations. The coefficients can have, of course, positive or negative values, as the case may be.
- In this way a linear equation is derived, that is used to evaluate the relative importance of each attribute considered, in the general selection, that can be performed in the decision to buy or not to buy the respective product. This linear equation is the abstract form of the discriminant, that in our case has the following content:

$$D = a \times X_1 + b \times X_2 + c \times X_3 + d \times X_4 \quad (2)$$

In this equation the values X_1, X_2, X_3 și X_4 represent the given grades for all four considered attributes (or the average of the given grades), whereas a, b, c and d represent the values of the calculated coefficients.

- If in the equation (2) above the evaluations of X_1, X_2, X_3 and X_4 related to the buyers are used, a numerical index D_c is obtained, describing the group of potential buyers, and if the evaluations for X_1, X_2, X_3 and X_4 of the non-buyers are used then a numerical index D_n is obtained describing the group of potential non-buyers.
- If the values of X_1, X_2, X_3 and X_4 related to individual grades given by a new person contained in the research are introduced in equation (2) then a specific index will be used, and the respective person will be classified as a potential buyer or non-buyer as the numeric index value is closer to D_c or to D_n . Suppose $D_c = 0.578, D_n = 0.191$, and the value of D for a new person who is asked to evaluate the four attributes (without being asked if he/she will buy the considered product or not) is $D_{specific} = 0.412$. This value is closer to D_c , which leads to the conclusion that this person can be included in the buyer group. A similar reasoning is applied for any other person in the research who will be included in the potential buyer or potential non-buyer category, according to the specific values of the discriminant numerical index.

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The Competitiveness of Romanian Services Exports

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Abstract. Romania carried on significant progresses in its intercession to fetch up the gaps towards the European Union concerning the services compartment, the balance of those being of almost 10% from the total Romanian export, during the first semester of 2007. In 2006, the export of services increased with 45% comparatively to the year before, consolidating the status of our country as a services exporter. The IT left its mark on the structure and organizing method of the tertiary compartment and ameliorated the form in which the services were performed in the context of enhanced electronic transfers.

Key words: services; growth; export performance; specialization.

JEL Classification: F10, O24.

The services incomes totaled 5,587 million Euro (increasing with 36.2% towards 2005), the payments for services were at the level of 5,583 millions Euro (increasing with 25.4%), an enhancement of the export flow in 2006 was noticed comparatively to 2005, above par increments are distinguished what “other commercial services” are concerned. These positive evolutions were favored by the amplitude of the commercial relationships with services from the information technology and consulting area, the balance account of services exports is 3.5 billion Euro in the first semester of 2007, comparatively to 2.7 billion Euro during the similar period of 2006.

The IT left its mark on the structure and organizing method of the tertiary compartment and ameliorated the form in which the services were performed in the context of enhanced electronic transfers. According to the trend of technological innovations, the commercial services exchanges met progressive evolutions, the business services delivered by electronic means are representing the engine of the increased international services flow. Thereby, once again, the growth potential recorded by Romania on the segment “other commercial services” is been confirmed.

Services balance

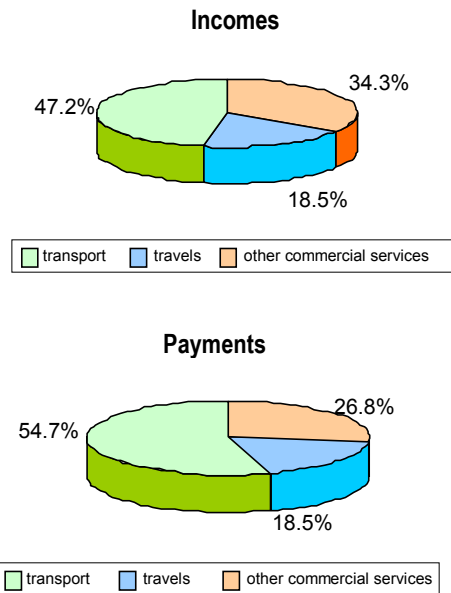
Table 1

- Million Euro -

	Transport		Travels		Other services		Total	
	2005	2006	2005	2006	2005	2006	2005	2006
Incomes	1188	1498	852	1034	2062	3055	4102	5587
Payments	1583	1916	750	1035	2118	2632	4451	5583
Net	-395	-418	102	-1	-56	423	-349	4

Source: National Bank of Romania, *Balance of payments and the international investment emplacement of Romania*, Annual Report, 2006.

The transport logistics came out in 2006, with a deficit of 418 millions Euro, ascending with 5.8 percentage towards the precedent year, this being considered, basically, to be the fault of the magnification with 12% of the deficit registered by the conveyance of materials comparatively to 2005. The passenger transport was characterized in 2006 by a positive evolution, ascending with 71.3% towards the precedent year, in the conditions of increased incomes from the aerial transport.



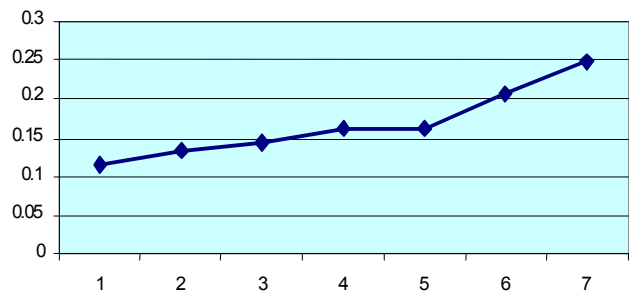
Source: BNR;

Figure 1. The heft of the main service groups in the payment and income structure, 2006

In the area of travel services, the incomes diminished due to the augmentation of the payments for business travels, which led to the annulment of the surplus registered in 2005. On the other hand, the group of “other commercial services” distinguished itself by the incomes which were increasing in a sustained rhythm comparatively to the payments (48.2%, respectively 24.3%). This increase was aroused by the communication, construction, IT, merchandizing, advertising, marketing and market research, research-development services, but also services between branches.

The growth of the export may be decomposed in three factors: (1) global request, (2) market effects and (3) effects of competition. The global request reflects the growth of the exports which can be imputable to the intensified international demand, which means the stronger the request of global imports, the more ample the increase will be for the exports of a specific country. Anyway, the increase of the market quote of a country into the worldwide commerce may be explained only in terms of the factors of the global request.

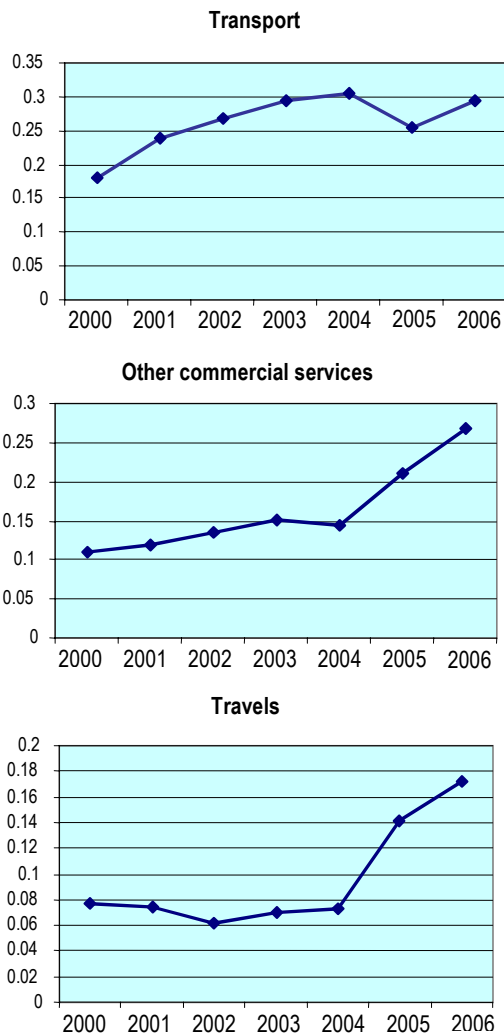
The Romanian market quote for commercial services exports, globally, followed an ascendant path during the period 2000-2006, except the year 2004, which designated an involution that was rectified in the following years, in 2006 this balance doubled comparatively to the year 2000, which suggests that the competitive performance of Romanian commercial service exports improved progressively during the above mentioned period (figure 2). The effects of competitiveness were materializing by the intensification of the exports that may be attributed to a better capacity of the national economy to “sell” commercial services at lower prices (price and cost competitiveness). Though, the export performances can be ameliorated also in the terms of the market effects, which means the increase of the exports is due to the fact that an economy specializes for some characteristic services or markets which are more dynamic than the international average.



Source: own calculations, according to Trade Profiles, 2007.

Figure 2. The evolution of Romania's balance into the global exports of commercial service

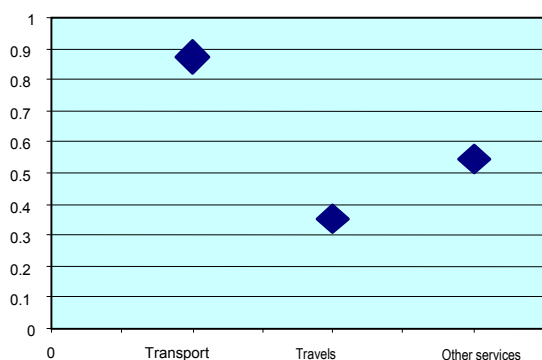
According to the main categories of commercial services, Romania had for the year 2006, regarding its rapport to the global market, a superior market quote for transport services exports (0.29%), which denotes that our country continues to be specialized in traditional services, intensive in labor force, even if these were characterized, during the period 2000-2006, by a slower evolution marked, in 2005, by a “gap” produced in the context of a diminished global request for these services. The category “other commercial services” has the biggest increasing potential that can be capitalized for the purpose of augmenting the competitiveness of services exports for Romania, especially because these have a market quote close to that of transports (0.26%), which almost tripled towards the year 2000 on the background of intensified commercial exchanges with intensive IT services. The travel services recorded in the past two years subdued to analysis, a sustained growth rhythm, but, nevertheless, they still have a reduced market quote comparative to the other two services groups mentioned before (0.17%).



Source: own calculations, according to *Trade Profiles*, 2007.

Figure 3. The evolution of Romania's balance in global exports, regarding the main services groups

Regarding the exports of commercial services carried on by Romania for UE-25, we can find out, that, what the year 2005 is concerning, the biggest market quote recurs to the transport services (0.86%), followed by "other commercial services" (0.54%) and travels (0.35%).



Source: own calculations, according to *Trade Profiles*, 2007.

Figure 4. The evolution of Romania's market quote in the commercial reports with UE-25, 2005

The commercial performance of a country can be affected by the departmental structure of its exports. For example, there may be foreseen an amplification of the market quote if the main exports include services for which the global request has a growth rhythm that advances the worldwide average.

The analysis of the departmental structure of the commercial services exports accomplished by Romania on the global market, undertaken in the precedent chapter, denotes the fact that our country is specialized in transport services, recording an important growth potential on the market of other commercial services and slow evolutions on the travel segment, situation that is similar also for the commercial relationships of our country with UE-25. The increasing of the balance for the group "other commercial services" is related not only to the fructification of the advantages of technique progress – IT –, but also to the fact that this sub-department is dominated by multinational trusts which are exporting almost the entire output that our country is producing. Additionally, the market quote of these services increased considerably during the period 2000-2006, which indicates that the exports in this segment were increasing in an alert rhythm comparative to the average of the entire commercial services. According to the fact that Romania possesses an increasing specialization for the export of IT intensive services wherefore the global request considerably increased during the analyzed period, it means that, *caeteris paribus*, the amplification of the market quote for export of our country was natural.

The exports of other commercial services increased also due to the externalization process to which the companies from the advanced economies appeal to and which aim mostly the electronic delivery services. Inside the European Union, the electronic delivery service flows are rather interactive than directed on the criteria of profitableness, with a noticeable tendency for externalization in the lesser developed countries. Hereby, in 2005 opposite to 2003, the export of business services amplified considerable in case of Slovakia (60.2%), Poland (58.8%), Hungary (47.4%), Slovenia (45.5%), Romania (24.2%).

The financial services registered an increase of 2.2 times what the export of Greece is concerned, a duplication in the case of Slovakia and an increase of 22.5% in the case of Romania. The IT services instated Romania with a front-rank amongst the new countries with UE membership, with an increase of 2.5 times, followed by Czech Republic, with an increase of 2.2 times, and by Hungary with an increase of 43.1%.

The imports of electronic services increased in the same way, that's why the balance account of the electronic services is the most representative element in the appreciation of the position a country has in the externalization process. A negative value of the hereof indicates that internal services are performed for an external beneficiary.

**The commercial balance account for the electronic services
in the main new states member UE**

Table 2

-Million Euro-

Electronic services*	2003	2004	2005
Czech Republic	-1232	-1597	-1648
Hungary	-588	-90	-23
Poland	-1129	-809	-728
Slovenia	-91	-110	-122
Slovakia	-390	-135	-235
Romania	-35	-202	-123
Bulgaria	-29	-28	-167

* The electronic services included in this comparison are: IT and computer services, financial services and other business services.

Source: National Prognosis Committee, *quoted work*, 2007, p. 10.

From the perspective of the commercial balance account, Poland and Czech Republic are detaching to be the dominant states which are externalizing services.

The growth of specialization in intensive export of IT represents a consequence of the expansion of other sub-departments, for example the travel services, which have a more significant autochthonous presents. In absolute terms, the travels were characterized by a sustained export growth rhythm, especially beginning with 2004, however, with the tendency to become better anchored in the domestic economy than the intensive sub-departments of the IT, from the point of view of the expenditures undertaken and, hereby, with a smaller probability for relocation in other countries.

The fact that the Romanian economy intensified substantially its specialization in intensive services for IT and has a reduced degree of specialization in certain departments (travel services) which registered slow export growths means that if these intensive sub-departments of IT are continuing to advance the average, the Romanian economy may capitalize, long-term, the positive effects of the commercialization outside the borders. As a result of the sustained growth of other commercial services exports, Romania enhanced its market quote in the international commerce with these services (see table 3).

**Romania's market quote for commercial services global
exports, 2000-2006**

Table 3

- (%) -

	2000	2001	2002	2003	2004	2005	2006
Commercial services	0.1151	0.1338	0.1446	0.1627	0.1622	0.2056	0.2486
Transport	0.1813	0.2392	0.2669	0.2941	0.3055	0.2557	0.2951
Travels	0.0766	0.0738	0.0621	0.0704	0.0734	0.1408	0.1722
Other services	0.1094	0.1194	0.1355	0.1504	0.1433	0.2114	0.2687

Source: own calculations, according to *Trade Profiles*, 2007.

The export performances may be affected, equally, by the changes intervened in the export request on regional level, a growth of the market quote on global level is to be expected if the exports of the target country are allocated to the markets with a faster growth than the global average.

During the period 2000-2006, Romania increased its market quote, especially on the exports directed towards UE-25. This reflects, mainly, the capacity of the autochthon economy to attract the multinational trusts to the intensive departments' of IT, the most part of the commerce between the two entities mentioned above is one intra-departmental.

The dominant commercial partners for Romania on the community market were, in 2005, Germany (6.61%), Italy (4.23%), Belgium (3.17%), Austria (2.99%) and Great Britain (2.68%), on the transport segment; the greatest percentage of Romanian travel export was directed towards Italy (4.85%), Germany (4.20%), Hungary (3.92%), and on the segment „other commercial services”, the biggest market quotes for export were registered in the relationship with Germany (12.54%), Italy (7.20%), France (5.78%), Great Britain (5.58%), Holland (2.92%) and Austria (2.82%).

The international competitiveness refers to the capacity of an economy to compete on the international market by offering products/services with lower costs or by selling those on lower prices than the competitors. Obviously, these concepts are cross correlated because the more limited the production costs will be, the lower will be the price or rate that the companies will demand for their products/services, without excluding the certainty of profitability. On short term, the development of competitiveness is often assimilated to the real exchange rate.

The real exchange rate is an important economic variable that sketches the macro-economical performance of a country; it reflects the international competitiveness of the domestic economy and has a direct impact over the course of the export and import flows of the target country. The equilibrium of the exchange rate is crucial because it affects directly the external competitiveness, especially through the export prices. In Romania the real appreciation of the national currency on long-term was determined by the improvement of the commercial and capital flow.

The real balanced exchange rate is the one that insures an internal but also an external equilibrium. The doctrine of the parity of the buying power alleges that the exchange rate is determined by the relative development of internal and external prices, suggesting that the balanced exchange rate is a constant. The recent studies are showing that the balanced exchange rate is a function of the real economic. The theoretical frame mentioned above does not contravene, usually, to the approach of the macro-economic equilibrium. A pre-eminent methodology, in this context, is the pattern of the exchange rate of general

equilibrium (Williamson, 1994). In the economic literature, there are also differentiated the concept of exchange rate of behavior equilibrium and the concept of exchange rate of permanent equilibrium (Clark, MacDonald, 1999). The exchange rate of behavior equilibrium is connecting the actual exchange rate to a vast palette of economic groundwork (MacDonald, 2000). The results are suggesting that the differential of the interest rate, the efficiency coefficients, the fiscal coefficients and the price of oil may be identified as basic determinants of the exchange rate.

The equilibrium rate exchange may be influenced by a number of coefficients, among which there is the opening degree that reflects the commercial policy of a state and the existence of commercial barriers. The accentuation of the opening degree determines the enhancement of the imports, and, implicit, of the current account deficit. Consequently, a larger amount of foreign currency is necessary to sustain the intensification of the imports, which will lead to a depreciation of the national currency. The development of the financial system is another factor that leaves its impression on the equilibrium exchange rate, for its quantification will be used a number of markers regarding the level of development of the banking system and of the capital markets. The intensification of the capital flows interacts with the equilibrium exchange rate, on short term, by generating an appreciation of this, inducing an excessive demand for goods/services that can not be commercialized, which will determine a rise of the prices for these products. On long term, the effect depends on the way the capital inflows are used. If these are put into the use of competitiveness growth of the national economy, the final effect will be a sustainable appreciation of the real exchange rate. If the capital inflow is used only to propel the consumption, than the initial appreciation of the real exchange rate will be followed by depreciation. The liberalization of capital inflows affects the real exchange rate by diminishing the real interest rate. This deflation propels the consumption, leads to a growth of the prices for the goods/services that can not be commercialized, and the final effect will be the depreciation of the real exchange rate. The fiscal policy influences, equally, the exchange rate by the amount and structure of governmental expenditures, the tax regime and budgetary deficit, to which we add the commercial policy through the level and structure of the commercial tariff, the policy is regarding the export subventions and the commercial barriers.

One of the most used methods to quantify the real exchange rate is the index of the commercial costs which provides a good reflection over the changes that are intervening in the purchasing power of the national currency and therefore may have a crucial importance for the development of the exterior commerce.

The domestic real exchange rate does not have a direct role in what the commercial performances of Romania

concerns. The exterior commerce depends on the competitiveness of the prices, appreciated with regard to the rapport of the commercial prices between Romania and its commercial partners. Through a wider perspective, the appreciation of the real exchange rate, especially in sustained rhythms on short-term, implies an erosion of competitiveness, since the indigenous goods and services become more expensive comparative to those of the partner countries.

Another used method is the cost of labor unit which is often considered to be an indicator for competitiveness more efficient than the commercial price index, considering the fact that the labor cost is an important component of the production costs. The marker for commercial prices influences a large palette of goods and services that can not be commercialized, whereas the cost of labor unit is influenced in a smaller amount by the effect Balassa-Samuelson (Checherita, 2005).

Nevertheless, when the cost of labor unit is used as a deflator, the real exchange rate can actually depreciate, reflecting costs of the labor unit relatively small and benefits on the competitiveness level.

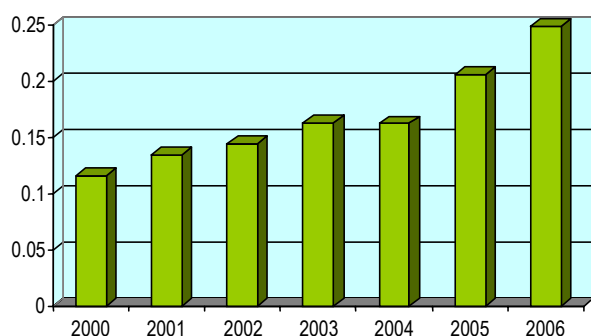
In 2005, the real exchange rate appreciated, affecting the external competitiveness. The increase of the wages had a major contribution to the cost of labor unit. The contribution of the domestic inflation to the real appreciation – if we rapport to the real exchange rate calculated with the help of the commercial price index – diminished, depending, basically, on the liberalization of the prices administrated and, partially, on the rise of the oil price on the international market, while the external inflation moderated very slightly the appreciation.

The evolution of these markers in Romania is determined by the development of the nominal exchange rate, which, in 2005 comparatively to 2004, appreciated in nominal terms towards Euro (10.6%) and dollar (10.7%), as a consequence of the intervention of the Central Bank on the currency market which generated a larger flexibility of the exchange rate. The fluctuations were owing to the liberalization of the capital account that supplemented the capital inflows which contributed to the appreciation of the national currency.

The currency structure of the export, respectively of the import, indicates an enhancement of the commercial exchange heft which had as business currency the Euro, to the detriment of the dollar, with a higher balance for the imports. This high balance for Euro are explained by the concentration of the commercial exchanges in the area of the European Union, especially with countries from zone Euro, concentrating the currency risk to which the external department was subdued in the evolution of the exchange rate Euro/Ron.

The market quote of Romanian commercial service exports in the similar imports of the UE-25 evolved

progressive, during the period 2000-2006, only the increase being modest, especially in 2004, due to the slow evolution of the efficiency and nominal appreciation of the "leu" in the conditions in which the main currency cashed in by the exporter was the Euro. Figure 5 indicates a sustained increase of the market quote during 2005-2006; in the same period it was observed an intensification of the costs of labor units due to the amelioration of the efficiency, particularly in the areas dominated by the multinational trusts (retail, banking, insurance, communication activities). The cost competitiveness sustained further the appreciation of the real exchange rate, which affected negatively the external competitiveness.



Source: own calculations, according to *Trade Profiles*, 2007.

Figure 5. The evolution of the market quote of Romanian commercial service exports in the total of imports UE-25

Conclusively, we may affirm that Romania's performances on commercial service exports increased during the analyzed period, 2000-2006, on the basis of the augmentation of its balance in the whole of international imports, as well as on communitarian level, what reflects, among other things, the increase of the depth of the specialization in intensive service rendering in IT wherefore the international request knew a strong increase and generated a favorable development of the general competitiveness. In 2005, the strongest increase of commercial services exports was registered and, therewith of the costs of labor unit, a decisive augmentation of commercial prices and consequently, the appreciation of the real exchange rate, all these acting in the direction of diminishing the competitive external position of Romania's economy. The attenuation of the competitive position Romania's amplifies the vulnerability of the autochthon economy, reason why the future challenges for the economic policy will be the consolidation of the competitive position of the most dynamic departments, including the attraction of new investments flows for the departments which add a superior value, the encouragement of the indigenous presents in this sectors and the improvement of efficiency and competitiveness in the other departments of the economy that were confronting a weak increase of the export in the late years.

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What is the Knowledge Society?



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***Abstract.** This study sets out to establish conceptual delimitations, more concordant to the theoretical acquisitions with regard to the knowledge society. The author considers it opportune to situate in the center of the definition of the concept of knowledge society the problem of prevalence in the typology of resources. Thus, the knowledge society appears as a form of organization in which scientific knowledge predominates, be that informatics as well. The concordances of essence are discovered through the discerning of the functional relationship knowledge society – global society. In the spectrum of meanings specific to this highway of post-postmodernist configuration of the world, the priorities of the project of the second modernity – the paradigmatic matrix of globalization – are approached. In fact, the study argues in favor of refocusing globalization on the humane, on its distinctive values which substantiate and lend sense to the evolutions of the world. Postreferentiality is the rational expression of humanity coming back to itself⁽¹⁾.*

Key words: the principle of critical mass; postreferentiality; the second modernity; the substance of globalization.



JEL Classification: D83, O33.

A postreferential perspective on resources

The real problem of the knowledge based society is meta-knowledge. The basis for this statement resides in the performance of actional routine of avoiding an entropic risk: the re-invention of the wheel. This is how the world must always come back to the need for formulating an asymptotic answer to the recurrent problem: how to favor development by increasingly using what knowledge is?

The first referential: the explicative model

When we talk about the knowledge society, in its various linguistic approximations, we are referring to the state of grace of people as beings whose creativity combines reason with passion, calculus with inspiration, deduction with induction, logical reasoning with metaphysical appreciation, the contingent or the substance with

transcendence or the immaterial, the value of truth with conjecture etc. In a natural way, an incremental perception gathers shape: the knowledge society is just the post-Cartesian human society, when creativity aims for the undetermined completeness.

The bare identification of this change in the public conscience must not get us worried. It is, anyhow, conforming to a limitative tradition, that of the comfort of the conservation of the frame of reference at the level of what was inculcated in each person's spiritual universe through the channels of general knowledge. The reflex of resorting to the mechanic model of describing the world and – eventually – of anything belonging to it, is the constituting invariable of today's spirituality.

We are still not out of – unless by exception and somewhat exclusively elitist – the paradigm of the clock-universe (Damasio, 2004). We explain to ourselves, self-sufficiently, that anything represents a cog in a contraption powered by the mechanical force of the extending spring. If even the visible universe seems to imitate the regularities of a pendulum, then we can construct and reconstruct any organism, be it alive or not!

The obsession for the mechanism, thoroughly installed in our way of perceiving the world, has culminated with industrialism and the specialization of professional thinking. Scissiparity and division have become the rule, the model for a savant covers ultra-specialization to the smallest possible particle of matter, the vocation of the schools of thought was squandered in the discovery of universal constants, excellence was achieved in the fragmentary profession, the part, the minute, making the whole uninteresting to research.

The signs of evolution though point to a comeback, on a different level, towards the preeminence of the functional whole, be that a self-regulating system or a self-organizing one, a tendency relating to the transformation of knowledge into the essential resource of existence. It can be an immanent tendency of the living world of attaining the functional completeness, but also a sought after alternative to the propensity of the individualization of the state of consciousness which shields the perspective of the whole. The exercise of redesigning the vision is somewhat vital for overcoming the bottleneck of understanding the unsolved problems which crowd the highway of knowledge due to the precarious method of *caeteris paribus*.

It must be pointed out that the paradigmatic reasoning of the knowledge society – as a notion generating directions, instruments, attitudes and practices, a human actional field different in history – needs, after the triumph of mechanics, extremely nuanced explanations. And this

because the conceptual universe of the knowledge society must be completely detached from the transcendental model of society which has always counted – especially implicitly – on knowledge, and it has even given the positivistic impression that it has progressed only as a result of the constantly refined capacity of using the instrumentalization of the values of knowledge in general.

Certainly, without vigor and commonly, human society is a society of knowledge; of knowing the mechanisms for the use of limited resources, which are by definition natural. Generally, society has always been a knowledge society, but which has sought new knowledge meant to exclusively consume mother-nature. The real knowledge society – as an expression of the global society – tries to reconcile the needs of human nature, ever larger and diverse, with those of the regeneration of mother-nature, by proposing ways of development which consume the inexhaustible resources, above all the resource represented by human intelligence, by knowledge, the propensity to innovate, the entrepreneurial capacity, the creative associateship etc.

It may be that some fundamentals of the strategies for knowledge society could have inadequate motivations, of the type that concentrate on the need for competition, as an expression of the exploitation of the competitive function (Groupe de Lisbonne, 1995). As others seem to simply fail in utopism, especially where there is no capacity of generating or benefiting from the resources, such as a Romanian attempt of orchestrating a durable development project with a year 2025 horizon. Beyond these extremes, there are enough experiences which can generate a data fund for a credible strategy of evolution toward the knowledge society.

Between the quality of progressing through knowledge, which the human society had, and the model of the knowledge society there is a difference of critical mass. When society arrives at diligently producing knowledge and preponderantly consuming knowledge, then it really becomes the knowledge society. Now, knowledge is effectively pluri- and trans-discipline to the point of paradigmatic fusions, concrete to the point of scientification and immaterial to the point of virtuality. In the knowledge society, the idea, as an information, is not just primordial, but has priority, while it manifests itself both as ineffable and substantial, essential and concrete, functional and efficient.

The second referential: the global society

As a resource of development, knowledge transforms into inexhaustible power, whose administration can only be done globally in order not to become its opposite. The

frequent associating of globalization with the knowledge society in the professionalized discourse is both opportune and justified. Frankly speaking, globalization has for finality the global society, which can be consistently identified in the spectrum of meanings of the knowledge society, from the centering of development on innovation to the comfortable mobility of factors and the fulfillment of liberties through self-assumed standardized discernment.

The evolutions toward the global society – as a definitive expression of globalization –, even if they seem theological, especially through the accepted logistics for the objectives of the knowledge based society in some parts of the globe such as the European Union, are not either linear or predetermined. The knowledge society bears indeterminations which relate only to the substance of knowledge, unprogrammable in essence in impossible to incase in the framework of a paradigm without the risk of not founding failed projects or of administrating a “wonderful new world”, utopian not just because it would be normative.

The connectivity between globalization and the knowledge society – as a global society –, even though natural, has much more sophisticated regularities than the experience of projecting global strategies would permit us to foresee. The difficulty emerges from the fact that the knowledge society is seen as a solution to the unsolved problems of history, and also as in insurance for the harmonization between the human nature, the human condition and the global context, including mother-nature (Edvinsson, 2002).

Even if it persists in its suspicion that, thus accredited, the knowledge society overbids on the desirable over the possible – represented by the global fund of creativity, we are faced with the ideal situation of overcoming, among others, the neuroses of the pre-global world, from mysticism to political superrealism. If today the counter-reactions to the global society take the recalibrated shape of the fears experienced in history, it doesn't constitute but a sign that the knowledge society – as a fundament of globalization – is alive, it dislocates the articulations of the pre-global world. Conflict – to be seen anywhere – is the violent expression of a world – the pre-global one – built on reflexes of adversity. This world is condemned, even brutally and irrevocably, to surrender its spot to the global world, as a support for competition.

The imagined decadences of the future through an excess of knowledge is, more often than not, invented to satisfy apocalyptic passions (Fukuyama, 2005). Sure, accidents are possible, rationally uncontrolled inclinations reproduce regardless, obscure interests will continue to

confiscate goods, especially ideas, but in general the knowledge society will create the favorable environment for well done things. The changes of conscience – in a positive sense, affect not just every individual and community in particular, but humankind as a whole. The world will be, obviously not at once at everywhere, responsible in regard to its insertion in the global system. It seems like an excess in optimism, although I believe that, in reality, the evolution of the knowledge society, as any other formula for a post-ideological society, is stalled by an excess of hereditary conservatism which refuses renewal *de facto* because it ruins habits.

If we take into account that the categorical practices in the administration of the economy about to globalize, deviant with regard to the essence of globalization, marked by the hegemony of a part which controls all the other parts of the global whole and which discretionarily administrates global powers – economical, political, scientific, energetic, military, cultural etc. – the knowledge society is still threatened by major derailments. As with globalization, the knowledge society, as a global society (otherwise it wouldn't even have sense but as a retrograde exercise of phalanstery), instead of triggering the second modernity (Beck, 2003), it can be a simple, but dangerous cluster of civilization. This would forever define the fault line between a self-sufficient center and a periphery extended to the maximum, condemned to underdevelopment, even under the benign formula of imitation, underling and reproductive of the alteration on the axis of progress.

No other reasons have determined the European Union to adopt the Lisbon Strategy, through which to target on medium-term the standard of the knowledge based society. Thus the provocation that the EU would be the real knowledge based society was accepted because it is based on an advanced approximation of globalization (Archibugi, Lundvall, 2001). It also has functional elements in regard to the prefiguration of the global society in the manner – still somewhat hesitant – of a political union.

The European attempt for a knowledge based society shows the initial elements of a successful path because it brings to fold the whole set of contemporary values which must constitute the proof of a capacity to refound attitudes and practices in a way specific to the global society.

The third referential: the recessive paradigms

It seems clear that the values derived from the cleavages operated by the national and industrial revolutions that debuted two or three centuries ago conserve the attitudes and practices of a world obsessed by fragmentarism and mechanism, as well as by adversity and an imbalance of

forces. These values – and evidently many others – find it problematic to insert themselves into the differently made, complete body of the global world. They mustn't, without exception, become recessive, as they must not necessarily generate idiosyncrasy to change (Brzezinski, 2005). The values of the pre-global world lose or modify their relevance within the essential guidelines of the global world. For instance, the value – not just symbolic – of sovereignty, as a mark of the pre-global world, perfectly exemplifies the transformational process of values. Sovereignty is a vestment of the part (and evidently also as a support of adversity) in a whole suggestive of the pre-global world. The symbols and the memory of sovereignty (Huntington, 2004), especially nationally supported, block – sometimes violently – the extension of the symbols of the global world. It is sufficient to point out – in order to illustrate this aspect – to the British attitude toward the Euro currency, but also to the recent evolutions regarding the advancement toward a political union by adopting a treaty if instituting a constitution for Europe.

It looks like, on the road to a global society, a bitter conflict between the sets of values of the pre-global world and those of the world becoming global. The knowledge society – as an approximation of the global society – is not shielded either from risks, blockages, ambushes, hijackings, lags etc. The European Union offers the most significant example in this regard. The Lisbon Strategy not only lags, but is often questioned, is pushed toward senses and objectives exclusively biased toward output, under the guidelines – which really have to be imitated? – of today's hegemonic society, represented by the USA. Instead of following the trend set out by the European formula for a global society, the instrumentalization of the Lisbon Strategy takes its heading from the comparative analyses with the American model, which, in fact, is the most accurate formula – of a type exclusively geared toward efficiency – of a pre-global society in its maximal formula. The American model looks successful from the perspective of the productive and innovative efficiency compared to the meanings of the sets of values of the pre-global world. Or, at the limit, what sense does it still have, for example, the efficiency justified almost exclusively by enormous externalities, as well as by unprecedented mechanisms for the transfer of value-added from the rest of the world to the United States by way of the dollar as the single reserve currency? (think about the story of petrodollars).

As what endurance and comfort offers the model which adopts the principle symbolized by the “wall of death”, the circus number represented by the risk assumed by a motorcycle rider of spinning endlessly around the interior

walls of a tower? Stopping the engine, at full speed, would be fatal! In this emblematic case we find ourselves in a one-dimensional world, exclusively dependent on the mechanism, fatally opened to risk. It is a world of the inherent exhaustion of resources, depressed by the rule of speed and obsessed by the cease of the power to keep on trajectory. The battle for the trend complicates the movement to a stall, the existence of several riders on the same circular track being hard to accomplish, even unimaginable.

Paradoxically, the USA finds itself in a situation where it can contradict its historic image, of a country promoting liberties and democracy, putting now a question mark over any different – especially political – option of theirs. The famous artificial ideology of political correctness augments the sensation of slipping towards the one-dimensional world. The leveling of attitudes, as a sign of mimeographic thinking, is not in any way the support of globalization, but the astonishing expression of the hegemonic confiscation of the global powers.

The knowledge society, as a global society, is either built on its own set of values (adversity replaced by competition, for example), or it stays a shape bereft of essence – as many others – of the extending pre-global world (when adversity actually simulates competition).

Competition, having rules of play, is less costly than the irrational and irreducible adversity. Adversity eliminates players definitively, while competition keeps on re-throwing the trophy into play for all participants. Competition is human, as opposed to adversity, which reproduces on pre- and post-human fundamentals. Adversity has exclusively material goals, sublimed by power, while competition offers the chance of the spiritual guidelines recognizable in humanization (Dinu, 2004).

Adversity, including under the formula of eliminatory competition, confiscates intelligence, concentrates performance – through brain migration; in contrast to competition, which emanates equal chances of success anywhere, democratizing power and disseminating the capacity for innovation, as well as prosperity. Competition, as an ordinate principle of the global world of a knowledge society kind, progresses through creative destruction, while adversity – as an ordinate principle of the pre-global world – sacrifices, removes from the circuit, eliminates, entropizes, recycles crises, actualizes the apocalypse etc.

The human-value postreferential

In way unhoped-for, the global society bring humanity back to the natural condition of depending on its own inexhaustible resource – innovative including with regard to liberties – reason, knowledge. In fact, this is truly about

the world returning to its own self, marked as its global stage of existence, when the renaissance attempts of centering the characteristics of society on the human-value are resuscitated.

Which would make any generic concept, of the type of the knowledge society, to suppose adherence beyond the rational, as it happened with socialism or communism; it is its quality of stimulating related developments with ideological ambitions. The projection of the premises, when it happens beyond the condition of comparing everything to the possible guidelines, with the exact measure of the available powers, fails into utopia. For instance, there are not few temptations of solving everything through globalization, this being not at all different from the practice of excessively conjecturally loading communism with powers, the true cause of its surprising demise.

As any other societal projection, the knowledge society too is voluntarily accredited with higher expectations than it can satisfy. Even in the most perverted way, globalization is suspected of super top-down functions also with regard to its capacity of solving the specific problems of the pre-global world, such as poverty, underdevelopment etc. Obviously a less visible trick for the uninitiated takes place here: the idea of the continuity of the ordinate principle of the world is induced, the order imposed from the perspective of the interest of the more potent party, which means, simply put – in a Caragiale-esque style – is modified somewhat, but in fact the essential is left unchanged.

The truth is that, to the extent of the move toward the project for a global society – in the functional variant of the knowledge society – there is no suggestion of a line continuity of practices, instruments, attitudes and visions. If it was so, the expected solution to the unsolved problems of the global world would be illusory, as both the intellectual and general effort would be useless in the absence of the process of change.

The understanding of the different mode of operating in a knowledge society makes possible its very functional existence, in the distinct period of the global world, it even categorically marks the censorship between the

pre-global and the global world. Certainly, there is still a need for leaps to be made in our understanding, for the explicative model of the global world to be truly internalized in order for it to effectively become reality. In fact, it would be an unnerving error to talk about the knowledge society without arriving to the internalization in a critical mass of individuals, of the defining significances of the new societal model. Otherwise, we would be talking about something which is self-producing, which is both absurd and catastrophic to the sense of the concept of knowledge, it would even annul the distinction of man inside living nature.

Things would not get twisted too much if another manner of approaching the reality of the knowledge society wouldn't be overused which such alarming frequency: its technicalist projection, limited at the material support of information, including at the atrociousness of idolizing artificial thinking. This theorized demiurgical attitude, as a determinant for the knowledge society, represents the perverted phase of the manifestation of the principle of the pre-global world, fed by mechanicism and Manichaeism.

The knowledge society would in any way be the expression of the human creativity marked by the rules of living systems (Prigogine, Stengers, 1997), and not of the systems functional with ergo-phage inertiality, or with top-down reproducibility (Penrose, 1998). In a direct way, the knowledge society is either way infinitely more than its instruments, be that the World Wide Web, as the knowledge society cannot be, as I said before, another wonderful new world.

As with the global society which gives it substance, the knowledge society cannot be – by respecting its essence – an utopia, even if it point us to an ideal society worthy of attaining through sacrifice.

The avoidance of the insinuating globaltopia is not only necessary, but must be possible precisely through the internalization of the specifics of the knowledge society. Even by respecting humanity's limits of being progressive with itself, keeping in mind the historically proven fact that nature – including the human nature – does not make leaps.

Note

⁽¹⁾ The ideas in this article constituted my contribution (“Societatea cunoașterii. O perspectivă postreferențială asupra resurselor”) to the volume “Societatea

cunoașterii”, edited by Ion Gh. Rosca, published in 2006 by Editura Economica.

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