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## **SUPPORT SYSTEM FOR DECISIONS USEFUL IN INSURANCES AREA**

**MARIAN-LUCIAN ACHIM, GRIGORE LUPULESCU \***

**ABSTRACT:** *The purpose of the study is represented by the identification of the actual methods and the assessment of the future methods of evaluation and underwriting of the risks in the sector of the insurances, for identifying the ways of increase of the performances on this domain. The intended objectives are, as follows: the identification of some analytical methods of qualitative analysis and of the quantification of the risks on the domain of the insurances of goods; the accuracy of the risk-situation evaluation; the improvement of the times for analysing the risk and the elaboration of the decision; the fundamental support for subscribing online for insurances, the elaboration of an application destined to establish the character as possible or impossible to be insured of an objective, and also the offer of some recommendations with improving character for the objectives exposed to some risk situations at the limit of the threshold of insuring possibility.*

**KEY WORDS:** *decisions, decisional processes, risk and uncertainty, insurable risks, support system for decision, decision assistance, insurance, finance*

### **1. THE PROJECTING OF THE “RISK ANALYSER” SYSTEM**

The need of information is felt at all levels. The contents and the dynamics of the activities which are specific for the insurance companies reflect an acute need of information regarding the financial state of the society, the reliance on the approved budget and the degree of implementation of the development strategy. Without an informational system and of evidence well established, may appear sincofes and problems within the activity, which can be known only based on an analysis and by studying in time of the information. On the insurance domain it can be identified an evidence system used by the insurance societies, which comprises: *the informational financial-countable system and the operative informational system.*

The phases that are crossed when developing an informational system include: *the preliminary study* within it is delimited the comprising area, the establishment of

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the objectives, the feasibility study. The result of this phase is represented by the system vision, which comprises a synthetic description which it is specified what the system will suppose, who is going to use it, why it is used, what facilities have to be assured and what kind of restrictions has to be responded; the elaboration is the phase when the data are collected and when there are specified the functional and unfunctional requirements of the future system; the construction supposes the phase of obtaining of the system including the analysis, the projecting, programming and the testing; the transition ensures the introduction into exploitation of the system at the user.

The four phases of structuring the cycle of development correspond to the managerial perspective upon the process, when the attention is focused on the financial, strategic and personal aspects, etc. The functional requirements of the system which we've developed are caught under the form of the use cases. The result of this activity is, therefore, a model of the cases of utilization, in which, next to the description of these cases and of the implied actors, there are also other elements, such as: the specification of the eventual unfunctional requirements and of the prototypes of the interfaces with the users. The main steps overpassed in defining the requirements of the developed system are: the identification of the actors; the identification of the utilization cases; the description of the utilization cases; the defining of the model of the utilization cases.

**The identification of the actors** supposed, in this context, the determination of any element which interacts with the system, but is not a part of it.

The actors may be human persons, different equipment or peripheric devices as the sensors, or even another computer. An actor can find himself in the position of introducing data in the system, of extracting from this one, or both. It must be kept the aspect that in all the cases the initiative of the interaction belongs exclusively to the actor and not to the system.

For being able to identify as completely possible the actors who are to use the system, we have searched answers at the following questions: Who is interested in the system? Who supplies the data of the system? Who's the beneficiary of the system's functionality?; Who's going to manage and ensure the maintenance of the system? Does the system use external resources? Is it necessary the interaction with other functioning informatical systems?

Concerning the actors who interact with an informatical system on the domain of the insurances, these are numerous as there have been developed integrated systems which bring together data supplied by all the departments of an insurance society (sales department, damages department, financial - accounting department, judicial department, etc). The access to these data is, of course, limited depending on the position occupied by the actor within each department. Resuming the application „RISK ANALYSER”, which has as object in a first phase the introduction of the insurance policy, the evaluation of the risks and the establishment of some conditions of overtaking in insurance, and the second phase the refining of the introduced policies by different criteria, it may be identified three types of actors: *the underwriters of the insurance policies, the data operators and the administrator of the data base.*

**The identification of the utilization cases** supposes the retrieval of all possibilities of dialogue between an actor and the system, by which the first is the

beneficiary of one of the functionalities assured by the second. The identification of the cases of utilization is done in correlation with the actors found during the previous step, and every actor has to have at least a corresponding case of utilization. Few questions of the following kind may contribute to the establishment of the utilization cases: What's the main task of each actor? Which are the cases of utilization that assure the update of the system data? ; Which are the actors who may introduce, modify or delete data from the system?; Do the identified utilization cases answer all the functional requirements? One of the most met difficult of this phase has consisted in finding an adequate of granularity, as sometimes it is reached at an excessive level of detailing, by equalization of the cases of utilization with the functions of the system, which is wrong. Concerning the decision making for the comprising of a case of utilization we've started from the idea that this one is a part of major, complete functionality, from the beginning to the end of it.

**The description of the cases of utilization** is materialized in obtaining of as much as possible details, for each of the case of utilization. In this description we've presented all possible variants of enchaining of the events in the respective case of utilization. The event signifies what the system does as an answer any of the actions of the actor. It is necessary, in consequence, to be precised when and how begins and ends the case of utilization, what interactions take place during its deploy, which are the data that must be supplied by the user, what's the main sequence of the events, which are the alternative or the exceptional sequences, those forming in a word *screenplays of the deployment of the case of utilization*. As a result of the effected analysis, we've determined all the cases of utilization which correspond to the application:

#### **A. Authorization of the user:**

**Case of utilization:** *The authorization of the users with respect to the access of the data base;*

**Purpose:** *To avoid the access at the data base of the unauthorized persons;*

**Initial Point:** *The Identification based on User and Password;*

**Final point:** *The access authorization;*

**Process description:** *the user may access the data base only after passing and authorization protocol*

*After introducing the user name and password, the system will establish either the access at the data base, either it will ask for a new authorization, in case of introducing of some data which the system does not recognise.*

**The measurable result:** *The authorization of accessing the data base.*

#### **B. Introduction of the goods insurance policy:**

**Utilization case:** *Introduction of the goods insurance policy;*

**Purpose:** *The evaluation of the insuring possibility and the storage in the data base of the insurance policies;*

**Initial Point:** *The request of the overtaking in insurance;*

**Final Point:** *The creation of the policy and then the evaluation, saving/ printing or abandon (cancelation);*

**Process description:** *The request of concluding an insurance, by a potential client, adressed to an insurance company representative. After collecting all necessary data (filling in a quetionaire – inquiry and performing the risk inspection) it passes to the*

loading of the data in the program In case in which the client cannot be found in the client - name list of the application, it will proceed to its introduction. After introducing the technical aspects(description of the assured, policy type,assured time , assured amounts, risk degree, etc) it will pass to the automatic evaluation of the risk, by the application, which will recommend to the insurance company representative the next steps to be followed(overtaking under insurance, overtaking under insurance in certain conditions, rejection of the insurance). The next stage will consist either in storing and printing of the policy if the insuring conditions are accomplished, either in rejecting the insurance request, if the risk exposure is higher than the acceptability threshold.

**The measurable result:** The underwritten policy.

### C. The retrieval of the policy in the data base:

**Utilization case:** The Retrieval of the policy in the data base;

**Purpose:** The Interogion of the data base upon certain criteria;

**Initial point:** Introduction of the filtration conditions;

**Final point:** Retrieval and view and / or printing of the policies;

**Process description:** Any person who has access to the application, may require to the data base its interogation and to display the results of this action. There are different conditions of filtering: on the name of the assured client, policy number, the agency where it was underwritten, underwriter, contractor. At the moment of the display of a positivie interogation result, the application will generate a cursor that will display this matter. The user may view the retrieved policy and may eventually reprint it.

**Measurable result:** The policy is retrieved, viewed and / or reprinted.

**The finishing of the model of the utilization cases** is the step which has included the recoveries and the corrections as required, referring to the actors and the utilization cases intially defined, as a following of the filling in and of the profound study of the obtained information after passing the previous steps. Knowig that the actors are exterior to the system and that the utilization cases are a part of it, it can be assigned at this moment the border which limits the system.

The utilization cases that appear in this application are:

**The authorization of the access of the users** to the data base, access performed based on the User and Password, figure 1:

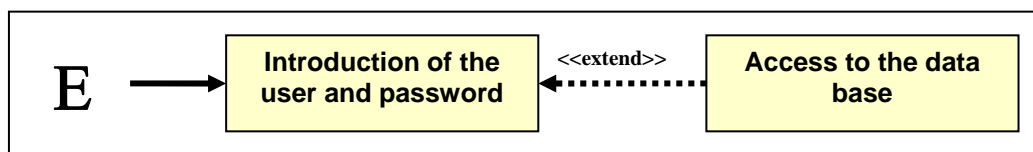


Figure 1. Case of utilization: The Authorizing the access of the users

**Introduction of the insurance policy and** assessment for overtaking as assured figure 2:



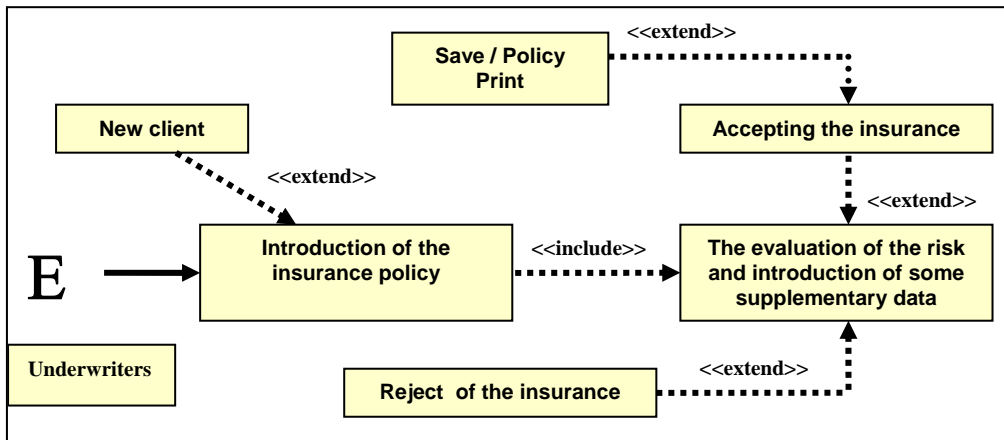


Figure 2. The Utilization case: Introduction of new policies in the data base

*The retrieval of an insurance policy* in the data base on certain criteria (fig.3):

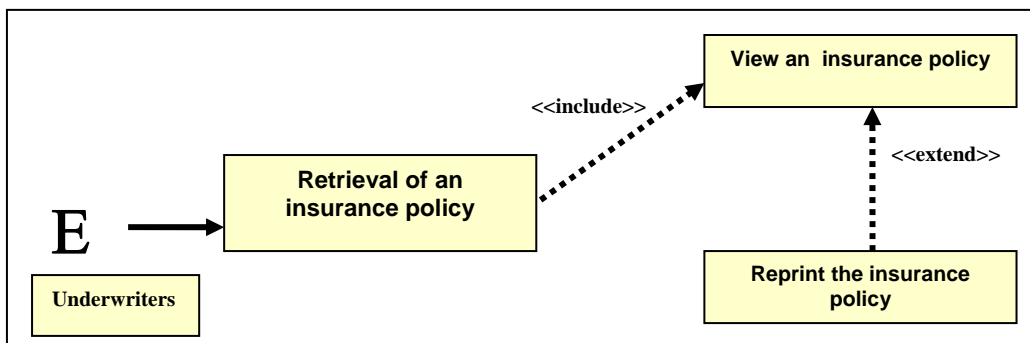


Figure. 3 The Utilization case: The Filtering of the policies on certain criteria

For obtaining a functional model we've considered as necessary the passing of the following steps : *the identification of the objects and of the classes, generation of the accomplishments of the utilization cases; the identification of the associations and of the aggregations, the identifications of the classes atributes, the identification of the inheritance relationships, finishing of the analysis model.*

**The Identification of the objects and of the classes:** The classes of objects identified on this level belong to the three stereotypes previously determined: *entity, of presentation and of control*. The identification of the presentation classes reflects concepts or elements that are inherent to the domain of the problem. The description of the utilization cases has represented a precious source of information and suggestions with this regard, as the discussions with the users, too. *The identification of the presentation and control classes* has as a start point, the following sentence: every case of utilization has to have at least a control class and at least a presentation class for each actor it interacts with. The diagrams of classes are statistical diagrams. In picture

4 we've presented the diagram of the classes that are components of the developed system.

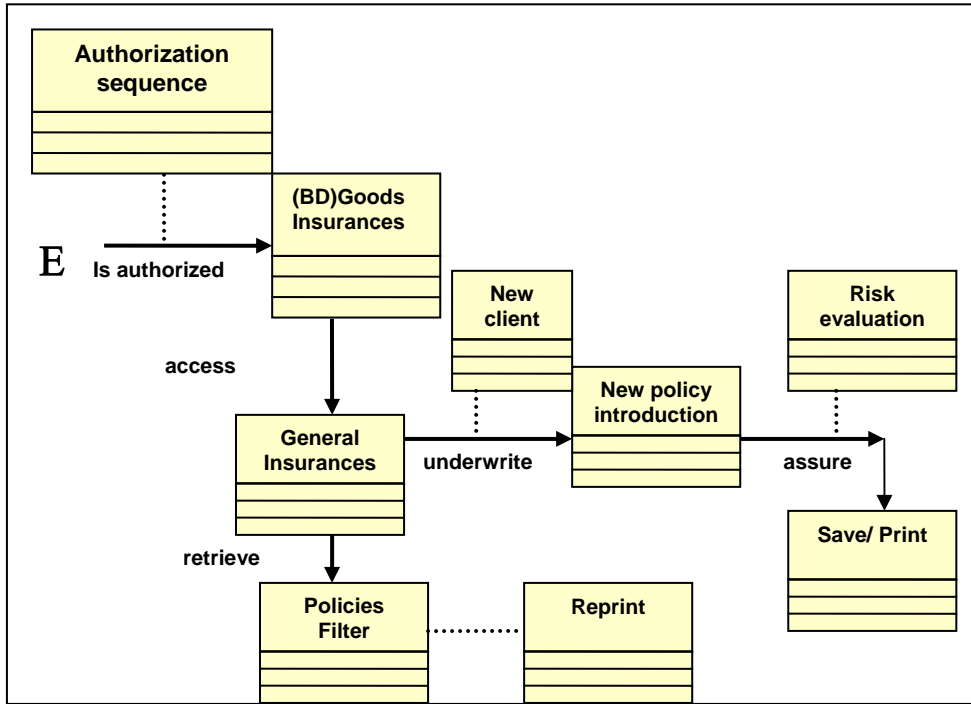


Figure 4. The Diagram of the classes of the system „RISK ANALYSER”

The classes of projecting represent the solution of implementation of the analysis classes. For their identifying and defining we've taken in account the following general orientation: to the presentation classes from the analysis correspond the interface classes with the users, necessary to their accomplishment; to the entity classes correspond the gestion classes, the persistence classes, and in some cases, classes of representation of the associations, the control classes will not have, as a general rule, an equivalent in the projecting classes, their responsibilities being distributed to the other projecting classes, according to the described behavior of the diagrams of sequences and of collaboration.

**The Generation of the accomplishment of the utilization cases:** An accomplishment or an instance-procedure of a utilization case assigns its functioning according to one of the identified flows of events. The functioning is described by indicating the classes of objects participating and of their way of interaction from the beginning to the end of the accomplishment of the respective case of utilization. We have represented this interaction by the sequence and collaboration diagrams. It is unlikely that all these elements to be possible to be established since the very beginning. As in the case of the previous steps, it follows a correlation of them, with possible revisions and corrections, performed within the analysis model. With this

respect, we have considered that it is more efficient to show the diagrams of activity for each case, sacrificing the sequence and collaboration diagrams.

The activity diagram for the case of utilization A “The Authorization of the access of the users” is revealed in figure 5:

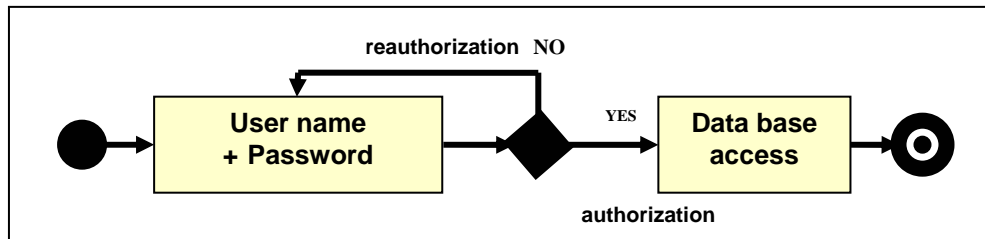


Figure 5. The diagram of activity for „The Authorization of the access of the users”

The diagram of activity for the case of utilization “Introduction of new policies in the data base” is shown in the figure 6.

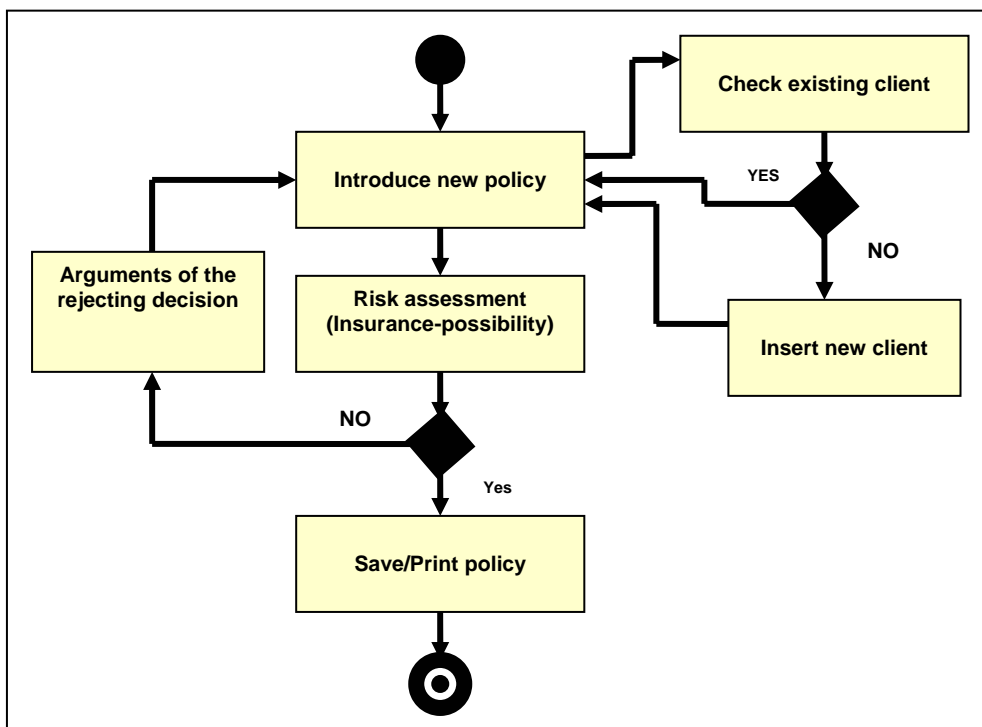


Figure 6. The Diagram of activity for „Introducing new policies”

The diagram of de activity for the case of utilization „Filter of the policies on certain criteria” is shown in the picture 7.

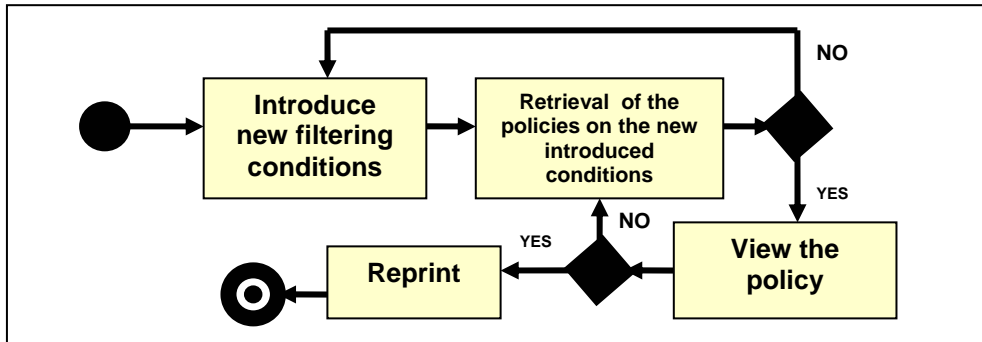


Figure 7. The diagram of activity for the „Policies filter”

**The finishing of the analysis model.** This supposed the review and, if necessary, the modifying of the initial solutions. The classes of objects together with all other elements defined up to now have been considered as “candidates”, this step establishing the ones that became definitive. In the logical projecting phase I would turn the attention from the presentation of what it is there and what’s the intention to the description of what will be the meaning or the signification of the new system and how it will function. The way of perception of the system shall offer by showing all inputs, outputs, and also the interfaces and the dialogues. These were built baed on what it was identified in the previous steps, but taking in account the requirements identified during the deployment of the activities from the logical projecting stage. **The logical projecting** is working by the means of three steps: *the projecting of the forms/formats and of the reports*, by whose means the users will have the image of the inputs and outputs of the new system; *the projecting of the interfaces and of the dialogues*, for revealing the way of communication of the user with the system; *the logical projecting of the data base*, by which it is described the standard structure of the data base of the system. It is to be mentioned the fact that, these three subphases shouldn’t be developed sequentially, as they are interdependent one of each other.

**The projecting of the forms/formats and.** A form/format is a printed element, with head and other pre-printed components, as with blank forms for filling in the data. During the process of projecting of the forms and reports it was necessary to be found answers for the questions: Who’s the beneficiary of the form or report?; What has to be in the contents of the form or report?; When is it required to obtain the outputs?; Where to be sent the form or the report?; How is it going to be used the respective outputs? How many persons are going to use or see them? With reference to the built application, there is a base with different formats for introducing the data (the filter for the retrieval of the insurance policies in the data base, the format for introducing the insurance policies together with the format of the risk assessment factors), and also reports generated automatically by the system for displaying the conditions of insurance or the causes of the insurance rejection or the view and printing of the insurance policies, these being presented visually in the chapter (section) V.

**The projection (design) of the interfaces and the dialogues.** I consider that a judicious projecting or design of the interfaces and dialogues should lead to finding out the answers to the used questions for supporting the activity of projecting of the forms

and reports. Similar with the interface, the dialogue disposes by an own subsystem of functioning. The main feature of the performant systems regarding the dialogues is the diversity of the forms of introducing of the data and of extracting the results. A modality of presentation of the sequence of the dialogues is that one which calls the diagram technique. The structure of the diagram of calling the menus, in the case of the created application, is shown in the figure 8.

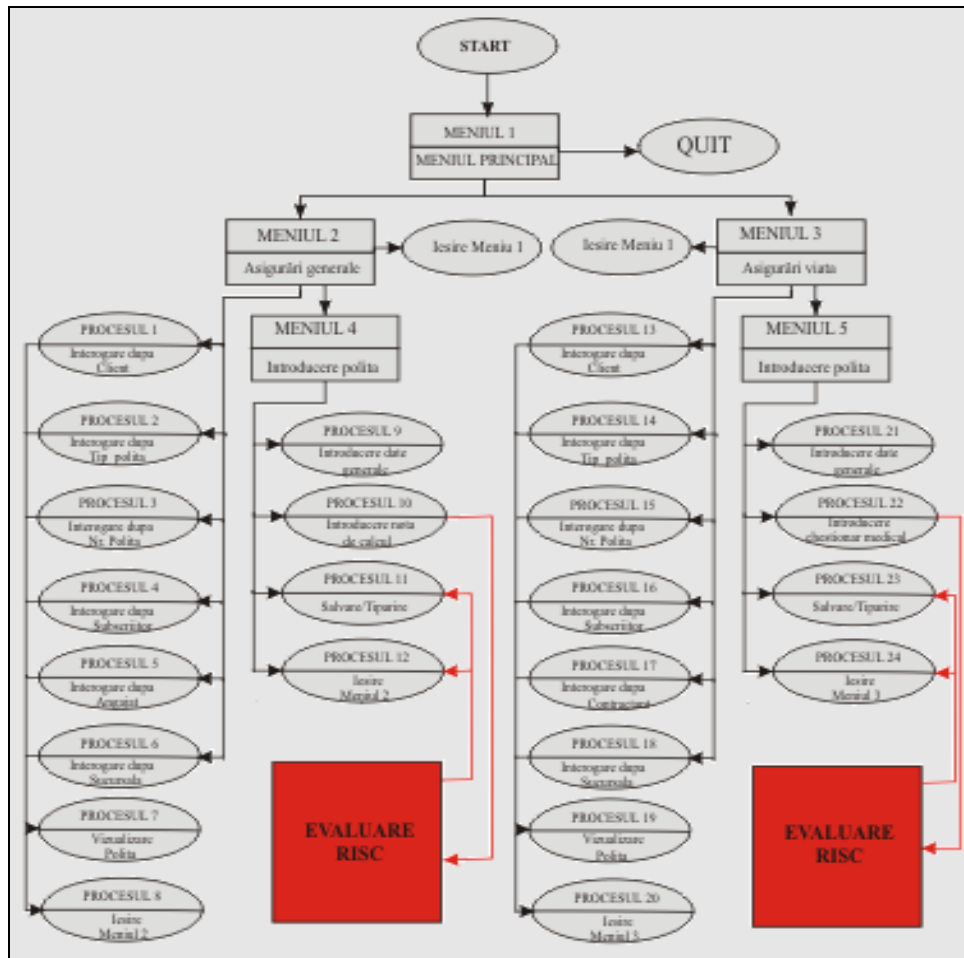


Figure 8. The structure of the diagram of calling the menus for the „RISK ANALYSER”

**The logical projecting of the data base.** The logical modelling of the data with their help of a special notation, which corresponds to an organization way of these by the system of gestion of the data base, in the present case being one based on relationships. The logical modelling process of the data developed in paralell with the other activities of the logical projecting: the projection of the forms, reports, interface and of the dialogues. This modelling is performed ont only based on the diagrams entity - relationship, but also based on the upmaking sketch of the forms and reports. In the

same stage I performed the elementary data analysis from the inputs and outputs of the system for detaching the existing connections between them. In the process of the logical projecting we've passed four essential steps : *the accomplishment of a logical data model* from the perspective of the user (forms and reports) regarding the application; the fusion of all perspectives of the users in a logical consolidated model of the data, this step being called *the integration of the perspectives, the transformation of concept model of the data* (entity-relationship), performed without taking in account the user's perspective, in a set of relationships; the comparison of the consolidated logical model of the data with the transformed model of the entity- relationship and the accomplishment, by the integration of the perspectives, of a final logical model of the application data. During the process of analysis of the requirements of a system, may be identified and described the points of view of a group of users. The number of the perspectives of the users may often be of a rank of hundreds or tens, each of them intending certain elementary data from the base. For the application „RISK ANALYSER” we considered as being necessary a data base which should contain 11 tables, as shown in the figure 9, which include the entire information specific to the general insurance policies. Here, the data are going to be loaded exclusively after awarding the right of underwriting the policy by the application and its saving in the data base.

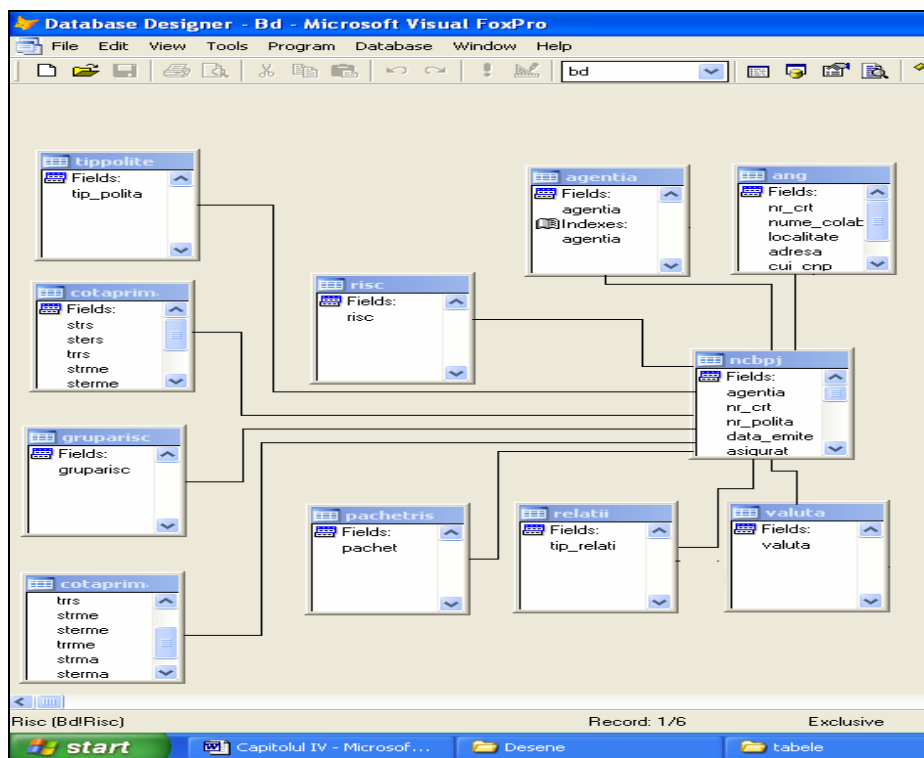


Figure 9. The data base of the system *RISK ANALYSER*

## 2. CONCLUSIONS

The projecting and accomplishment procedure for an informatical system designed for the assistance of the decision in the insurance activity, has the role of persuading for sure that, generally the introduction of the informatical technologies in the management of the organizației and, especially, the interactive assistance of the decisions supposes a detailed knowledge and a laborious effort of modelling of all processes which intervene within the activity of underwriting of the risks within the insurance companies. The substantiation of the decisions implies the *information and knowledge*, the decision making process registering an increase of the complexity. By this work I've tried to reveal the way in which the opportunities and the challenges of making a decision use the resources and the capacities of the organization, being stressed especially, the technology of the information. I described also detailed the aspects concerning the processing of the knowledge and problems of the decision making and the way in which the informatical systems intervene for offering a solution.

Such an informatical system, specialized for the assessment of the risks on the domain of the insurances, has to represent a powerful instrument, which allows to the users to control the decision-making process and to have the capacity to offer information, not only concerning the of inacceptance of the insurance, but also of the potential modalities of solving such problems. Knowing that this domain, the insurance domain, offers places of work for which the payment out is made directly proportional with the brought revenues, under this impulse it is possible to perform superficial or even subjective analyses of risks, only having the wish of maximizing the own earnings. The developed application has as one of the major objectives the elimination of the subjectivism of the evaluation of the risks and the underwriting of the policies exclusively based on objective principles.

Another sphere of action of the application „*RISK ANALYSER*” refers at the fact that in Romania, at this moment, there is an extremely alert rhythm on the direction of the stability of the employees in the insurance companies. Due to this fact, almost permanently there are employees with quite reduced oldness, who are in the stage of accumulation of the knowledge. The underwriting of the risks, especially in case of the insurances of goods for judicial entities and life insurances, will be done after a previous training of about two or three months, under a very careful monitoring. This application does not eliminate the part of theoretical training of the employee, but offers a practical support allowing that the activity of underwriting to begin on the first days of work.

Following the principle of the good faith or on the principle of realibility of the assured (a usual thing at the contracting of the life insurances), with the help of of this application may be put the base of the underwriting online of such types of policies, going till the list printing of the policy at the terminal of the assured and online payment performance of the insurance premium, a thing already practised by the most of the banking societies. After that, are to be performed the risks inspections at the assured place, by the representatives of the insurance company, for comparing the declarations of the assured with the reality and are to be made

eventual corrections of the insurance premium, going up to the cancelation of the contract, if the declarations given by the assured are quite inexact. From the perspective of the evolution to the society based on knowledge, I consider that soon, the stage of performing the inspections of risks on site will be skipped, the policies being concluded based on the data of the future electronical data base owned by the service of municipal planning (urbanism) within the local public administrations.

At this moment the perspective of the complete underwriting online, has become a reality. The support systems of decision-making have to be the main vehicle of the decision-makers with the purpose to keep the rhythm with the exponential increase of dimension, with the complexity and the speed at which the business has to be led. A support system for decision-making must be an integral component of the decision –making, which extends the ability of the decision-maker to process rapidly the information and to approach the complex problems, consuming time, reducing the time affected by this process. At the same time the fiability of the decision-making system will be improved encouraging the process of exploration and learning, creating a strategical and competitive advantage for the organization.

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## **CITIZENS' INFORMATION AND THE SIZE OF BUREAUCRACY**

**MARIA ALESSANDRA ANTONELLI** \*

**ABSTRACT:** *This paper analyzes, in a traditional public choice perspective, the political-bureaucratic relationship starting from the idea that citizens' information is a random variable whose distribution can change because of institutional elements. As in Niskanen's model, we assume that political preferences represent citizens' preferences, but unlike the traditional theory we consider a stochastic political demand function whose variables are the quantity of the public good and a random variable representing the available citizens' information on the public good. Additionally, political competition as well as mass media competition can affect the distribution of the information. Using the Rothschild and Stiglitz (1970) theory, we show that the size of bureaucratic activity decreases as the dispersion of information among citizens increases, thus improving the efficiency of the system.*

**KEY WORDS:** *bureaucracy, information, public organizations*  
*JEL code: D73, D72, D82*

### **1. INTRODUCTION**

The traditional public choice literature on bureaucracy (Niskanen 1971; Migué and Bélanger 1974) considers the relationship between politicians and bureaucrats as an “*all-or-nothing*” exchange: politicians fund the bureau with a given budget and, in return, the bureaucratic agency delivers a specified amount of services. In this framework, three main features characterize this relationship: a) political preferences perfectly represent citizens' preferences summarized in the political demand function; b) bureaucrats maximize their private utility pursuing non pecuniary goals such as power and prestige, which are correlated to the size of the bureau; c) the distribution of information between politicians and bureaucrats is such that the political demand- that is the maximum the government is willing to pay for any amount of output- is known to bureaucrats but the bureaucracy is not required to reveal a complete production cost function. As a consequence, the bureaucrats have a real decisional authority about the

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production of the service (Aghion and Tirole 1997). Since their utility depends from variables correlated to the size of bureau, bureaucrats pursue their own goals maximizing the output of the bureau and producing a quantity of public good/service greater than the social efficient quantity.

More recent literature has partially modified this framework either looking for institutional mechanisms (Miller and Moe 1983) or introducing control and enforcement mechanisms which punish or reward the bureaucratic agencies according to their performance. (Breton and Wintrobe 1975; McCubbins and Schwartz 1984; Tirole 1993; Laffont and Martimort 1998). Less attention has been given to the demand side of the relationship. The implicit assumption is that citizens have all necessary and relevant information to evaluate the benefits coming from a public good and that the institutional setting does not affect that information.

This paper analyzes, in a traditional public choice perspective, the political-bureaucratic relationship starting from the idea that citizens' information is a random variable whose distribution can change because of institutional elements. As in Niskanen's model, we assume that political preferences represent citizens' preferences, but unlike the traditional theory we also consider a stochastic political demand function whose variables are the quantity of the public good and a random variable representing the available citizens' information on the characteristics of the public good.

Political competition as well as mass media competition can affect the distribution of the information. Using the Rothschild and Stiglitz (1970) theory, we show that as the dispersion of information increases, the political demand shifts down thus reducing the size of the bureaucratic activity.

The paper is structured as follows. Section 2 introduces the framework of the analysis. Section 3 presents a model of exchange between politicians and bureaucrats with stochastic demand function. Finally, section 4 concludes the paper.

## **2. INFORMATION AND PUBLIC GOODS' BENEFITS**

Benefits' evaluation of a public good is a complex procedure for many reasons. Many benefits are external benefits. In other cases benefits are contingent on some events or they will be perceived only in a future time. For example, a green area gives positive benefits not only to the inhabitants using directly the park, but also a broader community in terms of clear air, lower traffic density, etc. Benefits coming from other public goods/services, such as cultural and health services have a direct component strongly perceived by some agents (as families with children or individuals needing health care) and also an external component concerning for all people<sup>1</sup>.

Some agents could not fully perceive the external component of the public service's benefits. Other agents could perceive, at the present time, only the external benefits but they will perceive in a future time the direct benefits too, because they will be in a different condition. A correct evaluation of the benefits of a public good needs a detailed information about the characteristics of the good and so about the direct,

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<sup>1</sup> A higher cultural level of collectivity and/or better collective health conditions are social welfare improving.

external and potential future benefits<sup>2</sup>. This information enables the agents to evaluate the complex effects connected to a public good/service<sup>3</sup>.

Nevertheless, the costs of information and the intrinsic complexity of some goods/services make the assumption of full information not realistic both in market and in non-market frameworks. Overall, three elements characterize the marginal evaluation for a public good/service: the available information; the subjective elaboration of that information; the subjective utility functions.

Then, two agents can have different valuations for a public good because they have different information or because they process in a different way that information<sup>4</sup> or simply because, given the same information and the same elaboration of the information, they have different personal preferences for a public good (for example because they have different personal and family conditions etc.).

In general, people could not fully perceive the benefits coming from a public good because of lack of information. In particular, we consider that the information is spread out among the agents and that institutional elements such as political competition or mass media competition can affect the distribution of information.

Both the elements affect the citizens' demand for public goods. As the distribution of information changes, the marginal evaluation changes too. In order to isolate the role of bureaucratic behaviour in the analysis, we assume<sup>5</sup> that the rules governing the elections of politicians are optimal, in the sense that the victorious political party would wish to enforce a public good's quantity up to the point where the sum of the marginal benefits to all citizens is exactly equal to the marginal cost of supplying the good.

### 3. THE MODEL: GENERAL FRAMEWORK

Let  $i \in [0; \bar{i}]$  be the information on public good's characteristics. With full information,  $i = \bar{i}$  for every agent  $j$  ( $j=1,2,3,\dots,n$ ). Every agent elaborates the available information in a subjective way. The subjective marginal valuation of the public good  $G$  is  $D_j = f_j(G; \bar{i}) \quad \forall j = 1,2,3,\dots,n$ .

Without full information,  $i$  is a random variable and every agent has a stochastic demand function depending on  $G \in [0; \bar{G}]$  and on the available information  $i_j \in [0; \bar{i}]$ . The individual demand function is  $D_j = f_j(G; i_j)$  with  $D_j \in [0; D_{jmax}]$ <sup>6</sup>  $\forall j=1,2,3,\dots,n$  and  $\forall G \in [0; \bar{G}]$ .

<sup>2</sup> The misreception of external and future benefits can also depend from a myopic behavior of some agents. In our framework this different subjective attitude of the agents can be caught by the subjective elaboration of available information.

<sup>3</sup> Full information is also necessary to assure the efficiency of markets where private goods are consumed.

<sup>4</sup> The different elaboration of the available information can depend from the cultural background of the agent.

<sup>5</sup> As in Niskanen (1971), Migué and Bélanger (1974), Breton and Wintrobe (1975) and in many others correlated papers.

<sup>6</sup> For every agent the minimum value of the willingness to pay is zero and the maximum value is a subjective value equal to  $D_{jmax}$ .

$D_j$  represents the willingness to pay of the agent  $j$  for the public good  $G$ . In others words, it represents the perceived benefit of the agent  $j$  from the public good  $G$  through a subjective processing of the available information.

We impose the following assumption on  $D_j$ .

**A 1:**  $D_j$  is concave in  $i_j$ .

Previous assumption means that the marginal effect (positive or negative)<sup>7</sup> of information on willingness to pay is decreasing. The function  $p(G; D_j)$  is a parametric density function<sup>8</sup> representing the probability that the agent  $j$  has a marginal valuation  $D_j$  for a given level  $G$  of public good. The standard characteristics of probability functions hold:  $p(G; D_j) > 0 \quad \forall G$  ;  $P(G; \bar{D}_j) = \text{prob}\{D_j \leq \bar{D}_j | G\}$ <sup>9</sup> is the cumulative distribution with  $P(G; 0) = 0$  and  $P(G; D_{j \max}) = 1$ .

**A 2:** the derivative of cumulative distribution  $P(G; D_j)$  respect to the parameter  $G$  is greater than zero:  $P_G > 0$ . A2 reflects the demand law. As the quantity of  $G$  increases, the probability that the subjective willingness to pay is smaller increases<sup>10</sup>.

The individual expected demand is :

$$E(D_j) = \int_0^{D_{j \max}} D_j p(G; D_j) dD_j \quad \forall j = 1, 2, 3, \dots, n \text{ and } \forall G \in [0; \bar{G}] \quad (1)$$

Integrating by parts, (1) can be rewritten as:

$$E(D_j) = [D_j P(G; D_j)]_0^{D_{j \max}} - \int_0^{D_{j \max}} P(G; D_j) dD_j \quad (1')$$

The first derivative of the subjective expected demand is:

$$\frac{\partial E(D_j)}{\partial G} = - \int_0^{D_{j \max}} P_G dD_j < 0, \quad \forall j = 1, 2, 3, \dots, n$$

From A 2, the subjective expected demand is decreasing in  $G$ .

Summing the subjective demand curves, we have the total demand curve:

$$D_{TOT} = \sum_{j=1}^n E(D_j) \quad (2)$$

The supply function depends on quantity:

<sup>7</sup> The marginal effect of information on subjective willingness to pay can be positive or negative according to the kind of information (good or bad).

<sup>8</sup> Where  $G$  is the parameter.

<sup>9</sup> The cumulative function  $P(G; \bar{D}_j)$  represents the probability that the individual willingness to pay is smaller or equal to  $\bar{D}_j$ , given  $G$ .

<sup>10</sup> This means that as  $G$  increases, the distribution function moves to the left.

$$S = g(G) \text{ with } \frac{\partial S}{\partial G} > 0 \quad (3)$$

The bureaucratic equilibrium realizes for a quantity level  $G_B$  such that the total budget is equal to the total costs:

$$D_{TOT}(G_B) = S(G_B) \quad (4)$$

### 3.1. Dispersion of information and bureaucratic equilibrium

Given the demand and the supply functions-(2) and (3)-, we analyze the bureaucratic equilibrium resulting from the transaction between politicians (the demand side) and bureaucracy (the supply side). The informative structure is the following: the total benefits coming from a public good -representing the available budget to reward bureaucracy- are known both to the demand side and to the supply side of transaction; the production process and the production costs are fully understood by the supply side.

Now assume that the “average information” stays fixed, but the dispersion of information increases. In other words, suppose that  $p$  and  $\tilde{p}$  are two density functions where  $\tilde{p}$  is obtained from  $p$  by taking some of the probability weight from the centre of  $p$  and adding it to each tail of  $p$  in such a way as to leave the mean unchanged.  $\tilde{p}$  is obtained from a *mean-preserving spread* on  $p$ . What happens to the bureaucratic equilibrium?

Following Rothschild and Stiglitz (1970), it is known that under the concavity assumption of  $D_j$ , (A1), the sum of the subjective demand functions will decrease in response to a *mean-preserving spread* on the information distribution, that is

$$\sum_{j=1}^n ED_j(G, i, p) > \sum_{j=1}^n ED_j(G, i, \tilde{p}).$$

A *gap* between the two demand functions realizes. In particular, the new demand is lower and represents a smaller perceived benefit. Bureaucracy is rewarded with a budget reflecting the perceived<sup>11</sup> benefits. In order to keep the total demand equal to the supply, the equilibrium quantity must decrease, then reducing the inefficient over dimension of the bureau's output.

As in Niskanen (1971), we consider two possible cases both giving a production level greater than the efficient level: a “*low demand*” case where the bureaucracy produces at the minimum cost efficient from a technical point of view and an “*high demand*” case where bureaucracy produces with costs greater than minimum costs<sup>12</sup>. In the first case, the production occurs at the minimum cost and the total costs

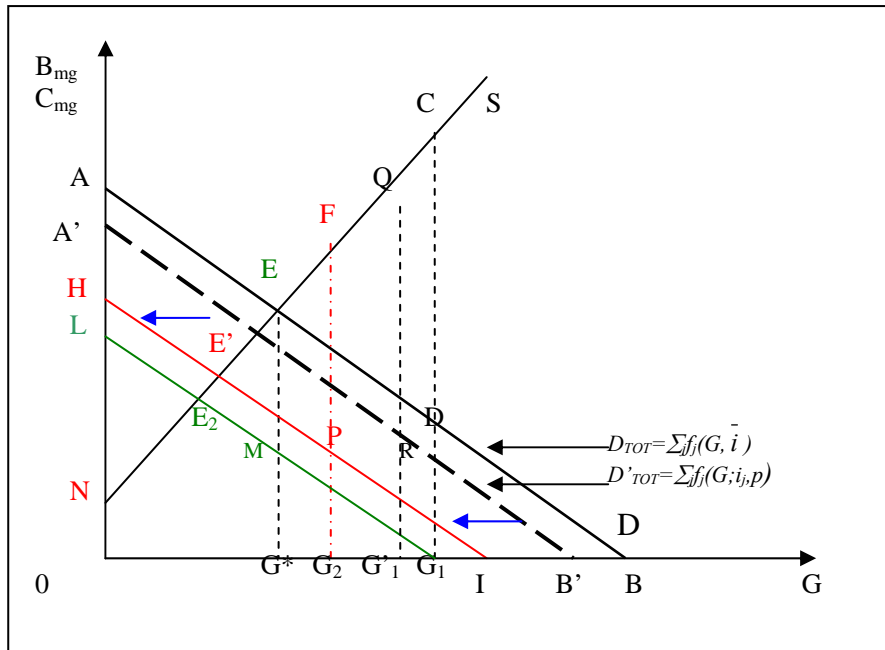
<sup>11</sup> If free rider behavior are considered in the analysis, the revealed demand function will be below.

<sup>12</sup> As in Niskanen's original work, two cases are considered: the case of bureaucrat producing with the minimum costs (technical efficiency) and the case of bureaucrat producing with costs greater than minimum costs (X-inefficiency)

are equal to the total willingness to pay. No discretionary budget exists. In the second case, the production does not occur at the minimum cost; the total willingness to pay- the total budget rewarding the bureaucracy- is greater than the total costs. A positive discretionary budget exists.

**3.1.1. Case 1: the “low demand” case**

The “low demand” case (“budget constrained” case) is showed in the figure 1.



**Figure 1. The “low demand” case**

The ANE area is equal to the ECD area.

Let the  $AB$  curve be the demand curve with full information ( $\bar{i}$ ) representing the true benefit coming from a public good. The  $NC$  curve is the supply curve. The efficient equilibrium is  $E$  where marginal benefits are equal to marginal costs and net benefit is maximum. The efficient quantity is  $G^*$ . Using its informative monopoly power, bureaucracy produces  $G_1$  spending  $ONCG_1$  which is exactly equal to the total benefits  $OADG_1$ . The quantity  $G_1$  is chosen in order to keep a balanced budget.

Switching from a first best framework to a second best framework without full information, the demand curve is not the  $AB$  curve but the  $A'B'$  curve<sup>13</sup>. The  $A'B'$

<sup>13</sup> From a theoretical point of view, the lack of information could also produce an over valuation of benefits. In this case the curve of the perceived benefits is above the  $AB$  curve. However, it does not change the following arguments of the paper (see note 11). So, without loss of generality we consider the case with a lower perceived demand curve.

represents the perceived benefits from the collectivity and, therefore, the total demand. The area under the A'B' is the available budget to reward bureaucracy. The production decreases from  $G_1$  to  $G'_1$  where the total benefit  $OA'RG'_1$  is equal to the total cost  $ONQG'_1$ .

As the dispersion of information increases through a *mean preserving* spread, the demand curve shifts down from A'B' to HI<sup>14</sup>. The new demand function is  $D''_{TOT} = \int f_i(G, i, \tilde{p})$  where  $\tilde{p}$  represents the mean preserving spread on  $i$ .  $D''_{TOT}$  is the new perceived benefits curve. The budget available to reward bureaucracy decreases. The production shifts to  $G_2$ . The expected net benefit is zero ( $NHE' = E'FP$ ).

The effects on allocative efficiency and on consumers' welfare are positive.

In  $G_2$  the inefficient over dimension decreases. Moreover, a welfare gain occurs either in term of spending save ( $FCG_1G_2$ ) or in term of consumers' surplus calculated as the difference between the true benefits curve AB and the perceived benefits curve HI. The area AEE'H represents the additional consumer's utility accruing to citizens with a production level equal to  $G_2$ .<sup>15</sup>

*Claim 1. In "non-market" exchanges between politicians and bureaucrats, the dispersion of information can be efficiency and welfare improving. In particular, there exists an optimal level of dispersion of information from a social point of view.*

The intuition of the claim 1 is simple. Unlike traditional market exchange theory where symmetrical agents move in an overall first best framework and efficient transactions are possible because all information is available; in a non-market context, the agents move in an overall second best framework with informative monopoly of bureaucrats. A dispersion of information is efficiency and welfare improving because decreases the informative power of bureaucrats. In a second best framework, the dispersion of information turns out to be a means to minimize distortions.

The efficiency and welfare gains increase up to a production level equal to  $G^*$ . This case occurs if the dispersion of information is such that the perceived benefits curve is  $LG_1$ . With a perceived benefits curve  $LG_1$ , the bureaucracy produces  $G^*$  where the total costs ( $ONG^*E$ ) are equal to the total benefits ( $OLMG^*$ ). A greater dispersion of information shifting the perceived benefits curve below  $LG_1$  gives an inefficient rationing of public good's quantity and it is not socially efficient.

### 3.1.2. Case 2: the "high demand" case

Unlike previous case, when the demand function is high<sup>16</sup>, the bureaucrat can produce the public good/service quantity where demand intersects x-axis, then

<sup>14</sup> The same effect (a shift down of the demand curve) occurs if the demand curve is above the *first best demand curve* (see note 10). With a mean preserving spread, the slope of the new demand curve could change. Moreover the conclusions do not change.

<sup>15</sup> In fact for a production level equal to  $G_2$ , the perceived utility from the agents is the area under the function HI from zero to  $G_2$  but the true utility accruing to the agents is represented by the area under the AB function from zero to  $G_2$ . The area  $ONFG_2$  represents the cost of  $G_2$ , therefore AEE'H is an additional utility accruing to the citizens

<sup>16</sup> Or the demand is steeper than the supply function.

maximizing the total budget achievable<sup>17</sup>. The total budget allocated by politicians is greater than total costs and the discretionary budget is positive. The figure 2 shows this case.

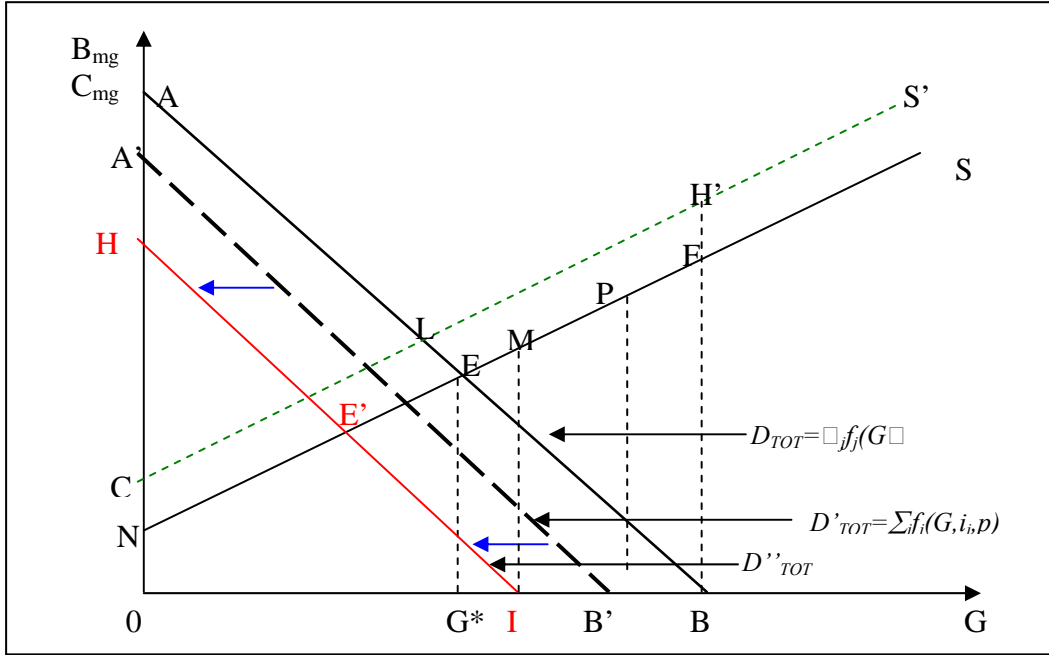


Figure 2. The “high demand” case

Like previous section, the AB function represents the total demand in a perfect transparency framework with full information and the NS function is the supply function. The efficient production is  $G^*$ , the bureaucratic production is OB. The discretionary budget is positive and equal to  $NAE-EFB$ .

Unlike private entrepreneur, the bureaucrat is not residual claimant. The budget received from government must be sufficient to cover the costs and no budget surplus- or discretionary budget- is possible.

Since a production level equal to OB implies a discretionary budget, the bureaucrat uses his informative monopoly about costs and produces OB revealing the supply function  $CS'$ . With  $CS'$  the total budget OAB is equal to the total revealed costs  $OCH'B$  ( $CAL=LH'B$ ) and the proposal is accepted by government.

In this case, bureaucracy is inefficient from an allocative and a technical point of view<sup>18</sup>. Let the  $A'B'$  be the demand function without full information. If the dispersion of information increases through a *mean preserving spread*  $\tilde{p}$  on  $i$ , the

<sup>17</sup> Switching from marginal to total variables, this case occurs when the cost function  $C(Q)$  intersects the total budget function  $B(Q)$  to the right of the maximum point. The quantity maximizing the total budget achievable can be produced then respecting the constraint  $B(Q) \geq C(Q)$ .

<sup>18</sup> Because the production does not occur at the minimum cost.



demand curve shifts down from AB to HI given by  $D''_{TOT} = \square_{fj}(G, i_j, \tilde{p})$  where  $\tilde{p}$  represents the mean preserving spread on  $i$ .  $D''_{TOT}$  represents the new perceived benefits curve. The quantity supplied is OI. From claim 1, we know that a welfare gain verifies up to the quantity  $G^*$ <sup>19</sup>. It is equal to HAEE' in terms of consumers' surplus and to IMF B in terms of saved costs. Moreover, as the dispersion of information increases, the discretionary budget changes.

The effects on discretionary budget are summarized by the following claim.

*Claim 2* If the dispersion of information increases the discretionary budget decreases-then improving the X-efficiency- the more the demand function is sleeper and the supply function is flat.

#### 4. CONCLUDING REMARKS

The public choice literature points out that the inefficiency of the public sector mainly derives from the informative structure characterizing the exchange between bureaucrats and politicians. In particular, the distribution of information between politicians and bureaucrats is such that the political demand- that is the maximum the government is willing to pay for any amount of output- is known to bureaucrats but the bureaucracy is not required to reveal a complete production cost function. As a consequence, the bureaucrats have a real decisional authority about the production of the service.

This paper analyzes the relationship between politicians and bureaucrats in a different perspective considering that the citizens' available information is a random variable whose distribution can change. The analysis shows that as the dispersion of information increases, the efficiency increases too because the agencies' informative power decreases. So, a greater dispersion of information can be considered as an endogenous mechanism to limit the bureaucratic power, thus limiting the public sector dimension.

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<sup>19</sup> For quantity smaller than  $Q^*$ , there is an inefficient rationing of quantity.

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## UNDERSTANDING EFFICIENCY OF AGRARIAN ORGANISATION

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**ABSTRACT:** *In this paper we incorporate achievements of interdisciplinary New Institutional and Transaction Costs Economics (combining Economics, Organization, Law, Sociology, Behavioural and Political Sciences) into analysis of agrarian organizations and suggest a framework for evaluating efficiency of different governing structures in agriculture. This new approach includes: study of farm and other agrarian organizations as a governing rather than production structure; assessment of comparative efficiency of alternative (market, contract, internal, hybrid) modes of governance; analysis of level of transaction costs and their institutional, behavioural (agents preferences, bounded rationality, tendency for opportunism), dimensional (frequency, uncertainty, assets specificity, and appropriability of transactions), and technological factors; and determination of effective horizontal and vertical boundaries of farms, and other agrarian organizations.*

**KEY WORDS:** *agrarian governance, efficiency of farms and agrarian organizations, transaction costs, new institutional and transaction costs economics*

### 1. INTRODUCTION

The issue of criteria and approaches for evaluating efficiency of agrarian organizations is among the most debated in economic theory and practices [1, 2]. It has been especially topical during transition and EU integration of Eastern European countries [2, 3]. The question of efficiency is often politicized as unilateral priority is given to a particular type of organization - free market, private farming, family farm, cooperative etc. In more profound analyses efficiency is assessed on the base of productivity of resources use in various types of organizations. At the same time, no answer is given to fundamental question: why there have been highly sustainable “inefficient” organizations across the region throughout transition now - unproductive subsistence and semi-market farms, production cooperatives with profitability several times lower than private farms, inefficient contractual arrangements etc.

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The New Institutional Economics is a new developing methodology which explains existence and efficiency of economic organizations with their role to maximize transaction benefits and minimize transaction costs [4, 5, 6]. Divers type of farms and contractual modes are considered as alternative governance (rather than production) structures – forms for governing relationships between different agrarian agents [1]. *In this paper we incorporate achievements of that new developing interdisciplinary concept into analysis of agrarian organizations and suggest a framework for evaluating efficiency of different governing structures in agriculture.*

## 2. THE TRADITIONAL APPROACH

Broadly applied traditional approach for evaluating efficiency of economic organizations is based on assessment of *efficiency of production costs* and *productivity of employed recourses*. Accordingly, a great number of indicators are used to express efficiency of organizations through determining the level of use of factors (land, labour, capital), rate of return (pay-back, profitability) of current and long-term expenditures etc<sup>1</sup>. In more sophisticated (Neoclassical) models criteria for assessment of efficiency of organization is derived from the equilibrium condition of entire economic system - when marginal benefits are equalized with marginal costs<sup>2</sup>.

The organizations using recourses with different (higher, lower) from marginal productivity are inefficient - e.g. if a farm has higher productivity than the social level (employing resources more effectively than other organizations) but it does not further invest resources to explore effective internal potential - then it is inefficient. Contrary, if a farm is performing with lower productivity, it means that it integrates more recourses than it can effectively manage (which could be effectively used by others), and therefore it is inefficient.

However, traditional approach does not answer the question: *why there exist so many organizations with different productivity of resources utilization*. If efficiency of a particular organization is low, there will always be private or social mechanism (competition, central planning) for reallocation of resources to more effective application - optimization, specialization, extension, or liquidation of organization. In a foreseeable long run there will exist only “effective” organizations, which govern resources on (or close to) the socially acceptable level of efficiency. What is more, traditional approach estimates different organizations without even looking for answering the question: *why there exist so big variety of types of economic organizations in agriculture* (one-person farms, group farms, cooperatives and firms of different kind, subsistent farms, small and large farms).

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<sup>1</sup> E.g. profitability of Bulgarian cooperatives has been 5 times lower than in private farms [7].

<sup>2</sup> That definition of efficiency (Pigou) is found in all Economics textbooks. “It is a central characteristic of welfare economics that outcomes derived from the basic neoclassical model are used as a criterion of efficiency. Outcomes that deviate from outcomes in model based on fully defined exclusive rights and costless transactions are called “inefficient” [8].

### 3. THE NEW APPROACH

New Institutional Economics explains existence of different agrarian organizations in their role to *govern transactions between individual agents* [9, 10]. Usually carrying out individual transacting (land and labour supply; marketing) is associated with significant costs - for finding best prices and partners; negotiation; contract writing; registration; enforcement of contacted terms; disputing including through a court system etc.

Thus, economic efficiency of agrarian organizations should take into account not only *their capacity to minimize production costs, but also their ability to economize on transaction costs* [1]. "Indeed it is obvious that once there is shift from a "frictionless" universe scarce resources have to be used to effect transactions, protect property rights and so on. This means that system's total resource endowment can no longer be devoted solely to the production of normal commodities" [11].

Moreover, both (current) costs for using of transacting forms and long-term costs for their development (initiation, modernization, liquidation) have to be taken into account [1]. If execution of transactions was not associated with costs ("zero" transaction costs) then the mode of organization would have no economic importance [4]. Agrarian agents would govern their relationships with the *same (equal) efficiency* though free market (prices movements), and private organizations of different types (contracts, firms), and collective decision making (cooperative, association), and in a nationwide hierarchy (single private or state company). Then technological opportunities for economies of scale and scope (maximum productivity of resources) would be easily achieved. All information for the effective potential of transactions (optimization of resources, satisfying new demands) would be costlessly obtained by everybody, and individual agents would costlessly trade available resources in mutual benefit until exhausting potential for increasing productivity ("Pareto optimum / efficiency").

However, often high transaction costs make difficult or block otherwise efficient (mutually beneficial) for all parties transactions. For instance, despite the great pay-off of investments in agrarian research and innovation, market and private agents do not organize such activity because of their high uncertainty and low market and private appropriability [12]. Since carrying out transactions is connected with costs, *rational agents will seek, chose, and develop such modes for organization of their activity and exchanges which maximize their transacting benefits and minimize associated costs*. The type of organization is crucial since various governing structures give *unequal* possibilities for participants to coordinate and adapt transactions, stimulate acceptable behaviour of counterparts, protect their rights and investments from unwanted expropriation.

Therefore, *in the long-run inefficient forms will be abandoned and only effective modes for organization of agrarian transactions will dominate*. Each transaction has different *specific dimensions* varying according to [4, 13]:

- *institutional environment* (legislation, efficiency of public contract enforcement, other formal and informal restrictions);

- *personal characteristics of agents* (preferences, experience, reputation, tendency for opportunism, risk aversion);
- and *macroeconomic conditions* (stability, foreign trade regime etc.).

Since there exist *no single* most efficient (universal) form for organization of all transactions, depending on critical dimensions of each transactions agrarian agents will use appropriate (most effective) mode for governance. Hence, in any particular moment agrarian activities will be carried out (governed) through a great variety of organizational structures: some will be governed by “*invisible hand of market*”, some will be carried out through a *special contract mode* (“private order”), some will be managed *within hierarchy* (under “visible hand of manager”), some will be *supported by a third party* (Government, NGO`s, international assistance), some would require more *complicated and mixed modes* [1].

Thus it must be abandoned commonly used (nirvana) approach for evaluating different form as “good” or “bad” for their own or in comparison with some no existed ideal (without transaction costs, model in other countries) [14]. Evaluation is to be directed to finding out the *comparative advantages* for initiating, establishing, and using; management, adaptation, intensification, coordination, stimulation and controlling (in short - for minimization of overall costs) of transactions, of alternative (and really possible) modes for governing of different transactions in the *specific market, institutional, natural environment*. For instance, in the condition of not well-defined and assigned private rights on farmland, and the high costs for their protection and exchange during post-communist transformation, the short-term lease and the internal integration (subsistence and semi-market farming, production cooperation) were the most efficient forms for organization of land supply in Bulgarian agriculture [7, 9].

Evaluation of efficiency of agrarian organizations has to *include not only comparative “productivity” of resources, but analyses of the level and structure of comparative transacting costs*. Besides, it should identify *factors of transaction costs in nationwide (social) scale*, which eventually slow down sustainable growth of agriculture, and lead to insufficient and unsustainable use of resources, underinvestment and low productivity in production, wide-spreading of primitive technologies, lack of innovations etc [5]. When a high level of costs for market and private transactions (which prevent or entirely block development of market and private forms) is observed then either a public intervention in agrarian transactions (assistance, regulation, in-house organization, partnership) or fundamental institutional modernization (e.g. introduction and enforcement of new private rights) should be undertaken.

#### 4. TRANSACTION - THE BASIC UNIT OF ANALYSES

The new approach turns individual transaction and costs associated with them into a *centre of economic analysis* [4, 9]. Following that new approach *firstly*, we have to determined major type of transactions in which agents managing agrarian activity (farm entrepreneurs) participates. *Secondly*, we are to identify feasible alternative forms for governance of diverse type of transacting. *Next*, we should specify various kinds of (transaction) costs associated with different type of organisation. *Finally*, we are to

assess comparative efficiency of alternative governing structures according to the criteria (minimum) transaction costs.

Main types of transactions of farm entrepreneur are associated with the supply of “factors” of production and marketing of farm output and services. Actually, *farm manager manages not (production) technology but transactions related with production*. It is not a hypothetical case when an entrepreneur is entirely engaged in managing transactions rather than participating in production activity - he hires all labour for carrying technological operations, and spends all time for governing contractual relations with inputs and service suppliers and buyers.

Major types of transactions in farming are associated with: *labour supply, supply of land and other natural resources, service supply, inputs supply, knowledge supply, innovation supply, finance supply, insurance supply, and realization (marketing) of output and services*. In addition, the farms entrepreneur takes part in a great variety *collective action* for inducing public (Government) intervention in market and private transactions in his own interests [1].

In rare cases there is *only one* practically possible form for governance of agrarian activity. For example, in Japanese dispersed paddy agriculture water supply could not be conducted by individual farmers (high interdependency, nonseparability of water use) and since earliest period water use organization developed as public organization. Often the choice of governing mode is determined by *institutional restrictions* as some forms for carrying farming activities, land and labour supply, trade of output etc. could be socially unacceptable or illegal<sup>3</sup>. For instance, corporate and cooperative organization of farming is forbidden in many countries; market trade of farmland (natural resources) and some outputs (inputs) is illegitimate etc.

Usually, there are a big variety of *practically possible* (alternative) forms for organization of each agrarian activity (transaction). *One extreme* is to govern all transactions via free market through spot-market or classical contracts for inputs supply and marketing. For example, leasing-in farmland and long-term material assets, purchasing all services for cultivation and harvesting of output, purchasing all short-term material assets, selling all primary products on market.

*Another extreme* is a close internal organization such as one-person or group subsistent farm - farmer(s) employ only own resources (land, labour, technological knowledge) and consume whole product. Between these two polls there is a *spectrum* of feasible modes for governing of transactions: various sort of long-term contracts, association, cooperation, interlinked organization, diverse hybrid forms, firms of

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<sup>3</sup> Nevertheless, when transaction costs associated with governance is not high (possibility for disclosure low, enforcement and punishment insignificant) while benefits are considerable, then more effective modes prevail - large gray/black economies are common in agriculture.

different kind (partnerships, corporations, complex hierarchical forms) etc <sup>4</sup>. Identification of practically employed specific forms for transactions in different countries is object of a special *micro-economic survey*.

## 5. “MEASUREMENT” OF TRANSACTION COSTS

One direction for evaluation of efficiency of agrarian organizations is *direct comparison of costs for each transaction in different forms*. Organization which requires less costs for is more efficient. For instance, comparison is made whether would be more economical direct (own) marketing of output or using a marketing cooperative. Data for some part of transaction costs can be found in traditional statistics and accountancy (e.g. management costs, marketing costs). Another part of transaction costs may be easily specified - costs for licensing and registration, agro-market information, promotion and marketing of output, general management, hiring lawyers and court suits, guarding property and yields, payment of bribes etc. However, a significant portion of transaction costs is either very difficult (too expensive) or impossible to be determined. In that group we can include the costs for finding best partners, negotiation, controlling and enforcement of contractual terms, organizational development, interlinked transacting, unrealized (failed) deals etc. Besides, it is often extremely complicated to separate transaction costs from traditional production expenditures<sup>5</sup>.

For example, while executing farming operations a farmer supervises hired labour; during transportation of chemicals he negotiates marketing of output etc. Approximate estimate for the level of transaction costs could be made by interviewing farm managers.

Here it is essential to indicate the level (high, low) of efforts and time devoted for governing different type of transactions:

- for finding needed labour for hiring, land and material inputs for purchase and lease-in;
- negotiating terms of exchange;
- monitoring implementation of contractual obligations;
- current adaptation of contracts to emerging new conditions;
- conflicts resolution;
- memberships in professional organizations; relationships with agrarian bureaucracy.

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<sup>4</sup> E.g. transaction associated with cultivation of land by tractor can be governed in different ways: a farmer can buy (unified ownership), rent (rent contract) or lease a tractor (input and credit supply interlinked contract); farmer could buy cultivation service from market (contract service); number of farmers may buy a tractor (joint ownership) and use it in a group (producers cooperative) or individually; farmer can join a cooperative providing cultivation services (non for profit organization); he may lease his land out to a tractor owner and share output (share tenancy contract); farmer can hire a tractorist to work on his farm (employment contract) and he may even sell cultivation service to market (profit making organization); cultivation service to farms could be subsidized by Government (trilateral mode), or provided by a municipality or state company (public organization) etc.

<sup>5</sup> All these “measurement problems” make it impossible to extend the traditional Neoclassical models simply by adding a new “transacting” activity [13].



Component comparison of transacting costs could not always give idea for efficiency of organizations. Very often alternative form decreases one type of costs while increasing another type transacting costs - e.g. internalization of a transaction (replacement of market with integral mode) is associated with reduction of costs for information supply (overcoming market uncertainty), permanent (re)negotiations along with constantly changing conditions, safeguarding investments from outside opportunism. On the other hand, it enlarges costs for organizational formation, decision making, integral management, supervising and motivation of hired labour etc.

In our previous example with alternatives for marketing of farm output the “internal realization” (personal consumption, production “consumption”, processing) could be chosen as more efficient form to direct sell or use of marketing cooperative. Moreover, a good part of transactions in agriculture is governed not by “pure” but through complex or interlinked modes - e.g. inputs supply in a “package” with know-how, extension or/and service supply; joint supply of inputs and credit; crediting of production against marketing of output etc. Thus, it is important to take into consideration *overall* (total) costs for organization of transactions of different types - *all external and internal transaction costs of the farm*.

Often it is difficult to select a base for comparison in view that the high transacting costs entirely block development of alternative organization. For instance, market for agrarian credit did not emerged in East Europe during most of the transition and internal supply (utilization of own finance, direct outside co-investment) was the only possible form for finance supply of farms [7]. Here the comparative level of transaction costs is impossible to be determined and appreciate “high” efficiency of the integral mode for finance supply. In that case funding with “own means” and with “bank credit” are not real alternative at all but completely different governing structures. Thus, broadly applied indicators for estimation of comparative efficiency of investments based on “opportunity costs” (discounting, payback period, internal rate of return) independent from the form of funding, have no significant economic sense.

## 6. FACTORS OF TRANSACTION COSTS

Another direction for evaluation of efficiency is the discrete structural analysis of alternative governing forms [4]. Since it is either very difficult or impossible to determine transaction costs for individual mode, assessment is made on *comparative costs* of alternative organizations. Besides, quantitative approach (absolute and relative measures, marginalism) is replaced by qualitative (structural) analysis and indirect assessment of transacting costs. Actually, we are interested not in absolute level of transaction costs in different form, but in organization with the lowest comparative costs for a particular transaction. Initially we have to identify critical factors of transactions in the specific market, institutional and natural environment.

These factors are responsible for variation of transacting costs and are associated with [1, 4]:

- *behavioural characteristics of agrarian agents* - bounded rationality, tendency for opportunism, reputation building, risk taking, level of trust;

- *economic dimensions of individual transactions* - frequency, uncertainty, assets specificity, and appropriability.

Transaction costs have two *behavioural origins*: individual's bounded rationality and opportunism [4]. Agrarian agents do not possess *full information* about economic system (price ranges, demands, trade opportunities, development trends) since collection and processing of such information would be either very expensive or impossible (for future events, partners intention for cheating). In order to optimize decision-making they have to spent costs for "increasing imperfect rationality" (data collection, analysis, forecasting, training etc.).

Furthermore, economic agents are *given to opportunism*. Accordingly, if there is opportunity for some of transacting sides to get non-punishably an extra rent from exchange he/she will likely do so<sup>6</sup>. It is very costly or impossible to distinguish opportunistic from non-opportunistic behaviour (because of bounded rationality). Therefore, agrarian agents have to protect their transactions from hazard of opportunism through: *ex ante* efforts to find a reliable counterpart and to design efficient mode for partners credible commitments; and *ex post* investments for overcoming (through monitoring, controlling, stimulating cooperation) of possible opportunism during contract execution stage [4].

In addition, transaction costs depend on "critical dimensions" of each transaction. When *recurrence* of transactions between same partners is high, both sides are interested in working out a special form for standardization of their ongoing relationships (building incentive structure, adjustment mechanisms, conflict resolution devices). Continuation of relationships with a particular partner and designing a special mode for transacting has a high economic value. Parties restrain for opportunism which detection is "punished" by turning to competitor (losing future business).

Besides, costs for development of a special mode could be effectively recovered for repeated transactions. When a transaction is incidental then possibility for opportunism is great since cheating side can not be easily punished (good reputation is not of value). Transaction costs become very high (and may block transacting) when low frequency coincides with high uncertainty and requirement for large relation-specific investments.

When *uncertainty* surrounding transactions increases then costs for overcoming uncertainty go up (bounded rationality is crucial and opportunism can emerged). Agrarian agents will seek, develop, and use such modes of organization which diminish transaction uncertainty - internal integration, cooperation, rational (relational) contract etc. There are strong mutual incentives to develop a special form for repeated transacting when high uncertainty is combined with significant relation specific investments. When transacting between same counterparts is rare, and it is not supported by specific assets,

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<sup>6</sup> Two major forms of opportunism can be distinguished [4]: *pre-contractual* ("adverse selection") - when some of the partners use "information asymmetry" to negotiate better contract terms; and *post-contractual* ("moral hazard") - when some counterpart takes an advantage of impossibility for full observation on his activities (by another partner or by a third party) or when he take "legal advantages" of unpredicted changes in transacting conditions (costs, prices etc.). Special *third form* of opportunism occurs in development of larger organizations [15]. Since individual benefits are often not proportional to individual efforts, everybody tends to expect others to invest costs for organizational development, and to benefit ("free ride") from the new organization.

and appropriability of rights is high, then faceless (autonomous) market exchange is the most efficient mode. Depending on the levels of uncertainty and their risk aversion the agrarian agents will take different entrepreneurial risk and will get normal, low or extra than average rate of return from transactions.

Transaction costs are very high when some of the parties is to make *specific for the transaction with a particular partner investments*. In this case it is impossible to change a partner of transaction (alternative use of assets) without a big loss in value of specific capital<sup>7</sup>. Specific investments are “locked” in relationships with particular partner (personality of partner matters) and they cannot be returned-back by “faceless” market exchange. Costless redeployment (alternative use) of specific assets is not possible if transactions fail to occur, they are prematurely terminated, or less favourable terms are renegotiated (in contract renewal time and before end of life-span of specific capital). Thus, if transaction requires significant specific investments agents will have to design a special mode to safeguard their investments from expropriation (possible opportunism) – tied-up contracts, quasi/complete integration etc.

If *symmetrical* assets dependency (regime of bilateral trade) exists there are strong incentives in both parties to elaborate a special private mode of governance. However, when *unilateral* dependency exists then dependent side (facing mini/total monopoly) has to protect investments against possible opportunism (behavioural uncertainty) either through integrating transactions (unified organization, joint ownership, cooperative)<sup>8</sup>; or safeguarding them with interlinked contract, exchange of economic hostages, development of collective organization to outstand asymmetrical dependency (for price negotiation, for lobbying for Government regulations) etc.

Serious transacting problems arise when condition of assets specificity is combined with high uncertainty and low frequency of transactions. In this case elaboration of a special governing structure for private transacting is not justified (set up costs can not be recovered by occasional transactions). Specific investments are not made and transactions fail to occur. Third party involvement (local authority, Government agency, NGO, hybrid organization) in individual transacting (through assistance, arbitration, regulation) is crucial for smooth organization of transaction. Special mode for trilateral transacting such as neoclassical contract is invented to manage transactions with high uncertainty and asset specificity, and low frequency<sup>9</sup>.

Transacting is particularly difficult when *appropriability* of rights is low [5, 14]. In this case possibility for unwanted (unequal) market or private exchange is great<sup>10</sup>. For transactions with low appropriability the costs and benefits are independent for

<sup>7</sup> If investment in specific capital is not made, transactions either can not take place or it could occur without (or loss of) comparative advantages in respect of productivity [1].

<sup>8</sup> When technological opportunities for economy on scale (scope) on specific assets can be achieved. Otherwise integration of transactions will be lost-making comparing to outside price (production costs) competition.

<sup>9</sup> arranging a “third party participation” - e.g. determination of grades of wine, certification of special (eco, fair-trade, origins) products by an authorized agency.

<sup>10</sup> “Natural” low appropriability has most of agrarian intellectual products: agro-market information, agro-meteorological forecasts, a big part of new agrarian technologies and, software for agriculture etc. Besides, all products (and activities) with big positive or negative externalities (spillovers) are to be included in this group [12].

individual participants. Because of bounded rationality the transaction costs for protection, detection, verification, and a third-party (e.g. court) punishment of unwanted exchange (non paying consumers-opportunists) are extremely high. Principally, when the appropriability associated with a transaction is low, there is no pure market mode to protect and carry out activity effectively. Nevertheless, the respecting others rights (unwanted exchange avoided) or “granting” additional rights to others (needed transactions carried) could be governed by a “good will” or charity actions. For instance, a great number of voluntary environmental initiatives emerged driven by competition, farmers’ preferences for eco-production, responds to public pressure for a sound eco-management [5]. In any case, voluntary initiatives could hardly satisfy the entire social demand especially if they require significant costs.

If appropriability is low and transactions are strongly specific (for a particular customer) the only way to carry them out is to integrate transactions (in house production, trade secrets) or elaborate effective form for securing credible commitment (joint investments, interlinks). Some private modes could be employed if a high frequency (a pay-back on investment is possible) and a mutual assets dependency (thus incentive to cooperate) exists<sup>11</sup>. In these instances, unwritten accords, interlinking, bilateral or collective agreements, close-membership cooperatives, codes of professional behaviour, alliances, internal organization etc. are used.

Serious transaction difficulties occur (and may block transacting) when they are associated with low appropriability but require significant specific/universal investments, and are characterized with low frequency and high uncertainty<sup>12</sup>. Incidental character of transactions between same agents makes designing and maintenance costs for a special (private, collective) large-members organization for dealing with low appropriability very high (“free-riding” problem). Thus, there is a strong need for a “third-party” public (Government, local authority, international assistance) intervention in order to make such activity possible or more effective – public organization, public contracts, mandatory fees, introduction of new property right etc.

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<sup>11</sup> For instance, inter-dependency between a dairy farm and a milk processor in a remote region (capacity and site dependency); or a bee keeper and a neighboring orchard farm (symmetric dependency between needs of flower and needs for pollination).

<sup>12</sup> That is when pay-back on investment requires “mass” consumption and “collective appropriation” of benefits (and risk taking).

## 7. DISCRETE STRUCTURAL ANALYSIS

Next step is to evaluate effective potential of alternative modes: to minimize bounded rationality of agrarian agents and uncertainty surrounding transactions; for appropriation and protection of absolute (determined by dominating institutions) and contracted rights (and associated private benefits and investment) from possible opportunism; to recover long-term costs for organizational development through high frequency of transactions; to explore economy of size and scale on specific for transacting with a particular partner capital etc.

Different governance forms are alternative but *not equal* modes for organization of transactions - they have different features (advantages and disadvantages) to coordinate, control, and stimulate (maximize benefits of, minimize costs on) transactions. Since transactions have different critical dimensions and governance forms have different comparative advantages the operationalisation of the concept is done by: "*aligning transactions (which differ in their attributes) with governance structures (which differ in their costs and competence) in discriminating (mainly transaction cost economizing) way*" [4].

Limited rationality of agents (lack of access to all information for optimal decision making, impossibility for processing information, deficiency of managerial experience) increases transaction costs, and thus there will be sleeked effective forms which diminish bounded rationality (investment for information supply, training, integration of transactions, using special organization). Possibility for opportunism of counterparts (unwanted and non-punishable "exchange") also boosts transaction costs, and hence preferences would be given to forms restricting opportunism and protecting investment from unwanted expropriation (contract specification, using economic hostages, join investment, ownership integration). Built reputation (good or bad) and existence of trust between partners, reduce transaction costs making easier or blocking transactions. Finally, depending of their risk aversion individuals will have different transaction costs for investments connected with significant uncertainty.

In general, *internal structure* has advantage for governing transaction with high uncertainty and specificity (dependency) of assets, since it diminishes bounded rationality and protects investments from outside opportunism. Contrary, transactions with high certainty (bounded rationality is not important) and universal character of assets (opportunism can not be realized since transaction can be executed with another partner without additional costs) can be carried across *free market* without encountering costs for development of a special private mode. *Private organization* is effective only for transactions with high recurrence between same partners, since occasional (single) transactions do not let recovering ("payback" on) investment for development of a special governance mode (mechanisms for coordination, stimulation, dispute resolution; formal registration etc.).

Finally, *markets* and *private forms* are appropriate for transactions with high appropriability, since during exchange they would recover invested resources. For transaction with low appropriability private rights cannot be protected or they are enforced with extremely high costs. Thus, such transactions could be effectively

governed either by hybrid (mixed public-private, quasi-public) or entirely public forms for organization.

After specification of potential of individual forms, we can build a *principle scheme with generic types for governing of transactions with different critical dimensions* (Figure 1). For transactions with different combination of specific characteristics there would be suitable *different effective forms* for governing: part of agrarian transactions will be managed through free market exchange; another part will be organized through a special contract mode(s); part of transactions will be entirely internally integrated (firm), and another portion protected through a special private organization(s) outside of farm gates (cooperation, association).

Generic modes	Critical dimensions of transactions								
	Appropriability								
	High								Low
	Assets Specificity								
	Low				High				
	Uncertainty								
	Low		High		Low		High		
	Frequency								
High	Low	High	Low	High	Low	High	Low		
Free market	Y	Y							
Special contract			Y			Y			
Internal organization					Y		Y		
Third-party involvement				⚡				⚡	
Public intervention									⚡

Y - the most effective mode; ⚡ - a necessity for a third party involvement

**Figure 1. Principle modes for governing of agrarian transactions**

When transactions between same parties are occasional, but they are characterized with significant uncertainty, and they are with increasing or high specificity of assets, then there is no pure market or private mode for effective organization ("market failure", "contract failure"). Here a third part involvement (state, local authority, international assistance, private agent) is necessary to make such transactions more efficient or possible at all.

## 8. ECONOMIC BOUNDARIES OF FARM AND AGRARIAN ORGANIZATIONS

Range of feasible organization forms for each generic mode is to be identified. Variety of “internal organization” in agriculture includes: one-person farm/firm, family farm/firm, group farm/firm (partnership), cooperative, corporation, public farm/firm, joint venture etc. Corresponding forms of “free market” are: spot exchange on local/regional markets; classical contract, wholesale trade etc. The “special contract form” could be: short-term contract, long-term contract, relational contract, interlinked organization, multilateral agreement etc. List of alternative governance mode is to be completed via special micro-economic study.

Finally, we are (and able) to determine the *effective (horizontal and vertical) boundaries* of agrarian organizations of different type. Individual forms in each generic type should be evaluated for their potential to explore economy of scale/size of specialized and/or specific capital, and comparative efficiency to minimize bounded rationality and control opportunism of participants. For instance, *one-person farm/firm* has zero internal transaction costs (one agent), but limited possibility for investment in specialized/specific human and material capital. “Internal” opportunities for increasing productivity (through investments, exploring economy of scale/size) increases along with extension of *members of coalition* (group farm, partnerships) but that is also associated with enlargement of costs for making the coalition (finding complementary and reliable partners) and the internal costs for managing the coalition (for coordination, reducing bounded rationality, controlling opportunism etc.).

*Separation of ownership from management* (cooperative, corporation) gives enormous opportunities for productivity growth but it is connected with huge transacting costs (for decreasing information asymmetry between management and shareholders, decision making, controlling opportunism of hired labour and between partners). *Special contract* combines the potential for greater “control” on transactions with possibility to explore advantages of further specialization of activity. Nevertheless, it could be connected with large costs for preparing and enforcement of contracts for complex occasional transactions with high unilateral dependency. Boundaries of *agrarian markets* extend along with development of specialization and standardization of agrarian recourses, technologies, and products, and institutional conditions for protecting of private (absolute and contract) rights. However, market governance could be associated with high uncertainty, risk, and costs due to price instability, great possibility for facing opportunistic behaviour, “missing market” situation etc.

Economic cooperation and exchanges let more profitable use of resources but also require additional costs. Farmers and other economic agents will tend to govern their activity and relations through the most effective forms – that which maximize their benefits and minimize their costs. Therefore, the most effective form and size of farm will be determined through optimization of *total* (production *and* transacting) costs, and *trade-offs between the gain in the productivity/benefits and the gain in transacting costs*. Hence farm will be efficient if it manages all transactions in the most profitable for the owner(s) way. *Expected benefits* for farmers could range from the monetary or non-monetary income; profit; indirect revenue; pleasure of self-employment or family

enterprise; enjoyment of agricultural activities; desire for involvement in eco-preservation; increased leisure time; to other non-economic benefits.

In the specific institutional environment (legal framework, support policies, tradition, access to new technology, level of transacting costs) various types of farm will have quite different effective horizontal and vertical boundaries. For instance, in transitional conditions of high market and institutional uncertainty, and inefficient property rights and contract enforcement system, most of the agrarian investments happened to be in a regime of high specificity (dependency).

As a result (over)integrated modes such as low productive subsistent household and group farming, or large production cooperatives and agro-companies, have been dominating in Bulgaria and East Europe [Bachev, 2006]. Alternatively, in more matured economies, where markets are developed and institutions stable, agrarian assets are with more universal character. Therefore, farm borders are greatly determined by family borders, and more market and mixed (contract rather than entirely integrated) forms prevail.

Thus that is a question of *trade-off* (comparison of benefits) between the increase in productivity and the growth of transacting costs, and of minimization of overall (*production plus transaction*) costs of farm. Such comparison not always (most often) is quantitatively measured. However, that calculation is always made by business managers and (rational) economic agents. Economic science should not ignore "immeasurable" costs of transaction but to seek adequate forms for their incorporation into efficiency analysis. At this stage of analysis it becomes clear the inadequacy of suggested indicators for productivity of production costs and resources for estimation of efficiency of different organizations. The opposite is true - it has to be expected significant differences in the rate of profitability on investments in an agro-firm (profit making organization) from the "pay-back" of expenditures and resources in a cooperative (member oriented organization), a public farm (non-for profit organization) or in a subsistence farm (giving opportunity for productive use of otherwise "non-tradable" resources such as family labour, land etc.).

Traditional statistical, accountancy etc. data are little suitable to test and apply our new approach. Here it is necessary to get *micro-economic data* for different transactions governed by divers type farms as well as costs and benefits associated with alternative governing structures. For this purpose it has to be organized interviews with managers of different kind of farms. Questions should give information for the specific characteristics of transactions of particular type and for associated transacting costs.

Besides direct indicators (e.g. frequency of deals with the same partner, term of contract) it should be also used appropriate proxy indicators for expression of uncertainty of transactions, specificity and dependency of assets etc. - e.g. whether there is an alternative supplier (buyer); reason for selecting a particular supplier or buyer (the best price, delayed payments, receiving supplementary service); identity of the partner (relative, friend, member organization); factors which make difficult procurement or sell (finding a partner, high price level, non-fulfilment of negotiated terms). Goal of analysis is not only to test adequacy of suggested approach, but also to identify transaction difficulties, and suggest directions for improvement of public policy and business strategies.



## 9. CONCLUSION

In unreal economy "without transaction costs" the theory of agrarian organization is very simple - there are no agrarian organizations (farms, firms, cooperative etc.). Here the single mechanism for governing (organizing, coordinating) all economic activities is the free market. "Situation of efficiency" is easily achieved since agrarian agents (individuals, households, firms) automatically and costlessly adapt their behaviour according to movements of market prices and changes in production technologies. In the real agrarian economy "with transaction costs" there is also place for other effective (non market) modes for optimization of resource use - group farms, cooperatives, contractual arrangements, public firms, hybrid forms.

"The old" problem of efficiency finds a "new" dimension through incorporation into analysis of the costs of transacting (in addition to production expenditures). Moreover, accent is put on evaluation of comparative efficiency of all (rather than only a part) of alternative modes for organization of agrarian transactions – "free market" as one extreme and "subsistent farm" or/and "complete (public or private) hierarchy" as another pole(s). It also becomes absurd usage of traditional approaches of "black box" in analysis of governing structures and productivity as an indicator for efficiency of different agrarian organizations.

That new concept of efficiency is inseparable part of new understanding of the essence and economic role of agrarian organizations. However, transaction costs economizing are not only a modern academic concept but a real practice in the world we are living in. Here arguments such as "transaction costs are difficult to measure" and therefore "they will be ignored in assessment of efficiency" are not acceptable - not only in research works, but in the farm management and agrarian policies design. .

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## **SUPPLY CHAIN MANAGEMENT: A NEW FRONTIER OF MANAGERIAL THOUGHT AND PRACTICE**

**VIRGINIA BĂLEANU, SABINA IRIMIE, ANDREEA IONICĂ \***

**ABSTRACT:** *Achieving and maintaining competitive advantage in an increasingly unpredictable and changeable business climate under the new rules of global competition and sustainable development became the major challenges facing the worldwide companies' management during the last decades. Our paper aims to reveal the developments of managerial thought and emerging practices that address these challenges, essentially based on the new relational view of business and the supply chain logic. Accordingly, the paper synthesizes the results of an extensive documentary research of the international literature that allowed us observing how this logic evolved and driven to the so called Supply Chain Management revolution. Also it's point out the growing interests at the world level in this field covering the complex problems of integrating the key business processes and managing them along the supply chain, with emphasis on its current shaping as a new multidisciplinary study field.*

**KEY WORDS:** *supply chain; traditional/transactional view/model; relational view/model; customer-supplier relationships; integration; supply chain management*

### **1. INTRODUCTION**

In the last few decades the world is changed faster than ever, creating not only new opportunities of doing business but also new imperatives for surviving in the global marketplace. The remarkable progress of information and communication technology (IT&C) blurred the geographical and national boundaries, overcoming the obstacles of physical distance and opening the "digital age". Some primary effects of this progress at the company level are emphasized by Alan Greenspan in an interview published in Washington Post as follows: "Technology has driven significant advances in companies' operating capabilities, enabling them to better track product orders, supplies, deliveries, and other aspects of their businesses, which allows them to meet customer's needs more quickly and at lower cost" (Berry, 1999). But the information

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availability resulting from this progress together with growing consumer incomes in many markets around the world fostered also the buying motivations shift (from basic product functionality to convenient, service-intensive and customized solutions).

Therefore, the companies had to satisfy a more informed customers, having far better choices and wanting a wide range of options they can configure to their specifications - that is more and more value demanding customers. Focusing on customer became the key to survive in the global competition. Higher level of quality, responsiveness and customization (all at a lower cost) defines the new coordinates of customer requirements. Furthermore, the customer satisfaction is based on its own perception of value and expectations about products availability, speed, consistency and flexibility of deliveries, service quality and reliability, so it is increasingly difficult for a single company to fulfil the particular specifications of its customers from different parts of the world. Accordingly, increasing attention to the effective interactions, communication channels, and relationships shifted the paradigms of industrial marketing and management giving consistence to the supply chain logic and relational view. Considered to be a major breakthrough in thought (Russell, 2007), supply chain thinking enabled new advances in conceptual and practical approaches to the above-mentioned problems laying the foundation of Supply Chain Management.

## **2. EVOLUTION IN MANAGEMENT: SHIFTING PARADIGMS TOWARD SUPPLY CHAIN THINKING**

The beginnings in development of formal management thought and its applied fields are generally associated with the scientific management principles defined by Frederick Taylor in 1911. Almost four decades after, the managerial theories and practices were based on these principles aiming in essence the production efficiency (optimally performing the production function) and resulting in important progress in the fields of production and operations management.

Following the historical course of economic and organizational evolutions, in the next four decades the managerial power axis gradually moved toward the other business functions. Thus, beginning in the 1950 years, the changes in capital markets directed attention to finance issues and fostering the development of modern financial management. Then, during the 1960 years, the efforts focused on improving the marketability of products (commercial function, respective the marketing areas). Consequently, a general marketing orientation set to run at the organizational level and new approaches of industrial marketing emerged, like in organizational/industrial buying behaviour, or analysis of distribution systems areas. Furthermore, in the next decade, the need to improve the physical distribution functions generated idea to "borrow" some practices from military logistics and adapt them to the business problems laying the foundation of the logistics management. Towards the end of this period, the new perspective opened by the systemic approach has stimulated interest in the integration of logistics activities, marking the beginning of change for internal functional integration and for the transition to the phase of integrated logistics.

In the next decade (the 1980 years), the pace and nature of change have been radically affected by the trend of expanding business in foreign markets. Against this

background, the moment of the Japanese "attack" on U.S. markets marked history through its impact on subsequent course of management thought and practice. Unexpected and long-term success of Japanese companies, which famous analysts explained by their different management, has created an unprecedented opening of U.S. firms toward the new managerial practices inspired by the Japanese model, including in the area of supplier relationships. The parallel theoretical accumulations in the same period focused mainly on two directions (improving quality, staff involvement), leading to the development of quality management and human resources management.

The last decade of the twentieth century could be seen as a period of the major challenges for management, since each of its above-mentioned fields facing new problems of globalization requiring new appropriate approaches. Due to the widespread implementation of quality management systems, differentiation by high quality products/services begins to transform from a source of competitive advantage in the standard of global market access. Thus, the companies try to differentiate themselves in terms of responsiveness to the market demands, seeking for their logistic performance improvement, mainly through adopting advanced IT solutions for logistic processes integration and customer support (Russell, 2007). Meantime, the idea that the unit of analysis and competition in the new economy is not more the firm, but the supply chain is increasingly gaining ground (Lewis, 1995; Kotler, 1999, 2000; Dyer, 2000). In the first half of the decade this idea appears as a leitmotif of many researches, reflecting the common concerns of professionals in various fields (e.g. competitive strategies, transaction costs, market structure, industrial organizations, logistics, supply, production and operations management, industrial marketing, systems engineering, IT, etc). So, if the quality management revolution emerged in the 1980 years (as the US companies faced increased competition from their Japanese rivals) and high quality became the global standard, by the year 2000 an entire culture was developed around the supply chain driving the supply chain management revolution (Bowersox et al., 2002; Friedman, 2005; Russell, 2007). It is the new frontier of emphasis in management thought and practices of the new millennium.

To conclude about the above-described evolution, it should be noted the shift of paradigms that became apparent in the last decades, following the changes of globalization. In essence, it is a shifting of views about the ways of doing and managing business in the new economy described in many works as being close related to the shift occurred in approaches to the marketing function (from transactional marketing to relational marketing).

According to Seth (Sheth, 1996), shifting from the transactional view to the relational view was fostered by at least four reasons as follows:

(1) The global competition has evidenced the competitive advantage of a good many of leading companies (mainly in the manufacturing sector) obtained through creating and managing customer-supplier relationships on strategic partnership basis.

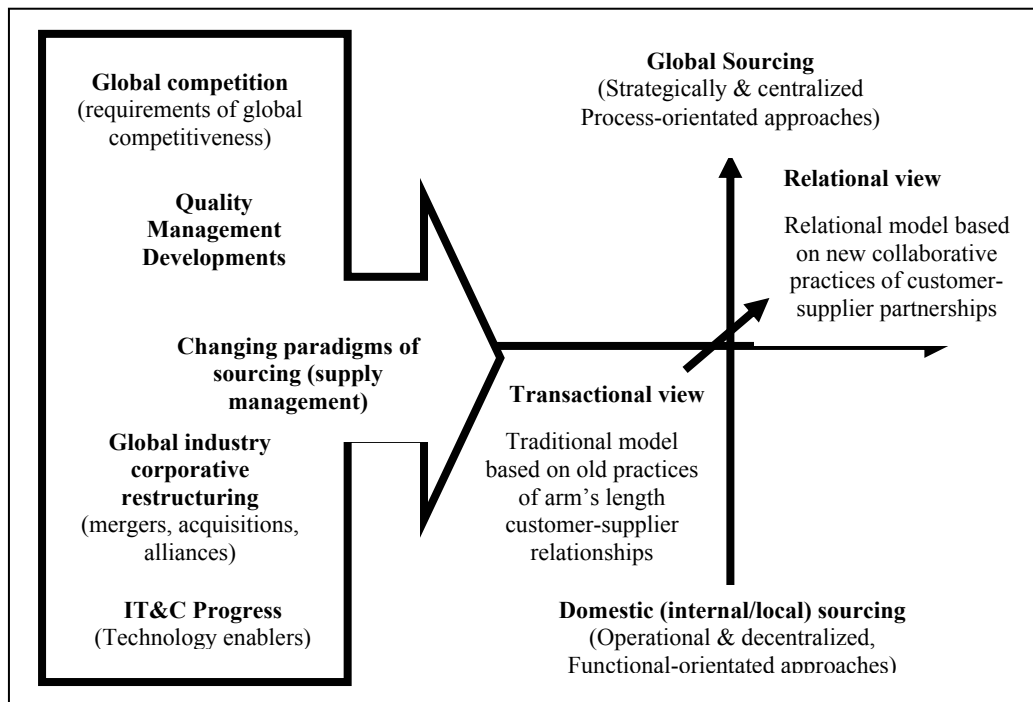
(2) The quickly adoption and spreading worldwide of quality management principles, and TQM philosophy have encouraged the "reverse marketing" starting with the external clients and moving backward into the sourcing/supply process and its procurement related practices (to reduce cycle times, inventory and associated costs).

(3) The industry restructuring (through the global mergers, acquisitions and alliances) yielded a major change in the corporate function of sourcing (transforming it from an administrative decentralized function in a strategic centralized function).

(4) The rapid progress of IT&C enabled the implementation of systems and tools for supporting decision-making process and for improving organizational performance, including in the supply field.

Based on these arguments, Seth highlights two dimensions of changing paradigms: moving from “a transaction centered to a relational-centered philosophy”, and “from a decentralized domestic sourcing to a centralized global sourcing process” (Seth, 1996, p.11). By default, referring to the changes in approaching to the sourcing function as a major driver of changing paradigms, he reveals the new strategic role of supply process for business management with emphasis on the relational side of managing supplier relationships. In parallel, the logistics developments based on the supply chain thinking revealed another important shift in approaching the organizational integration problems: from the functional-oriented approaches to the process-oriented ones. That enabled the internal (intra-firm) integration of key business processes opening the new perspective of external (inter-firm) integration along the supply chain (Stevens, 1989; Bowersox et al., 2002; Gimenez, 2004).

Considering together the above aspects, in the figure 1 are represented the main descriptors of changing paradigms.



Source: Băleanu, 2009

Figure 1. Descriptors of changing paradigms

### 3. CONCEPTUAL DEVELOPMENTS OF SUPPLY CHAIN

As we mention in the previous section, the evolution of management thought and practice was decisively marked by the globalization changes, especial in the last two decades of the twentieth century. During this period the traditional view of doing business reflected by the transactional model of practices based on vertical integration and arm's length relationships with suppliers became less and less able to sustain the competitive advantage in the new economic context. Consequently, more and more companies in developed economies began to rely on suppliers to provide valuable, high quality and customized inputs, following the basic idea that for a firm to deliver maximum value to its customers it must receive maximum value from its suppliers (Lewis, 1995; Sheth, 1996; Dyer, 2000). In other words, these companies adopted the new relational view and its related model of practices focused on virtual integration and partnerships along their supply chains. In fact, it is the essence of supply chain thinking, which evolved from the new rules of the global competition revealing the competitive advantage of inter-firm cooperation and integration.

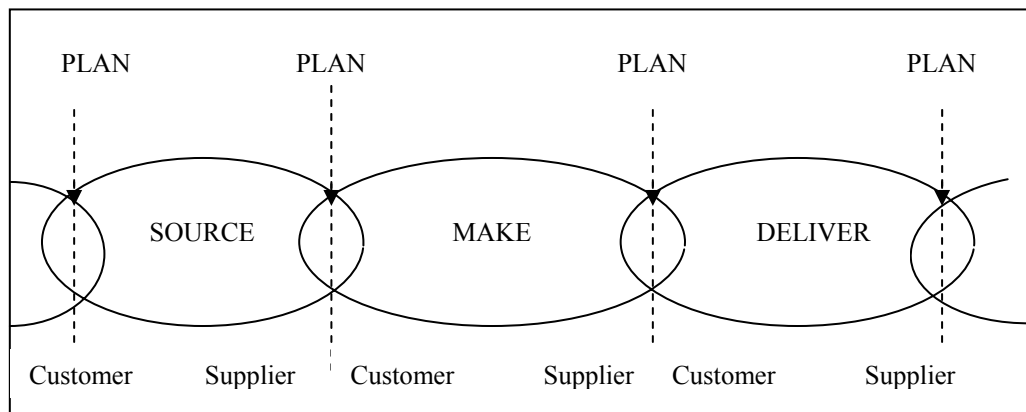
The concept of supply chain (SC) had a gradual evolution in time from functional approaches focused on the inside of organization to process approaches focused both inward and outwards that extend upstream and downstream, from the first raw material supplier to the final customer (see table 1).

**Table 1. An evolving perspective of supply chain concept**

Definitions associated to SC (in chronological order)	Authors, years
A series of connected activities refer to planning, coordinating and controlling materials, components and finished goods from supplier to customer, pursuing two distinct flows (material and information) through the organization	Stevens, 1989
A network of facilities that ensure the functions of supplying materials, transforming them into byproducts and finished products and distributing to customers	Lee & Billington, 1992
A network of organizations involved through upstream and downstream links in the various processes and activities that produce value in the form of products and services for final customer	Christopher, 1998
Two or more parts linked by a flow of goods, information and funds	Tsay et al., 1999
The whole of efforts involved in producing and delivering a final product/service from supplier's supplier to the customer's customer	Supply Chain Council, 2000
An integrated process in the context that some business entities (suppliers, manufacturers, distributors, retailers) work together to plan, coordinate and control the flow of materials, components and finished goods from suppliers to customers	Eksioglu, 2001
The sequentially-connected organizations and activities involved in creating and making a product available. It can be viewed as a value chain inasmuch as suppliers, manufacturers, transporters, and all other components of SC add value.	Russell, 2007

Source: extract from Băleanu, 2009, p.30

According to the logistic view of Supply Chain Council, each basic SC is a flexible series of joined links formed by the so-called execution processes (source, make and deliver) that transform or transport materials and/or products (Supply Chain Council, 2008). Each intersection of two execution processes is a link in the SC and each of these processes is a customer of the previous process and a supplier to the next one. Furthermore, each link (being a customer-supplier relationship) requires a particular type of planning process (plan) in order to ensure the SC equilibrium enabling its efficient functioning (see figure 2).



Source: Supply Chain Council, 2008

**Figure 2. Configuration of a basic supply chain**

Obviously, if attention focuses on the chain thus formed only between the firm frontiers, then can seem important only the internal links (customer-supplier relationships) for ensuring the equilibrium. Consequently, the management solutions of planning (and otherwise all the other ones) aimed at the SC equilibrium addressing only the causal issues of inside, while the outside ones are considered only if directly affect final link with the external customers (usually those referring to customer service). This is the general perspective that prevails in the approaches of SC developed up to the 2000 year (see definitions in the table 1 that reflect this fact, and for more details Băleanu, 2009).

The essence of SC concept, as it results from the latest approaches, could be easier to understand relative to a more familiar term – value chain. In our opinion, the key difference between the concept of value chain developed by Michael Porter (Porter, 1985) and SC is that while first focuses on the value-adding activities within the organization second focuses on value-adding processes, both inside and outside the organization. Thus, it could consider that SC extends the perspective of value chain beyond the organization's frontiers, upstream and downstream, toward its suppliers and its customers (Băleanu, 2009). Consequently, we can see SC as a whole of value chains of some individual organizations that are juridical independent but have business processes powerful interdependent. In such a perspective of SC, since manufacturing operations become increasingly specialized and complex, a producer-firm which



supplying a finished product is increasingly relying on its suppliers, which in their turn relies on the own suppliers and so on. This outlines the image of a broader system of firms/companies that are put together to meet an order to an end user, like the links of a chain. Such a view suggests that, of necessity and not optional, each company is part of at least one SC. The chains in which a company is involved are defining by (1) the producer of final product and its suppliers, which together ensure all the capabilities needed to create that product, and (2) the customers who buy the product (Committee on Supply Chain Integration, 2000). The implementation of this vision requires an inter-organizational arrangement based on recognition of interdependency and managing relationships between the involved parts. Therefore, SC operations require managerial processes crossing functional areas from inside individual firms, and their traditional frontiers, in order to make the connections needed for ensuring the integration and competitive functioning of the chain.

#### **4. THE PATH TOWARD SUPPLY CHAIN MANAGEMENT**

The recent international SC literature reflects the consensus about the fact that SC integration can be realized only if the component organizations work together (cooperate), on the basis of collaborative mutual beneficial relationships (Tompkins, 2000; Mentzer et al., 2001; Bowersox et al., 2002; Handfield & Nichols, 2002; Handfield & Bechtel, 2004; Min & Mentzer, 2004; Lambert et al., 2005; Schlegel & Smith, 2005; Stadler, 2005; Russell, 2007). There are two basic beliefs arguing for this view as follows:

(1) The cooperative behaviour, of win-win type, will reduce the inherent risks of opportunistic actions and will substantially improve the efficiency of the whole process of creating and adding value to the final customer.

(2) The redundant efforts and losses, which by their propagation along the chain negatively affect the results of this process, can be more easily identified and eliminated through collaboration.

Since requiring as essential prerequisite the collaborative relationships that are sustained only by a cooperative behaviour of win-win type, SC integration is obviously incompatible with traditional model of doing business based on adversative behaviour of win-loss type. Thus emerged "a new order of business relationships" (Bowersox et al., 2002, p.3), called Supply Chain Management (SCM).

Conceptual developments of SCM have occurred in direct connection with those of SC, so that pioneering initiatives (reflecting mainly logistics perspective) were developed in time by significant contributions from other fields. Thus, SCM has become not only an increasingly hot topic of research at the world level, but also of controversy between representatives of different academic study fields, given the traditional disciplinary boundaries and rivalries. For example, in a research work published four years ago in *Journal of Business Logistics* the authors have noted that during the preliminary discussions and literature review were confronted with no less than five other academic departments "claiming the ownership of SCM": industrial engineering, operations management, supply management, marketing and strategic management (Stank et al, 2005, p. 36). Of course, this comment reflects the partisan

view of the logistics representatives that consider SCM as naturally being a logistical matter. Even if such partisan views still exists in other fields also (including those previously mentioned), more and more of the latest works refer to SCM as to a new multidisciplinary developing study field.

In order to highlight the path toward the current stage of developing this field, we reviewed the literature from the past two decades and we drawn out a synthesis of few tries of reference for defining SCM that are presented chronologically in Table 2.

**Table 2. Different views on Supply Chain Management concept over the past two decades**

Conceptual approaches of SCM (in chronological order)	Authors (source), years
Integration of various functional areas of an organization to improve the flow of goods from the direct strategic suppliers up to the end user, along the production and distribution chain	Houlihan, 1987
A management philosophy that reflects a systemic view of SC (by viewing the chain as a single entity) based on partnership concept that involves the joint efforts of several companies directed to total goods flow management, from supplier to final customer	Ellram & Cooper, 1990
Management of relationships both between corporate functions and across companies	Ellram & Cooper, 1993
“Integration of key business processes from end user through original suppliers that provides products, services and information that add value for customers and other stakeholders”.	Global Supply Chain Forum (GSCF), cited in Lambert et al., 1998, p.1
A set of approaches used to efficiently integrate suppliers, manufacturers, warehouses, distribution and sales centers, implying the production and distribution of goods in adequate quantities, at the right place and right time, in order to minimize overall system cost while satisfying the requested level of demand and customer service	Simchi-Levi et al., 2000
The systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole	Mentzer et al., 2001
The proactive management of bidirectional coordination and movement of goods, services, information and funds, from raw material to final user	Trent, 2004
Since SC is a network of companies, or independent business units, from original supplier to end customers, management of this network is a complex task having the goal to implement cross-functional business processes and integrate them with other key members of the chain	Lambert et al., 2005
„Alliances with key partners, and information technology that allows supply chain partners to share accurate information on a timely basis are the building blocks of efficient and responsive supply chain operations. Upon this foundation, the introduction of lean manufacturing and lean logistics processes, together with the integration of key business processes up and down the supply chain create SCM”.	Russell, 2007, p.59

Source: extract from Băleanu, 2009, p.38

#### 4. BRIEF CONCLUDING REMARKS

Despite the "explosion" of worldwide research interests in SCM field, the national literature covering such issues is just at the beginning. Furthermore the few

related works seem to focus on the early logistics approaches, rather than to consider their latest developments. Our paper is an attempt to overcome this shortcoming by contributing to a better understanding of how evolved supply chain thinking and resulted in current approaches of SCM as the new frontier in management thought and practice, that is "more than integrated logistics" (Russell, 2007). And, as Handfield & Bechtel showed: "In fact, the field of SCM spans multiple interdisciplinary areas, and thus must draw from a vast field of prior research in business, industrial psychology, economics, operation research, and organisational science...Rather than allowing the field to fragment into distinct areas, we need to think about how to extend our conventional notion of what constitutes SCM" (Handfield & Bechtel, 2004, pp.3, 4). This is, in our opinion, the main stream of global research efforts that should followed also at the national level in order to give substance to our researches in SCM field.

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## **RELATION BETWEEN EDUCATION AND ADAPTION TO THE SOCIAL AND ECONOMIC ENVIRONMENT**

**EVA BÓCSA, VASILE CIOCODEICĂ,  
VALENTIN FULGER \***

**ABSTRACT:** *This research is going to focus upon the different opinions of the persons having a low/ average/ high level of education according to age, sex, occupation, income, and their expectations regarding labor market offers, as well as the problems the Jiu Valley has to face at present. The research took place in 2007, on a sample counting 1596 subjects. The data of the research show that the subjects having a higher education level also have a more active attitude towards the problems they are confronted with; they have the capacity of understanding these problems more complexely and are more optimistic than the subjects having lower education.*

**KEY WORDS:** *level of education, social and economic statute, attitude when facing community's problems, passivity - activism, pessimism-optimism*

**Introduction.** A lot of researchers belonging to various fields such as sociology, economy, and psychology have studied the relation between the educational level and other characteristics, namely: income, social statute. The relation between education and economic aspects was studied by the school of human capital. G. Becker (according to Hatos, 2006) develops a theory about the foundation of human capital and analysis the revenue rates of education and training investments. Cherkaoui shows that within modern societies the income is positively correlated with variables such as age, sex, social class. Nevertheless, under equal circumstances, the level of education has the most powerful effect upon incomes, except age.

R.J. Herrnstein and Ch. Murray (according to Roth-Szamosközi, 1998), in their controverted book, "The Bell's Curve", have analyzed the relation between intelligence and various aspects of the environment. They have studied the relation between the intelligence coefficient and education, social statute, income, ethnic affiliation. The authors associate the notion of "social classes" with that of "cognitive

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classes”, since their researches show that the IQ correlates with social condition. The borders among cognitive classes have been fixed at 5, 25, 75, and 95 centiles of intelligence distribution among population. The persons belonging to the superior class form the society’s elite. Social problems powerfully focus at the lower end of cognitive distribution. The authors have a positive opinion regarding the efficiency of the efforts of cognitive activation. The raise of intellectual level during childhood might mean the settling of a part of the social problems. Intelligence could be improved through nourishment improvement, psychic stimulation at tender age, a better quality of education.

Starting from this kind of researches (and also relying upon daily observations) we aimed at focusing certain differences existing between those having a higher/average/lower education level. We targetted this goal as we frequently meet the opinion according to which at present the effort necessary to graduate a faculty is not worth (people say that a lot of graduates do not find a job matching their education).

**Goals of the research.** The analysis aims at focusing upon certain differences among those having a lower/average/higher level of education from the following points of view: age, sex, occupation, income, their expectations regarding labor market offers; of the opinions regarding the problems the Jiu Valley has to face at present.

**Methodology of the research.** The research took place in the district of Hunedoara, in the 6 towns of the Jiu Valley: Aninoasa, Lupeni, Petrila, Petrosani, Uricani, Vulcan, in July 2007. The method employed by the research was indirect investigation, and the working instrument was the questionnaire. The research took place on a sample counting 1596 subjects. The sample was established according to the principle of connected shares: age, sex, residence. More specifically, we took into account the whole population of the Jiu Valley and calculated the share of each administrative unit out of the 6 ones belonging to the Jiu Valley: Petrila, Petrosani, Aninoasa, Vulcan, Lupeni and Uricani. We also included the population over 18 years old belonging to each territory unit of the Jiu Valley, grouping it according to intervals such as: 18-25 years old, 26-30 years old, 31-35 years old, etc.

The completion of the shares was done in its largest part at random; yet all variables were connected. Accordingly we provided the foundation of a sample that had a quite positive representativity as compared with that of a simple random sample, but without the possibility of precisising the maximum admitted error. Nevertheless, specialized literature proves that this type of sample, in case one does not have at hand a complete sample background (as we would have liked, namely electoral lists), is the most economic and sure possibility of carrying out a research.

In order to process the data we used the SPSS program (mainly the hi-square test). **The analysis of the relations among the level of education, age, sex, occupation, income.** The level of education of the 1596 subjects was grouped into 4 categories: maximum 8 graduated forms, 10 forms and/ or vocational school, college or college followed by post college school, superior education (tab.1). The structure of the sample according to age is displayed in tab.2. Further we analyzed the relations between the level of education and age, sex, occupation, income. The relation between the level of education and each of these variables is highly significant from a statistic point of view.

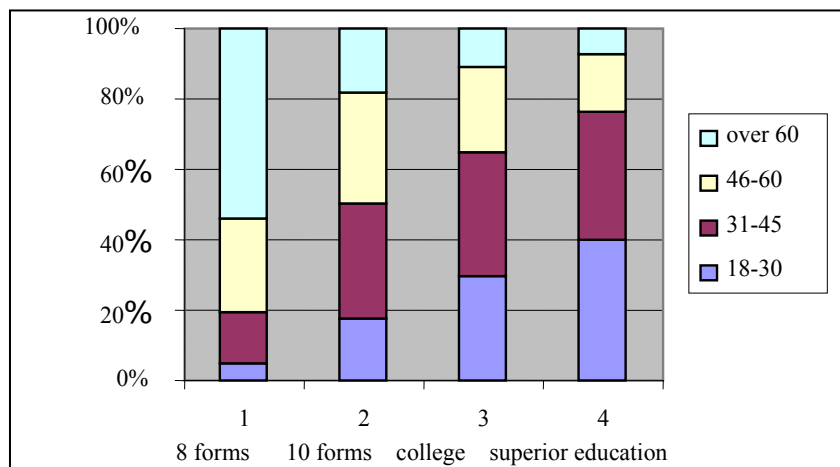
**Table 1. Structure of the sample according to the level of education**

Level of education	No. of abs.	%
Maximum 8 forms	198	12.4
10 forms or vocational school	423	26.5
College/ post college school	620	38.84
Superior education	355	22.24
Total	1596	100

**Table no. 2. Structure of the sample according to age**

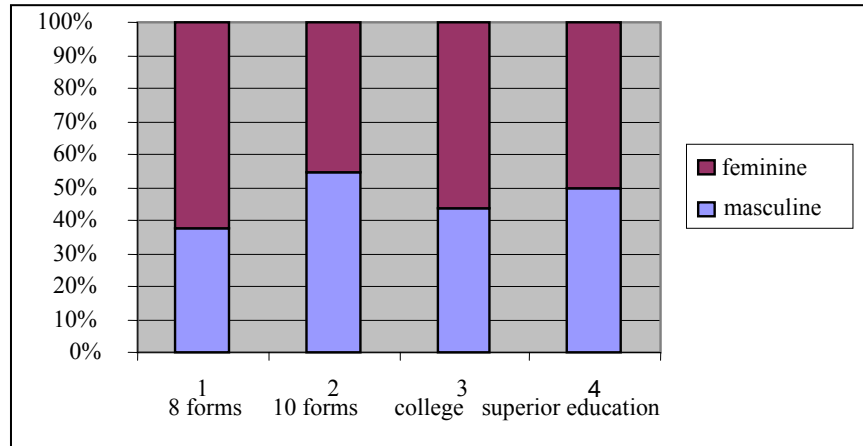
Age	No. of abs.	%
Between 18 – 30 years old	413	25.9
31 – 45 years old	512	32.1
46 – 60 years old	395	24.7
Over 60 years old	276	17.3
Total	1596	100

The relation between the level of education and age ( $\chi^2 = 308.04$ ;  $p < 0.001$ ): those having a low level of education (maximum 8 forms) are mainly old persons, over 60 years old. 40% of the persons with superior education have maximum 30 years old. (fig.1). Out of these data one can infer that during the last decades the level of education of the Jiu Valley’s population significantly increased.



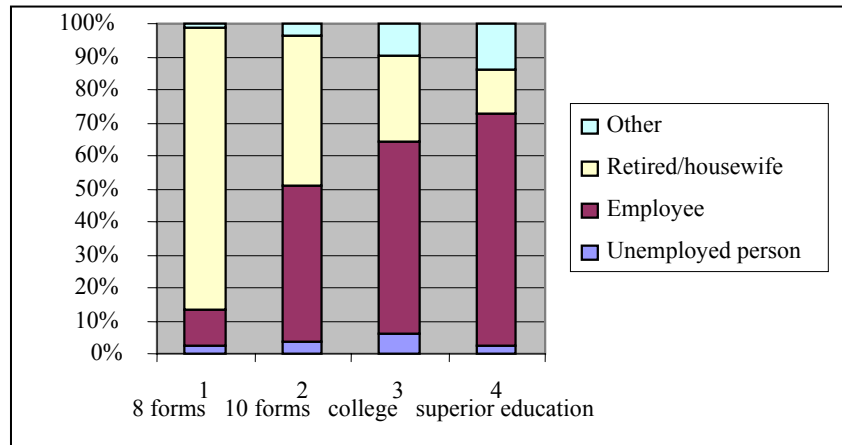
**Figure 1. Relation education - age**

The relation between education and sex ( $\chi^2 = 20.724$ ,  $p < 0.001$ ): the persons having lower education are mainly women (62.6% of those with maximum 8 forms). Most of those having 10 forms and/or vocational school are men (54.4%), and of those having college/ post college school are women (56.5%). Regarding those with superior education the percent of men and women is almost the same 50 – 50% (fig.2).



**Figure 2. Relation education - sex**

As one would have expected, there is a statistically significant relation between education and occupation ( $\chi^2 = 350.934$ ;  $p < 0.001$ ): 84.8% of those having a lower level of education are retired persons or housewives; the large majority of those having college/ post college school (58.4%) and of those having superior education (70.1%) are employed. At the same time we should say that 55.2% of the unemployed persons are college or post college school graduates, and only 13.4% have superior education (fig.3).

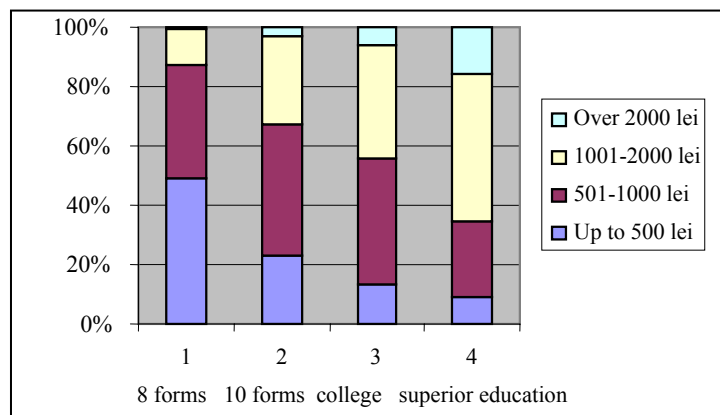


**Figure 3. Relation education - occupation**

The relation between education and income ( $\chi^2 = 265.268$ ;  $p < 0.001$ ): among those having a low level of education almost 50% earn up to 500 lei per month (about 150 euro), and only 0.5% earn more than 2000 lei (about 600 euro). 75% of those who have at least 10 forms earn between 500 and 2000 lei per month. Among those having superior education 16% earn more than 2000 lei (fig.4). The subjects' self



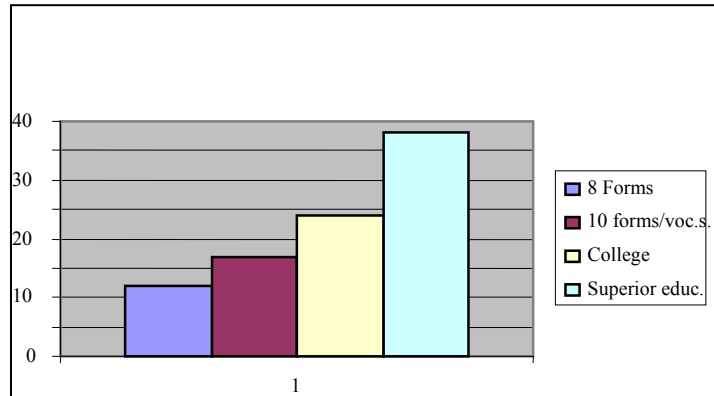
appreciations regarding the degree their family's incomes are/ are not enough in order to live decently match the data previously displayed and are correlated with their educational level ( $\chi^2 = 168.127$ ;  $p < 0.001$ ). 54% of those having a low education level state that their income does not give them the possibility of living a decent life. Among those with superior education only 10% agree with this opinion. It is nevertheless quite worrying the fact that only 7.9% of all the subjects declare that their family's income is more than enough in order to live a decent life; the majority (62.8%) consider that their incomes hardly provide them a decent living standard. This opinion shows that most of the Jiu Valley's inhabitants are not content with their living standard.



**Figure 4. Relation education - income**

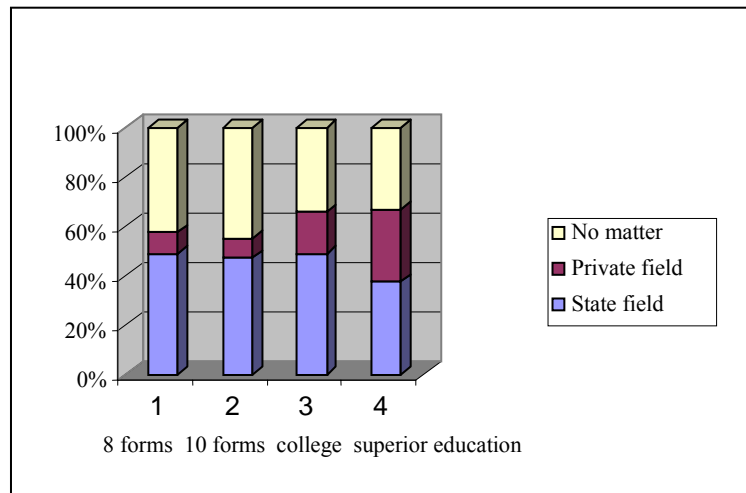
Further we asked ourselves the following question: what do/ would like to do the subjects in order to improve their living standard? Their answers were quite discouraging. The largest majority of the subjects (76%) do nothing in order to grow their incomes. The others deploy occasional activities or loan something (20.4%), or might have a second job (3.6%). Although those who try to do something in order to improve their condition are quite few, figure no. 5 shows that their percent grows with their level of education ( $\chi^2 = 66.586$ ;  $p < 0.001$ ).

Those who are not satisfied with their living conditions in the Jiu Valley want to move to another locality or country. 70% of the subjects thought of this possibility, and one third of them have already been away for a certain period of time. This tendency is more obvious in the case of those persons having a higher level of education than in the case of those having a lower education ( $\chi^2 = 54.089$ ;  $p < 0.001$ ). 78% of those with superior education thought of leaving the Jiu Valley. Among those having maximum 8 forms, 55.6% thought of leaving. In order to find out what the population's expectations are regarding the labor market offers, the subjects were asked to say where they would like to work (within state or private companies), what would they expect from their job, and what are the factors, according to their opinion, one should take into account when establishing salaries.



**Figure 5. Relation education-carrying out of certain activities in order to grow incomes (%)**

The inhabitants of the Jiu Valley expressed more confidence in the state field than in the private one: 46% of the questioned persons would like to work for “the state”. A small percent (16.3%) would choose a job in the private field; the others are not concerned with this aspect. There is a statistically significant relation between these options and education ( $\chi^2 = 81.633$ ;  $p < 0.001$ ): those with a higher level of education know better what they want and are more confident in the private field (fig.6).



**Figure 6. Relation education-preference for a certain workplace**

Those having low education would like their job offers them a good salary (49% of those having maximum 8 forms), while 48% of those with superior education are concerned with the recognition of their personal achievements and with promoting opportunities ( $\chi^2 = 57.785$ ;  $p < 0.001$ ). When establishing salaries the main factor one should have in view, according to 33% of the subjects, is job competence. Only 6% of

them believe that salary should largely depend on the extent labor product is demanded on labor market. One also encounters here differences depending on education ( $\chi^2 = 48.28$ ;  $p < 0.001$ ): those with a low level of education consider that salary should mostly depend on the job's characteristics (the more a job is difficult the more the salary should be higher); Those having superior education think importance should be paid especially to competence and education level.

**The analysis of the relations between the level of education and the opinions regarding certain important problems of the community.** Further we wanted to find out what the subjects' opinions regarding the problems of the Romanian society, in general, and in the area they live (the Jiu Valley), in particular; what they believe about the causes of these problems, and what solutions they envisage. We assumed that as regards these problems too the subjects having a higher level of education are going to have different opinions as compared with those having a lower level of education.

**Problems.** According to the opinion of the questioned subjects the most serious problems of nowadays Romanian society are the following: the mass increase of poverty, unemployment, and the lack of jobs. Most of those having a lower level of education (70% of those who graduated maximum 8 forms) give these three answers representing only the finding of certain problems. 44% of those having superior education refer to more profound problems that can be considered as generating the economic problems: inefficiency of economic restructuring, explosion of social inequities, diletantism of political class, deviance phenomena (criminality, toxicomania, violence). These problems are considered to be serious by only 27.3% of those having low education ( $\chi^2 = 49.842$ ;  $p < 0.001$ ). In case the question regards the Jiu Valley, the most serious problem is considered to be poverty and financial problems (60%), followed by unemployment (12.4%). The subjects having superior education pay a diminished attention to financial problems than the others.

**Causes.** Those who should involve more in settling down the problems of the inhabitants are local authorities. The attitude of the authorities is negative, and from this point of view there are no differences among the subjects having a higher/ average/ lower level of education ( $\chi^2 = 4.418$ ;  $p = 0.882$ ). 77% of the questioned persons consider that local authorities do very little or almost nothing in order to develop the towns either because they do not have necessary financial resources or because they are simply not interested in doing anything. The inefficiency of the authorities is considered to be an important reason of the problems the Jiu Valley's population is confronted with. The number of unemployed persons in the Jiu Valley is quite high; the fact might have causes determined by employers (who offer non-stimulating salaries, insecure jobs from the point of view of their duration, few jobs or jobs that do not match education/training of those who look for a job), or by the potential employees (who are not interested to work or have an insufficient level of education). The answers are significantly different, according to the subjects' level of education ( $\chi^2 = 67.199$ ;  $p < 0.001$ ). The subjects having the lowest level of education (up to 8 forms) consider that high unemployment is due to the small number of jobs offered by job fairs and to the fact that jobs do not match the qualification of those who look for a job. At the same time they consider that those who do not find a job are partly guilty as they

are not motivated to work; yet, they do not think at the fact that those who want to be hired should have a higher level of education. The subjects having superior education consider that the number of jobs is not insufficient, yet the level of education of those who look for a job is too low.

The condition of the Jiu Valley might be improved in case investors coming from other areas/ other countries initiate businesses; nevertheless a certain restraint of those who might invest here is to be noticed. The causes of these restraints are differently perceived by the subjects having a high/ average/ low level of education ( $\chi^2 = 78.328$ ;  $p < 0.001$ ). A large part of those who have maximum 8 forms (51.5%) and 10 forms/ vocational school (43%) consider that the main cause determining the investors to avoid the area is the general poverty of the region. This answer suggests certain confusion between cause and effect (the small number of investors is the cause of poverty and not vice-versa). Among those having superior education only 23% has the same opinion. Those having college, post college school or superior education consider that the low interest of investors for this area is due to non-stimulating and contradictory legislation, to insufficient interest of local authorities, to the unfavorable image of the area throughout the country as well as to the local investors who do not welcome other competitors.

**Solutions.** During the 20<sup>th</sup> century the main economic activity of the Jiu Valley was mining. In the last decade, as a result of diminishing the mining sector's activity, the number of unemployed persons increased and numberless economic and social problems came out. Such circumstances might have determined most of the subjects (97%) to consider that maintaining functional the mining units would be benefic. At the same time the subjects are also aware of the negative aspects implied by continuing this activity. Both the advantages and the disadvantages of maintaining mining as a main activity in the area are quite differently understood by the subjects having a low/ average/ high level of education (advantages:  $\chi^2 = 50.232$ ;  $p < 0.001$ ; disadvantages:  $\chi^2 = 37.93$ ;  $p < 0.001$ ). The subjects having graduated maximum 8 forms believe that the most important advantage is the fact that by doing this a part of the inhabitants might have a job. Those with superior education also admit this fact; yet, they think not only to the individuals who would have a job but also to the global development of the area and to the strategic importance of mining for the national economy. The continuation of mining has also disadvantages. For those having modest education the main disadvantage is the fact that young people are forced to go to other areas or to other fields of activity in order to find a job (probably in order not to work in mining). The continual pollution of the environment is considered to be the most important disadvantage by those having superior education. They also consider that mining activity is inefficient and does not determine economic growth, a fact that, on a long term, would have negative consequences.

When answering the question: "What do you appreciate most in the Jiu Valley?" 80% of the subjects refer to the beauty of the environment. This answer suggests a possible solution regarding the economic problems of the area: namely, the development of tourism. The more the subjects have a higher level of education the more they realize that this could be an opportunity of economically improve the area (42.3% of those having college/post college school education and 39.7% of those

having superior education agree with this opportunity). They also consider that in order to economically improve the condition of the area it is important to re-build infrastructure and to develop the private field. For those having a low level of education (0 - 10 forms, vocational school) the best solution might be the reconstruction of dwelling places (probably because in this field a lot of people having a low education may be employed). They believe that tourism has small chances to become the main occupation of the inhabitants in the area.

The population of the Jiu Valley pessimistically regards the future of the area. About 65% of the subjects consider that within 10 years the social and economic condition of the Jiu Valley is going to be worst or the same with the present one. Nevertheless, the degree of pessimism/ optimism is not the same with the subjects having different levels of education ( $\chi^2 = 39.893$ ;  $p < 0.001$ ). The most pessimistic are those having a low level of education. Only 19.2% of them consider that within 10 years the situation is going to be better. Among those with college/ post college school/ superior education, the percent of the optimistic ones, of those who believe that the Jiu Valley is capable to economically develop in the future, is higher (30%, and 36%).

**Conclusions.** The research emphasizes the numberless significant differences between those having a high/ average/ low level of education. As a conclusion, we should stress upon the differences between the two extremes: those having 0 – 8 forms and those having superior education. Intermediary groups (those who graduated 10 forms/ vocational school and those having a college/ post college school) are situated between the two extremes. The persons having a low level of education are older and among them the percent of women is larger (these data show the growth of the level of education during the last decades as well as the fact that in the past boys were mainly educated). Within this group the percent of the persons who do not work (being retired or house wives) is higher, and the monthly incomes are lower. Although they are not content with their incomes these persons do almost nothing in order to improve their material condition. In case they have the opportunity to choose, the persons having low education prefer to work for the “state”. When they look for a job, the main criterium is salary which, in their opinion, should match working conditions.

The persons having superior education are younger; most of them are employed and earn over 1000 lei per month. Neither they are content with their incomes, yet almost 40% of them do supplemental activities in order to grow their incomes. More than three fourth of them thought of leaving the Jiu Valley. The persons having superior education accept to a larger extent than those with lower education to work in the private field. For them, the recognition of personal capabilities, promotion opportunities become more important than salary; they consider that salaries should be given according to the level of competence and education. The level of education is strictly correlated with the manner personal and community problems are perceived. The persons having a lower level of education notice the problems they have to face (poverty, lack of jobs) and tend to incriminate the others for these misfortunes. Local authorities are blamed for their insufficient involvement in settling down the problems as well as employers as they offer insufficient jobs or as the jobs offered do not match the qualification/ education of those who look for a job. They realize that some people become unemployed because they are not motivated to work, but are slightly aware of

the fact that their low level of education may be a cause of their difficulty in finding a job. For such persons two solutions that might improve economic problems are the reconstruction of the dwelling places and the functional maintaining of the mining units in the area; yet, they only think of the individuals who accordingly may find a job and not to the social and economic implications of these activities.

Those having superior education have a deeper perception of the problems they/ the community face/faces. A large number of these persons notice that the real problems of the area are not the “visible” ones (poverty, unemployment), but the deep ones that, in fact, determine the surface problems: inefficiency of economic restructuring, explosion of social inequities, diletantism of the political class, criminality, toxicomania, violence, etc. Referring to the causes of these problems they not only “accuse” local authorities but also those who do not find a job as the latter ones have a low level of education. The situation may be improved, and superior education persons identify several solutions (attracting new investors, maintaining functional mining units, developing the private field, reconstructing infrastructure, and especially developing tourism); they have a whole image of the advantages, disadvantages, and difficulties in settling the problems.

The persons having a low level of education are “trapped” by present. They superficially are aware of the problems they have to face and blame the others for their misfortune. They slightly understand the causes that determine these problems, have a reduced capacity of realizing their own responsibility for their condition. These persons are relatively passive; they do not have enough initiative and do not manage to find out efficient solutions in order to overpass their own difficulties or those of the community. All these problems are also reflected on the emotional plan: these persons are more pessimistic; they seem not to trust their future. The more the level of education increases the more the chances of finding a job increase as well as those of earning a higher monthly salary. These persons are more active, they are ready to do something in order to improve their own life. At the same time education also determines the development of the capacity of perceiving not only the problems but also their causes and of identifying various solutions. The persons who have such capacities are not so helpless and have greater chances to maintain their psychic balance.

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## **EVOLUTIONS AND TRENDS IN THE DEVELOPMENT OF ROMANIAN SEASIDE TOURISM AFTER ROMANIA'S INTEGRATION IN THE EUROPEAN UNION**

**GRAȚIELA BRÂNZĂ \***

**ABSTRACT:** *Romanian seaside tourism is not yet well developed and depends mostly on domestic tourists. To increase the international tourism flows on the seaside our country has to make big investments to modernize the existing touristic structures with functions of accommodation, to develop touristic structures of entertainment, to create special events for the decrease of seasonality, to diversify the touristic supply and not last, to increase the global quality of touristic services. In this development process, we need to take into account the European and international evolutions and trends in tourism.*

**KEY WORDS:** *evolution, Romanian seaside, seaside tourism, touristic supply, tourists, world tourism, European Union, index of competitiveness, seaside tourism development*

### **1. WORLD TOURISM TRENDS**

The main trends registered currently in the area of world tourism, which will grow in the perspective of the years 2020, regarding the touristic supply and demand were identified in special studies of the World Tourism Organisation. Among most significant aspects, can be mentioned [2]:

- an increasing number of tourists who want to satisfy their hobby and their special interests, based on nature, historic places, economic activities and professional interests;
- ethnic tourism, represented of people who want to visit the places they or their ancestors were born, is developing; a special side is represented by the religious tourism;
- the demand for new destinations is growing, with profitable effects for the development of new zones or for the improvement and expand of existing ones;
- the concernment about maintaining or improving the state of health increases and, in this way, stimulates the development of the balnear resorts and centres of

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balnear treatments; hotels from resorts have to respond to these demands, comprising facilitations and units for gymnastics, fitness, another treatments and procedures, breeding tourists' interest;

- a tendency of increasing the number of short vacations; this fact permitting the development of several touristic destinations, and for the satisfaction of the demand, the occasion to offer facilitations and activities for tourists in all seasons;
- an increasing number of third age persons who are active and want to travel, without any decrease in number of middle age persons or young population; at the same time, the handicapped persons travel a lot and this fact causes the adaptation of services and utilities for this segment of clientele;
- tourists become more sophisticated and expects attractions of good quality, appropriate utilities and services and the best ratio between tariffs and quality in their travels;
- travels for business, congress, conferences, reunions are developing, bringing benefits to organizers; the persons who participate in such events are in the same time and "vacational" tourists, who want to know the zone they visit;
- the increasing number of tourists concerned about the problems of natural and social environment; due to this fact many destinations are preoccupied to adopt development programs and want to encourage the tourism of good quality, which avoids the environmental and social problems, optimizing the economic benefits;
- the oldest touristic resorts are restructured and modernised in order to satisfy the present expectations of tourists, the process being managed with many precaution;
- tourism use much more the modern technology for booking or marketing services; in the last period the internet has become a very important mean of information and marketing.

For Europe the specialists forecast that tourism will be influenced by certain factors in the next decades as:

1. European industry of tourism will face the increasing competition from the region and out of region. The factors which compete to this situation are: political factors, social and demographic changes, economic and financial competition, technological innovations, promotional activities of competitor regions and others. In the same time, a series of goods and services compete with tourism in order to ocupate the leisure of potential tourists, creating another form of competitive pressure.
2. Extension of spending free time supply in the residential zones (for instance, the thematic or recreational parks, clubs of health, cultural events and sportive ones) will lead to shorter holidays and to holidays spend near home.
3. Introduction of euro as common currency for many European countries will cause the growth of travels inside Europe.
4. Non-regulation in the air transport caused an afflux of new airlines, with low cost on pan-European races that increase the number of rest travels.

Romanian tourism is due to outface both opportunities and risks involved by our country's integration in the European Union, and his development has to respect the global trends in this sector of activity, taking into account the factors of influence.



## **2. COMPETITIVENESS INDEX IN EUROPEAN TOURISM**

Tourism represents for Romania the economic sector which has a valuable potential of development, still not sufficient exploited and which can become a source of attraction for investors and foreign tourists. This fact becomes heavier due to strong competition from neighbour countries (Hungary, Bulgaria and Croatia) and because of problems concerning the competitiveness of Romanian tourism. Romania has the lowest value of competitiveness index (58.91) comparatively with Hungary (78.44), Czech Republic (74.47), Bulgaria (68.57), Croatia (68.04), Poland (66.03) and Slovakia (62.84), as it is mentioned in the National Authority of Tourism' project of strategy over the period 2007-2013 [6].

The competitiveness index of a country's touristic industry was obtained through the calculation of arithmetic average of the following indexes: price, infrastructure, environment, technology, human funds and social problems. The data sources for these indicators are the development indicators created by World Bank, and the reports of United Nations Organisation and The World Tourism and Travel Council.

In the National Development Plan 2007-2013 of Romania, that aims to reduce the disparities between our country and the European Union, a special attention is given to the sustainable development of tourism, through cooperation between regions and relationship development of the investments in tourism - investments concerning the adaptation of utilities network that provides general services, respectively those which deal with used waters and garbage management, pollution, remake the sceneries, enter in the touristic circuit of the protected areas, preservation of natural resources and their rehabilitation, protection of the coast zone, regularization of rivers and lakes, protection of beaches - elements that represents the foundation of sustainable development of tourism.

In this plan it is mentioned also the fact that the seaside tourism does not turn to good account the touristic potential of the Romanian seaside of Black Sea. Delayed privatisation (Neptun, the second resort of the Romanian seaside has been privatised in the period 2002-2003), old capacities of touristic accommodation, the absence of investments in touristic structures of entertainment, the lack of touristic zonal politics in order to reduce the seasonality and the absence of qualified personnel are only several reasons which decreased the competitiveness of Romanian seaside tourism on the external markets and conduced to the loss of big tour-operators, as: TUI, Neckerman, Thomas Cook and others.

## **3. DEVELOPMENT STRATEGY OF ROMANIAN TOURISM**

In his development strategy of Romanian tourism, created in 2006, National Authority for Tourism proposes many strategic directions, actions and procedures for the development of Romanian seaside tourism, in order to integrate this on the touristic world market. First, the development of tourism supposes the development of general infrastructure (the achievement of freeways, the modernization of railway transport, of the airport Mihail Kogălniceanu and others).

Secondly, it is necessary the diversification of touristic supply through:

consolidation and development of the traditional forms of tourism - rest and entertainment, water treatment; promotion of other forms of tourism: itinerant tourism, cultural tourism, religious tourism, rural tourism, business and reunions tourism, specialized tourism (horsemanship, scientifically, etc.); diversification of the entertainment supply (nautical, cruises, sinking, underwater picture, sports, pools etc.).

Thirdly, the Romanian seaside tourism can recover his place on the external market through the growth of general attractiveness of the resorts and that means: the modernization of every base of treatments from the seaside resorts, breed the quality of touristic services (training yearly the employees) in the touristic structures with function of accommodation, respectively in food structures; the modernization of hotels which have treatment bases and their endowment with systems of heating for the enlargement of the period of operation; the elimination of the old equipments and endowments of entertainment and their replacement with modern equipments.

Fourthly, the development of tourism involves the growth of services quality offered by seaside beaches, which can be realized by respecting the Blue Flag criteria.

Fifthly, the development of Romanian tourism means the protection of natural and human created environment, especially coast environment which is most exposed to degradation by natural and human factors.

Sixthly, the integration in European and international programs for Black Sea and in the development politics of tourism in the basin of Black Sea represents another strategic aim for the development of seaside tourism.

Not last, the accentuation of touristic supply promotion, the development of training and inform the population concerning the relation between tourism and environment and the necessity of environment protection represent important strategic directions of action for the launch of Romanian tourism from the Black Sea zone on world market.

The privatization of touristic structures with accommodation function from the Romanian seaside represents one of the important solutions for the lift of qualitative level of touristic services and to attract bigger flows of Romanian and foreign tourists.

In our country, tourism privatization began later, in the conditions in which the privatization strategy was created in 1997. Romanian tourism was privatized through following methods: sale of actives, sale of shares, creation of mixed societies and tenancy of administration. Unfortunately, the methods used, without measures of encouragement and stimulation of the operators from services sector have not produced the expected results, and, on the background of economic general decline, they determined the physical degradation of the existing material base and the disqualification of quality and variety of services [1].

In the year 2001, Tourism Ministry took over the decision of privatize the tourism commercial societies from Authority for Privatization and Administration of State Interests. The program of privatization launched in 2001 has been intensifying in the next years, attracting many investors.

Analysing the situation of the touristic structures with functions of accommodation of the Romanian seaside over the period 2002-2006, presented in table 1, we notice the fact that the whole private property dominates and it has been growing from one year to other.

**Table 1. The evolution of the structures of touristic reception with functions of accommodation on property forms on the seaside over the period 2002-2006**

- Number of touristic structures-

Year	Total	Property form					
		Whole state	Major state	Major private	Whole private	Cooperative	Public
2002	811	50	123	115	452	14	57
2003	863	54	78	57	607	14	53
2004	897	86	56	12	668	15	60
2005	970	82	62	11	739	14	62
2006	989	77	62	11	763	14	62

Source: Processing statistical data offered by Statistics Office Constanța

#### 4. PROPOSALS FOR SEASIDE PRIVATIZATION

One of the obstacles which stood in the path of Romanian seaside privatization is the seasonal character of the littoral tourism. Tourism seasonality in the Black Sea zone represents a problem for investors, because the investment is profitable only if the structure of accommodation is functioning permanently, practicing in off-peak season business tourism, cultural tourism, treatment tourism, entertainment tourism. For this purpose, the investors have to increase the quantum of the investments, to elaborate projects of hotels' modernization for the period of off-season and to access structural funds. The Environment and Sustainable Development Ministry encourages the owners of hotels to invest in their modernization through the granting of ecologic labels. Obtaining these eco-labels supposes investments (for instance, endowments such as: the light with motional sensors on halls and in elevators beat of washstands with photocells, detergents without phosphates and others), that are paid off quickly through the reduced consumptions of resources and the ecologic material utilization.

A solution for efficient privatization of the seaside could be the adoption of Bulgarian model, the investors buying not only the hotel, but also the restaurant and other facilities, so that to offer complete touristic services to tourists. In Bulgaria, tourism privatization began earlier than in Romania, respectively in 1993. The big advantage of Bulgarian investors was the association with the best German tour-operators, TUI and NECKERMAN, which offered money for investments, either for the modernization of existing hotels, or for the build of new hotels, according to German's projects. The modernized touristic infrastructure, services of high quality and convenient prices attracted many foreign tourists, among which tourists from Romania. The Romanian tourist became exacting regarding services quality and prefers to allocate the same amount of his money even less on the Bulgarian seaside.

Another solution for the Romanian seaside is the affiliation of many hotels to a hotel chain of international notoriety. This opportunity means financial funds for investments, continuous modernization and the guarantee of high quality. On seaside there is just three hotels included in hotel chain: Hotel "Ibis" of three stars from the chain "Accor Hotels", destined to vacation in summer and to business in winter; Hotel "Riu Fantasy Beach" of four stars from the hotel chain "RIU", specialized in seaside hotels and Hotel "Best Western Savoy" from the chain "Best Western". Although the

tariffs of accommodation are higher, these hotels offer the system "all-inclusive" that all Romanian tourists and foreigners want. These hotels example incorporated in strong international hotel chains must followed by other hotel's owners from the Romanian seaside, because only in this way these hotels will be known in the whole world and will attract many foreign tourists.

Analysing the structure of international tourism flows on main countries of origin, statistical data place Germany on first place, holding the major part from all foreign tourists accommodated on seaside. In 2006 Germany accounted for 20.5% of total number of foreign tourists. Italy ranked second with 8.1%, followed by Russian Federation (7.2%), France (6.6%) and Norway (4.7%).

In the last years there is a dramatic reduction of tourists' number from northern countries, but also those from the other emittent countries. Therefore there is the necessity of an aggressive policy to promote the Romanian seaside, to modernise the material structure of each littoral resort, to finalise the privatization process of the seaside, to diversify touristic supply, to reduce seasonality, to train permanently the force of labour employee in tourism and to rise the qualitative level of touristic services for the regainment of international traditional markets and for the attraction of many foreign tourists flows.

All these conjugated efforts have to create a touristic destination competitive on European and international level, turning to good account the touristic resources of the Romanian seaside of Black Sea.

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## **THE IMPACT OF TAX REGULATIONS REGARDING THE ASSESSMENT OF OUTGOING STOCKS ON THE COMPANY'S RESULTS**

**LUCIAN BUȘE, MIRELA GANEA, OANA-ADRIANA DUȚĂ \***

**ABSTRACT:** *Taxation is a reality of today's economic life, an important factor in the management of a company's incomes and expenses, which manifests itself through the taxes, fees and contributions paid by a company to public budgets. For these reasons, any owner or manager is interested to manage tax flows and tax accountancy so that related costs are minimum and tax law is not infringed. Considering the above-mentioned this paper aims at determining and showing the way in which tax regulations in force influence the level of raw materials and consumable materials expenses of Cerealcom S.A. Teleorman company and, by means of these, the level of the main performance indicators of the company.*

**KEY WORDS:** *tax regulations, raw materials and consumable materials expenses, economic-financial performance*

For obtaining usage values, any company uses material, human and financial resources, whose consumption is represented by expenses. So, a company's expenses reflect in a value form the entire consumption of production factors or material, human and financial resources, incurred for the fabrication and sale of production (Bușe L. et al., 2008, p. 105). Taxation represents an important component in the management of a company's expenses.

This happens because the amount of taxes, fees and contributions paid by a company to public and local budgets is higher and higher. Moreover, considering that a company's profit is determined as a difference between incomes and expenses, which is why any company is interested in reducing its expenses, its efforts required for the accomplishment of incomes, this paper analyses from a methodological, theoretical and practical point of view the impact of tax regulations on raw materials and consumable materials expenses and, by means of these, on the company's economic-financial performances.

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In the approach of this subject we started from the fact that the establishment and reporting of the value of raw materials and consumable materials expenses represents a constant accounting and tax challenge. This happens because costs related to stock accounts are production costs with direct influence on operation expenses and indirect influence on the final result and the company's tax obligations. A cost stratified in time is actually created within cost accounts, which corresponds to the physical movements of raw materials.

Therefore, material stocks reflects various cost levels and the way how they are released into consumption (the oldest or the newest stock element) influences the level of costs which are periodically allocated to the result accounts. The level of these costs depends on the assessment method used, namely: The weighted average cost of capital (WACC); First-in, first-out (FIFO); Last-in, first-out (LIFO).

**Unitary weighted average cost of capital (WACC)** is calculated either after every input or after that input which results in an output operation, in other words before every output operation, or only at the end of the month, for assessing, in a single operation, all the inputs performed during this management period. Unitary weighted average cost is determined through the ratio between the total value of the initial stock combined with the value of inputs, and the amount existing in the initial stock, combined with the input or inputs, as the case may be. **The first-in, first-out method (FIFO)** consists in that outgoing goods are evaluated at the input cost or value (by purchase or production) of the first input (first input batch). As the first batch is exhausted, outgoing goods are evaluated at the input cost of the following chronological batch.

**The last-in, first-out method (LIFO)** consists in the evaluation of outgoing goods at the purchase or production cost, as the case may be, of the last input (last incoming batch). As this last batch is exhausted, goods to be released are evaluated at the purchase or production cost of the penultimate incoming batch and so on, in inverse order of inputs. Choosing one of the presented methods is a tax and profitability issue. We start from the reality that an over-evaluation of outgoing goods determines an under-evaluation of the exercise's final result (profit), whereas an under-evaluation thereof has contrary effects.

For determining the impact of tax regulations on stock assessment, both on the amount of raw materials and consumable materials expenses and on the company's results, we calculated, for Cerealcom S.A. Teleorman company, the monthly amount of such expenses and related stock elements, for each evaluation method separately, comparing and interpreting the obtained results. According to its scope of activity, namely the takeover, storage, preservation and trading of cereals to various beneficiaries, S.C. Cerealcom S.A. accounts and records as raw materials and consumable materials stocks only the value of chemical substances (gas pills against pests) for treating cereals during storage and preservation.

The data required for this analysis were taken over from the financial reports of the company available on <http://www.bvb.ro>. The evolution of the stocks of consumable materials and related expenses is presented in the table below, for the years 2007 and 2008, for the analysed company.

**Table 1. The evolution of the stocks of consumable materials and related expenses**

Elements	2007	2008	Absolute variation ( $\Delta$ )	Index (%)
Raw materials and consumable materials	3,785,232	5,248,102	1,462,870	138.64
Raw materials and consumable materials expenses	7,464,708	9,962,834	2,498,126	133.46
Ratio of raw materials and consumable materials expenses in total operation expenses	17.09%	19.72%	2.63%	115.38

Source: Accounting Balance on December 31, 2008 and Profit and Loss Statement

We notice that, in dynamic, the company recorded both an increase of consumable materials stocks (38.64%) and an increase of related expenses (33.46%), which is important as the weight of raw materials and consumable materials expenses in total operation expenses increased by 15.38% in 2008 with respect to 2007. Considering these increases, as well as the fact that the level of consumable materials stocks and related expenses is differently influenced by the three evaluation methods, we estimated the value of these stock elements and expenses, separately for each of the three evaluation methods, comparing and interpreting the obtained results.

We mention that S.C. Cereacom S.A. uses the first-in, first-out (FIFO) method for the evaluation of outgoing consumable materials stocks. The value of raw materials and consumable materials stocks on December 31, 2008, as well as the expenses related to such stocks, obtained if the three evaluation methods are used, are presented in the table below.

**Table 2. The value of raw materials and consumable materials stocks on Dec. 31, 2008**

Elements on December 31, 2008	Evaluation methods			$\Delta$ (FIFO-LIFO)	$\Delta$ (FIFO-WACC)
	FIFO	LIFO	WACC		
Raw materials and consumable materials	5,248,102	5,138,015	5,186,210	+110,087	+61,892
Raw materials and consumable materials expenses	9,962,834	10,178,238	9,783,184	- 215,404	+784,596

In the interpretation of these results we take into account the fact that the company Cereacom S.A. Teleorman chose the FIFO method (release into consumption of first incoming elements, reporting a stock value of 5,248,102 lei and consumable materials expenses of 9,962,834 lei. These values shall be considered a comparison basis in the analysis we shall perform on the impact of taxation on stock elements and related expenses. Thus, considering the results obtained in case the other two methods are used, we notice that the evaluation of stocks at the lowest price results in the allocation of lower expenses to the result account, 215,404 lei less than those which would have been obtained in case current prices had been used (LIFO method) and 784,596 lei higher than expenses obtained in case of use of a weighted average cost (WACC method).

At the same time, the balance on December 31, 2008 reflects relatively current values of raw materials and consumable materials stocks, as lower cost elements have already been released into consumption and, hence, included in expenses. If the LIFO evaluation method had been used, the balance would have indicated under-evaluated values of stocks (5,138,015 lei), as oldest stocks, with lowest costs, remain here, whereas the weighted average cost method would have resulted in average (5,186,210 lei) values of raw materials and consumable materials stocks for the analysed company.

In the following, we aim at analysing the consequences of this option on the main result indicators, in comparison with the other two possible methods. To this purpose, we calculated, for the beginning, the structure rate of current assets ( $R_{Ac}$ ) and stocks ( $R_{St}$ ), as well as the analytical rates for each stock element, for each of the three evaluation methods separately:

**Table 3. Result indicators**

No.	Indicators	Evaluation methods		
		FIFO	LIFO	WACC
1.	Total assets ( $A_t$ )	85,259,435	85,109,348	85,198,534
2.	Current assets ( $A_c$ )	35,822,026	35,671,939	35,761,125
3.	Stocks ( $St$ )	17,357,757	17,207,660	17,296,865
3.1.	Raw materials and consumable materials ( $Mat$ )	5,248,102	5,138,015	5,186,210
3.2.	Products in progress ( $P_{ex}$ )	254,470	254,470	254,470
3.3.	Finished products and goods ( $P_{fin}$ )	11,855,185	11,855,185	11,855,185
4.	Current assets' rate ( $R_{Ac} = A_c/A_t$ )	42.02%	41.91%	41.98%
5.	Stocks' rate ( $R_{St} = St/A_c$ )	48.46%	48.24%	48.32%
6.	Raw materials' rate ( $R_{Mat} = Mat/St$ )	30.73%	29.08%	29.80%
7.	Products' in progress rate ( $R_{Pex} = P_{ex}/St$ )	1.47%	1.46%	1.45%
8.	Finished products and goods' rate ( $R_{Pfin} = P_{fin}/St$ )	67.80%	69.46%	68.75%

According to the presented data, in the calculation of structure rates, the level of products in progress and finished products and goods remains constant for the three evaluation methods. The only stock elements which varies relates to raw materials and consumable materials. The difference between the level of this element by the three evaluation methods is the one which affects the amount of total stocks and, by means of this, the amount of current assets and total assets, respectively. Thus, the values obtained for each of the calculated structure rates indicate the level they would have obtained if S.C. Cerealcom had used one of the three methods in the evaluation of its outgoing stocks. Knowing that the values obtained in case of the FIFO method are real, as reported by the company, we shall use them as a comparison basis in our analysis for the data obtained in the case of the other two methods.

Thus, in case of the current assets' rate ( $R_{Ac}$ ) the values obtained for the three evaluation methods do not vary very much (42.02% for FIFO, 41.91% for LIFO and 41.98% WACC), as the weight of raw materials and consumable materials stocks in the company's current assets is low (approx. 14%) and, hence, the impact of the different size of stocks pursuant to evaluation by one of the three methods is negligible at this level. At the level of the company's total stocks, the different amount of consumable materials results in low differences (0.22%) between the FIFO (48.46%) and LIFO



(48.24%) methods, as well as between the FIFO (48.46%) and WACC (48.32%) methods.

Considering the evaluation rules for each method we may say that, in case of the FIFO method, the structure of stocks reflects the level thereof at approximately current values, whereas the LIFO-related structure artificially reduces the weight of consumables in total stocks, as they are assessed at the lowest prices. On balance, stock evaluation methods influence the balance elements of S.C. Cerealcom S.A. differently, but to a low extent, as the weight of the elements evaluated on basis of these methods is low in total stocks. Another indicator influenced by tax regulations on the evaluation of stocks and whose level has been calculated for the analysed company is the required working capital. The values obtained pursuant to calculations are mentioned in the following table.

**Table 4. Required working capital**

<b>Indicator</b>	<b>FIFO</b>	<b>LIFO</b>	<b>WACC</b>
Stocks (St)	17,357,757	17,207,660	17,296,865
Receivables (Rec)	16,219,510	16,219,510	16,219,510
Short-term operation debts (Dets)	9,605,456	9,605,456	9,605,456
<i>Required working capital (RWC = St + Rec - Dets)</i>	<i>23,971,811</i>	<i>23,821,724</i>	<i>23,900,910</i>

The required working capital represents those capitals which the company must hold for financing stocks and temporary delays between the payment of providers and other operating debts and the collection of receivables from customers. According to the obtained results, for 2008 S.C. Cerealcom S.A. records a need of financing the operating activity of **23,971,811 lei**, 150,087 lei higher than the level recorded in case stocks are assessed through the LIFO method and 70,910 lei higher than the level recorded in case of evaluation through WACC method. Starting from the fact that the only element varying in the calculation of this indicator through the three evaluation methods was the amount of raw materials and consumable materials stocks, differently reflected in total stocks, and also considering that the FIFO method implies an approximately current value of stocks of the company, we may say that the value of **23,971,811 lei** represents the actual requirement of funding for our company's operation activity.

The RWC value in case of application of the LIFO method, although lower, which implies a lower amount to finance, does not represent the current need for funding, as stocks were evaluated at the oldest costs. As for the WACC method, it implies an average cost for outgoing stocks and, thus, the value of **23,900,910 lei** for RWC could be considered the amount of capitals that the company has to own for financing stocks and temporary delays between the payment of operating debts and the collection of receivables from customers.

Thus, regarding balance elements, we may say that the FIFO method is the more recommended, as it reflects relatively current values of stocks, with the corresponding implications on the indicators calculated on basis of such elements. The

indicators in the interim management balances were determined for showing the impact of tax regulations in stock evaluation on the profit and loss statement, as follows.

**Table 5. Indicators in the interim management balances**

Income	FIFO	LIFO	WACC	Expenses	FIFO	LIFO	WACC	IMB	FIFO	LIFO	WACC
<i>Vm</i>	26,447,440	26,447,440	26,447,440	<i>Cost of goods</i>	22,500,916	22,500,916	22,500,916	<i>Mc</i>	3,946,524	3,946,524	3,946,524
<i>Qv</i>	24,862,965	24,862,965	24,862,965								
<i>Qs</i>	774,173	774,173	774,173	<i>Stocks reduction</i>	0	0	0	<i>Qe</i>	25,637,138	25,637,138	25,637,138
<i>Qi</i>	0	0	0								
<i>Mc</i>	3,946,524	3,946,524	3,946,524	<i>Consumption from third parties</i>	16,035,670	16,251,074	15,856,020	<i>VA</i>	13,547,992	13,332,588	13,727,642
<i>Qe</i>	25,637,138	25,637,138	25,637,138	<i>Taxes</i>	2,274,211	2,274,211	2,274,211				
<i>VA</i>	13,547,992	13,332,588	13,727,642	<i>Staff expenses</i>	6,846,626	6,846,626	6,846,626	<i>EBE</i>	4,581,113	4,365,709	4,760,763
<i>Subsidy</i>	153,958	153,958	153,958	<i>Amortisation</i>	2,034,210	2,034,210	2,034,210				
<i>EBE</i>	4,581,113	4,365,709	4,760,763	<i>Ace</i>	826,456	826,456	826,456	<i>Re</i>	3,207,418	2,992,014	3,387,068
<i>Ave</i>	1,486,971	1,486,971	1,486,971								
<i>Re</i>	3,207,418	2,992,014	3,387,068	<i>Cf</i>	2,313,038	2,313,038	2,313,038	<i>Rc</i>	1,046,028	830,624	1,225,678
<i>Vf</i>	151,648	151,648	151,648	<i>Cex</i>	0	0	0	<i>Rex</i>	0	0	0
<i>Vex</i>	0	0	0								
<i>Rc</i>	1,046,028	830,624	1,225,678								
<i>Rex</i>	0	0	0					<i>Rt</i>	1,046,028	830,624	1,225,678
<i>Rt</i>	1,046,028	830,624	1,225,678	<i>Income tax</i>	161,719	127,254	201,663	<i>Pn</i>	884,309	703,370	1,024,015

Considering the calculation methodology for the result indicators presented in the previous table, we may say that taxation is one of the main factors which influence the level of these indicators. Taxation may influence the company's results by decreasing them, through the collection of a part thereof to the state budget (taxes, fees and contributions paid to the state), as well as increasing them, in case companies record tax savings. The different influences of the three evaluation methods on the company's results can be noticed starting with the value added (VA) on all the calculated indicators and, implicitly, on the performance indicators determined on basis thereof.

These influences are due both to the different amount of expenses with consumable materials, reflected in the level of consumption from third parties, by the three evaluation methods, as well as to the deductibility of such expenses in the calculation of the income tax payable by the company. Through the different amount of raw materials and consumable materials expenses, the FIFO method leads to an operation result of 3,207,418 lei, 215,404 lei higher than the result which would have been obtained in case the LIFO method had been used, but 179,650 lei lower than the operational profit obtained in case of the WACC method.

At the same time, the deductibility of raw materials and consumable materials expenses from taxable profit results in tax savings equal to the amount obtained by multiplying them by the income tax rate. Thus, the tax savings obtained by S.C. Cerealcom pursuant to the expenses with raw materials and consumable materials for 2008, by using the FIFO method in the evaluation thereof, in comparison with the tax savings which could have been obtained if using either of the other two methods

regulated by the legislation in force, as well as the comparative situation of gross and net results of the company, are the following:

**Table 6. Tax savings obtained by S.C. Cerealcon pursuant to the expenses with raw materials and consumable materials for 2008**

Indicators	Evaluation methods			$\Delta$ (FIFO-LIFO)	$\Delta$ (FIFO-WACC)
	FIFO	LIFO	WACC		
Total result	1,046,028	830,624	1,225,678	+ 215,404	- 179,650
Income tax	161,719	127,254	201,663	+ 34,465	- 39,944
Net profit	884,309	703,370	1,024,015	+ 180,939	- 139,716

Pursuant to the analysis of the presented data, we may see that S.C. Cerealcon S.A. records and pays an income tax of 161,719 lei, obtaining tax savings of 39,944 lei in comparison with using the WACC method for the evaluation of its stocks. Comparing the income tax payable in case of using the FIFO method and the amount payable in case of the LIFO method, we see that the LIFO method determines the lowest level of the income tax which the company may record in the given conditions (127,254 lei). In other words, the LIFO method results in the highest tax savings, 34,465 lei higher than the savings obtained for the FIFO method and 63,209 lei higher than the ones obtained in case of the WACC method. These savings are reflected differently in the amount of net profit and the indicators calculated on basis thereof, as the choice of either of the methods has a different influence on tax cash flows.

On balance, we may say that the use of the FIFO method in the evaluation of stocks results in higher profits (1,046,028), taxed as operational profits, even though they contain a profit accomplished through the deduction of lower stock expenses, due to the release in consumption of raw materials, with lower costs than current ones, whereas the LIFO method results in a lower, but more realistic level of profits (830,624 lei) and, consequently, in a lower payable income tax. On the other hand, the WACC method, based on average values of costs, results in the highest level of gross and net profit, as well as in the highest payable income tax.

Thus, a criterion in choosing either of the three evaluation methods for raw materials and consumable materials stocks may be the level of taxes paid, which really affects the company's funds. From this point of view, the LIFO method would be the most recommended, even though it implies under-evaluated values of stocks. However, the FIFO method is the most used in our country, even if it results in a release of funds on basis of higher taxes. We may say that the higher profits obtained on basis of FIFO represent an attractive element for many managers, despite the current tax disadvantage, as it is an election between reporting and economicity.

Considering all the aspects presented, we may say that the highest tax effects in favour of a company would be obtained if the FIFO method was used for accounting and reporting purposes and the LIFO method for tax purposes. However, tax legislation in force does not allow using a certain method for tax reporting and another method for accounting and financial reporting, and companies have to choose one of the three methods, depending on the goals.

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## **MEASURING EXPENDITURE NEEDS AND PUBLIC SAFETY TRANSFERS IN MEXICO**

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FREDERICK H. WALLACE \***

**ABSTRACT:** *In this paper we deal simultaneously with two crucial problems in today's Mexico: a fiscal federalism that is seriously-flawed in the allocation of transfers to the local governments and the large number of offences linked with organized crime, a category in which the country is among the highest ranking. In this paper we suggest a more equitable and effective allocation of public safety transfers to state governments. The proposal is based on measuring expenditure needs through the method of principal components.*

**KEY WORDS:** *fiscal federalism; decentralization; public safety transfers; factor analysis*

*JEL: H53, H72, H73, H76*

### **1. INTRODUCTION**

Mexico is a decentralized country in which allocations are made by a central government to 32 regional governments (31 states and the Federal District) and 2.447 local governments. A weakness in the Mexican system is that sub-national governments have low levels of financial autonomy, among the lowest in the OECD countries (see Figure 1). Approximately 90% of their overall income comes from the central government. Moreover, these transfers are carried out through fifteen different funds that take explicitly into account neither the measurement of expenditure needs nor the fiscal capacity of the state and local governments. (Cabrera and Lozano, 2008)[7].

The economic theory of fiscal federalism emphasizes that those transfers assigned to state and local governments should cover both horizontal and vertical financial imbalances (Bird, 1993 [3] and 1996 [4]). At the same time, the necessity of incorporating assessments and measurements of expenditure needs and fiscal capacity

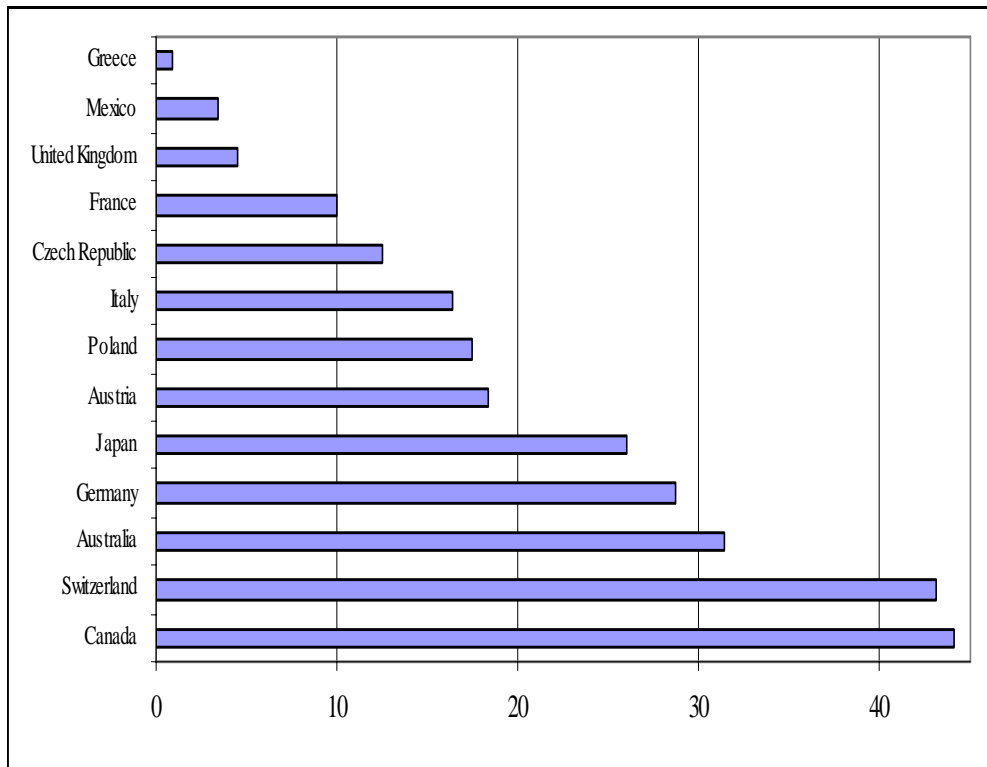
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in assigning those transfers must be emphasized (Ahmad et al, 2007 [2], and Shah, 1994 [15] and 1996 [16]). According to Shah: “*A leveling program which doesn’t take into account the aspect of (the needs of) expenditure can not be defended on the basis of effectiveness and equity*” (Shah, 1996: 100) [16].



Source: OECD (2006) [14]

**Figure 1. OECD: Fiscal Revenue of Local Governments as a Percentage of the Total for Selected OECD Countries (2002)**

The economic theory of fiscal federalism emphasizes that those transfers assigned to state and local governments should cover both horizontal and vertical financial imbalances (Bird, 1993 [3] and 1996 [4]). At the same time, the necessity of incorporating assessments and measurements of expenditure needs and fiscal capacity in assigning those transfers must be emphasized (Ahmad et al, 2007 [2], and Shah, 1994 [15] and 1996 [16]). According to Shah: “*A leveling program which doesn’t take into account the aspect of (the needs of) expenditure can not be defended on the basis of effectiveness and equity*” (Shah, 1996: 100) [16].

The manner in which transfers are distributed to state governments in Mexico is especially worth examining given their low financial autonomy. Such considerations motivate this research.

## 2. MEASURING EXPENDITURE NEEDS

The measurement of expenditure needs has been the focus of recent attention due to its importance in vertical and horizontal equalizing. Broadway (2006) [5] stresses the importance of creating an index of expenditure needs, whereas Ahmad and Searle (2006) [1] support simultaneously taking into account income capacities and expenditure needs to obtain a satisfactory transfer scheme. This insistence on the importance of better measurement of expenditure needs can also be found in López Laborda (2006) [13] and De la Fuente (2005) [8].

However, the measurement of expenditure needs is far from being an easily solvable problem, and according to different scholars, it is more complicated than the determination of the fiscal capacity. Shah (1996:12) [16] points out that *“expenditure needs have been traditionally seen as more difficult to be defined and measured than their equivalents in income, that is fiscal capacity,”* a viewpoint shared by Solé-Olle (2003:3) [17] who states *“as regards quantifying fiscal capacity, both literature on economics and compared experience have developed a methodology which has become standard. On the other hand, explicit leveling of expenditure needs is less common in the compared system and there exists little consensus about the more appropriate techniques for its quantification”*.

The complexity of measuring expenditure needs can be seen in the diversity of options regarding its implementation. According to Boex and Martínez-Vázquez (2004)[6], the options for measuring expenditure needs can range from the very simple to highly sophisticated, including: i) value of previous expenditure; ii) normative per capita equal expenditure; iii) weighed indexes of needs; iv) “superior” expenditure rules for customers; v) traditional expenditure rules (for physical inputs) and; vi) representative expenditure system.

Although the last option is most-often recommended by different scholars, its estimation is not easy. The two most commonly used methods are the Direct one and that of Statistical Assessment. In the first, the explanatory variables for each expenditure function are defined with their weights based on such subjective criteria as political negotiations and expert opinions. The second method applies regression and multivariate statistical techniques to available data in order to find those variables which significantly affect each expenditure function and their respective importance.

As far as Mexico is concerned, there are few works related to the assessment of expenditure needs, and the existing ones have focused on expenditure in education. Gershberg (1993) [10], as well as Lamoyi (2004) [12], analyze expenditure in basic education using the regression method. Espuelas (2004) [9], studies the same expenditure but uses the method of the principal components. In a more recent work, Ahmad, González, Anaya, Brosio, García-Escribano, Lockwood and Revilla (2007) [2] emphasize the necessity of determining expenditure needs in order to establish leveling systems. These authors carry out an assessment of expenditure needs for Mexico by using three expenditure categories (Education, Health and “Others”), establishing explicative variables for each, and adjusting them in an ad hoc manner, in an attempt to make them mutually balanced.

### 3. METHODOLOGY

In the case of Mexico, we have opted for the second approach, one based on multivariate statistics. Towards this objective, a representative budget for the public safety expenditure function of the state governments, expressed as an index, is shown in equation (1).<sup>1</sup> The importance of the included variables, and their weights, is a result of principal components analysis.

$$SPEI_s = \beta_1 \left( \frac{X_{1,s}}{\Sigma X_{1,s}} \right) + \beta_2 \left( \frac{X_{2,s}}{\Sigma X_{2,s}} \right) + \dots + \beta_k \left( \frac{X_{k,s}}{\Sigma X_{k,s}} \right) \quad (1)$$

where:  $\sum_1^k \beta = 1$

Where  $SPEI_s$  is the expenditure index for public safety for each state government  $s$ , the  $X_i$  are those variables determining expenditure in public safety, and  $\beta$ 's are the weights of each variable. Obviously, the difficulty is determining the vector of explanatory variables and the weights to be applied. Several other studies have addressed this problem, and there is no clear consensus in either the specialized literature or in compared experience. The determination of variables is generally based on theoretical and logical arguments derived from the data analysis. The previously cited literature provides guidance for the variables considered for inclusion in the estimation of equation (1). Variables are sought which will allow the capture of variations in the costs of different demands, economies of scale, or levels of congestion.

To capture the level of demand for public security we consider total population and the number of people ten years of age and older. Similarly, we include as possible explanatory variables those explain the level of expenditure on security and are typically employed in these kinds of functions:

- inmate population;
- the number of arrest warrants issued over one year;
- the number of criminals sentenced;
- the number of registered crimes against health;
- the number of violent or accidental deaths over the year.

Finally, as territorial or dispersion variables (to capture cost variability), we consider the number of inhabitants in communities with fewer than 15,000 and fewer than 2,500 inhabitants. The variables, shown in Table 1, are for 2005 and from the National Institute for Statistics and Geography known by its acronym in Spanish, INEGI.

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<sup>1</sup>This expenditure category includes the administration and management of courts, jails, prisons and correctional facilities and generally all those dealing with the maintenance of law and order (police and traffic), that is from administration to the supply of tools and equipment.



**Table 1. Variables in the Public Safety Expenditure Function**

C_p	Total Population
C_pobmayor10	Population ten years of age and older
C_penit	Inmate population
C_oa	Arrest warrants issued in one year
C_delsal	Crimes against health (drugs)
C_senten	Criminals sentenced in first-grade trials (federal jurisdiction)
C_mviolen	Number of violent or accidental deaths
C_hab2_5	Number of inhabitants in communities with fewer than 2.500 people
C_hab15	Number inhabitants in communities with fewer than 15.000 people

The data of the variables refer to 2005. Source: Instituto Nacional de Estadística y Geografía.

#### 4. RESULTS

This method of principal components has been used in different models assessing expenditure needs and allows for flexibility in the management of highly co-linear variables, a common problem with regression methods. Indeed, we find that just two factors explain 94% of the total explained variance (67.4 and 26.6 per cent, respectively). Furthermore, the determinant of the correlation matrix is extremely close to zero that is the variables are highly colinear.

The KMO and Bartlett's tests, displayed in Table 2.c, indicate that the selection method is valid.

**Table 2.a. Correlation Matrix(a)**

		C_penit	C_oa	C_delsal	C_senten	C_p	C_hab15	C_pobmayor10
Correlation	C_penit	1,000	,895	,680	,863	,734	,544	,729
	C_oa	,895	1,000	,799	,897	,552	,343	,549
	C_delsal	,680	,799	1,000	,857	,207	,014	,204
	C_senten	,863	,897	,857	1,000	,448	,233	,445
	C_p	,734	,552	,207	,448	1,000	,884	1,000
	C_hab15	,544	,343	,014	,233	,884	1,000	,885
	C_pobmayor10	,729	,549	,204	,445	1,000	,885	1,000
Sig. (1-tailed)	C_penit		,000	,000	,000	,000	,001	,000
	C_oa	,000		,000	,000	,001	,030	,001
	C_delsal	,000	,000		,000	,132	,470	,135
	C_senten	,000	,000	,000		,006	,104	,006
	C_p	,000	,001	,132	,006		,000	,000
	C_hab15	,001	,030	,470	,104	,000		,000
	C_pobmayor10	,000	,001	,135	,006	,000	,000	

a Determinant = 3,27E-007

Using these results the adjustments for the two factors can be determined. Factor 1 includes the variables inmate population (C\_penit), arrest warrants carried out (C\_oa), confirmed sentences (C\_senten), and crimes against health (C\_delsal). Consequently this factor has been named *Fdelinquency*. In turn, factor 2 includes the variables total population (C\_p), population 10 years of age and older (C\_pobmayor10) and population in places with fewer than 15.000 inhabitants (C\_hab15), thus the factor has been designated *Fpopulation*. The derived figure (using the *Varimax* method) of

the components and the coefficient matrix of the results allow visualization of these factors (see Figure 2).

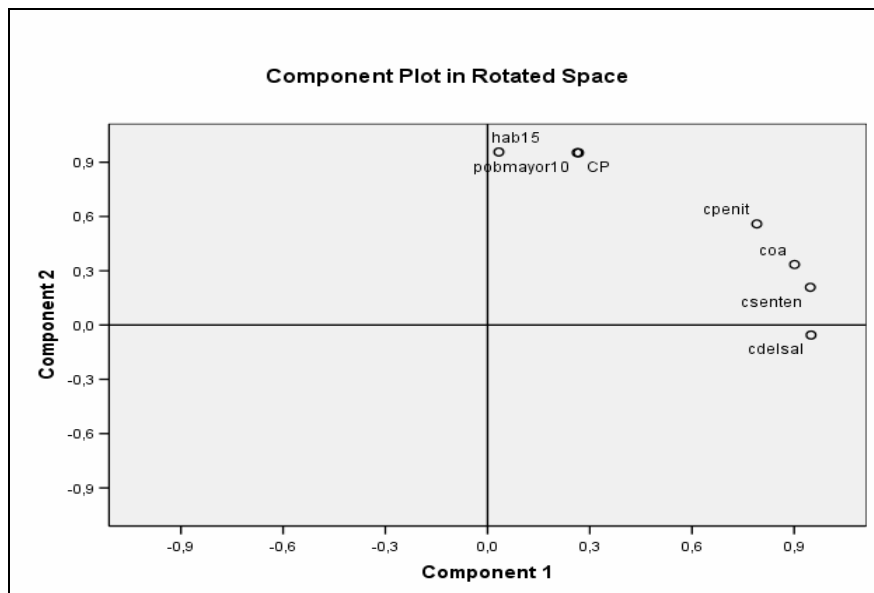
**Table 2.b. Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4,716	67,365	67,365	4,716	67,365	67,365	3,377	48,237	48,237
2	1,861	26,579	93,944	1,861	26,579	93,944	3,199	45,707	93,944
3	,160	2,282	96,226						
4	,110	1,570	97,796						
5	,094	1,347	99,142						
6	,060	,852	99,995						
7	,000	,005	100,000						

Extraction Method: Principal Component Analysis.

**Table 2.c. KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		,828
Bartlett's Test of Sphericity	Approx. Chi-Square	400,749
	degrees of freedom	21
	Marginal significance	,000



**Figure 2. Component plot in rotated space**

The final weights for each variable are shown in Table 3.

**Table 3. Factors and Weights for the Included Variables**

<b>Fdelincency (Weight: 0.71707613)</b>		<b>Fpopulation (Weight: 0.28292387)</b>	
Variable	Weight	Variable	Weight
C_penit	0.17338285	C_penit	0.0791701
C_oa	0.24088825	C_p	0.29459093
C_delsal	0.31206852	C_hab15	0.33077754
C_senten	0.27366038	C_pobmayor10	0.29546142

The index of expenditure needs resulting from these adjustments is shown in table 4.

**Table 4. Expenditure Needs in Public Safety**

<b>States</b>	<b>SPEI</b>	<b>Ordered by Index</b>	<b>SPEI</b>
Aguascalientes	0.009170	Jalisco	0.093990
Baja California	0.073757	Sonora	0.087024
Baja California, South	0.011970	State of México	0.079078
Campeche	0.009483	Baja California	0.073757
Coahuila	0.022221	Veracruz	0.050410
Colima	0.012026	Chihuahua	0.046922
Chiapas	0.040233	Michoacán	0.043909
Chihuahua	0.046922	Guanajuato	0.041482
Durango	0.019873	Sinaloa	0.040769
Guanajuato	0.041482	Chiapas	0.040233
Guerrero	0.026021	Puebla	0.034579
Hidalgo	0.018781	Tamaulipas	0.033836
Jalisco	0.093990	Nuevo León	0.033271
State México	0.079078	Oaxaca	0.027961
Michoacán	0.043909	Morelos	0.026126
Morelos	0.026126	Guerrero	0.026021
Nayarit	0.014446	Coahuila	0.022221
Nuevo León	0.033271	Durango	0.019873
Oaxaca	0.027961	Hidalgo	0.018781
Puebla	0.034579	San Luis Potosí	0.018615
Querétaro	0.018125	Querétaro	0.018125
Quintana Roo	0.013769	Tabasco	0.017638
San Luis Potosí	0.018615	Nayarit	0.014446
Sinaloa	0.040769	Quintana Roo	0.013769
Sonora	0.087024	Yucatán	0.012882
Tabasco	0.017638	Zacatecas	0.012281
Tamaulipas	0.033836	Colima	0.012026
Tlaxcala	0.009355	Baja California, South	0.011970
Veracruz	0.050410	Campeche	0.009483
Yucatán	0.012882	Tlaxcala	0.009355
Zacatecas	0.012281	Aguascalientes	0.009170

The results indicate that the expenditure needs are very unequal across the Mexican states. Based on the calculated indexes, just four states (Jalisco, Sonora, State of Mexico, and Baja California) should receive a third of all public security expenditures. Indeed, the indexes suggest that the thirteen highest ranked states should be allocated more than 70% of the funds available for public safety. Of these thirteen states, five (Baja California, Sonora, Chihuahua, Tamaulipas y Nuevo León) share a border with the United States. Coahuila is the only state having a border with the US that is not in the top thirteen.

A rather obvious hypothesis is that drug trafficking accounts for the high levels of insecurity in these states. The three states that comprise the Yucatan Peninsula; Quintana Roo, Yucatán, and Campeche; are among the eight states with the lowest levels of insecurity as measured by the index.

A comparison of the SPEI with an alternative measure of organized criminal activity, the number of criminals sentenced at the federal level by each state government in 2007, suggests that our index is a useful measure of expenditure needs. Figure 3 clearly shows a strong positive correlation between the two measures.

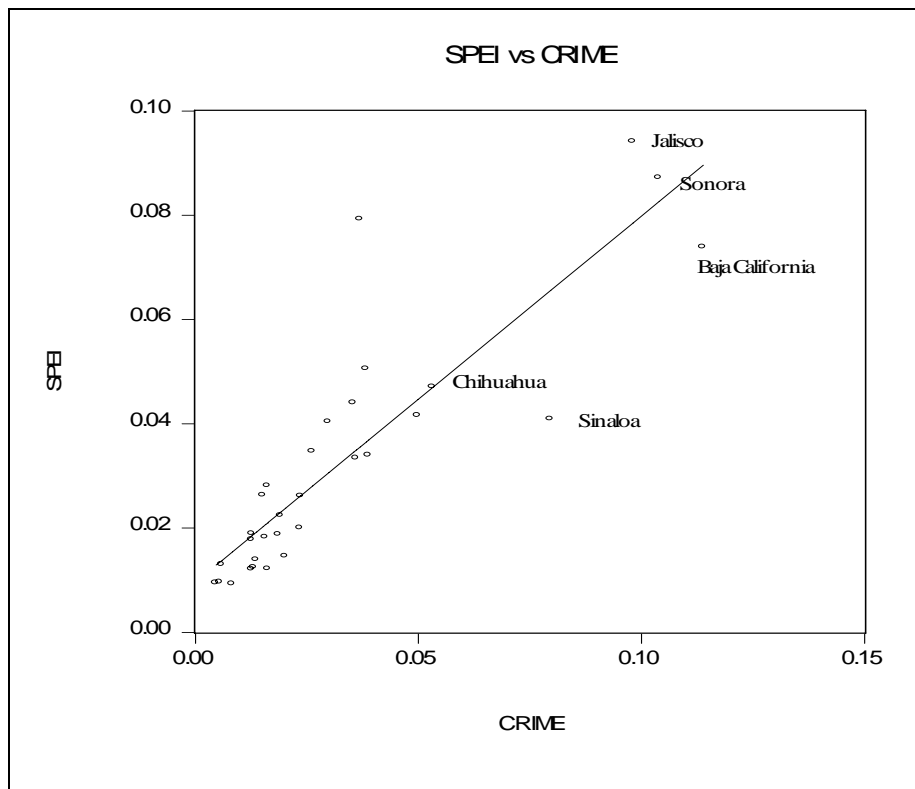


Figure 3. SPEI vs CRIME

## 5. CONCLUSIONS

We have developed an index of expenditure needs for public security in each Mexican state that, among its advantages, is based on quantifiable factors thus independent of manipulation by governments. A potential use is as the criterion for allocating transfers from the central to the state governments for this category of expenditure. The proposal satisfies the needs of equity and effectiveness, as it is based on an objective methodology. Of course, this methodology could be applied to other expenditure categories, for the purpose of determining the total amount of transfers from the federal government to state governments.

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## **PRACTICAL AND THEORETICAL ISSUES CONCERNING INTERNAL AUDIT TOOLS' USAGE**

**GEORGE CALOTĂ \***

**ABSTRACT:** *For presentation and substantiate the findings, in the intervention stage on the spot auditors use internal audit activity-specific instruments, known in the special literature as template of findings. In this material we propose a theoretical approach and a practical example of the methodology of development sites in terms of FIAP recommendations made by the International Standards on Internal Audit and internal audit standards in our country. Regarding the FIAP elaboration, the best practice in field recommends that document should be completed in three stages: First stage: gradual achievement, Second stage: Validation, Third stage: supervision.*

**KEY WORDS:** *problem, findings, consequence, conclusions, recommendations*

For presentation and substantiate the findings, in *the intervention stage on the spot* auditors use internal audit activity-specific instruments, known in the special literature as *template of findings*. In this material we propose a theoretical approach and a practical example of the methodology of development sites in terms of FIAP recommendations made by the International Standards on Internal Audit and internal audit standards in our country.

In the literature of the internal audit it is pointed out that the sheet identification and analysis of the problem is a rigorous and effective formulation of provisions from *Standard „2320 - Analysis and assessment”* according to which *„the internal auditors should base their conclusions and results of their mission on appropriate assessments and analysis”* and *Standard „2410 - The content of communication”* which recommends: *“communication should include objectives and scope of the mission as well as the conclusions, recommendations and action plan”*.

Regarding the FIAP elaboration, the best practice in field recommends that document should be completed in three stages:

- **First stage: gradual achievement.** The internal auditor outlines problems he finds, as he gets in his discoveries, and intends to

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- analyze. For each problem discovered the internal auditor shall prepare a FIAP, which is completed at the time of validation.
- **Second stage: Validation.** After identifying all the problems the audited structure may encounter, the auditor should be concerned about the collection of evidence for this FIAP. This concern of the auditor is based on one fundamental principles of internal auditing, namely *“there's nothing to be concluded without being validated first”*. *In our opinion*, validation of an issue should take place only in conditions in which the auditor can obtain the same positive answer to the following questions: It is true the finding which is FIAP's subject? Are the causes based on valid analysis? Are analyzed consequences considered realistic? Do the developed recommendations allow mitigating or eliminating the problem?
  - **Third stage: supervision.** To ensure that the problem or finding, which leads to FIAP's development is properly addressed, the auditor discuss with the supervisor. He analyzes it and establishes its level of importance and place within the internal audit mission, requiring in some cases a deeper exploration or a detail analysis. On that *issue we consider as relevant* the opinion of few experts in the field, namely [4], *“the intervention of the supervisor must be a professional one, that a specialist that was not involved directly in the field during testing and obtaining evidence for the findings and conclusions on the internal auditor”*.

Analysis of bibliographic resources points out that this stage is to avoid imperfections in the FIAP prepared by the internal auditor, *“but also has meaning not to intervene and influence the internal auditor's work”* [4].

*In our opinion*, supervision of this document allows the removal of contradiction such as: inadequate substantiation of a finding based on laws repealed; existence of incomplete causal analysis, situation often encountered in the case of inexperienced auditors; consequences do not represent the effect the risk producing or they are wrongly estimated; absence of causal links between formulated recommendations and the identified causes.

According to normalizers' concept in our country, FIAP is signed by the internal auditors appointed to collect evidence and making tests, and from the audited structure by an appointed person, only to confirm existing findings in FIAP, not for other elements contained therein.

Using this audit instrument, the theory and practice recommends using a template document that contains five parts:

**a) problem** must be structured as a statement of some lines, which is intended to alert the reader and especially the Head of Mission, the auditor and audited management structure. In other words, it should be a summary of the findings, the causes and their consequences;

**b) findings** means bringing together some evidence with predefined titles that which, following the analysis, allows identification of areas of weaknesses to be remedied. When compiling a FIAP internal auditor should consider the following rules:



**one FIAP = one finding.** If the practical situation requires, the auditor may relate more findings if they are very closely linked, they are the same kind, or have the same issue or result; **the finding must be made as a short statement and synthetic.** In current practice, auditors should avoid supporting explanations used in order to facilitate understanding and can be treated as a causal analysis. However, when formulating a finding necessary to avoid the use of examples that could be a bad start in looking for consequences. Analysis of the above formulation allows us *to state* that a finding should be made in brief, concise way.

c) **the causes** for the emergence of the problem. Causal analysis of the phenomenon is to identify those control tools which once implemented can avoid another production of the phenomenon. However, clear and precise identification of the cause which has triggered the malfunction, should guide the auditor's work on making recommendations. For example, if a finding on the erroneous preparation of analytical balance of tangible assets, the main cause of the problem is: Lack of adequate professional training of persons responsible for developing analytical balance of tangible assets, and its equivalent recommendation is: Develop a training system for the staff from the accounting department departments.

Having determined the foregoing, *we can state* that the auditor, at this stage of Stage spot intervention must identify which of the established internal control instruments have not worked / have worked poorly, and / or not provided, resulting thus producing the failure.

Literature in this area points out that according to most opinions, to achieve this practical approach, the auditor should use certified causal analysis tools. *As a result of research conducted seems appropriate using the method, recommended by two renowned experts, Mr Jacques Renard and Jean-Michael Chaplain [6], the method also called „the fish skeleton“.* According to the design of these experts, this method is a memotehnic tool which guides internal auditor's work, with the help of five words beginning with the letter M (which is why in some works in the field we find as the „method of 5M“), in activity analysis of the 5 possible areas where a problem may have originated.

To exemplify the application of this method in practice, we resume previous the example on developing analytical balance of tangible assets:

- **Labour:** - *staff was not trained on this requirement. Why? because there was not provided appropriate training to persons responsible for developing analytical balance of fixed assets*
- **Environment:** *this document has no utility for the staff. Why? because no one uses this document to base decisions. Why? because there is not any computer program on the management of fixed assets to facilitate access of the top management to this information.*
- **Matter:** *nothing to report.*
- **Material:** *nothing to report*
- **Method:** *lack of work procedures, written and formalized. Why? no one had concerns about this issue: supervision problem - the non-hierarchical control.*

*In our opinion*, by using this method, the internal auditor can provide a reasonable assurance to the top management only in the condition that the findings of the analysis are real and studied at the most elementary level.

**d) consequences.** The auditor in the performance of its mission has to quantify the consequences of malfunction identified, whenever is possible. The ultimate goal of this quantification is to measure the impact of the phenomenon, which eventually will allow the auditor to make a classification of FIAPs, depending on the importance of consequences for the entity. The auditor quantifies the consequences of a phenomenon by its nature. Based on this criterion, we classify consequences such as: financial consequences, legal consequences, economic consequences, technical consequences.

The analysis of bibliographic resources and practical experience in internal audit *allows us to state* that even if the auditor can not always quantifies in figures consequences of a phenomenon, he can anyhow - after his research assessments - must provide sufficient quality estimation to allow the reader to correctly measure the consequences of the phenomenon and to estimate the importance.

**e) recommendations** are necessarily equivalent to the exact causes. The formulation of recommendations, the literature refers to two aspects of met in practice: as a first point it refers to the work of internal auditors who have no experience in the audited area, fact that leads to the development of less precise and detailed recommendations. In these circumstances, the auditor should be limited to general proposals such as: “procedure needs updating” or “the organization system of managing the fuel and lubricants should be revised”; the other refers to the formulation of precise recommendations which contain a real proposal to solve the problem, such as, „nominating a responsible person for the systematic procedures’ development and update” or “execution of a check during the audit in order to determine the size of the malfunctions found and restoration of tangible analytical balance” or “developing a training system for the staff from the accounting department departments”.

The template of this document, completed as well with aspects of internal audit activity related to the finance-accounting department is the following:

#### **SHEET OF IDENTIFICATION AND PROBLEM ANALYSIS NR.12**

**Audit activity:** Finance-accounting activity

**Period of audit:** 01.01.2009 - 30.09.2009

##### **PROBLEM**

- Non-compliance of technical-operational inventory-data of the Finance and Accounting Department templates organizational system.

##### **ASCERTAINMENT**

- Lack of written and formalized procedures for assignation and/or allocation of numbers through which it should be stated, for each financial year, which is the number of the first invoice to be issued.

- The person responsible for issuing the financial and accounting documents underlying the accounting record of revenue, having in his job description also the registry of bank operations, due to lack of time, has not completed the document "Invoice" with the address of the purchaser.
- The person responsible for tracking the use of financial and accounting documents of the Finance and Accounting Department has not conducted regular monitoring on how to fill them.

#### **CAUSES**

- The person responsible for tracking the use of financial and accounting documents of the Finance and Accounting Department has conducted regular monitoring on how to fill them.

#### **CONSEQUENCES**

- The document "Invoice" is not used in accordance with legal provisions, therefore the identification and permanent check over the entity's customers is not allowed. There is the possibility of financial and accounting documents to be already issued but not registered in the accounting registries.

#### **RECOMMENDATIONS**

- Develop and formalize a system of procedures regarding the assignation and/or allocate numbers for the invoices;
- Assign a responsible person for the preparation and issuance of the invoices;
- Establishing annually the needed financial and accounting documents and the number of the first document to be issued.
- Setting of concrete tasks, in conjunction with the procedures and job descriptions for staff involved in these activities;
- Staff training in management and check of financial and accounting documents on which revenues are recorded in the accounts.

Date:	Internal Auditor,	Supervisor,	In line,
31.10.2009	Ursulescu Ion	Stroe Adrian	

On the basis of the above, *we can conclude* that the *raison d'etre* of the internal audit is to elaborate recommendations so that problems encountered within an entity not to occur in the future. Thus, the auditor through his work will contribute to the improvement of the internal control system functioning within the entity.

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## **RISK ANALYSIS - SPECIFIC PROCEDURE OF THE INTERNAL AUDIT**

**GEORGE CALOTĂ, TRAIAN IANA \***

**ABSTRACT:** *During the stage of Preparation of the mission of internal audit for intervention on the spot, Internal audit program must be prepared, which shall be based on a specific risk analysis procedures. The Standard „, 2200 - Mission Plan recommends that „when planning the mission, internal auditors should take into account: the audited business objectives and how this activity is under hand; significant risks related to business, its objectives, resources used and operational tasks and the means by which the potential impact of risk is maintained at an acceptable level; pertinence and effectiveness of risk management and control of business systems in relation to an appropriate control framework or model; opportunities for significant improvement of risk management systems and control of business. Practice in internal audit field in Romania, adapted to the requirements of International Standards on Internal Audit, requires that the Elaboration of the internal audit program procedure, to be preceded by Risk analysis procedure and followed by the Opening meeting procedure.*

**KEY WORDS:** *risk, probability, risk register, risk analysis, internal audit program*

Risks, as inherent elements in the conduct of any activity, can lead to different effects. In the literature there are found many definitions of the risk. Thus, one of the recognized experts in the French environment, Dominique Vicente, quoted in the literature in Romania [3], considers that: „risk is a threat in the purpose that an event or action to have an adverse impact on the company's capacity to fulfill its objectives successfully”. In another publication in the area, Risk Management: Changing the Internal Auditor's Paradigm, two renowned experts, David Mcmanee and George Selim, argue that „risk is a concept used to express uncertainty about the event and / or their results, which may have a significant effect on the objectives of the organization”.

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International Standards on Internal Audit (Standard 2200 - Planification of the mission) define risk as „the probability of producing an event that may impact on the achievement of the objectives”. Internal audit rules applicable to public sector entities [9] define risk as being „any event, action, situation or behavior with negative impact on the public entity's ability to achieve its objectives”. Analysis of such definitions points out that *risk is a problem* which has not yet occurred but could occur in the future, where it constitute a threat to the entity regarding the achievement of the objectives set by the multiannual and annual plans and those concerning each function of the enterprise; the risk should be seen as a combination of probability and impact.

Considering the volume on the impact, there may be strategic or operational risks (in some approaches appear intermediate risks or program risks as well). Also, some risks have their origin in the external environment of the organization (external risks), and others are risks of the organization itself (internal risks). However, risks can be seen in the light of nature of the activity, in which case they may be risks: legal, judicial, financial, professional, social, commercial, informational, operational, environmental, image (goodwill), property. For illustrating different types of risks that may affect the activity of an entity, *we consider* as representative the table shown below including the categories of risks, conducted by the resort ministry of the United Kingdom - *Hight Majesty Tresury*, equivalent institution of the *Ministry of Public Finance of Romania*, in order to support entities to determine whether they have taken into account the full range of risks involved.

According to *General rules regarding the exercise of public internal audit activity*, the main categories of risks are: *organizational risks* (unformalized procedures): lack of clear responsibilities, insufficient organization of human resources, inadequate documentation, outdated; *operational risks*: not recording in the accounts, improper archiving of justificatory documents, lack of control on high-risk operations; *financial risks*: unsecured payments, not detecting financial risk operations; - *other risks*: risks arising from legislative, structural changes or managerial changes.

From the above it results that the risks must be **identified** and **evaluated** in terms of the combination of its two components namely, **the probability** that something (the risk) may occur and **the impact** (the consequence in the objective) that the materialization of such probability will have:

**a) Measuring the probability** means determining the likelihood of occurrence probability of a specific result. We would like to recall that the risk is a problem (situation, event) that may occur (to materialize), case that leads the objectives to be affected. In other words, there is uncertainty in the occurrence of the situation or event that may affect the achievement of the objectives. The probability is a measure of uncertainty. The probability of risk's advent varies from impossibility to certainty and is expressed on a scale of values on three levels: low probability, average probability, high probability.

In practice, for the probability of risk's advent measurement, two criteria are used: **a.1. vulnerability assessment of the entity**. To make the assessment, the auditor will examine all the factors that could have an incidence on the vulnerability of the existing technical means. The vulnerability is expressed on three levels: low vulnerability, average vulnerability, high vulnerability.

**a.2. assessment of internal control.** The assessment of internal control is based on an analysis of the entity's internal quality control on three levels: appropriate internal control, insufficient internal control, deficient internal control.

**Table 1. Types of risks**

No.	Risk categories
1.	<p><b>External</b> - arising from the external environment and can not be fully controlled by the entity, but for which mitigation measures can be taken:</p> <p>1.1. Political;            1.2. Economic;            1.3. Socio-cultural;            1.4. Technology;            1.5. Legal;            1.6. Environment.</p>
2.	<p><b>Operational</b> - related to current operations, meaning the current mode of developing the activities, creation and maintenance of the capacity and capability as well:</p> <p>2.1. Progress in:            2.1.1. Ability to provide a product / service;            2.1.2. Running activities / projects.            2.2. Capacity and capability:            2.2.1. Resources (assets, human, financial, information);            2.2.2. Relations;            2.2.3. Operations (results);            2.2.4. Reputation.            2.3. Method and capability of risk management:            2.3.1. Governance (regular and fair);            2.3.2. Exploration (ability to identify risks and opportunities);            2.3.3. Flexibility and adaptability;            2.3.4. Security (active, social, informational)</p>

**b) Measuring the severity of the consequences of the event (at impact level).**

The impact represents the consequence on the expected objectives (outcomes), which may be, depending on the nature of the risk, positive or negative. In some situations, especially when it comes to strategic objectives and the organizations are complex (alike, complex projects, complex activities), the assessment of impact becomes a difficult problem that requires impact studies. But, in an organization, most risks are not of the above mentioned the nature and their impact can be measured with considerably less effort. The impact of any risk is characterized by the consequences of different natures. Besides qualitative consequences, expressed in a descriptive way, can be identified and consequences can be expressed in terms of budget (costs), effort (work time) and time (possible delays in the allocated period to achieve the objectives).

Generally speaking, the impact can be decomposed as follows:

- I** → **IC** - qualitative component (which may include quantitative indicators)
- **IB** - budgetary and / or patrimonial component
- **IE** - effort component
- **IT** - time component

*We consider as necessary to mention* the fact that, the impact assessment is not required to be made by all its components. Sometimes this thing is not possible,

and sometimes it is not relevant. For example: the impact produced by the risk of non-availability of the justificatory documents:

- **Ic** - untrue financial statements, damage credibility in front of the partners (problems regarding the receipt of funding by onerous title or not), increased frequency of external audits. Internal audit rules applicable to public economic entities from Romania require that measuring the level of the impact of a risk to be done using a scale of values with three levels: low impact, moderate impact, high impact.

Performing risk analysis in accordance with the rules of internal public audit, supposes crossing the following phases:

**A. Identify the risks associated activities.** Identifying the risks associated to the objects that may be audited, has as its starting point, the analysis of the objects and / or the operations covered by the *Centralized list of objects that may be audited*. For this purpose, the auditors collect information about the objects that may be audited, information which are then examined in order to determine their impact on the mission.

Regarding the information that the auditors need at this time of deployment of internal audit activity, reviews the literature points out that these concerns: business objectives and goals; rules, plans, procedures, legal and contractual regulations which may have significant impact on the operations; audited entity / structure: number and names of the employees, employees who occupy key positions, job descriptions, changes in the organizational structure, changes in information systems; the income and expenditure, turnover and financial data regarding the audited activity; working documents of previous internal audit assignments; results of other missions, including external auditors, completed or under development; correspondence files to detect important problems; information on the technical reference documentation for the activity being audited; technical reference documentation for the activity concerned.

However, in order to achieve *the analysis of risks*, the auditors should assess the processes of risk management. Regarding these issues, *The International Internal Audit Standards* (Standard 2100 – Nature of activity) states: „We must distinguish between the assessment of risk management processes and risk analysis that the auditors must make, in order to plan their activities. However, the information resulting from a full risk management process and in particular from the identification of the subjects of interest to the managers and the Council may help the internal auditor to plan audit activities”. In such conditions and requisitions *we consider as necessary* the following presentation of several issues that may be considered as useful in terms of the auditor's awareness of the situations they may encounter in practice.

A first practical issue that can be incorporated, relates to the situation where the risk management process, as part of the organizational management process is well organized within the entity<sup>1</sup>, in which case there is a *risk registry book*<sup>2</sup> that highlights the main risks, identified and assessed, associated with relevant objectives. Because the risks are constantly changing, the auditor will be interested to see whether the risks and

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<sup>1</sup> The process of risk management or risk management - all processes on the identification, evaluation and risk assessment, establishing responsibilities and taking measures to mitigate or anticipate them, regularly reviewing and monitoring progress.

<sup>2</sup> Risk Registry book - integrating document for the risk management, which includes a summary of information and decisions taken on risk analysis.



their mitigation measures were reviewed regularly and recently. If this is evident in practice, the auditor will be interested to explore and validate the content revision, or if full, current and well-founded.

Finally, if the auditor concludes that *the risk registry book* is a good basis to guide the audit activity, he will focus on the higher risks involved, to ensure that control instruments are put with effectiveness in practice. Likewise, *it should be mentioned that* these risks are seen by the auditor on one hand as an "exposure" because the control instruments are not sufficiently consistent, and on the other hand as a potential for adding value based on the made recommendations.

Another relevant practical issue to this problem, is specific to entities that do not have organized such a *risk registry book* and the management does not have a clear idea on the most important risks they are facing. In these circumstances, the auditor should discuss with the management about the risks, their impact and probability. *This thing is recorded by the internal auditor as part of the audit trail.* If the management is not very concerned by these risks, the auditor should seek to identify and assess the risks on his own knowledge and experience and using all other sources of information that is available. This can be done only when all other options mentioned above have been already explored and considered as inappropriate. In practice this first phase of risk analysis procedure is completed by internal auditors through elaboration of the document called *Identification of risks*. Regarding this document, the internal auditing standards applicable in Romania do not provide a standardized templatet, leaving it up to the professionals to prepare this document as necessary.

**B. Establishing the criteria, weightings and levels of risk assessment.** On the subject of risk assessment, the internal auditor should develop an assessment methodology. Best practice in the field recommends that the structure of the internal audit to establish a set of criteria (factors), objectives for impact measurement and another set of instruments as targets for measuring the probability. In international practice, the impact criteria include financial criteria, operational criteria, reputational criteria, compliance criteria etc., and the probability criteria are often a combination of experience and insight sustained by information. The rules of internal audit in Romania, applicable to public economic entities, recommends for the risk analysis the following factors/criteria of risk: assessment of internal control, quantitative assessment, qualitative assessment.

Also, the general rules of public internal audit recommends the establishment of risk levels using a scale of values on three levels, such as (Table 2):

**Table 2. Nivelurile de apreciere a factorilor de risc**

<b>Level of Assessment</b>	<b>level 1</b>	<b>level 2</b>	<b>level 3</b>
<b>Risk factor</b>			
assessment of internal control	appropriate internal control	insufficient internal control	deficient internal control
quantitative assessment	low financial impact	moderate financial impact	high financial impact
qualitative assessment	low vulnerability	average vulnerability	high vulnerability

After analyzing bibliographic resources and practical work in the manner of determining the share of risk factors, the following model *can be retained*:

F1 - Risk assessment	.....	50%
F2 - Quantitative assessment	.....	30%
F3 - Qualitative assessment	.....	20%
Total	100%	

Another responsibility of the auditor, in this phase of risk analysis, is establishing the risk factor weighting within the audited activity. Practice recommends that the highest weight to be given to the criterion - *the assessment of internal control* and the amount of risk criteria assigned weightings to be 100%. The entire intercession of the auditor, in this phase of risk analysis, are materialized in the elaboration of a working document. The internal auditing standards applicable in our country do not provide a procedure for its preparation in this document template neither, which is why a study of literature in the related area was necessary. From the study performed, *we consider* that it justified to elaborate a document which will be called *The appraisal of factors, weights and risk assessment levels and which should contain all the elements presented above.*

**C. Determination of risk level and determining the total risk score.** Based on the risk factors described above in this phase of the risk analysis procedure, a risk assessment is carried out associated to the activities that may be audited which materializes in: *applying to the weights of the risk factors for assessing the level of risk, risk factors*, based on evaluations conducted by internal auditors; *determining total risk score* is achieved by applying the share of each risk assessment factor level to determine the total score, according to the formula:

$$T = \sum_{i=1}^n P_i x N_i \quad (1)$$

where:

$P_i$  - weight of risks for each criterion;

$N_i$  - level of risks for each used criterion.

Regarding the completion of this phase of the risk analysis procedure, internal audit rules applicable to public economic entities do not provide any document preparation.

**D. Risk Ranking based on total scores.** After the calculation, the phase of *Appraisal of the level of risk and determining the total risk score* is necessary to indicate to which level of risk corresponds numerical result of the calculation. To conduct this work, it is necessary to establish intervals which will indicate the level of risk, in fact the priority it gives a risk audit. Best practice in the field recommends that in establishing the size of the interval, to consider the available resources within the entity in order to carry out the mission of internal audit. Internal audit rules applicable to public economic entities in Romania, recommends sharing the risks - depending on the risk factors taken into analysis – on three risk levels: *low, medium, large*. At the same time, practice in the related area from our country, recommends for risk

classification in the case of three risk factors, using the following intervals: *small risk from 1.0 to 1.8; average risk from 1.9 to 2.3; high risks from 2.4 to 3.0*. All activities developed by the auditors in this phase of risk analysis are summarized with a summary document - *Ranking objects that may be audited*, which the legislation has enabled the user to adapt to his needs.

**E. Hierarchy of activities / operations depending on risk analysis.** Prioritizing activities which are to be audited shall be based on previously prepared document. For the successful completion of this activity is necessary to take into account the number of staff, available time, other activities taking place within the structure of internal audit and risk analysis specifically identified in other areas of the entity.

This phase is materialized in the elaboration of *Table of strengths and weaknesses* document, through which analyzed operations to determine if they can be considered for the entity, „*strengths*” or „*weaknesses*”. In order to show how the identification of a strong point or a weak point, we consider as relevant the point of view of Mr Marcel Ghita who, in his publication *The internal audit – second edition*, Economic Publishing House, Bucharest, 2009, states: „A strong point or a weak point must be expressed depending on an objective internal control or a sought feature in order to ensure proper functioning of the audited structure”. *Table of strengths and weaknesses* document presents schematically the result of assessment of each activity / operations / issues and contains the internal auditor's degree of confidence in the functioning of internal control as well as the consequence of operation / malfunction, which will lead to minimizing the risk, when the degree of confidence is large (strong point), and maximizing the occurrence of risk when the degree of trust is low (weak point). Operations identified as strengths are removed from risk analysis and will not be taken into account at the drawing up the detailed topic of the internal audit mission.

**F. Develop the detailed thematic of the internal audit mission.** The detailed thematic of the internal audit mission is that phase within the internal audit mission, which is done by selecting objectives that may be audited, having as starting point the *Table of strengths and weaknesses* document, which were assessed as weaknesses and will be considered further for auditing. Regarding the method of selecting objects that may be audited, we consider it appropriate to mention the view of experts [5] from Romania, respectively, „In practice usually there are considered all the objectives that were classified as weaknesses, but may be covered by the auditors and objectives that are qualified as strengths, if the auditor believes it necessary to investigate whether the internal control system is functioning”. The results of this work are reflected in elaboration of the *The detailed thematic of the internal audit mission* document, for which the rules of internal audit applicable to public economic entities, do not recommend to use a formalized document, leaving it up to an auditor to use this document in accordance with his needs.

A distinct problem regarding *The detailed thematic of the internal audit mission* document is to locate this activity within *The Preparation of the audit mission* phase. Thus, the rules of internal audit [9] applicable in our country, for public economic entities, recommends the creation of this activity and thus develop the reference document, as a first step within the *Elaboration of internal audit program* procedure. In another train of thoughts, experts in the field of Romania [5][6] consider

The detailed thematic of the internal audit mission is the last phase of the risk analysis procedure, which is why the specific document of this phase should be developed within this procedure. From the analysis of the presented above *we can reckon* that for the smooth conduct of internal audit mission it is important the achievement of the activity itself namely, the correct elaboration of The detailed thematic of the internal audit mission document, which will compile The internal audit program. As for locating this activity within The Preparation of the audit mission phase, as the last phase of the Risk analysis procedure or the first phase of the Elaboration of internal audit program procedure, we consider that it is not very important as long as the activity was carried out in accordance with best practice in the related area.

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## **CASH ACCOUNTING IN THE EQUATION OF THE BUDGET EXECUTION AND OF THE PUBLIC MANAGEMENT**

**IULIANA CENAR** \*

**ABSTRACT:** *Accounting is the instrument used by the management of a public institution to satisfy the need for information and to direct their decisions. The state's treasury is the public institution that ensures the perpetuation of the cash based accounting. The paper approaches the following: the treasury's role in achieving the execution phase of the budgetary process, methods of changing into cash the budgetary incomes and to pay the expenses, the accounting instruments of the various transactions that contribute to achieving the budget execution, with the active involvement of the budget classification and of the fiscal register.*

**KEY WORDS:** *cash accounting, budget execution, treasury, budget incomes, budget expenses, incomings, payments*

### **1. INTRODUCTION**

A lot was written about the advantages of liability accounting in connection with cash accounting at the level of the public institutions, the process was emphasized after the start of the accounting reform in the public sector, beginning with 2002. Just as proliferated is the parallel between double entry bookkeeping and single entry bookkeeping. The conclusion regarding this last parallel, namely the fact that the simple entry bookkeeping has lasted in time because of the scientific usability (and not because of its elementariness), is also valid for the binomial cash accounting - liability accounting. Apparent in desuetude and compared with the proliferated liability accounting, the cash accounting proves to be the main mean to get information regarding the budget execution at the level of the state treasury. The state treasury represents a unitary and integrated system used by the state to ensure the collecting and payment operations regarding the public funds, in conditions of safety and with the observing of the legal dispositions. Therefore, the treasury achieves the management process of the financial resources in the public sector and the prompt intervention in all the tracing phases of the public finances execution becomes possible.

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## 2. THE BUDGET EXECUTION IN THE TREASURY'S ACCOUNTING

Based on the Accountancy Law no. 82/1991 and the Government Directive no. 78/1992, the Ministry of Finance is authorized to organize the accounting of the Treasury of Public Finances regarding the cash execution of the various budgets, as well as other financial operations done in the account of the central and local public administrations. Among the elements that define the object of the treasury's accounting, we can identify the cash reflection of operations like: cash entries and exits in/from the current account/the treasury's money office; collecting the incomes and the payment of the budget expenses; the availabilities and the deposits of the public institutions; reimbursements between the units of the treasuries and banks, etc.

In general, the public institutions are entities that produce public services which address the private sector. The specificity of the state's treasury is also given by the fact that its services are offered to both the public and the private sector. This is why the treasury's key role is to ensure the financial elements/resources that are used to meet the general needs of society. The purpose of the public sector is to serve, not to accumulate and the efficiency constitutes an indicator dependent on the quality of the provided public services. In this context, we can say that the management decisions are grounded on value judgements and the public financial resources reserved and allotted through budgets approved by the political representatives constitute an important factor in ensuring the quality of public services. Mathematically, it results that efficiency is dependent on the financial resources managed by public institutions, the leading role being the public finances treasury:

$$\left. \begin{array}{l} E = f_1(Csp) \\ Csp = f_2(Rfp) \end{array} \right\} \Rightarrow E = f_1 \circ f_2 = f_3(Rfp) \quad (1)$$

where: E - the efficiency of public services, Csp - the quality of public services, Rfp - sums reserved and allotted through the budget system.

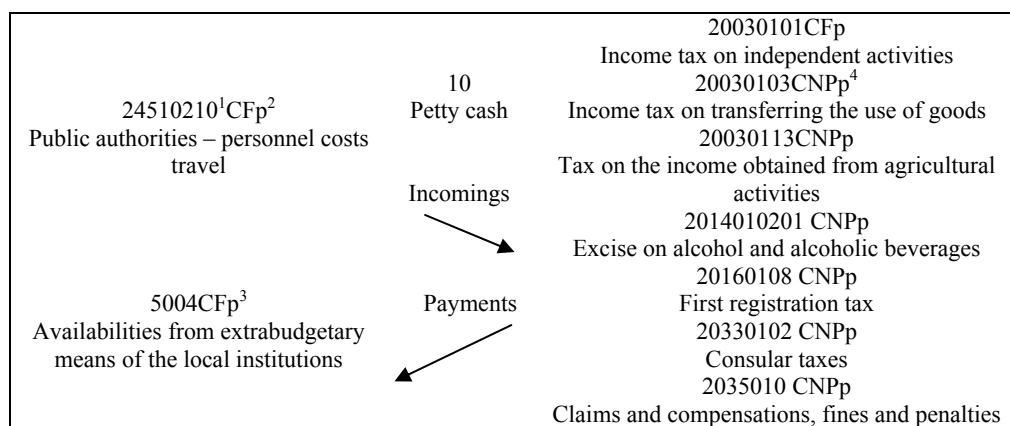
Therefore, a very important role in ensuring the fluidization of the financial flows at the level of the public institutions is held by the budget execution, run through the state's treasury. The budget execution reflects the set of measures, activities and operations regarding the income collecting and the actual budget spending approved by the legal forum. The State Treasury Accounting is organized within the General Direction of Public Accounting and of the Reimbursement System in the Public Sector within the Ministry of Public Finance, as well as within the General Directions of Public Finance in each county and the Public Finance Administrations as specialized bodies of the Ministry of Public Finance at territorial level.

From a technical point of view, transposing into the accounting of the Treasury the operations generated by the execution is done based on the following elements: the accounts in Class 2 "Budget revenues and expenses" of the chart of accounts specific for the Treasury, the digital codes offered by the budget classification of the revenues and expenses for each budget that creates the budgets system, the fiscal register. Thus, in the structure of the budget revenues and expenses analytic account that generate

cash entries/exits we can identify the code of the synthetic account of income/expense from the chart of accounts, the code of the income/expense chapter, the code of the budget that has the elements which generate the result, the code of the income/expense title subchapter, the fiscal code of the payer/public institution. The latter is written digitally in the symbolic unfolding of the analytic account.

The mentioned aspects reveal “the concern for details” in achieving the budget execution and at the same time their importance in the economic life. For the revenues of local budgets derived from private individuals and corporate bodies, the allotment of revenues between local budgets is done by using the taxpayer identification number of the Local Council that the taxpayer belongs to. All the operations regarding the actual incomings and payments are daily recorded in the treasury’s accounting, either done in cash or through transfer, based on the informational support that certifies those operations. Usually and in a classic manner at the same time, the budget revenues are collected and the budget expenses are paid in cash. The revenues come from corporate bodies, but especially from private individuals and they charge the state budget, the local budgets and the social welfare budget. Regarding the expenses, the distinction between their payments based on the open and allotted budget credits for the financing of various expenses, namely the cash payment as a result of drawing out sums of money from the availabilities accounts of the Treasury.

Schematically, the reflection in accounting of the budget execution through the cashier’s office is as follows:



*1. cash draw out by a institution financed from the local budget; 2. CFp - taxpayer identification number; 3. drawing out a sum of money from the account for the payment of mailing expenses; CNPp - the personal identification number of the taxpayer*

**Figure 1. The accounting dimension of the budget execution through the cash desk**

Based on Directive 945/04.07.2005, the instructions regarding the reimbursement operations of the state’s treasury in the electronic payments system were approved. In the electronic payments system the cash orders are grouped in packages depending on the type of the operations: (i) initiated intra-treasury payments of small and large value, which include operations done through transfers between units of the state treasury within the same county; (ii) initiated intra-treasury payments

of small and large value, which include operations done through transfers between units of the state treasury that are in different counties; (iii) initiated small interbank payments, include operations initiated through transfer, representing payments of small value between units of the treasury and banking units; (iv) initiated large interbank payments, include operations initiated through transfer representing payments of large value between units of the treasury and banking units.

Therefore, another part of the operations regarding the budget execution is done through transfer. The credit of the analytical accounts adequate for the collected income sources on the basis of the payment arrangements of the payer, attached to the account statement is used for incomings. The debit of the analytical accounts adequate for the destination of the expenses made/paid on the basis of the foundation note and of the cash orders presented by public institutions is used for expenses.

The figure of the book entry of the operations regarding the budget execution, done through transfer is rendered below:

23510120 <sup>1</sup> CFp Public authorities – material expenses	61 Treasury nostro account	2010010101CFp Value added tax
	Incomings	20470101CFp Salary income tax
	↓	20350101CFp Claims and compensations, fines and penalties
	Payments	20470101CFp Tax of the revenues of micro enterprises
24510271 <sup>2</sup> CFp Public authorities – capital expenses	↑	2107020102CFp Tax on buildings from corporate bodies
		2107020202CFp Land tax from corporate bodies

1. Reimbursement of the material expenses for the public institution financed from the state budget towards a beneficiary that has an open account in a bank; 2. The investment's reimbursement through transfer to an institution financed from the local budget

**Figure 2. Book entries regarding the budget execution through transfer**

According to the ANAF Order no. 1294/2007, a series of fiscal liabilities owed to the state budget are paid in the sole account 20.47.01.01 "Revenues to the state budget - amounts collected to the state budget in the sole account, in progress of distribution". For the budget of the social insurance the sole account is 55.02 "Availabilities of social insurance and social fund budgets in progress of distribution". The internal reimbursement from the account open at the treasury by economic agents (5069 "Availabilities of the economic agents") is another way to achieve the budget execution, schematically, the incomings and payment operations are rendered in accountancy as presented in figure 3.

There are situations when the availabilities accounts are not present in the accounting mechanism of achieving the budget execution. This is the case with internal reimbursement operations from the account of the public institutions financed from public funds with an open account at the treasury for the budget liabilities. Assuming that it's about the local public authorities, and the payment liability takes the form of



the employer's contribution to the sole national social health insurance fund. The book entry is as follows:

24510210CFp = 262005030CFp  
Public authorities                      The employer's social health insurance contribution

236501201CFp Education-material expenses	5069CF Availabilities of the economic agents Incomings	5502 The employer's social insurance contribution
246502101763332 Education – material expenses		201401020110203040 Excise on alcohol and alcoholic beverages
50041763333 Availabilities from extra budgetary means of the local institutions	Payments	

1. The payment of a bill to an economic agent by an institution financed from the state budget; 2. reimbursing the material expenses through transfer to an institution financed from the local budget; 3. reimbursing the material expenses by a public institution from the availabilities account.

**Figure 3. The accounting of the budget execution through internal reimbursement**

A non-intervention situation for the availabilities accounts is represented by the offsetting between various fiscal liabilities, such as the global income tax and the income tax from independent activities.

20030160CFp = 20030101CFp  
Global income tax                      Income tax from independent activities

The accounting and reimbursement department accomplishes the finish of the operational flow of the day, renders the daily balance as a control mean of the operations, accomplishes the reimbursement of the payments disposed from the accounts open at the treasury by the beneficiaries from the outside, issues, prepares and releases account statements to the titular of the account. Last, but not least, it gives to the administration office of the state revenues and the audit department of corporate bodies useful information regarding the budget execution.

The cash accounting, known also as accounting in a financial style, records only the impact of the economic activity upon the treasury and it gives a detailed image of the way in which the annual budget was spent, it offers revenues and budget expenses accounts, whose functioning is based on the principle of cash accounting.

### 3. CONCLUSIONS

Change is omnipresent in the contemporary society, including in the accounting field, given the globalisation process, its role in the managerial process and in ensuring the necessary information for different categories of users, including/especially the government and its institution, which are involved in managing public funds. The goal of the public institutions and administration is to satisfy the public interest, to provide quality public services in the context of the growing superior human needs and the limited feature of the financial resources. Cash accounting regarding the budget execution supports the public administration in identifying the best relation between the put-in efforts and the results obtained as a substitute of the efficiency principle, which is advertised by the public administration

management. We think that the triad state treasury - budget - cash accounting will activate for a long time on the accountancy scene of the public institutions in Romania, at least because during its execution, the budget uses information from the budget execution account, which is produced by the cash accounting model through the state treasury. The final goal is to inform the users regarding the collecting level of the planned incomes, to make the payments for the budget credits associated with the expenses approved by the budget. Aspects like observing the destination of the budget credits, the allotment policy of the resources during the budget exercise are not neglected. At the same time, we can't talk about a fight for supremacy between cash accounting and liabilities accounting, but we can talk about their contribution to satisfying the informational demands of different categories of users. Cash accounting has the leading role in supplying information about the materialization of the forecasts regarding the budget revenues and expenses. The dichotomy also intervenes when it's about disconnecting public accounting from the budget, the pro argument being the inability to apply the budget rules for certain categories of expenses (depreciation, provisions), and the con ... cash accounting of the budget execution.

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## **FORECASTING WITH X-12-ARIMA: INTERNATIONAL TOURIST ARRIVALS TO INDIA**

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**ABSTRACT:** *Forecasting is an essential analytical tool in tourism policy and planning. This paper focuses on forecasting methods based on X-12-ARIMA seasonal adjustment and this method was developed by the Census Bureau in the United States. It has been continually improved since the 1960s, and it is used by many statistics agencies and central banks. The secondary data were used to produce forecasts of international tourist arrivals to India for 2007-2010 based on the period 2002-2006. The results confirm that the best forecasting method based on the X-12-ARIMA seasonal adjustment is X-12-ARIMA(0,1,2)(0,1,1), X-12-ARIMA(0,1,1)(0,1,1) and X-12-ARIMA(2,1,0)(0,1,1). Furthermore this method predict that international tourism arrivals to India for 2007-2010 will growth at a positive rate as same as in this during period the number of international tourists arrival to India will be 5,079,651 million, 5,652,180 million, 6,224,480 million and 6,796,890 million, respectively. If these results can be generalized for future year, then it suggests that both the India government sector and private tourism industry sector should prepare to receive increasing numbers of international tourist arrivals to India in this period.*

**KEY WORDS:** *India; international tourism; X-12-ARIMA; the best forecasting methods*

### **1. INTRODUCTION**

International tourist arrivals and international tourist receipts have traditionally been used as benchmark aggregate series to assess the overall importance of tourism worldwide and in specific countries. High international tourist arrival levels may be

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used in advertising campaigns and also in political discussions to legitimize and emphasize the success of a country in the international community. Similarly, sizeable international tourist receipts can be a good indicator of the role of tourism in an economy in term of both Gross Domestic Product and foreign exchange generation.

Policy makers may subsequently be convinced to assist tourism development and further increase profitability from tourism activities. It is not surprising, therefore, that the majority of World Tourism Organization (WTO) statistics focus on these two time series reported as levels, annual changes and market shares (Papatheodorou and Song 2005). Furthermore The United Nations Conference on Trade and Development singled out tourism as the only sector in international trade in services for which developing countries had experienced positive surpluses in their trade account (UNCTAD, 1998). Tourism receipts in developing countries, valued at US\$ 6 billion in 1980, reached an unprecedented US.\$ 62.2 billion in 1996.

The prognosis is that this surge will continue a manifestation of the growing importance of tourism (Narayan, 2005). The above information emphasizes that international tourism can generate money for the economy of developing countries, such as India. In 2002, India 2.38 million international tourists and in the same year India received income from international tourism of 2,923 million US\$. And in 2004, the number of international tourists was 3.46 million and the income was 4,769 million US\$. This data shows that when the number of international tourists to India increases, then the income from international tourists to India also increases. Therefore, if the econometrics approach is able to forecast the number of international tourist arrivals to India, it will also be able to forecast the level of income from international tourists. Thus it is an essential analytical tool in tourism policy and planning.

In a lot of articles to study about time series methods to forecast international tourism (in terms of tourist arrivals) for a particular country (Richa, 2005). An incomplete list of recent studies includes those by Martin and Witt (1987), Chan(1993), Witt *et al* (1994), turner et al (1995, 1997), Kulendran and King (1997), Chu (1998), Kim (1999) and Lim and McAleer (2000a, 200b), N. Rangaswamy, Prasert and Chukiat (2006). Authors differ on the best method for tourism forecasting. For example, whereas Martin and Witt(1989) used simple autoregressive(AR) models, Lim and McAleer found that the Autoregressive Integrated Moving Average(ARIMA) forecast tourism arrivals more accurately, and N. Rangaswamy, Prasert and Chukiat found that the best methods to forecast international tourists arrivals to Thailand was both VAR model and SAIMA (p,d,q)(P,D,Q) model. It is impossible to reach a unanimous decision for any particular model, since forecasts are affected by a variety of factors, particularly the country/countries under consideration, the type of data and time span covered by the study.

Form above of reason this paper focus on the famous econometrics approach based on X-12-ARIMA for forecasting the number of international tourist arrival to India for the period 2007-2010 based on data from the period 2002-2006.

## **2. RESEARCH AIM AND OBJECTIVE**

This research aims to predict the number of international tourist arrivals to India in the period 2007-2010 and to seek the best forecasting model for forecasting international tourist arrivals to India in this period.

## **3. SCOPE OF THIS RESEARCH**

The scope of this research is the period 2002-2010 and mostly the data was secondary data. The countries used for forecasting international tourist arrivals to India were all the countries of importance to the international tourism industry of India such as UK, USA, Canada, France, Sri Lanka, Germany, Japan, Malaysia, Australia, Italy, Singapore, Nepal, Netherlands, Korea, Spain and other country (source : India 's Tourism Organization). And the variables used in this research were the number of international tourist arrivals to India from 2002-2006 to forecast for 2007-2010.

## **4. THE RESEARCH FRAMEWORK OF TOURISM FORECASTING AND FORECASTING METHODOLOGY**

Tourism forecasting methods can be divided into qualitative and quantitative methods and causal quantitative techniques. Regardless of the type of forecasting method used, the usefulness of any tourism demand forecasting model is really determined by the accuracy of the tourism forecasts that it can generate, as measured by comparison with actual tourism flows (Mahmoud, 1984). Frechtling (1996, 2001) highlighted five patterns in a tourism time series: (a) seasonality, (b) stationarity, (c) linear trend, (d) non-linear trend and (e) stepped series. The time series non-causal approach or forecasting a single variable approach is limited by the lack of explanatory variables and it also was best used for short-term to medium-term forecasting. Additionally, in this approach, it is assumed that the factors related to seasonality, trend and cycle are slow to change and can be extrapolated in the short term (Kon and Turner, 2005 and N. Rangaswamy, Prasert and Chukiat, 2006).

In this paper, focus on forecasting a single variable approach as well as this variable as international tourists arrival to India during period 2002-2006. The X-12-ARIMA (p,d,q)(P,D,Q) method was used to forecast international tourist arrival to India during period 2007-2010. This method developed by the Census Bureau in the United States as well as it has been continually improved since the 1960s, and it is used by many statistics agencies and central banks (Shu and Andrew, 2005).

### **4.1. The X-12-ARIMA forecasting method**

The X-12-ARIMA program is the primary method used for seasonal adjustment of government and economic time series in the United States, Canada, and the European Union (Miller and Willianms, 2003). The package seasonal adjustment is X-12-ARIMA developed by the Census Bureau in the United States. It has been continually improved since the 1960s, and it is used by many statistics agencies and

central banks (Shu and Andrew, 2005). As well as it is based on ratio-to-moving-average classical) decomposition (Macauley, F.R., 1930; also described in Makridakis, et. al., 1998) and includes a great number of improvements that have been developed through empirical testing over the years, with the X-12-ARIMA variant having being released in 1996. The X-12-ARIMA procedure makes adjustment for monthly or quarterly series. It consists of three steps that build upon one another (see more information at appendix C).

1. A regress-ARIMA model is built for the time series as well as this technique combines the tools of regression analysis with the ARIMA approach to pre-adjust various effects such as outliers, trading day and holiday effects.
2. Carries out the actual seasonal adjustment which decomposes the pre-adjusted series, *i.e.* the output from the reg-ARIMA step, into three elements – trend, seasonal, and irregular components.
3. And the final step of the program tests the quality of seasonal adjustment.

#### 4.2. The general model of X-12-ARIMA (Source: U.S. Census Bureau X-12-ARIMA Reference Manual version 0.2.7)

ARIMA models as discussed by Box and Jenkins (1976) are frequently used for seasonal time series. A general multiplicative seasonal ARIMA model for a time series  $Z_t$  can be written

$$\emptyset(B)\Phi(B^s)(1-B)^d (1-B^s)^D Z_t = \theta(B)\rho(B^s)a_t \quad (1)$$

where:

$B$  = the backshift operator ( $B z_t = Z_{t-1}$ )

$S$  = the seasonal period

$\emptyset(B) = (1 - \emptyset_1 B - \dots - \emptyset_p B^p)$  is the non-seasonal AR operator

$\Phi(B^s) = (1 - \Phi_1 B^s - \dots - \Phi_p B^{ps})$  is the seasonal AR operator

$\theta(B) = (1 - \theta_1 B - \dots - \theta_q B^q)$  is the non-seasonal moving average(MA) operator

$\rho(B) = (1 - \rho_1 B^s - \dots - \rho_Q B^{Qs})$  is the seasonal moving average(MA) operator

$(1-B)^d (1-B^s)^D$  = non-seasonal differencing of order  $d$  and seasonal differencing of order  $D$

A useful extension of ARIMA models results from the use of a time-varying mean function modelled via linear regression effects. More explicitly, suppose write a linear regression equation for a time series  $Y_t$  as

$$Y_t = \sum_i \beta_i x_{i,t} + Z_t \quad (2)$$

where:

$Y_t$  = the (dependent) time series

$x_{i,t}$  = regression variables observed concurrently with  $Y_t$

$\beta_i$  = regression parameters

$Z_t = Y_t - \sum \beta_i x_{i,t}$

The time series of regression error is assumed to follow the ARIMA model (1). Modelling  $Z_t$  as ARIMA address the fundamental problem with applying standard regression methodology to time series data, which is that standard regression assumes that the regression error ( $Z_t$  in (2)) are uncorrelated over time. In fact, for time series data, the errors in (2) will usually be auto correlated, and, moreover with often require differencing. Assuming  $Z_t$  is uncorrelated in such cases will typically lead to grossly invalid results the expression (1) and (2) taken together define the general regARIMA model allowed by the X-12-ARIMA program. Combining (1) and (2), the model can be written in a single equation as

$$\emptyset(B)\Phi(B^s)(1-B)^d(1-B^s)^D(Y_t - \sum_i \beta_i x_{i,t}) = \theta(B)\rho(B^s)a_t \quad (3)$$

The regARIMA model (3) can be thought of either as generalizing the pure ARIMA model (1) to allow a regression mean function  $\sum_i \beta_i x_{i,t}$ , or as generalizing the regression model (2) to allow the errors  $Z_t$  to follow the ARIMA model (1). In any case, notice that the regARIMA model implies that first the regression effect are subtracted from  $Y_t$  to get the zero mean series  $Z_t$ , then the error series  $Z_t$  is differenced to get a stationary series, say  $w_t$ , and  $w_t$  is then assumed to follow the stationary ARIMA model,  $\emptyset(B)\Phi(B^s)w_t = \theta(B)\rho(B^s)a_t$ . Another way to write the regARIMA model (3) is (see model 4)

$$(1-B)^d(1-B^s)^D Y_t = \sum_i \beta_i (1-B)^d(1-B^s)^D x_{i,t} + w_t \quad (4)$$

where  $w_t$  follows the stationery ARIMA model just given. Equation (4) emphasize that that the regression variables  $x_{i,t}$  in the regARIMA model, as well as the series  $Y_t$ , are differenced by the ARIMA model differencing operator  $(1-B)^d(1-B^s)^D$ . Notice that the regARIMA model as written in (3) assumes that the regression variable  $x_{i,t}$  affect the dependent series  $Y_t$  only at concurrent time points, i.e., model (3) does not explicitly provide for lagged regression effects such as  $\beta_i x_{i,t-1}$  lagged effects can be included by the X-12-ARIMA program.

## 5. THE RESULTS OF THE RESEARCH

The X-12-ARIMA seasonal adjustment method was employed in this paper for forecasting international tourists' arrival to India for 2007-2010. A single variable as the number of international tourist arrivals to India was used to forecasting. The table 1 to table 4 present the best models of X-12-ARIMA to forecasting international tourists' arrival to India in this period is selected based on the average absolute percentage error in within-sample forecast (three year). And the table 5 presentation forecasts of quaternary average percentage change in international tourist arrivals to India based on the best models of X-12-ARIMA(p,d,q)(P,D,Q) during the period 2007-2010.

### 5.1. Forecasting accuracy is based on the Average Absolute Percentage Error in within-sample forecasts: (three year) of each X-12-ARIMA model for forecasting international tourist arrivals to India for 2007-2010

Table 1 shows forecasting performance accuracy comparisons of the 5 models based on X-12-ARIMA seasonal adjustment method for forecasting international tourist arrivals to India for 2007. The value of Average Absolute Percentage Error (AAPE(%)) in within-sample forecasts: (three year) of each X-12-ARIMA model was used for selection the best of X-12-ARIMA models for forecasting international tourist arrivals to India for this period. Form table 1, the best model to forecasting international tourist arrivals to India during the specified period is X-12-ARIMA(0,1,2)(0,1,1). Because the AAPE(%) of this model is lower than the other models such as X-12-ARIMA(0,1,1)(0,1,1), X-12-ARIMA(2,1,0)(0,1,1), X-12-ARIMA(0,2,2)(0,1,1) and X-12-ARIMA(2,1,2)(0,1,1).

Table 2 shows forecasting performance accuracy comparisons of the 5 models based on X-12-ARIMA seasonal adjustment method for forecasting international tourist arrivals to India for 2008. The value of Average Absolute Percentage Error in within-sample forecasts: (three year) of each X-12-ARIMA model was used for selection the best of X-12-ARIMA models for forecasting international tourist arrivals to India for this period. Form table 2, the best model to forecasting international tourist arrivals to India during the specified period is X-12-ARIMA(0,1,2)(0,1,1). Because the AAPE(%) of this model is lower than the other models such as X-12-ARIMA(0,1,1)(0,1,1), X-12-ARIMA(2,1,0)(0,1,1), X-12-ARIMA(0,2,2)(0,1,1) and X-12-ARIMA(2,1,2)(0,1,1).

Table 3 shows forecasting performance accuracy comparisons of the 5 models based on X-12-ARIMA seasonal adjustment method for forecasting international tourist arrivals to India for 2009. The value of Average Absolute Percentage Error in within-sample forecasts: (three year) of each X-12-ARIMA model was used for selection the best of X-12-ARIMA models for forecasting international tourist arrivals to India for this period. Form table 3, the best model to forecasting international tourist arrivals to India during the specified period is X-12-ARIMA(0,1,1)(0,1,1). Because the AAPE(%) of this model is lower than the other models such as X-12-ARIMA(2,2,0)(0,1,1), X-12-ARIMA(0,2,2)(0,1,1) and X-12-ARIMA(2,1,2)(0,1,1). But X-12-ARIMA(0,1,2)(0,1,1) was not selected to the best model for forecasting because this model has been found that evidence of non-seasonal over differencing (see more information at U.S. Census Bureau. *X-12-ARIMA Reference Manual, Version 0.2.10.* and appendix B).

Table 4 shows forecasting performance accuracy comparisons of the 5 models based on X-12-ARIMA seasonal adjustment method for forecasting international tourist arrivals to India for 2010. The value of Average Absolute Percentage Error in within-sample forecasts: (three year) of each X-12-ARIMA model was used for selection the best of X-12-ARIMA models for forecasting international tourist arrivals to India for this period.

Form table 4, the best model to forecasting international tourist arrivals to India during the specified period is X-12-ARIMA(2,1,0)(0,1,1). Because the AAPE(%) of this model is lower than the other models both X-12-ARIMA(0,2,2)(0,1,1) and X-12-ARIMA(2,1,2)(0,1,1). But X-12-ARIMA(0,1,1)(0,1,1) and X-12-RIMA(0,1,2)(0,1,1) were not selected to the best model for forecasting because these models have



been found that evidence of non-seasonal over differencing (see more information at U.S. Census Bureau. *X-12-ARIMA Reference Manual, Version 0.2.10.* and appendix B).

## **5.2. The empirical results of forecasting international tourist arrivals to India for 2007-2010 by quaternary growth rate.**

Table 5 presents the results of forecasting by the best of X-12-ARIMA (p,d,q)(P,D,Q) models for 2007-2010. Mostly first quaternary average percentage change, second quaternary average percentage change and third quaternary average percentage change in international tourist arrivals to India are negative. And mostly fourth quaternary average percentage changes in international tourist arrivals to India are positive. Furthermore the quaternary average percentage changes per year are positive as well as the quaternary average percentage change per year equally between 1.30% and 2.00 % during this period.

From this table the X-12-ARIMA method forecasting that the high season of international tourism industry in India should be fourth quaternary of each year during the period 2007-2010. This empirical results similarity with previously empirical results from India's tourism organization. And the future based on this method show that international tourism industry in India (the period 2007-2010) will be a good business for India's government and privet business sectors.

## **6. THE CONCLUSIONS OF RESEARCH AND POLICY RECOMMENDATIONS**

This paper provides forecasting analysis of international tourist arrivals to India for 2007-2010 based on the X-12-ARIMA seasonal adjustment method. The best X-12-ARIMA models are the X-12-ARIMA(0,1,2)(0,1,1), the X-12-ARIMA(0,1,1)(0,1,1) and the X-12-ARIMA(2,1,0)(0,1,1). Because of these models have values of average absolute percentage errors (AAPE (%)) are very low than other X-12-ARIMA models (see more detail at U.S. Census Bureau. *X-12-ARIMA Reference Manual, Version 0.2.10* and appendix B). And the X-12-ARIMA (0,1,2)(0,1,1) model predicts that both in 2007 the number of international tourists arrival to India will be 5,079,651 million and in 2008 the number of international tourists to India will be 6,224,480 million.

Furthermore the X-12-ARIMA(0,1,1)(0,1,1) model predicts that in 2009 the number of international tourists arrival to India will be 6,224,480 million and X-12-ARIMA(2,1,0)(0,1,1) predicts that in 2010 the number of international tourist to India will be 6,796,890 million (see more information at appendix A, table 6 and figure 1). Therefore the conclusion of this research is that for the next four years, the number of international tourists to India will continue to increase. This result was similar with the results of previous empirical studies of forecasting the international tourist receipts for the world, Asia and Thailand (Papatheodorou and Song, 2005), (Jo Chau Vu and Lindsay W. Turner, 2006) and (N. Rangaswamy, Prasert and Chukiati, 2006) which indicate that the number of international tourists in these area will have positive growth rates for 2007-2010.

If these results can be generalized for future years, then it suggests that both the Indian government sector and the private tourism industry sector need to prepare for increased numbers of international tourists to India for 2007-2010 and should ensure that there are adequate numbers of hotels, transportation, tourist destinations, tourist police units and airports, and that there is an adequate budget allocated for developing facilities and human resources and for addressing the environmental impact of increased tourism.

### Appendix A

#### Experimental results of forecasting international tourist arrivals to India for 2007-2010 based on X-12-ARIMA forecasting method

**Table 1. Accuracy comparison in sample for different forecasting models based on X-12-ARIMA seasonal adjustment method for 2007**

Number	Models of forecasting	AAPE(%) (Three Year)
1	X-12-ARIMA(0,1,1)(0,1,1)	10.95
2	X-12-ARIMA(0,1,2)(0,1,1)	7.21
3	X-12-ARIMA(2,1,0)(0,1,1)	9.99
4	X-12-ARIMA(0,2,2)(0,1,1)	26.21
5	X-12-ARIMA(2,1,2)(0,1,1)	11.41

*Form: computed*

**Table 2. Accuracy comparison in sample for different forecasting models based on X-12-ARIMA seasonal adjustment method for 2008**

Number	Models of forecasting	AAPE(%) (Three Year)
1	X-12-ARIMA(0,1,1)(0,1,1)	6.07
2	X-12-ARIMA(0,1,2)(0,1,1)	4.05
3	X-12-ARIMA(2,1,0)(0,1,1)	6.46
4	X-12-ARIMA(0,2,2)(0,1,1)	11.24
5	X-12-ARIMA(2,1,2)(0,1,1)	7.00

*Form: computed*

**Table 3. Accuracy comparison in sample for different forecasting models based on X-12-ARIMA seasonal adjustment method for 2009**

Number	Models of forecasting	AAPE(%) (Three Year)
1	X-12-ARIMA(0,1,1)(0,1,1)	2.13
2	X-12-ARIMA(0,1,2)(0,1,1)	1.46
3	X-12-ARIMA(2,1,0)(0,1,1)	2.20
4	X-12-ARIMA(0,2,2)(0,1,1)	9.03
5	X-12-ARIMA(2,1,2)(0,1,1)	3.84

*Form: computed*

**Table 4. Accuracy comparison in sample for different forecasting models based on X-12-ARIMA seasonal adjustment method for 2010**

Number	Models of forecasting	AAPE(%) (Three Year)
1	X-12-ARIMA(0,1,1)(0,1,1)	0.33
2	X-12-ARIMA(0,1,2)(0,1,1)	0.70
3	X-12-ARIMA(2,1,0)(0,1,1)	0.81
4	X-12-ARIMA(0,2,2)(0,1,1)	24.48
5	X-12-ARIMA(2,1,2)(0,1,1)	1.11

Form: computed

**Table 5. Forecasts of quaternary average percentage change in international tourist arrivals to India based on the best of X-12-ARIMA(p,d,q)(P,D,Q) models during the period 2007-2010**

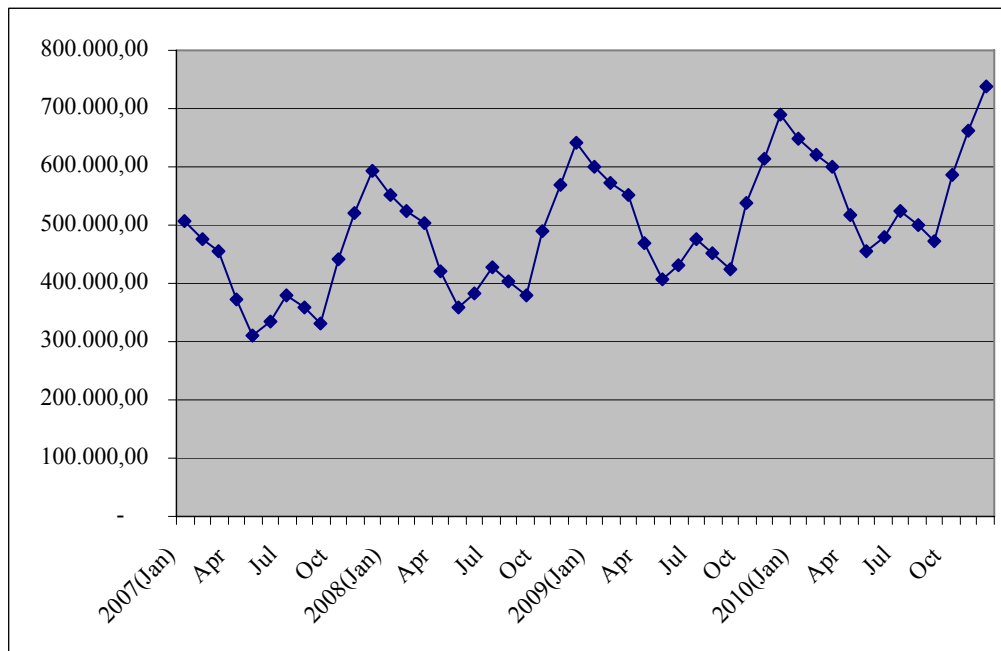
Year	Q1 (%)	Q2 (%)	Q3 (%)	Q4 (%)	Average per Year
2007	-5.07	-9.03	-0.07	22.01	1.96
2008	-4.59	-8.16	-0.01	19.58	1.68
2009	-4.21	-7.45	-0.12	17.66	1.47
2010	-3.89	-6.85	-0.13	16.09	1.30

From: computed

**Table 6. Forecast the number of international tourist arrivals to India for 2006- 2010 based on the X-12-ARIMA(0,1,2)(0,1,1), X-12-ARIMA(0,1,1)(0,1,1) and X-12-ARIMA(2,1,0)(0,1,1)**

Year/Month	2007	2008	2009	2010
<b>Jan</b>	505,575.00	552,962.00	600,570.00	648,269.00
<b>Feb</b>	476,527.00	524,294.00	571,992.00	619,692.00
<b>Mar</b>	455,593.00	503,356.00	551,054.00	598,756.00
<b>Apr</b>	372,654.00	420,243.00	467,944.00	515,644.00
<b>May</b>	311,258.00	359,061.00	406,759.00	454,460.00
<b>Jun</b>	334,873.00	382,714.00	430,412.00	478,113.00
<b>Jul</b>	379,481.00	427,242.00	474,946.00	522,648.00
<b>Aug</b>	357,028.00	404,795.00	452,494.00	500,195.00
<b>Sep</b>	329,832.00	377,699.00	425,396.00	473,097.00
<b>Oct</b>	442,002.00	489,717.00	537,416.00	585,117.00
<b>Nov</b>	520,081.00	567,781.00	615,480.00	663,181.00
<b>Dec</b>	594,747.00	642,316.00	690,017.00	737,718.00
<b>Total</b>	<b>5,079,651.00</b>	<b>5,652,180.00</b>	<b>6,224,480.00</b>	<b>6,796,890.00</b>

Form: computed



Form computed

**Figure 1. Graphical presentation of forecasting international tourist arrivals to India for 2006-2010 based on X-12-ARIMA(0,1,2)(0,1,1), X-12-ARIMA(0,1,1)(0,1,1) and X-12-ARIMA(2,1,0)(0,1,1)**

### Appendix B.

#### The totally empirical results of this research based on X-12-ARIMA monthly seasonal adjustment Method, Release Version 0.2.9

U. S. Department of Commerce, U. S. Census Bureau X-12-ARIMA monthly seasonal adjustment Method, Release Version 0.2.9 (forecasting for 2007)

Model 1: (0 1 1)(0 1 1)

Average absolute percentage error in within-sample forecasts:

Last year: 5.35 Last-1 year: 16.85 Last-2 year: 10.67

Last three years: 10.95

Chi Square Probability: 6.06%

Nonseasonal MA parameter estimates: 0.270

Seasonal MA parameter estimates: 0.062

Model 2: (0 1 2)(0 1 1)

Average absolute percentage error in within-sample forecasts:

Last year: 3.13 Last-1 year: 8.42 Last-2 year: 10.18

Last three years: 7.24

Chi Square Probability: 44.09%

Nonseasonal MA parameter estimates: 0.272 0.469  
 Seasonal MA parameter estimates: 0.033

Model 3: (2 1 0)(0 1 1)

Average absolute percentage error in within-sample forecasts:  
 Last year: 4.73 Last-1 year: 14.87 Last-2 year: 10.37  
 Last three years: 9.99

Chi Square Probability: 44.36%

Nonseasonal AR parameter estimates: -0.165 -0.318  
 Seasonal MA parameter estimates: 0.028

Model 4: (0 2 2)(0 1 1)

Average absolute percentage error in within-sample forecasts:  
 Last year: 7.12 Last-1 year: 11.04 Last-2 year: 60.49  
 Last three years: 26.21

Chi Square Probability: 1.44%

Nonseasonal MA parameter estimates: 1.207 -0.207  
 Seasonal MA parameter estimates: 0.061

MODEL 4 REJECTED:

Average forecast error > 15.00%  
 Ljung-Box Q chi-square probability < 5.00%  
 Evidence of nonseasonal overdifferencing.

Model 5: (2 1 2)(0 1 1)

Average absolute percentage error in within-sample forecasts:  
 Last year: 3.43 Last-1 year: 7.07 Last-2 year: 23.72  
 Last three years: 11.41

Chi Square Probability: 29.04%

Nonseasonal AR parameter estimates: -0.209 0.408  
 Nonseasonal MA parameter estimates: 0.058 0.941  
 Seasonal MA parameter estimates: 0.075

MODEL 5 REJECTED:

Evidence of nonseasonal overdifferencing.

The model chosen is (0 1 2)(0 1 1)

Average absolute percentage error in within-sample forecasts:  
 Last year: 3.13 Last-1 year: 8.42 Last-2 year: 10.18  
 Last three years: 7.24

ARIMA Model: (0 1 2)(0 1 1)

Nonseasonal differences: 1  
 Seasonal differences: 1

Parameter	Estimate	Standard Errors
-----		
Nonseasonal MA		

Lag 1	0.2721	0.13440
Lag 2	0.4686	0.13348
Seasonal MA		
Lag 12	0.0325	0.13360
Variance	0.31002E+09	

-----

Likelihood Statistics

-----

Effective number of observations (nefobs)	47
Number of parameters estimated (np)	4
Log likelihood (L)	-526.5756
AIC	1061.1511
AICC (F-corrected-AIC)	1062.1035
Hannan Quinn	1063.9360
BIC	1068.5517

-----

FORECASTING

Origin 2006.Dec  
Number 12

Forecasts and Standard Errors

-----

Date	Forecast	Standard Error
2007.Jan	505575.59	17607.376
2007.Feb	476527.28	21778.487
2007.Mar	455593.82	22251.983
2007.Apr	372654.64	22715.613
2007.May	311258.26	23169.966
2007.Jun	334877.00	23615.580
2007.Jul	379481.39	24052.940
2007.Aug	357028.77	24482.488
2007.Sep	329832.10	24904.628
2007.Oct	442002.26	25319.731
2007.Nov	520081.28	25728.138
2007.Dec	594747.31	26130.162

-----

Confidence intervals with coverage probability (0.95000)

-----

Date	Lower	Forecast	Upper
2007.Jan	471065.76	505575.59	540085.41
2007.Feb	433842.23	476527.28	519212.33
2007.Mar	411980.73	455593.82	499206.90
2007.Apr	328132.86	372654.64	417176.43
2007.May	265845.96	311258.26	356670.56
2007.Jun	288591.32	334877.00	381162.69
2007.Jul	332338.49	379481.39	426624.29
2007.Aug	309043.98	357028.77	405013.57
2007.Sep	281019.92	329832.10	378644.27
2007.Oct	392376.50	442002.26	491628.02

2007.Nov 469655.05 520081.28 570507.50  
 2007.Dec 543533.14 594747.31 645961.49  
 -----

**U.S. Department of Commerce, U. S. Census Bureau X-12-ARIMA monthly  
 seasonal adjustment Method, Release Version 0.2.9 (forecasting for  
 2008)**

Model 1: (0 1 1)(0 1 1)

Average absolute percentage error in within-sample forecasts:  
 Last year: 1.67 Last-1 year: 2.91 Last-2 year: 13.61  
 Last three years: 6.07

Chi Square Probability: 5.25%

Nonseasonal MA parameter estimates: 0.520  
 Seasonal MA parameter estimates: -0.197

Model 2: (0 1 2)(0 1 1)

Average absolute percentage error in within-sample forecasts:  
 Last year: 0.49 Last-1 year: 3.07 Last-2 year: 8.59  
 Last three years: 4.05

Chi Square Probability: 21.99%

Nonseasonal MA parameter estimates: 0.349 0.493  
 Seasonal MA parameter estimates: -0.068

Model 3: (2 1 0)(0 1 1)

Average absolute percentage error in within-sample forecasts:  
 Last year: 2.40 Last-1 year: 3.04 Last-2 year: 13.94  
 Last three years: 6.46

Chi Square Probability: 6.97%

Nonseasonal AR parameter estimates: -0.277 -0.418  
 Seasonal MA parameter estimates: -0.144

Model 4: (0 2 2)(0 1 1)

Average absolute percentage error in within-sample forecasts:  
 Last year: 3.87 Last-1 year: 5.10 Last-2 year: 24.76  
 Last three years: 11.24

Chi Square Probability: 5.75%

Nonseasonal MA parameter estimates: 1.449 -0.449  
 Seasonal MA parameter estimates: -0.182

MODEL 4 REJECTED:  
 Evidence of nonseasonal overdifferencing.

Model 5: (2 1 2)(0 1 1)

Average absolute percentage error in within-sample forecasts:  
 Last year: 2.85 Last-1 year: 3.20 Last-2 year: 14.94

Last three years: 7.00

Chi Square Probability: 6.53%

Nonseasonal AR parameter estimates: -0.307 -0.530  
 Nonseasonal MA parameter estimates: -0.047 -0.137  
 Seasonal MA parameter estimates: -0.146

The model chosen is (0 1 2)(0 1 1)  
 Average absolute percentage error in within-sample forecasts:  
 Last year: 0.49 Last-1 year: 3.07 Last-2 year: 8.59  
 Last three years: 4.05

ARIMA Model: (0 1 2)(0 1 1)  
 Nonseasonal differences: 1  
 Seasonal differences: 1

Parameter	Estimate	Standard Errors
-----		
Nonseasonal MA		
Lag 1	0.3488	0.12816
Lag 2	0.4929	0.12352
Seasonal MA		
Lag 12	-0.0683	0.12396
Variance	0.19600E+09	

-----  
 Likelihood Statistics

Effective number of observations (nefobs)	47
Number of parameters estimated (np)	4
Log likelihood (L)	-515.9986
AIC	1039.9973
AICC (F-corrected-AIC)	1040.9497
Hannan Quinn	1042.7822
BIC	1047.3979

-----

FORECASTING

Origin 2007.Dec  
 Number 12  
 Forecasts and Standard Errors

Date	Forecast	Standard Error
-----		
2008.Jan	552962.42	14000.107
2008.Feb	524294.89	16707.016
2008.Mar	503356.98	16853.472
2008.Apr	420243.65	16998.667
2008.May	359061.36	17142.632
2008.Jun	382714.41	17285.398
2008.Jul	427242.66	17426.994
2008.Aug	404795.34	17567.449
2008.Sep	377699.56	17706.790



2008.Oct 489717.98 17845.043  
 2008.Nov 567781.19 17982.233  
 2008.Dec 642316.83 18118.384  
 -----

Confidence intervals with coverage probability (0.95000)

Date	Lower	Forecast	Upper
2008.Jan	525522.71	552962.42	580402.12
2008.Feb	491549.74	524294.89	557040.04
2008.Mar	470324.78	503356.98	536389.18
2008.Apr	386926.88	420243.65	453560.43
2008.May	325462.42	359061.36	392660.30
2008.Jun	348835.66	382714.41	416593.17
2008.Jul	393086.38	427242.66	461398.94
2008.Aug	370363.77	404795.34	439226.91
2008.Sep	342994.89	377699.56	412404.23
2008.Oct	454742.34	489717.98	524693.62
2008.Nov	532536.66	567781.19	603025.72
2008.Dec	606805.45	642316.83	677828.21

**U.S. Department of Commerce, U. S. Census Bureau X-12-ARIMA monthly seasonal adjustment Method, Release Version 0.2.9 (forecasting for 2009)**

Model 1: (0 1 1)(0 1 1)

Average absolute percentage error in within-sample forecasts:  
 Last year: 0.19 Last-1 year: 2.26 Last-2 year: 3.94  
 Last three years: 2.13

Chi Square Probability: 13.89%

Nonseasonal MA parameter estimates: 0.404  
 Seasonal MA parameter estimates: -0.075

Model 2: (0 1 2)(0 1 1)

Average absolute percentage error in within-sample forecasts:  
 Last year: 0.39 Last-1 year: 1.21 Last-2 year: 2.78  
 Last three years: 1.46

Chi Square Probability: 18.13%

Nonseasonal MA parameter estimates: 0.583 0.376  
 Seasonal MA parameter estimates: -0.136

MODEL 2 REJECTED:  
 Evidence of nonseasonal overdifferencing.

Model 3: (2 1 0)(0 1 1)

Average absolute percentage error in within-sample forecasts:  
 Last year: 0.27 Last-1 year: 2.53 Last-2 year: 3.79  
 Last three years: 2.20

Chi Square Probability: 18.34%

Nonseasonal AR parameter estimates: -0.354 -0.259  
 Seasonal MA parameter estimates: -0.098

Model 4: (0 2 2)(0 1 1)

Average absolute percentage error in within-sample forecasts:  
 Last year: 2.61 Last-1 year: 9.56 Last-2 year: 14.92  
 Last three years: 9.03

Chi Square Probability: 24.21%

Nonseasonal MA parameter estimates: 1.355 -0.356  
 Seasonal MA parameter estimates: -0.066

MODEL 4 REJECTED:

Evidence of nonseasonal overdifferencing.

Model 5: (2 1 2)(0 1 1)

Average absolute percentage error in within-sample forecasts:  
 Last year: 1.14 Last-1 year: 2.95 Last-2 year: 7.44  
 Last three years: 3.84

Chi Square Probability: 9.92%

Nonseasonal AR parameter estimates: -0.125 0.279  
 Nonseasonal MA parameter estimates: 0.400 0.600  
 Seasonal MA parameter estimates: -0.054

MODEL 5 REJECTED:

Evidence of nonseasonal overdifferencing.

The model chosen is (0 1 1)(0 1 1)

Average absolute percentage error in within-sample forecasts:  
 Last year: 0.19 Last-1 year: 2.26 Last-2 year: 3.94  
 Last three years: 2.13

ARIMA Model: (0 1 1)(0 1 1)

Nonseasonal differences: 1

Seasonal differences: 1

Parameter	Estimate	Standard Errors
-----		
Nonseasonal MA		
Lag 1	0.4041	0.13425
Seasonal MA		
Lag 12	-0.0747	0.11898
Variance	0.12095E+09	

-----  
 Likelihood Statistics  
 -----

Effective number of observations (nefobs)	47
Number of parameters estimated (np)	3
Log likelihood (L)	-504.1679

AIC 1014.3358  
 AICC (F-corrected-AIC) 1014.8939  
 Hannan Quinn 1016.4244  
 BIC 1019.8862

-----  
 FORECASTING

Origin 2008.Dec  
 Number 12  
 Forecasts and Standard Errors

Date	Forecast	Standard Error
2009.Jan	600570.38	10997.542
2009.Feb	571992.85	12801.973
2009.Mar	551054.82	14381.762
2009.Apr	467944.12	15804.419
2009.May	406759.56	17109.186
2009.Jun	430412.13	18321.267
2009.Jul	474941.12	19457.991
2009.Aug	452494.08	20531.877
2009.Sep	425396.83	21552.321
2009.Oct	537416.58	22526.587
2009.Nov	615480.75	23460.429
2009.Dec	690017.19	24358.495

-----  
 Confidence intervals with coverage probability (0.95000)

Date	Lower	Forecast	Upper
2009.Jan	579015.59	600570.38	622125.16
2009.Feb	546901.45	571992.85	597084.26
2009.Mar	522867.08	551054.82	579242.56
2009.Apr	436968.03	467944.12	498920.21
2009.May	373226.17	406759.56	440292.94
2009.Jun	394503.11	430412.13	466321.15
2009.Jul	436804.16	474941.12	513078.08
2009.Aug	412252.34	452494.08	492735.82
2009.Sep	383155.05	425396.83	467638.60
2009.Oct	493265.28	537416.58	581567.88
2009.Nov	569499.15	615480.75	661462.34
2009.Dec	642275.42	690017.19	737758.96

-----  
**U.S. Department of Commerce, U. S. Census Bureau X-12-ARIMA monthly seasonal adjustment Method, Release Version 0.2.9 (forecasting for 2010)**

Model 1: (0 1 1)(0 1 1)  
 Average absolute percentage error in within-sample forecasts:  
 Last year: 0.09 Last-1 year: 0.06 Last-2 year: 0.84  
 Last three years: 0.33

Chi Square Probability: 85.72%

Nonseasonal MA parameter estimates: 0.965  
 Seasonal MA parameter estimates: -0.132

MODEL 1 REJECTED:  
 Evidence of nonseasonal overdifferencing.

Model 2: (0 1 2)(0 1 1)  
 Average absolute percentage error in within-sample forecasts:  
 Last year: 0.31 Last-1 year: 0.88 Last-2 year: 0.92  
 Last three years: 0.70

Chi Square Probability: 99.37%

Nonseasonal MA parameter estimates: 0.599 0.401  
 Seasonal MA parameter estimates: -0.160

MODEL 2 REJECTED:  
 Evidence of nonseasonal overdifferencing.

Model 3: (2 1 0)(0 1 1)  
 Average absolute percentage error in within-sample forecasts:  
 Last year: 0.01 Last-1 year: 0.11 Last-2 year: 2.32  
 Last three years: 0.81

Chi Square Probability: 50.71%

Nonseasonal AR parameter estimates: -0.419 -0.439  
 Seasonal MA parameter estimates: -0.037

Model 4: (0 2 2)(0 1 1)  
 Average absolute percentage error in within-sample forecasts:  
 Last year: 5.94 Last-1 year: 13.30 Last-2 year: 24.20  
 Last three years: 14.48

Chi Square Probability: 87.84%

Nonseasonal MA parameter estimates: 1.582 -0.582  
 Seasonal MA parameter estimates: -0.195

MODEL 4 REJECTED:  
 Evidence of nonseasonal overdifferencing.

Model 5: (2 1 2)(0 1 1)  
 Average absolute percentage error in within-sample forecasts:  
 Last year: 0.51 Last-1 year: 0.93 Last-2 year: 1.90  
 Last three years: 1.11

Chi Square Probability: 99.05%

Nonseasonal AR parameter estimates: -0.144 0.029  
 Nonseasonal MA parameter estimates: 0.476 0.524  
 Seasonal MA parameter estimates: -0.090

MODEL 5 REJECTED:  
 Evidence of nonseasonal overdifferencing.

The model chosen is (2 1 0)(0 1 1)  
 Average absolute percentage error in within-sample forecasts:  
 Last year: 0.01 Last-1 year: 0.11 Last-2 year: 2.32  
 Last three years: 0.81

ARIMA Model: (2 1 0)(0 1 1)  
 Nonseasonal differences: 1  
 Seasonal differences: 1

Parameter	Estimate	Standard Errors
-----		
Nonseasonal AR		
Lag 1	-0.4190	0.13491
Lag 2	-0.4387	0.12953
Seasonal MA		
Lag 12	-0.0365	0.10768
Variance	0.53534E+08	
-----		

Likelihood Statistics

Effective number of observations (nefobs)	47
Number of parameters estimated (np)	4
Log likelihood (L)	-485.1577
AIC	978.3155
AICC (F-corrected-AIC)	979.2679
Hannan Quinn	981.1004
BIC	985.7161
-----	

FORECASTING

Origin 2009.Dec  
 Number 12

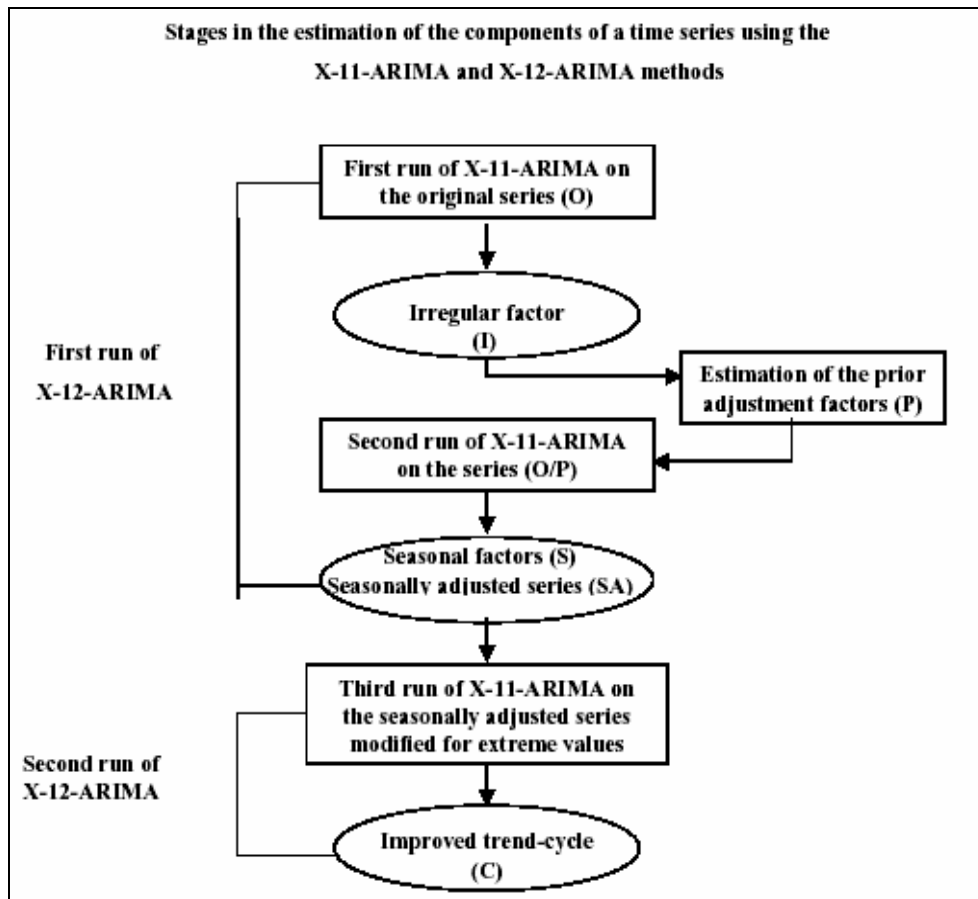
Forecasts and Standard Errors

Date	Forecast	Standard Error
-----		
2010.Jan	648269.68	7316.689
2010.Feb	619692.61	8462.123
2010.Mar	598756.11	8775.874
2010.Apr	515646.30	9851.984
2010.May	454460.38	10798.313
2010.Jun	478113.64	11351.488
2010.Jul	522648.08	12006.262
2010.Aug	500195.70	12700.832
2010.Sep	473097.56	13276.013
2010.Oct	585117.84	13831.327
2010.Nov	663181.81	14396.828
2010.Dec	737718.97	14926.396
-----		

Confidence intervals with coverage probability (0.95000)

Date	Lower	Forecast	Upper
2010.Jan	633929.23	648269.68	662610.12
2010.Feb	603107.15	619692.61	636278.07
2010.Mar	581555.71	598756.11	615956.50
2010.Apr	496336.76	515646.30	534955.83
2010.May	433296.08	454460.38	475624.68
2010.Jun	455865.14	478113.64	500362.15
2010.Jul	499116.24	522648.08	546179.93
2010.Aug	475302.53	500195.70	525088.88
2010.Sep	447077.05	473097.56	499118.06
2010.Oct	558008.93	585117.84	612226.74
2010.Nov	634964.55	663181.81	691399.07
2010.Dec	708463.77	737718.97	766974.17

### Appendix C



Source: From Israel's Central Bureau of statistics

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## **A PANEL COINTEGRATION ANALYSIS: THAILAND'S INTERNATIONAL TOURISM DEMAND MODEL**

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**ABSTRACT:** *This paper sought to find the long-run relationships between international tourist arrivals in Thailand and economic variables such as GDP, cost of transportation and exchange rates for the period 1986 to 2007. Also this paper used five standard panel unit root tests such as LLC (2002) panel unit root test, Breitung (2000) panel unit root test, IPS (2003) panel unit root test, Maddala and Wu (1999), Choi (2001) panel unit root test, Handri (1999) panel unit root test. Moreover, the panel cointegration test based on Pedroni residual cointegration tests, Kao residual cointegration tests and Johansen fisher panel cointegration test were used to test in panel among the variables. The FMOLS estimator was used to find the long-run relationship of the international tourism demand model for Thailand. The long-run results indicated that growth in income (GDP) of Thai's Asia major tourist source markets has a positive impact on international tourist arrivals to Thailand. The empirical data implies that when the GDP of Asia major international tourist source markets such as Malaysia, Japan, Korea, China, Singapore, Taiwan increases by 1% then the number of international tourist arrivals to Thailand increases by 1.46%. In addition, when Thailand's currency strengthens by 1% in comparison to the currencies of the above countries, then the number of international tourist arrivals to Thailand from those countries increases by 0.74%.*

**KEY WORDS:** *Thailand; tourism demand; Panel Unit Root Test; Panel Cointegration Test; long-run relationship*

### **1. INTRODUCTION**

In Thailand international tourism is the fastest growing industry and the earnings from international tourism in Thailand have increases substantially, rising from 220 billion baht in 1997 to 299 billion baht in 2001. Moreover, the earnings from international tourism in Thailand have risen from 323 billion baht in 2002 to 450 billion baht in 2005. While, the number of international tourist arrivals to Thailand was 7.22 million in 1997, by 2005 the number of international tourist arrivals to Thailand

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had increases to 13 million (source: Thailand's tourism organization). Additionally, the domestic tourism industry in Thailand is also the fastest growing industry and the earnings of the domestic tourism industry has increases substantially, rising from 180 billion baht in 1997 to 223 billion baht in 2001. Furthermore, the earnings of the domestic tourism industry in Thailand have risen from 235 billion baht to 347 billion baht in 2005. In major source international tourism market of Thailand as mostly tourists from East Asia's countries. In 2005 the numbers of tourists from this area is 50% of international tourism market share of Thailand. Moreover, the top six countries from this area such as Malaysia, Japan, Korea, China, Singapore and Taiwan are import impact to the number of international tourism market of Thailand during period of 2000-2005 (source: Thailand's tourism organization). Based on information above have inspired to produce this paper for education of Thailand's international tourism demand as well as this paper would like to study only tourists from these countries such as Malaysia, Japan, Korea, China, Singapore and Taiwan. For a long time now, economists have tried to understand the international tourist consumer behavior through demand models. For example, Barry and O'Hagan (1972): studied the demand of British tourists going to Ireland; Jud, G.D. and Joseph, H., (1974); studied the demand of international tourist going to Latin American; Uysal and Crompton (1984) studied the demand of international tourists going to Turkey. Summary (1987) studied the demand of international tourists going to Kenya, Kulendran, N. (1996) studied the demand of international tourists going to Australia; Lim C. and M. McAleer (2000) studied the demand of international tourist going to Australia; Durbarry (2002) studied the demand of international tourists (French) going to the UK, Spain and Italy. As well as Paresh Kumar and Narayan (2004) and Resina Katafono and Aruna Gounder (2004) who studied the demand of international tourists going to Fiji. Also the aim of this paper is to find out the international tourist consumer behavior in coming to Thailand during the period 1968-2007 through the demand model. The consumer behavior information gathered from this research will help to develop the international tourism industry in Thailand.

## **2. RESEARCH AIM AND OBJECTIVE**

This research aimed to determine how various factors affect international tourist demand arrivals to Thailand in the long-run and to use the international tourism demand model to explain international tourist behavior in Thailand.

## **3. SCOPE OF THIS RESEARCH**

The focus of this research was during period of 1968 to 2007. Most of the data was secondary data and also the countries under analysis were Asia major tourism market of Thailand such as Malaysia, Japan, Korea, China, Singapore and Taiwan. All of these countries had a significant impacted on the international tourism industry of Thailand in the same period (source: Thailand's tourism organization). The variables used in this research such as the numbers of international tourists arriving in Thailand, the GDP of the countries that the tourists were coming from, the international price of

aviation fuel, and the exchange rate of Thai currency in comparison to foreign currencies.

#### **4. THE METHODOLOGY AND RESEARCH FRAMEWORK**

##### **4.1. The theory of International Tourism Demand Model**

The concept of international tourist demand has been applied since 1950 but the estimation of international tourist demand by the econometric method was first used by Artus (1972). Following that, a lot of studies on international tourist demand function used the econometric method. This researcher reviewed the work of Archer (1976), Crouch (1994), Walsh (1996), Lim (1997), Inclair (1998), Lise & Tol (2002), McAleer (2001, 2003), Resina and Aruna (2004), Narayan (2004), Prasert, Rangaswamy and Chukiat (2006). Growth in international tourism is closely aligned to economic variables, which at both the microeconomic and macroeconomic levels influences the consumer's decision to undertake overseas travel. Empirical research on international tourism demand has overwhelmingly been based on aggregate time series data which permits the estimation of income and price elasticity on inbound tourism (see Lim, 1997 and McAleer (2001, 2003) and Prasert, Rangaswamy and Chukiat (2006)). A simple origin-destination demand model for international tourism can be represented as follows:

$$D_t = f( Y_t \ TC_t \ P_t ) \quad (1)$$

where:

$D_t$  = is a measure of travel demand at time  $t$ ;

$Y_t$  = is a measure of income of the tourist-generating or origin country at time  $t$ ;

$TC_t$  = is a measure of transportation costs from the origin to destination country at  $t$ ;

$P_t$  = is a measure of tourism price of goods and services at time  $t$ ;

And assume that  $(+Y_t)$ ,  $(-TC_t)$ ,  $(-P_t)$  and explain that when income at time  $t$  is increasing then the demand for international tourism is increasing simultaneously. When the measure of transportation costs from the origin to destination country at time  $t$  is increasing then the demand for international tourism decreases. And when the measure of tourism price of goods and services is increasing then the demand for international tourism is decreasing. Equation (1) can be expressed in log-linear (or logarithmic) form:

$$\ln D_t = \alpha + \beta \ln Y_t + \gamma \ln \{F1_t \text{ or } F2_t\} + \delta \ln \{RP_t, ER_t \text{ or } RER_t\} + \phi \ln D_{t-1} + \theta \ln CP_t + u_t \quad (2)$$

where:

$\ln D_t$  = logarithm of short-term quarterly tourist arrivals (or demand) from the origin to destination country at time  $t$ ;

$\ln Y_t$  = logarithm of real GDP in original country at time  $t$ ;

$\ln F1_t$  = logarithm of real round-trip coach economy airfares in Neutral Units of construction (NUC) between original country and destination country at time  $t$ ;

$\ln F_{it}$  = logarithm of real round-trip coach economy airfares in original country currency between original country and destination country at time  $t$ ;

$\ln RP_{it}$  = logarithm of relative prices (or CPI of destination country/CPI of original country) at time  $t$ ;

$\ln ER_{it}$  = logarithm of exchange rate (original country per destination country) at time  $t$ ;

$\ln RER_{it}$  = logarithm of real exchange rate [or  $CPI(\text{destination country})/CPI(\text{original country}) * 1/ER$ ] at time  $t$ ;

$\ln CP_{it}$  = logarithm of competitive prices [using  $CPI(\text{destination country})/(\text{other destination country})$ ]

$u_{it}$  = independently distributed random error term, with zero mean and constant variance at time  $t$ ;

And defined that:  $\alpha, \beta, \gamma, \delta, \phi, \theta$  = parameters to be estimated;  $\beta > 0, \gamma < 0, \delta < 0, 0 < \phi < 1, \theta > 0$  (substitutes) and  $\theta < 0$  (complements).

The above information mostly focuses on the international tourism demand function based on time series analysis. Recently a lot of research about international tourist demand function has used the econometric method based on the panel data analysis. This researcher reviewed the following studies which applied this technique: Durbary (2000), Munoz and Amaral (2002), Naude and Saayman (2004), Eilat and Einav (2004), Chin and Pan (2004), Proenca and Soukiazis (2005), Maloney and Rojas (2005), Chaiboonsri, Chaitip, Rangaswamy (2008). Also the models used in this research were a modification of equation (2A) and can be written as equation (3).

$$\ln D1_{it} = \alpha + \beta \ln (GDP_{it}) + \gamma \ln (PO_{it}) + \theta \ln (ER_{it}) + u_{it} \quad (3)$$

where:

$i$  = cross-section-data (the number of country arrival to Thailand)

$t$  = time series data

$\ln D1_{it}$  = logarithm of tourist arrivals (or demand) from the origin countries number  $i$  to destination country (Thailand) at time  $t$ ;

$\ln GDP_{it}$  = logarithm of real GDP in original countries number  $i$  at time  $t$  ( $Y_{it}$ );

$\ln PO_{it}$  = logarithm of price of aviation fuel of original countries number  $i$  at time  $t$  ( $TC_{it}$ );

$\ln ER_{it}$  = logarithm of exchange rate of original country number  $i$  per destination country (Thailand) at time  $t$ ;

$u_{it}$  = independently distributed random error term, with zero mean and constant variance number  $i$  at time  $t$ ;

And defined that  $\alpha, \beta, \gamma, \theta$  = parameters to be estimated;  $\alpha > 0, \beta > 0, \gamma < 0, \theta < 0$ .

#### 4.2. Panel Unit-Root Tests

Recent literature suggests that panel-based unit root tests have higher power than unit root tests based on individual time series. See Levin, Lin and Chu (2002), Im, Persaran and Shin (2003), and Breitung (2000) which mention test purchasing power

parity (PPP) and growth convergence in macro panels using country data over time. This research focused on five types of panel unit root tests such as Levin, Lin and Chu (2002), Breitung (2000), Im, Pesaran and Shin (2003), Fisher-Type test using ADF and PP-test (Maddala and Wu (1999) and Choi (2001), Hadri (1999)). These methods also see more detail in Chukiat Chaiboonsri, Prasert Chaitip and N. Rangaswamy (2008).

### 4.3. Panel Cointegration Test

Kao (1999) uses both DF and ADF to test for cointegration in panel as well as this test similar to the standard approach adopted in the EG-step procedures. Also this test starts with the panel regression model as set out in equation (4).

$$Y_{it} = X_{it}\beta_{it} + Z_{it}\gamma_0 + \varepsilon_{it} \tag{4}$$

where Y and X are presumed to be non-stationary and: see equation (5)

$$\hat{e}_{it} = \rho \hat{e}_{it} + v_{it} \tag{5}$$

where  $\hat{e}_{it} = (Y_{it} - X_{it}\hat{\beta}_{it} - Z_{it}\hat{\gamma})$  are the residuals from estimating equation (4). To test the null hypothesis of no cointegration amounts to test  $H_0: \rho = 1$  in equation (5) against the alternative that Y and X are cointegrated (i. e.,  $H_1: \rho < 1$ ). Kao (1999) developed both DF-Type test statistics and ADF test statistics were used to test cointegration in panel also both DF-Type(4 Type) test statistics and ADF test statistics can present below that:

$$DF_{\rho} = \frac{\sqrt{NT}(\hat{\rho} - 1) + 3\sqrt{N}}{\sqrt{51/5}},$$

$$DF_t = \sqrt{\frac{5t_{\rho}}{4}} + \sqrt{\frac{15N}{8}}.$$

$$DF_{\rho}^* = \frac{\sqrt{NT}(\hat{\rho} - 1) + \frac{3\sqrt{N}\hat{\sigma}_v^2}{\hat{\sigma}_{0v}^2}}{\sqrt{3 + \frac{36\hat{\sigma}_v^4}{5\hat{\sigma}_{0v}^4}}},$$

$$DF_t^* = \frac{t_{\rho} + \frac{\sqrt{6N}\hat{\sigma}_v}{2\hat{\sigma}_{0v}}}{\sqrt{\frac{\hat{\sigma}_{0v}^2}{2\hat{\sigma}_v^2} + \frac{3\hat{\sigma}_v^2}{10\hat{\sigma}_{0v}^2}}},$$

$$ADF = \frac{t_{ADF} + \sqrt{6N}\hat{\sigma}_v/2\hat{\sigma}_{0u}}{\sqrt{\hat{\sigma}_{0v}^2/2\hat{\sigma}_v^2 + 3\hat{\sigma}_v^2/10\hat{\sigma}_{0v}^2}}$$

where:

$N$  = cross-section data

$T$  = time series data

$\hat{\rho}$  = co-efficiencies of 211

$t_{\rho} = [(\hat{\rho} - 1) \sqrt{(\sum_{i=1}^N \sum_{t=2}^T e^{*\ast}_{i,t-1})}] / Se$

$Se = (1/NT) \sum_{i=1}^N \sum_{t=2}^T (e^{*\ast}_{i,t} - \hat{\rho} e^{*\ast}_{i,t-1})^2$

$\sigma_u^2$  = variance of  $u$

$\sigma_v^2$  = variance of  $v$

$\sigma_u^{\wedge}$  = standard deviation of  $u$

$\sigma_v^{\wedge}$  = standard deviation of  $v$

$t_{ADF} = [(\hat{\rho} - 1) (\sum_{i=1}^N (e'Q_i e_i))^{1/2}] / S_v$

Pedroni (1995) provides a pooled Phillips and Perron-Type test and these test have the null hypothesis of no cointegration. The panel autoregressive coefficient estimator,  $\hat{\alpha}_{N,T}$ , can be constructed as follow: see equation (6).

$$\hat{\alpha}_{N,T}^{-1} = [\sum_{i=1}^N \sum_{t=2}^T (e_{i,t-1} \Delta e_{i,t-1} - \hat{\lambda}_i)] / \sum_{i=1}^N \sum_{t=2}^T (e_{i,t-1}^2) \quad (6)$$

where

$N$  = cross-section data

$T$  = time series data

$e_{i,t-1}$  = error term of model

$\hat{\lambda}_i$  = a scalar equivalent to correlation matrix

And also Pedroni (1995) provides the limiting distributions of two test statistics as well as can be written in equation (7):

$$PP\text{-statistic} = [T \sqrt{N} (\hat{\gamma}_{N,T}^{-1})] / \sqrt{2} \rightarrow N(0,1) \quad (7)$$

And this research focus on ADF test statistic based on residual-based test follow concept of Kao (1999) to test cointegration in panel and also this research focus on PP-test statistic based on concept of Pedroni (1995) to test cointegration in panel. Both ADF-statistics and PP-statistic have same null hypothesis of no cointegration in panel. In term of combined individual test (Fisher/Johansen) also Maddala and Wu (1999) use Fisher's result to propose and alternative approach to testing for cointegration in panel data by combining tests from individual cross-sections to obtain at test statistics for the full panel. If  $\Pi_i$  is the p-value from an individual cointegration test for cross-section  $i$ , then under the null hypothesis fir the panel, see formula (8)

$$-2 \sum \log(\Pi_i) \rightarrow \chi^2_{2n} \quad (8)$$

By default the  $\chi^2$  value based on MacKinnon-Haug-Michelis(1999) P-value use for Johansen's cointegration trace test and maximum eigenvalue test. And the Johansen's Maximum likelihood procedure (see more detail at equation (9)).

$$\Delta Y_{i,t} = \Pi_i y_{i,t-1} + \sum_{k=1}^n \Gamma_k \Delta Y_{i,t-k} + u_{i,t} \tag{9}$$

*Ho: rank (Π<sub>i</sub>) = r<sub>i</sub> ≤ r for all i from 1 to n*  
*Ha: rank (Π<sub>i</sub>) = P for all i from 1 to n*

The standard rank test statistics is defined in terms of average of the trace statistic for each cross section unit and mean and variance of traces statistics.

**4.4. Estimating panel cointegration model**

The various (casually single equation) approach for estimating a cointegration vector using panel data such as the Pedroni (2000, 2001) approach, the Chiang and Kao (2000, 2002) approach and the Breitung (2002) approach. The various estimators available include with-and between-group such as OLS estimators, fully modified OLS (FMOLS) estimators and dynamic OLS estimators. FMOLS is a non-parametric approach to dealing with corrections for serial correlation, serial correlation, while OLS and DOLS are a parametric approach which DOLS estimators include lagged first-differenced term are explicitly estimated as well as consider a simple two variable panel regression model: see detail calculated of OLS, FMOLS and DOLS in equation (11), (12) and (14).

$$Y_{it} = \alpha_i + \beta_i X_{it} + \varepsilon_{it} \tag{10}$$

A standard panel OLS estimator for the coefficient β<sub>i</sub> given by :

$$\hat{\beta}_{i, OLS} = [\sum_{i=1}^N \sum_{t=1}^T (X_{it} - X_i^*)^2]^{-1} \sum_{i=1}^N \sum_{t=1}^T (X_{it} - X_i^*) (Y_{it} - Y_i^*) \tag{11}$$

where:

- i = cross-section data and N is the number of cross-section
- t = time series data and T is the number of time series data
- β̂<sub>i, OLS</sub> = a standard panel OLS estimator
- X<sub>it</sub> = exogenous variable in model
- X<sup>\*</sup><sub>i</sub> = average of X<sup>\*</sup><sub>i</sub>
- Y<sub>it</sub> = endogenous variable in model
- Y<sup>\*</sup><sub>i</sub> = average of Y<sup>\*</sup><sub>i</sub>

To correct for endogeneity and serial correlation, Pedroni (2000) has suggested the group-means FMOLS estimator that incorporates the Phillips and Hanseri (1990) semi-parametric correction to the OLS estimator to adjusts for the heterogeneity that is present in the dynamics underlying X and Y. Specifically, the FMOLS statistics is: see equation 24I).

$$\hat{\beta}_{i, FMOLS} = N^{-1} \sum_{i=1}^N [\sum_{t=1}^T (X_{it} - X_i^*)^2]^{-1} [\sum_{t=1}^T (X_{it} - X_i^*) Y_{it}^+ - T Y_i^+] \tag{12}$$

where:

$i$  = cross-section data and  $N$  is number of cross-section data

$t$  = time series data and  $T$  is number of time series data

$\hat{\beta}_{i\text{FMOLS}}$  = Full modified OLS estimator

$X_{it}$  = exogenous variable in model

$X_i^*$  = average of  $X_i$

$Y_{it}$  = endogenous variable in model

$Y_i^*$  = average of  $Y_i$

$Y_{it}^+ = X_{it} - X_i^* - [(\hat{\Omega}_{21i} / \hat{\Omega}_{22i}) \Delta X_{it}]$  and  $\hat{\Omega}$  is covariance

In contrast to the non-parametric FMOLS estimator, Pedroni (2001) has also constructed a between-dimension, group-means panel DOLS estimator that incorporate corrections for endogeneity and serial correlation parametrically. This is done by modifying equation (10) to include lead and lag dynamics: see equation (13).

$$Y_{it} = \alpha_i + \beta_i X_{it} + \sum_{j=-k}^{ki} \gamma_{ik} \Delta X_{i,t-k} + \varepsilon_{it} \quad (13)$$

$$\hat{\beta}_{i,\text{DOLS}} = [N^{-1} \sum_{i=1}^N (\sum_{t=1}^T Z_{it} Z_{it}^*)^{-1} (\sum_{t=1}^T Z_{it} Z_{it}^{\wedge})] \quad (14)$$

where:

$i$  = cross-section data and  $N$  is number of cross-section data

$t$  = time series data and  $T$  is number of time series data

$\hat{\beta}_{i\text{DOLS}}$  = dynamics OLS estimator

$Z_{it}$  = is the  $2(K+1) \times 1$

$Z_{it}^{\wedge} = (X_{it} - X_i^*)$

$X_i^*$  = average of  $X_i$

$\Delta X_{i,t-k}$  = differential term of  $X$

The above methods, used to estimate panel cointegration models, were mostly developed by Pedroni (2000, 2001). This research focused on only the FMOLS estimator for estimating panel cointegration for modeling international tourism demand of Thailand.

## 5. THE EMPIRICAL RESULTS OF THE RESEARCH

### 5.1. The empirical results of the panel unit root test

This research used the panel unit root test of the variables by five standard method tests for panel data. Namely Levin, Lin and Chu (2002), Breitung (2000), Im, Pesaran and Shin (2003), Fisher-Type test using ADF and PP-test (Maddala and Wu (1999) and Choi (2001)) and Hadri (1999). Table 1 presents the results of the panel unit root tests based on the five method tests for all variables used in modeling international tourism demand of Thailand. The Levin, Lin and Chu (2002) method test indicate that  $LD_{it}$ ,  $LY_{it}$ ,  $LTC_{it}$  and  $LER_{it}$  are at the level of insignificance for accepting the null of a unit root. The Breitung (2000) method test indicate that that  $LD_{it}$ ,  $LTC_{it}$  and  $LER_{it}$  is of the level of significance for rejecting the null of a unit root but  $LY_{it}$  have unit root. The Im, Pesaran and Shin (2003) method test indicate that  $LD_{it}$ ,  $LTC_{it}$



and  $LER_{it}$  have a unit root but  $LY_{it}$ , have not unit root. Maddala and Wu (1999) and Choi (2001) method based on ADF-Fisher Chi-square test indicate that  $LD_{it}$ ,  $LTC_{it}$  and  $LER_{it}$  have a unit root but  $LY_{it}$  have not unit root. And also Maddala and Wu (1999) and Choi (2001) method based on PP-Fisher Chi-square test indicate that  $LD_{it}$ ,  $LY_{it}$ ,  $LTC_{it}$  and  $LER_{it}$  have unit root. The Hadri (1999) method test indicates that  $LD_{it}$ ,  $LY_{it}$ ,  $LTC_{it}$  and  $LER_{it}$  have a unit root because this method has a null hypothesis of no unit root. From the results of the panel unit root test, it can be concluded that most variables used in this model have unit root. So all variables should be take first differencing or take second differencing as well as after take first differencing in all variables then the results of the panel unit root test based on five methods are presented in table 2.

The Levin, Lin and Chu (2002) method test indicate that  $LD_{it}$ ,  $LY_{it}$ ,  $LTC_{it}$  and  $LER_{it}$  are at the level of significance for rejecting the null hypothesis of a unit root. The Breitung (2000) method test indicates that  $LD_{it}$ ,  $LY_{it}$ ,  $LTC_{it}$  and  $LER_{it}$  are at the level of significance for reject the null hypothesis of a unit root. The Im, Pesaran and Shin (2003) method test indicate that  $LD_{it}$ ,  $LY_{it}$ ,  $LTC_{it}$  and  $LER_{it}$  are of the level of significance for rejecting the null hypothesis of a unit root. The Maddala and Wu (1999) and Choi (2001) method based on both ADF-Fisher Chi-square test and PP-Fisher Chi-square test indicated that  $LD_{it}$ ,  $LY_{it}$ ,  $LTC_{it}$  and  $LER_{it}$  are at the level of significance for rejecting the null hypothesis of a unit root. The Hadri (1999) method test indicated that  $LD_{it}$ ,  $LY_{it}$ ,  $LTC_{it}$  and  $LER_{it}$  have a unit root because this method has a null hypothesis of no unit root (see more detail in table 2).

## **5.2. The empirical results of panel cointegration test**

Table 3 present the results of the panel cointegration test of the modeling international tourism demand of Thailand based on Pedroni Residual Cointegration Tests, Kao Residual Cointegration Tests and Johansen Fisher Panel Cointegration Test. Most of these method were used to test for this model indicate that all variables used in this model are of the level of significant for rejecting the null hypothesis (no cointegration). The empirical results imply that all variables used in modeling international tourism demand of Thailand have cointegration with each other.

## **5.3. The empirical results of estimating panel cointegration model**

The table 4 presents the results of estimating panel cointegration of Thailand's international tourism demand (PANEL GROUP FMOLS RESULTS). From this table shown that six countries as in long-run base on FMOLS-estimator to estimating panel cointegration model suggested that  $LY_{it}$  has a positive impact on international tourist arrival to Thailand. The empirical results imply that in the long-run when  $LY_{it}$  increases by 1 % then the number of tourists from the six countries arriving in Thailand increases by 1.46%. And when  $LER_{it}$  increases by 1% then the number of tourists from the six countries arriving in Thailand increases by 0.74%.

## 6. THE CONCLUSIONS OF RESEARCH AND POLICY RECOMMENDATIONS

This paper was motivated by the need for empirical analysis of international tourist behavior arriving in Thailand and an analysis of the determinants of Thailand's international tourism demand from its six main source markets such as Malaysia, Japan, Korea, China, Singapore and Taiwan. In this article, five standard panel unit root test were used test for all variables. Namely, Levin, Lin and Chu(2002), Breitung(2000), Im, Pesaran and Shin(2003), Fisher-Type test using ADF and PP-test (Maddala and Wu(1999) and Choi (2001)) and Hadri (1999). And in this article were used panel cointegration test base on Pedroni Residual Cointegration Tests, Kao Residual Cointegration Tests and Johansen Fisher Panel Cointegration Test.

**Table 1. Results of panel unit root tests based on 5 method tests for all variables**

Method test	Test statistic	Significance level for rejection
<b><u>Null : unit root (assumes common unit root process)</u></b>		
Levin, Lin and Chu (2002) t*- Statistics		
1. $\ln D_{it}$	0.57	0.71
2. $\ln Y_{it}$	-0.49	0.30
3. $\ln TC_{it}$	3.73	0.99
4. $\ln ER_{it}$	1.61	0.94
Breitung(2000) t*-Statistics		
1. $\ln D_{it}$	-2.73	0.00
2. $\ln Y_{it}$	0.35	0.64
3. $\ln TC_{it}$	-4.51	0.00
4. $\ln ER_{it}$	-1.69	0.04
<b><u>Null : unit root (assumes individual unit root process)</u></b>		
Lm, Pesaran and Shin (2003) W-Statistics		
1. $\ln D_{it}$	0.77	0.78
2. $\ln Y_{it}$	-1.85	0.03
3. $\ln TC_{it}$	5.96	0.99
4. $\ln ER_{it}$	2.04	0.97
Maddala and Wu (1999) and Choi (2001)		
ADF-Fisher Chi-square		
1. $\ln D_{it}$	11.36	0.49
2. $\ln Y_{it}$	22.17	0.03
3. $\ln TC_{it}$	0.03	0.99
4. $\ln ER_{it}$	2.04	0.97
PP-Fisher Chi-square		
1. $\ln D_{it}$	14.51	0.26
2. $\ln Y_{it}$	12.02	0.44
3. $\ln TC_{it}$	0.79	0.99
4. $\ln ER_{it}$	4.56	0.97
<b><u>Null : No unit root (assumes common unit root process)</u></b>		
Hadri (1999) Z-Statistics		
1. $\ln D_{it}$	5.36	0.00
2. $\ln Y_{it}$	5.39	0.00
3. $\ln TC_{it}$	5.58	0.00
4. $\ln ER_{it}$	4.18	0.00

*From: computed*

Furthermore in this article also used the FMOLS-estimator to investigate long-run equilibrium relationships between the numbers of international tourists arriving in

Thailand with economics variables. These methods were suggested by Pedroni (2000, 2001). The economic variables such as the GDP of major countries of international tourists coming to Thailand, the world price of aviation fuel and the exchange rate of Thailand compared with the origin countries of international tourists.

**Table 2. Results of panel unit root tests based on 5 method tests for all variables after first differencing or second differencing into these variables**

Method test	Test statistic	Significance level for rejection
<b><u>Null : unit root (assumes common unit root process)</u></b>		
Levin, Lin and Chu (2002) t*- Statistics		
5. lnD <sub>it</sub>	-6.78	0.00
6. lnY <sub>it</sub>	-6.21	0.00
7. lnTC <sub>it</sub>	-8.00	0.00
8. lnER <sub>it</sub>	-6.61	0.00
Breitung(2000) t*-Statistics		
5. lnD <sub>it</sub>	-3.18	0.00
6. lnY <sub>it</sub>	-2.14	0.01
7. lnTC <sub>it</sub>	-8.82	0.00
8. lnER <sub>it</sub>	-5.48	0.00
<b><u>Null : unit root (assumes individual unit root process)</u></b>		
Lm, Pesaran and Shin (2003) W-Statistics		
5. lnD <sub>it</sub>	-7.35	0.00
6. lnY <sub>it</sub>	-5.30	0.00
7. lnTC <sub>it</sub>	-7.06	0.00
8. lnER <sub>it</sub>	-4.48	0.00
Maddala and Wu (1999) and Choi (2001)		
ADF-Fisher Chi-square		
5. lnD <sub>it</sub>	64.36	0.00
6. lnY <sub>it</sub>	46.66	0.00
7. lnTC <sub>it</sub>	62.84	0.00
8. lnER <sub>it</sub>	39.31	0.00
PP-Fisher Chi-square		
5. lnD <sub>it</sub>	72.48	0.00
6. lnY <sub>it</sub>	42.01	0.00
7. lnTC <sub>it</sub>	110.21	0.00
8. lnER <sub>it</sub>	42.82	0.00
<b><u>Null : No unit root (assumes common unit root process)</u></b>		
Hadri (1999) Z-Statistics		
5. lnD <sub>it</sub>	1.79	0.036
6. lnY <sub>it</sub>	2.35	0.009
7. lnTC <sub>it</sub>	24.23	0.00
8. lnER <sub>it</sub>	2.48	0.00

*From: computed*

The only one important both conclusions and recommendations that emerge from the empirical analysis of this research. The 1% increase in income (GDP) of the Asia tourism markets of Thailand (Malaysia, Japan, Korea, China, Singapore and Taiwan) leads to an increase the number of international tourists traveling to Thailand by 1.46%. This result is consistent with economic theory and was similar to the results of previous empirical studies on tourist demand (Lim & McAleer (2003), Kafono & Gounder (2004) and Narayan (2004) and Prasert, N. Rangaswamy and Chukiat, (2006, 2008)). The long-run result for Thailand's international tourism demand implies that Thailand will receives the number of international visitors more when the income (GDP) of Asia tourism markets of Thailand will growth up more in the same of during

period. If this can be generalized for future years, then it argues well for the continued development of the Thailand tourism industry.

**Table 3. Results from panel cointegration test of the international tourism demand of Thailand**

Test Name	Test statistic	Significance level for rejection of the null hypothesis (no cointegration)
<u>(1) Pedroni Residual Cointegration Tests</u>		
• Panel $v$ -Statistic	0.703680	(0.3114)
• Panel rho-Statistic	0.280608	(0.3835)
• Panel PP-Statistic	-2.350831	(0.0252)
• Panel ADF-Statistic	-2.426043	(0.0210)
• Group rho-Statistic	1.031702	(0.2343)
• Group PP-Statistic	-2.103406	(0.0437)
• Group ADF-Statistic	-1.978332	(0.0564)
<u>(2) Kao Residual Cointegration Tests</u>		
• ADF-Statistics	-3.233149	(0.0006)
<u>(3) Johansen Fisher Panel Cointegration Test</u>		
• Fisher Statistics from Trace Test	30.7829	(0.0021)
• Fisher Statistics from Max-Eigen Test	18.4540	(0.1026)

From: computed

**Table 4. Results of the long-run relationship of the modeling international tourism demand of Thailand based on FMOLS-estimator(  $\ln D_{it}$  is dependent variable)  
INDIVIDUAL FMOLS RESULTS (t-stats in parentheses)**

Asia-Country	Variable	Coefficient	t-statistic
No.1	LY	0.68***	( 6.60 )
No.1	LTC	0.18**	( 3.28 )
No.1	LER	0.77*	( 1.91 )
No.2	LY	2.67***	( 4.74 )
No.2	LTC	-0.07	( -0.91 )
No.2	LER	0.72***	( 4.84 )
No.3	LY	3.07***	( 9.85 )
No.3	LTC	-0.25	( -0.63 )
No.3	LER	1.04	( 0.56 )
No.4	LY	2.14***	( 20.16 )
No.4	LTC	-0.71***	( -5.14 )
No.4	LER	-0.82***	( -3.19 )
No.5	LY	0.12	( 0.72 )
No.5	LTC	0.20***	( 5.95 )
No.5	LER	1.23***	( 8.75 )
No.6	LY	0.08	( 0.22 )
No.6	LTC	-0.19*	( -1.37 )
No.6	LER	1.48**	( 2.28 )

No.1=Malaysia, No.2=Japan, No.3= Korea, No.4= China, No.5=Singapore, No.6=Taiwan		
<b>PANEL GROUP FMOLS RESULTS</b>		
	<b>Coefficient</b>	<b>t-statistic</b>
LY	1.46***	( 17.26 )
LTC	-0.14	( 0.48 )
LER	0.74***	( 6.19 )
Nsecs = 6 , Tperiods = 22 , no. regressors = 3		

*From: computed*

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## **DOWN TREND FORECASTING METHOD WITH ARFIMA: INTERNATIONAL TOURIST ARRIVALS TO THAILAND**

**PRASERT CHAITIP, CHUKIAT CHAIBOONSRI \***

**ABSTRACT:** *Forecasting is an essential analytical tool in tourism policy and planning. This paper focuses on forecasting methods based on ARFIMA(p,d,q) or fractionally integrated moving average (ARFIMA). The secondary data were used to produce forecasts of international tourist arrivals to Thailand for during period of 2009. From these period the results confirm that the best forecasting method based on ARFIMA(p,d,q) method is ARFIMA(0,0.443,1). Furthermore these methods predict that international tourism arrivals to Thailand for during period of 2009 will be both down trend and constant trend. If these results can be generalized for future year, then it suggests that the both Thailand government sector and also the private tourism industry sector of this country need to both develop tourism market of Thailand more and develop tourism product in Thailand more too.*

**KEY WORDS:** *Thailand; Down Trend Forecasting Method; ARFIMA method; International tourists*

### **1. INTRODUCTION**

Thailand's tourism industry likely will suffer throughout 2009 with significant loss of revenue and loss of jobs. Since somewhere in the middle of 2008 a severe worldwide recession has dampened the desire to travel. Thailand furthermore has suffered from political instability, a closure of Suvarnabhumi Airport (26 November 2008, by the Yellow Shirts protesters). A Red Shirt mob invaded the East Asia Summit in Pattaya on 11 April 2009, leading to a cancellation of the summit, with world leaders scurried away to safety. This was followed by violent riots the next day (during Songkhran) and the declaration of a state of emergency by Prime Minister Abhisit Vejjajiva. The protesters withdrew and the state of emergency was lifted on 24 April. On top of all that, flu cases emerged in March and April of 2009 in Mexico, with the official first announcement of the new H1N1 flu on 23 April. On 12 May, it was made

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public by Health Minister Witthaya Kaewparadai that two Thais who returned from Mexico had been infected with swine and subsequently recovered.

Whether a real pandemic lies ahead, is still unclear. However, at least it seems, this new flu strain is less lethal, than initially suspected. Based on information above have inspired to looking for the down trend forecasting method for forecasting the international tourists arrival to Thailand in downturn period. The one down trend forecasting method was used in this paper is the fractionally integrated moving average (ARFIMA (p,d,q) ).

In a lot of articles to study about time series methods to forecast international tourism (in terms of tourist arrivals) for a particular country (Richa, 2005). An incomplete list of recent studies includes those by Martin and Witt (1987), Chan (1993), Witt *et al*(1994), turner et al (1995, 1997), Kulendran and King (1997), Chu (1998), Kim (1999) and Lim and McAleer (2000a, 2000b), N. Rangaswamy, Prasert and Chukiat (2006). Authors differ on the best method for tourism forecasting. For example, whereas Martin and Witt (1989) used simple autoregressive (AR) models, Lim and McAleer found that the Autoregressive Integrated Moving Average (ARIMA) forecast tourism arrivals more accurately, and N. Rangaswamy, Prasert and Chukiat found that the best methods to forecast international tourists arrivals to Thailand was both VAR model and SAIMA(p,d,q)(P,D,Q) model.

Fong-Lin Chu (2008) used ARFIMA(p,d,q) model to forecasting international tourists arrival in Singapore. it is impossible to reach a unanimous decision for any particular model, since forecasts are affected by a variety of factors, particularly the country/countries under consideration, the type of data and time span covered by the study. Form articles above found that the ARFIMA model have not previous been used to forecast the international tourists arrival to destination countries based on concept of down trend period. Consequently this paper would like to forecast the international tourists' arrival to Thailand in during period of down trend based on ARFIMA model forecasting method.

## **2. RESEARCH AIM AND OBJECTIVE**

This research aims to predict the number of international tourist arrivals to Thailand in the period of 2009 and also to seek the best forecasting model for forecasting international tourist arrivals to Thailand in this period.

## **3. SCOPE OF THIS RESEARCH**

The scope of this research is the period 1998-2009 and mostly the data was secondary data. The countries were used for forecasting international tourist arrivals to Thailand be all the countries have impact to the international tourism industry of Thailand (Source of Data: Immigration Bureau, Police Department). And the variables were used in this research is the numbers of international tourist arrivals to Thailand from 1998-2008 to forecast during period of 2009.



**4. THE RESEARCH FRAMEWORK OF TOURISM FORECASTING AND FORECASTING METHODOLOGY**

Tourism forecasting methods can be divided into qualitative and quantitative methods and causal quantitative techniques. Regardless of the type of forecasting method used, the usefulness of any tourism demand forecasting model is really determined by the accuracy of the tourism forecasts that it can generate, as measured by comparison with actual tourism flows (Mahmoud, 1984). Frechtling (1996, 2001) highlighted five patterns in a tourism time series: (a) seasonality, (b) stationarity, (c) linear trend, (d) non-linear trend and (e) stepped series. The time series non-causal approach or forecasting a single variable approach is limited by the lack of explanatory variables and it also was best used for short-term to medium-term forecasting. Additionally, in this approach, it is assumed that the factors related to seasonality, trend and cycle are slow to change and can be extrapolated in the short term (Kon and Turner, 2005 and N. Rangaswamy, Prasert and Chukiat, 2006, 2009). And also the method to forecast international tourist arrival to destination country namely ARFIMA(p,d,q) model has been used in previous time by many researcher such as Fong-Lin Chu (2008), Chukiat (2009) and Presert (2009).

In this paper, focus on forecasting a single variable approach as well as this variable as international tourists arrival to Thailand during period 1998-2009. And also ARFIMA(p,d,q) model was used to forecast international tourist arrival to Thailand during period of 2009. However, this model never been used to forecast the international tourist arrival to Thailand in previously.

**4.1 The general model of ARFIMA**

ARFIMA models was proposed by Granger and Joyeux(1980) after that Hosking(1981) also proposed this method to fit long-memory data. An autoregressive fractionally integrated moving-average (ARFIMA) process is ARFIMA(p,d,q) model as well as it can be written give by: (see equation (1)).

$$\Phi(\beta)\Delta^d y_t = \delta + \theta(\beta)\varepsilon_t \tag{1}$$

with

$$\Phi(\beta) = 1 - \phi_1\beta - \phi_2\beta^2 - \dots - \phi_p\beta^p$$

and

$$\theta(\beta) = 1 - \theta_1(\beta) - \theta_2(\beta)^2 - \dots - \theta_q(\beta)^q$$

where:

$\delta$  = constant term

$\theta(\beta)$  = moving-average operator at order q

$\varepsilon_t$  = error term of equation 14E

$\Phi(\beta)$  = The autoregressive operator at order p

$\Delta^d y_t$  = differencing operator at order d of time series data  $y_t$

- For  $d$  within  $(0, 0.5)$ , the ARFIMA process is said to exhibit long memory or long range positive dependence
- For  $d$  within  $(-0.5, 0)$ , the process exhibits intermediate memory or long range negative dependence
- For  $d$  within  $[0.5, 1)$  the process is mean reverting and there is no long run impact to future values of the process
- The process is short memory for  $d=0$  corresponding to a standard ARMA process

### 5. FORECASTING ACCURACY IS BASED ON THE AIC (AKAIKE, 1973) IN WITHIN-SAMPLE FORECASTS: (ONE YEAR) OF EACH ARFIMA MODEL FOR FORECASTING INTERNATIONAL TOURIST ARRIVALS TO THAILAND DURING PERIOD OF 2009

Table 1 shows forecasting performance accuracy of the models based on ARFIMA method for forecasting international tourist arrivals to Thailand for 2009. The value of AIC of each ARFIMA model was used for selection the best of ARFIMA models for forecasting international tourist arrivals to Thailand for this period.

**Table 1. Accuracy comparison in sample for different forecasting models based on ARFIMA method for 2009**

Number	Models of forecasting	AIC
1	ARFIMA(1,d,1) model, $d = 0.437$	26.11
2	ARFIMA(1,d,0) model, $d = 0.415$	26.16
3	ARFIMA(0,d,1) model, $d = 0.443$	26.10
4	ARFIMA(2,d,2) model, $d = 0.439$	26.14
5	ARFIMA(1,d,2) model, $d = 0.437$	26.13

*Form: computed*

Form table 1, the best model to forecast international tourist arrivals to Thailand during the specified period is ARFIMA(0,0.443,1). The value of Akaike Criteria(AIC) = 26.10 as well as this model is best model among of these model because the value of AIC is less than other models (Torre, Didier and Lemoine, 2007). Consequently ARFIMA(0,d,1) model was used for selection the best model for forecasting international tourist arrivals to Thailand for this period (see more detail at appendix A).

### 6. THE CONCLUSIONS OF RESEARCH AND POLICY RECOMMENDATIONS

This paper provides forecasting analysis of international tourist arrivals to Thailand for during period of 2009 based on the ARFIMA (p,d,q) method. The best ARFIMA models is the ARFIMA(0,0.443,1). Because of this model has a value of

Akaike Criteria(AIC) = 26.10 also this value is very low than other ARFIMA models (see more detail at Torre, Didier and Lemoine, 2007). And the ARFIMA (0,0.443,1) model predicts that in 2009 the number of international tourists arrival to Thailand will be 13,253,457 million (see more information at appendix A, table 2 and figure 1). Moreover, the value of Mean Absolute Error (MAE) is 78,936.04 million in during period of January – May, 2009. And also the value of Mean Absolute Percentage Error (MAPE (%)) is 7.40 % in the same of during period (see more information at appendix A, table 2 and figure 1).

Therefore the conclusion of this research is that for the next one year (2009), the number of international tourists to Thailand will be constant. This result was similar with the information from Tourism Council of Thailand (TCT) told that in 2009 the number of international tourist will be constant or decrease because of negative impact factors effecting to international tourism industry of Thailand such as World economy slow down, World's price of flue go up and fever's 2009.

If these results can be generalized for future years, then it suggests that both the Thailand government sector and the private tourism industry sector need to both develop tourism market of Thailand more and develop tourism product in Thailand more too. In term of the tourism market development need to launch an active marketing campaign, promoting Thailand's exclusive culture and natural beauty through every channel especially the internet, and high quality accommodation, restaurants, and services. And also in term of tourism product development need to keep on improving both the quality and management of tourist products in Thailand.

Such as to develop tourist destinations in Thailand, provide educational tourism to people in the industry of Thailand and decrease the negative image of tourist destinations in Thailand. Moreover, keeping tourist destinations clean, keeping tourist destinations beautiful, keeping tourist destinations safe and to protect the environment of tourist destinations. And also the private tourism sector and the Thai government tourism sector should maintain good management of tourist destinations in Thailand. Such as maintaining the amenities of the tourism products, keeping good accessibility to the tourism products, keep a good image of tourism products, keeping the right price of tourism products and keeping the competitiveness of tourism products (Prasert and Chukiatt, 2009).

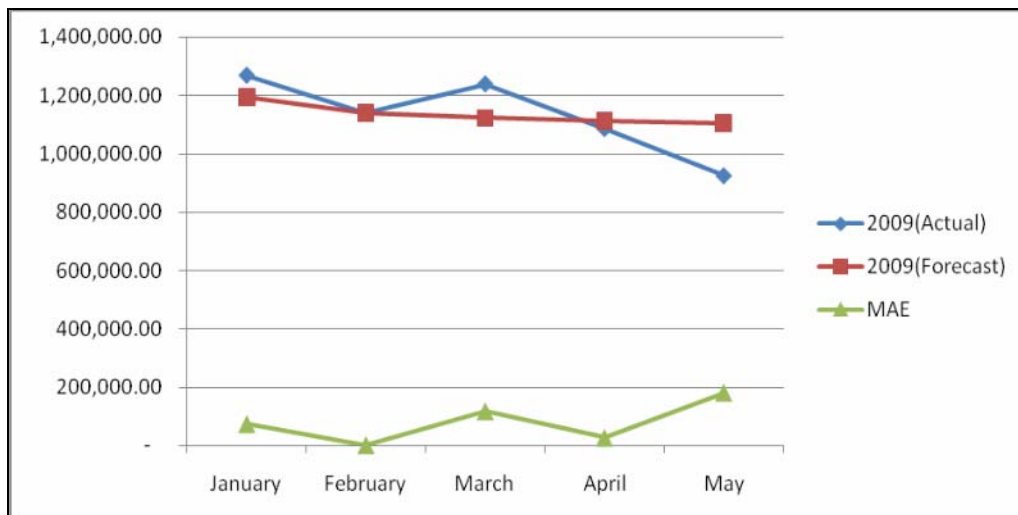
## Appendix A

Extension experimental results of forecasting international tourist arrivals to Thailand for during period of 2009 based on ARFIMA(p,d,q) forecasting method

Table 2. Forecast the number of international tourist arrivals to Thailand during period of 2009 based on ARFIMA(0,0.443,1). (MAE: Mean Absolute Error, MAPE(%): Mean Absolute Percentage Error)

Month/Year	2009 (Actual)	2009 (Forecast)	MAE	MAPE(%)
January	1,267,029.00	1,194,369.92	72,659.08	5.73
February	1,138,092.00	1,138,525.71	433.71	0.04
March	1,237,507.00	1,121,634.33	115,872.67	9.36
April	1,085,351.00	1,111,340.21	25,989.21	2.39
May	923,918.00	1,103,643.52	179,725.52	19.45
June	-	1,097,327.70	-	-
July	-	1,091,880.40	-	-
August	-	1,087,041.50	-	-
September	-	1,082,661.06	-	-
October	-	1,078,644.24	-	-
November	-	1,074,926.60	-	-
December	-	1,071,461.86	-	-
<b>Total</b>	<b>5,651,897.00</b>	<b>13,253,457.05</b>	<b>78,936.04</b>	<b>7.40</b>

From: compute



From: compute

Figure 1. Graphical presentation of forecasting international tourist arrivals to Thailand for during period of 2009 based on ARFIMA (p,d,q)

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## **INTRODUCING TAXATION POLICY OF PROFIT FOR COMPANIES IN ROMANIA AND OTHER EUROPEAN UNION MEMBER STATES**

**MARIA FELICIA CHIRCULESCU, GABRIELA DOBROTĂ \***

**ABSTRACT:** *Taking into account the EU enlargement process the problem of establishing the various levels of tax rates of interest in the context of the policy runs the national tax policy states with influence over capital flows. Quantifying corporate tax rates of companies are the most visible attribute of the structure of company taxation in an economy, while being only one factor among many determining the tax, resulting in a significant economic impact in a state.*

**KEY WORDS:** *profit tax, taxation levels, tax harmonization*

### **1. INTRODUCTION**

The corporate profit tax policy plays an important role in determining the financial incentives behind redistributing the incomes and wealth in society and makes their mark on the decision on the location for placement the multinational companies. The incomes involved determining its sphere to apply, the scope, the subject of tax and the rates charged. Tax competition existing today results in a decrease in corporate tax rates and widening of tax bases. The need to analysis rate systems development company profits / companies result from the relationship obvious existing between and size of revenue collected from these taxes.

### **2. THE SPHERE TO APPLY THE PROFIT TAX TO COMPANIES**

In Romania, under the Tax Code, the scope of income tax concern: foreign legal persons, foreign legal persons having registered office in Romania, foreign legal persons and natural persons carrying out activity in Romania, an unincorporated association, foreign legal persons having income from immovable property or the sale /

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transfer of fund units, individuals associated with Romanian legal persons resident for income from Romania and abroad. Compared with Romania, in France subject to the income tax are: simplified joint stock companies, partnership companies limited by shares, limited liability companies if no opting for tax revenue, limited partnership, partnership companies, the business activities of cooperatives, civil societies that carry on commercial activities, non-profit organizations that carry out activities taxable.

Unlike Romania and France where taxable subjects may have both limited liability and unlimited, in Germany it is found a limiting them to those who have limited liability. In Spain the scope of corporation tax not included civil society (otherwise taxed in France). Austria has a classical system of taxation of corporate profits. In this country the subjects of tax subjects are: stock companies, limited companies, private foundations, public entities engaged in commercial activities, associations, institutions and foundations without independent legal existence and accumulation of property for a specific purpose. In Belgium, under the Tax Code, the imposing subjects, subjects of imposition revenue companies are: companies, associations, cooperatives, establishments and organizations engaged in business or other activity generating profit. Most Belgian partnerships have legal personality and thus are subject to the imposition of associations. Even if the analysis performed, it is seen that the first affected by the taxation of companies/businesses are tax subjects, they are not alone, followed by consumers and even employees (Influence on employees is explained by partial reduction of the profit distribution. Influence on consumers due to a number of implications: a high rate on company income discourages capital investment companies, as their production decreases, lowering wages and / or increase the price of capital goods companies compared to the price of goods partnerships being ultimately affected consumers of those goods whose real income is reduced compared with that of other consumers).

### **3. SUBJECT TAX ON PROFITS OF CORPORATIONS / COMPANIES**

In Romania subject to income tax is given by taxable profit (basic calculation) obtained in Romania and abroad (in the case of subjects Romanian legal persons), attributed to the permanent establishment (for foreign legal persons) or for income from immovable property or equity (foreign legal persons) or result from the association of individuals resident. Accordingly to the Romanian Fiscal Code, the taxable profit is determined as the difference between the revenues derived from any source and expenses incurred in pursuit of revenues, minus non-taxable income and to whom are added deductible expenses. The same principles apply in France.

In Austria and Luxembourg the taxable income is the difference between net assets at beginning of financial year and its net assets at the end, with some adjustments. A detailed analysis in determining taxable profit must be made on deductible expenses. For example, in France are foreseen certain conditions of form and substance that must be accomplished by the deductible expenses, namely: substantive conditions are: costs should be reflected in the normal management of the enterprise, is engaged in its interest to cause a decrease in assets, has not been excluded from the calculation of profit by express provision of law; form conditions are reflected



by: expenditure must be accounted for in the financial year for which reporting is made and must to have legal documents for them. In Belgium the object of taxation is the company achieved worldwide revenues, less the deductions that are legally permissible. Accordingly to the tax code the taxable profit is determined by covering several stages, namely: determining profit (increases in reserves, deductible expenses and dividends); classification of profits wherever arising, that the Belgian sources and non-profits in countries of the European Union; deductions for profit of EU countries and other exempt profits; deduction of dividends in the holding companies (holding exemptions); recover losses and deferred; deductions related to investments.

#### **4. TAXATION LEVELS OF SOCIETIES/COMPANIES PROFIT**

Level of the rate of corporate tax have particular interest because companies must meet, on the one hand, the state needs to collect a volume as high of income, but on the other hand, the interest of taxpayers, so that they-and preserve purchasing power, not to diminish the propensity for consumption, saving and investing. Since tax payments depend on a number of factors, a high tax rate does not involve concomitant also tax revenue at a level high. In the speciality literature for summarizing the relationship between income tax rate and the income obtained is presented the Laffer curve which is used to understand how a flat tax is not diminishing, but on the contrary, may even increase tax revenue. Laffer's curve suggests that income is growing faster at lower levels of taxation. As the rate increases, income increases at a decreasing rate to reach the highest level of income collected by the state, the point of equilibrium. Beyond this limit, any increase in tax rates drive people to work less or to find effective methods by which to evade the payment of state obligations, thereby reducing overall revenue collected. In a hypothetical tax rate of 100% no one would be motivated to work, invest, since the government would be collecting all income earned through work. Laffer curve analysis explains also the way the government can get the same income in two different ways, namely: by the collection of taxes raised from a small number of people (a high fee for a reduced tax base); by imposing a small tax to a broader population segment (a reduced fee for a large tax base)

As mentioned above also the size of the tax base is extremely important. In most countries, determining the tax base is complex, involving a wide range of laws and variables as comprehensive coverage as their only impossible in a single provision: allowances for capital expenditure deduction for contributions to pension reserves, valuation of assets, expenditure can be deducted. The level of tax rates in the old and new EU Member States for the period 2000-2008 are presented in table 1, are presented also synthetic, in the EU-27, EU-15 and NSM-12 in figure 1.

From consultations of figures there is a tendency to reduce corporate tax rates by the company/companies in both countries which founded the EU (Belgium, France, Germany, Italy, Luxemburg, Holand, in 1958), and the countries that joined in later years (Denmark, Irland, UK, 1973; Greece, 1981; Portugal, Spain, 1986; Austria, Finland, Sweeden, 1995; Cipru, Estony, Letony, Lituanis, Malta, Poland, Chech Republic, Slovacia, Hungary, 2004; Bulgaria, Romania, 2007). To EU-27 level it shows a reduction in tax rates from 31.9% in 2000 to 23.6% in 2008, which means by

8.3%, while the EU-15 decrease was only 7.9 percentage points, i.e. from 35.4% in 2000 to 27.5% in 2008. Evolution of decreasing rates of profit tax was certainly one reason for attractiveness to investors. If you analyze the evolution of tax rates in the new EU Member States shows that the largest drops were in Bulgaria and Poland, i.e. from 32.5% in 2000 to 10% in 2008, and those from 30% in 2000 to 19% in 2008.

**Table 1. The evolution of corporate tax rates / companies in EU member states - 27 in the period 2000-2008**

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Austria (AT)	34.0	34.0	34.0	34.0	34.0	25.0	25.0	25.0	25.0
Belgium (BE)	40.2	40.2	40.2	34.0	34.0	34.0	34.0	34.0	34.0
Bulgaria (BG)	32.5	28.0	23.5	23.5	20.0	15.0	15.0	10.0	10.0
Cyprus (CY)	29.0	28.0	28.0	15.0	15.0	10.0	10.0	10.0	10.0
Danemark (DK)	32.0	30.0	30.0	30.0	30.0	28.0	28.0	25.0	25.0
Estonia (EE)	26.0	26.0	26.0	26.0	26.0	24.0	23.0	22.0	21.0
Finland (FI)	29.0	29.0	29.0	29.0	29.0	26.0	26.0	26.0	26.0
France (FR)	37.8	36.4	35.4	35.4	35.4	35.0	34.4	34.4	34.4
Germany (DE)	51.6	38.3	38.3	39.6	38.3	38.7	38.7	38.7	29.8
Greece (GR)	40.0	37.5	35.0	35.0	35.0	32.0	29.0	25.0	25.0
Ireland (IE)	24.0	20.0	16.0	12.5	12.5	12.5	12.5	12.5	12.5
Italy (IT)	41.3	40.3	40.3	38.3	37.3	37.3	37.3	37.3	31.4
Letvia (LV)	25.0	25.0	22.0	19.0	15.0	15.0	15.0	15.0	15.0
Lithuania (LT)	24.0	24.0	15.0	15.0	15.0	15.0	19.0	18.0	15.0
Luxembourg (LU)	37.5	37.5	30.4	30.4	30.4	30.4	29.6	29.6	29.6
Malta (MT)	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0
Netherlands (NL)	35.0	35.0	34.5	34.5	34.5	31.5	29.6	25.5	25.5
Poland (PL)	30.0	28.0	28.0	27.0	19.0	19.0	19.0	19.0	19.0
Portugal (PT)	35.2	35.2	33.0	33.0	27.5	27.5	27.5	26.5	26.5
United Kingdom (GB)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Czech Republic (CZ)	31.0	31.0	31.0	31.0	28.0	26.0	24.0	24.0	21.0
Romania (RO)	25.0	25.0	25.0	25.0	25.0	16.0	16.0	16.0	16.0
Slovakia (SK)	29.0	29.0	25.0	25.0	19.0	19.0	19.0	19.0	19.0
Slovenia (SI)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	23.0	22.0
Spain (ES)	35.0	35.0	35.0	35.0	35.0	35.0	35.0	32.5	30.0
Sweden (SE)	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0
Hungary (HU)	19.6	19.6	19.6	19.6	17.6	17.5	17.5	21.3	21.3
UE-15	35.4	33.8	32.6	31.9	31.4	30.1	29.6	28.7	27.5
NSM-12	27.6	27.0	25.3	23.8	21.6	19.7	19.8	19.4	18.7
UE-27	31.9	30.7	29.3	28.3	27.1	25.5	25.3	24.5	23.6

Source: Eurostat data basis

In Romania, the 2000-2008 analysis period, the rate of profit fell by 9 percentage points, i.e. from 25% to 16%. As is the evolution, in 2008, of corporate tax rates may indicate that the highest level was reached in Malta, namely 35%, followed by France, Belgium with a rate of 34.4%, and 34%. On the other was west Bulgaria, Cyprus, the United Kingdom with a corporate tax rate of 10%. The tendency to implement proportionate percentage share of tax, waiving such progressive rates occurred in recent years, in the context of globalization, when it began to be implemented neo-liberal doctrine. Implication of taxation system is that all taxpayers in the same class participate by the same percentage to aggregate public revenues needed to cover public expenditure The argument made for the proportional income taxation of

individuals and profits of companies / businesses is to avoid the distortion induced differential fiscalizarea two inputs, labor and capital.

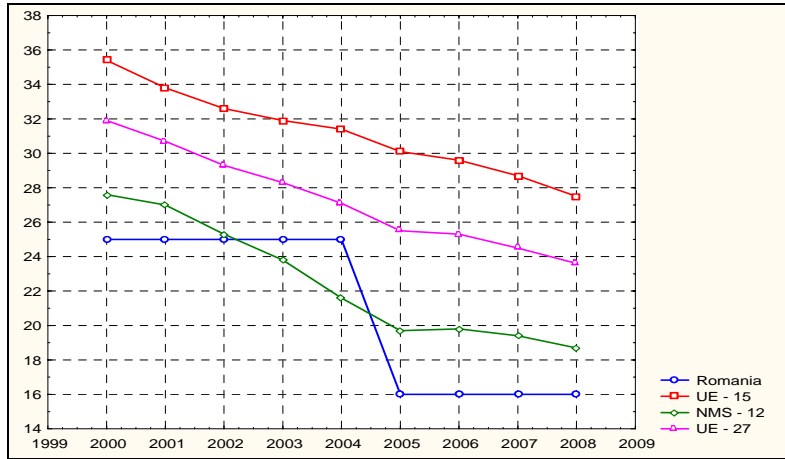


Figure 1. Evolution of corporate tax rates of companies in the EU - 27 and Romania in the period 2000 – 2008

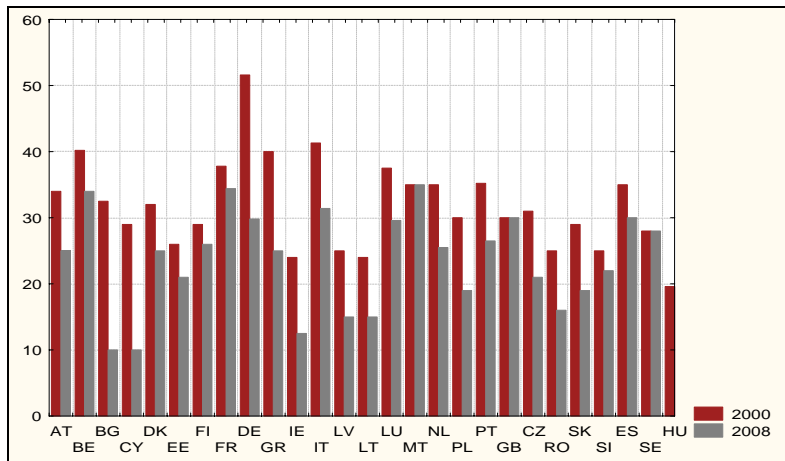


Figure 2. Change in corporate tax rates of companies in EU member states - 27, 2000 compared to 2008

### 5. HARMONIZATION OF PROFIT TAX

The importance of the concept of "tax harmonization" into the European Community was due to the achievement of economic developments and monetary<sup>1</sup>,

<sup>1</sup> In the history of fiscal policy has been marginalized subject of tax harmonization, the interest coming back while strengthening currency areas and the introduction of the single currency, or reference, in particular the euro.

wishing is that at some point in the future to achieve the approximation of tax systems. Paying particular attention to the harmonization of indirect taxes, and less direct ones, was based on the argument that direct taxation is the free choice of each country. European Union Member States supported the principle of national sovereignty in the field of direct taxation, although tax diversity is likely to distort the competitive relations between the enterprises. The tax harmonization to the level of taxation not means uniformity (Tax harmonization is a comprehensive mechanism that can be done at many levels, as follows: tax base adjustments, adjustments to tax rates, tax adjustment procedures).

Thus, tax harmonization is intended to highlight the preferences of national revenue, consistent with minimizing costs for government intervention. As such, the emphasis is mainly on the unification of the tax base and eliminates benefits and exemptions from taxation, so that, finally, to ensure close and effective tax rates than the uniform statutory tax rates.

In conclusion, regardless of which level is aimed the tax harmonization must be pursued and meet certain criteria, namely: interjurisdictional equity; neutrality jurisdiction; fairness to taxpayers.

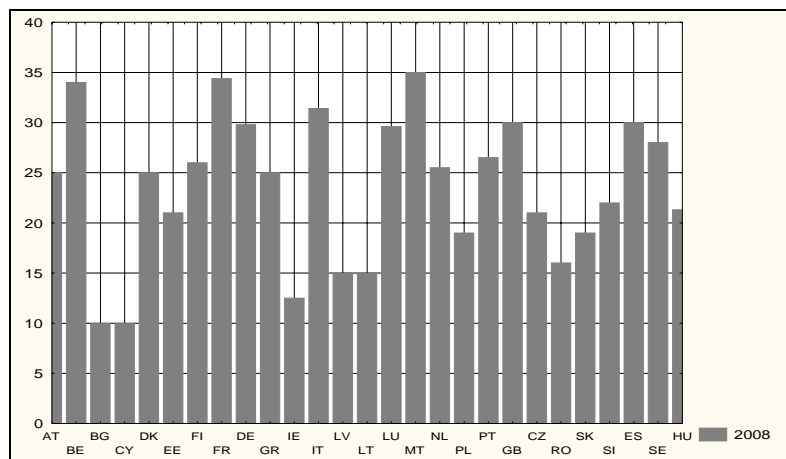


Figure. 3 The size of the profit tax rates in EU countries - 27 in 2008

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## **PROBLEMS CAUSED BY THE INTEGRATION OF ROMANIAN ECONOMY IN THE EUROPEAN UNION**

**LAURA CISMAȘ, MIHAI PĂREAN, MARIA OȚIL \***

**ABSTRACT:** *At almost two years from aderation, the Romanian Economy continues to place in the top the economic growth, instead of competitiveness, productivity and performance. The ability to be competitive, at an economical, but also share level, depends on the public polices that are applied, which can ease or break the economical environment. Romania, at the end of 2008, can be described as a combination of good and bad, and for example: economic growth, but not performance in research; relatively cheap labour, but a start of qualified labour workers crises as well; a pretty acceptable fiscal environment, but birocracy and greed are still present; primarely gathering of capital, in a word: rich people but also corrupted and poor people. This scientific work would like to briefly present some of the problems that the main integration process of Romanian Economy in European Union encounters, by trying to suggest possible paths to follow for a durable development of Romania in European and also worldwide context.*

**KEY WORDS:** *European Economic integration, competitiveness, economic growth, productivity, performance, durable development*

### **1. THE POSITION OF THE ROMANIAN ECONOMY IN THE EUROPEAN UNION**

Romania holds a share of total U.E. 4.4% in terms of population, holding the 7<sup>th</sup> place in the EU with a population of 21.6 million inhabitants on 1 January 2007 (Table 1.). As in other EU Member States, Romania has encountered a decrease in fertility, with important consequences upon the aging of the population, which creates problems regarding social policies, particularly for the labour market, but as well in the health system and education.

According to Human Development Report, Romania finds itself on the place 78 in the world, of all the 177 countries considered, life expectancy at birth being

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extremely low, in 2006, only 72 years total, namely 68, 5 years for males and 75.8 years for women.

**Table 1. Population, density and territory in EU 27, EU 25 and Romania, as well as other EU member countries, in 2006**

Countries	Population (mill. inhabitants)	Area (thousand km <sup>2</sup> )	Population density (inhabitants./km <sup>2</sup> )
U.E. 27	492,9	4576	107,7
U.E. 25	463,5	4228	109,6
Romania	21,6	238	90,6
Bulgaria	7,7	110	70,2
Czech Republic	10,3	79	130,0
France	62,9	552	114,0
Germany	82,4	357	230,9
Greece	11,1	132	84,3
Italy	58,8	301	195,0
Holland	16,3	42	393,3
Poland	38,2	313	122,0
UK	60,4	243	248,6
Slovakia	5,4	49	109,9
Spain	43,8	506	86,5
Sweden	9,0	450	20,1
Hungary	10,1	93	108,3

Source: Eurostat

However Romania, according to Human Development Report for 2007, advanced from position 98 in 1995 to position 60 in 2006. This is due to consecutive rhythms of increased growth (7.7% in 2006), which exceeded that of many developed countries (Table 2). Romania's overcoming of the EU growth rate is a basic condition for reducing the gap that separated the level of GDP per capita of the other EU member states.

## **2. COMPETITIVENESS, PRODUCTIVITY AND PERFORMANCE OF THE ROMANIAN ECONOMY**

Although Romania has registered economic growth rates of 6-8% annually, the lack of competitiveness of the Romanian economy is a concern. A *competitive economy* is characterized by high productivity and a high efficiency in using resources. At the population level, this is manifested through income and a higher standard of living and a higher quality of life, practically by welfare.

The European Union, through the General Directorate for Enterprise and Industry, publishes every year the EU's report of competitiveness<sup>1</sup>, with concrete proposals for future steps (Table 3.). Thus, the report of November 2007 proposes

<sup>1</sup> [http://ec.europa.eu/enterprise/enterprise\\_policy/competitiveness/1\\_eucompetrep/eu\\_compet\\_reports.htm](http://ec.europa.eu/enterprise/enterprise_policy/competitiveness/1_eucompetrep/eu_compet_reports.htm)

quantifiable arguments regarding the role of horizontal policies to increase economic competitiveness.

**Table 2. Growth rate, level per inhabitant and GDP share in Romania, compared to some EU member countries**

Countries	GDP growth rate 2005/2004(%)	GDP growth rate 2006/2005(%)	GDP share / inhabitant, 2006 (U.E. 25=100)	GDP per inhabitant in year 2006 (PPS)
U.E. 27	1,8	3,0	95,1	23400
Romania	4,1	7,7	35,9	8800
Bulgaria	6,2	6,1	35,3	8700
Czech Republic	6,5	6,1	75,6	18600
France	1,7	2,0	107,5	26500
Germany	0,9	2,8	107,7	26500
Greece	3,7	4,3	84,2	20800
Italy	0,1	1,9	98,8	24300
Holland	1,5	3,0	124,4	30600
Poloand	3,6	6,1	50,4	12400
UK	1,8	2,8	113,2	27900
Slovakia	6,0	8,3	59,7	14700
Spain	3,5	3,9	97,1	23900
Hungary	4,1	3,9	62,2	15300

Source: Eurostat

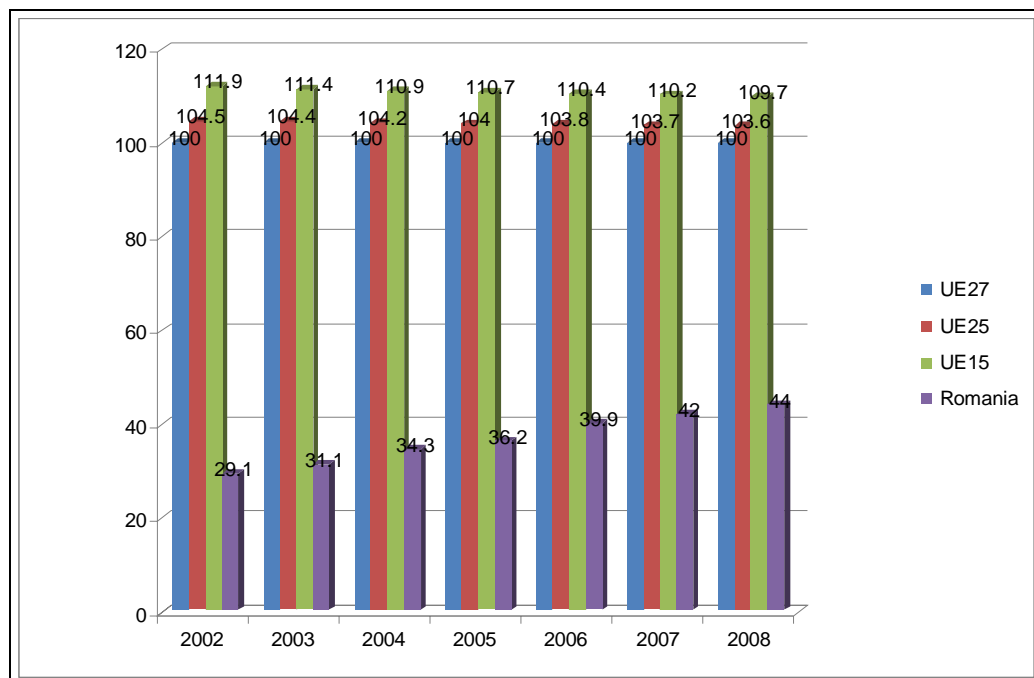
**Table 3. Macroeconomic effects of horizontal policies in EU 27**

Indicators	Qualification of the work force	Research - development	Administrative burden	Internal market	Energetic efficiency	Total
Structural effects of horizontal policies (%)						
GDP	0,5	3,0	1,5	1,7	0,9	7,7
Consuming	0,5	1,6	1,4	5,5	0,9	9,8
Export	0,5	4,8	1,4	40,6	1,8	49,0

In Romania there are a number of plans and structural programs, but they can not replace the national strategy of competitiveness in the long term. There is a need to create a public body specialized in issues of competitiveness, a "think-tank" government that is based on a public-private partnership to develop a database for evaluating and monitoring competitiveness, as well as reports on case studies and other comparison analysis<sup>2</sup>.

<sup>2</sup> More and more has been debated the need to constitute a Romanian National Council of Competitiveness (CNRC), whose purpose would be to "develop skills that can answer questions in strategic explicit forms and to assist those who make decisions assessing well established solutions", as stated the researcher at IEN and adviser to the European Parliament, Mrs. Andreea Vass, in the "Competitiveness-concern", published in the number 32/2008, pages 90-92, the Economic Tribune

A very negative aspect of the Romanian economy is that *productivity* is not even half the average level existing in the EU-27. Romania is placed last but one among the EU states according to the labour productivity per employee, before Bulgaria, while the average number of hours worked is kept at a high level, according to Eurostat Yearbook. According to Eurostat, at the level of the year 2007, labour productivity per employee in Romania was 42% of EU average calculated for the 27 Member States and Bulgaria where the percentage was 35,6%. Labour productivity in Romania has made steady gains in the range 2000-2007 at the beginning of the reference level registering 29,1% of the EU average, according to Eurostat (Figure 1).



Source: Eurostat

**Figure 1. Labour productivity per employee**

The situation on the labour productivity sectors in Romania is presented in figure 2. The lowest level recorded in agriculture, productivity decreasing compared to 1990. The industrial sector in general, has maintained the same levels throughout the period after 1989. In 1999 this sector recorded a sudden increase, but then returned to the values in previous years, in 2005 recording a slight increase, while labour productivity in the other two sectors recorded an easy rebound. The services' sector – at the beginning of the period – had low labour productivity, mainly because until 1989 the sector was not so developed. It recorded a substantial increase until 2000, and then decreased gradually from one year to another.



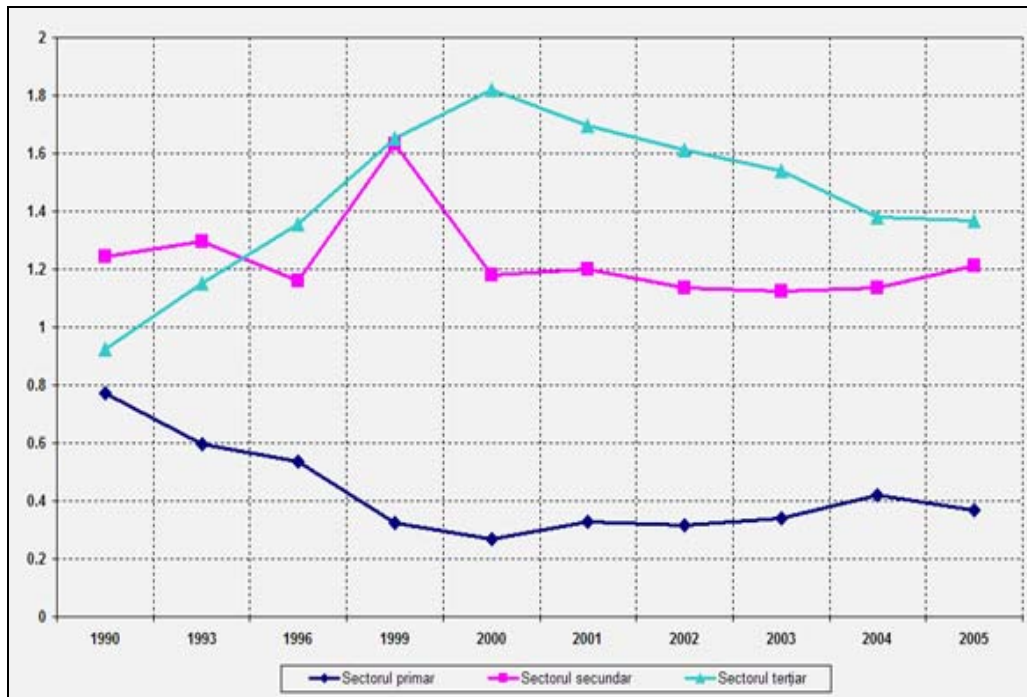


Figure 2. Labour productivity regarding sectors of the national economy

Regarding the dynamics of real wages in Romania (Figure 3) one can notice that at the beginning there was a strong decline until 1993, and then there was an increase until 1996, but this increase was immediately annulled in 1997, year after which we can notice a constant increase; this increase has been considerable in recent years.

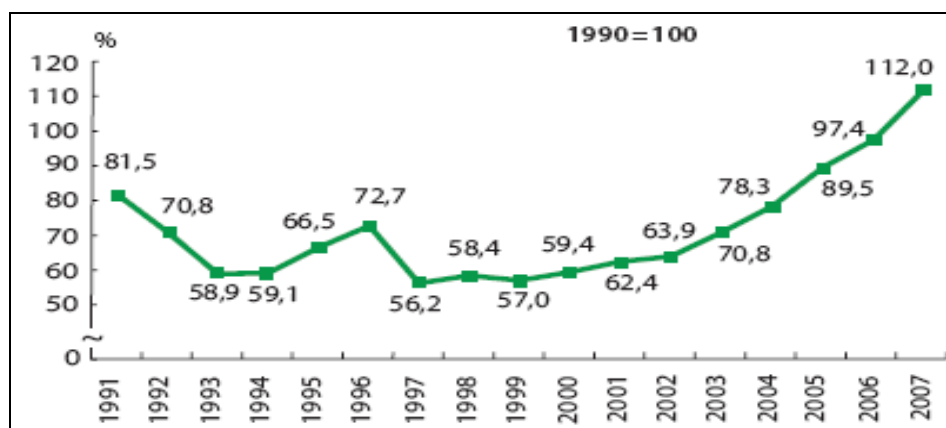
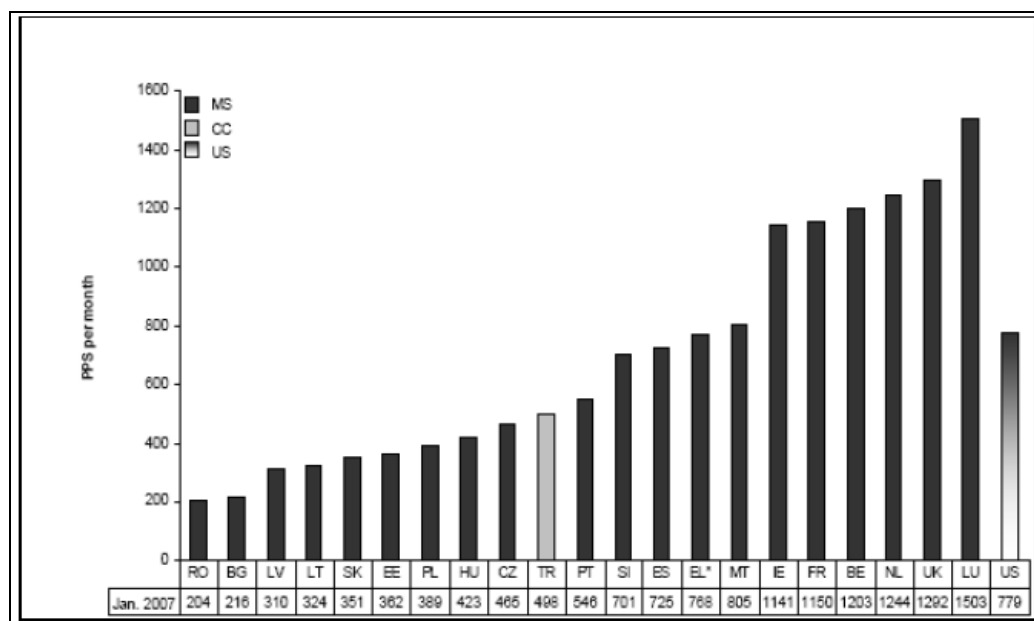


Figure 3. The dynamics of the real income index in Romania

Although wages in recent years have increased, they remained at a low level compared to other European countries. Member States of Central and Eastern Europe, Estonia and the Czech Republic provide the highest levels of minimum wage on the economy, over 5 times and 2 times respectively compared to Romania (668 Euro and 288 Euro). Compared to the highest level of the minimum wage on the economy of the EU-27 (Luxembourg), the minimum salary in Romania is about 13 times smaller.

Expressed in purchasing power parity Standard (PPS), the national minimum wage indicate gaps between smaller member states of the EU-27. Romania recorded the lowest minimum wage in the economy of all countries analyzed, 204 Euro, 7 times less compared to Luxembourg or 6 times lower compared to the UK (Figure 4).

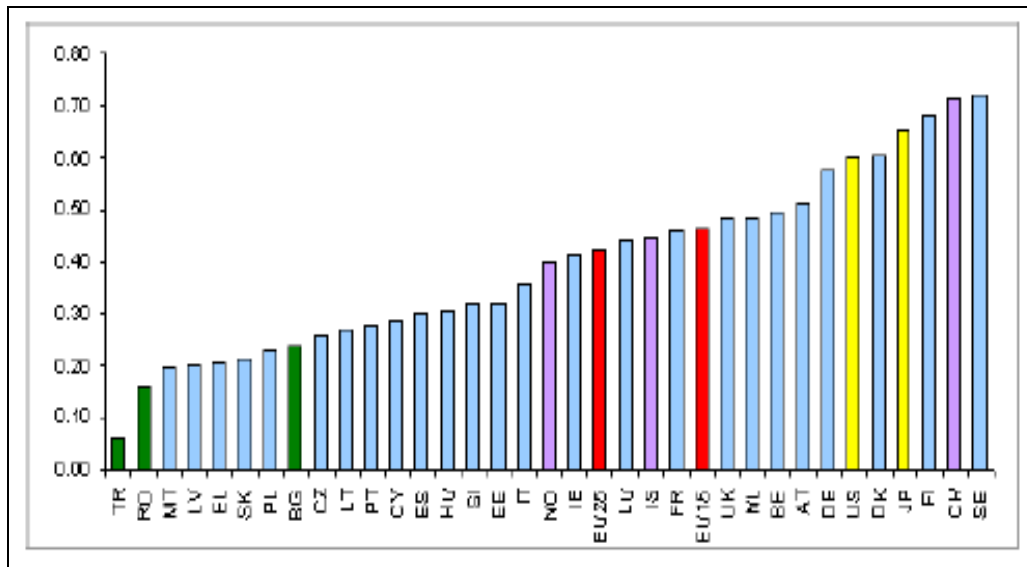


Source: Eurostat, database on minimum wages

**Figure 4. Medium wage per economy in the case of EU 27 member states regarding the purchasing power parity of final consumption expenses for families**

Regarding the *performance*, although Romanians are frequently awarded at exhibitions and workshops of inventions and innovations, showing ability towards original ideas, not the same thing can be said of the application in production of basic research, either because of technological gaps, or because of prohibitive costs which cancel the process' efficiency.

The effectiveness of the national innovation system, a key element of the innovation policy, is the ability of firms to transform innovation inputs into innovation outputs, being calculated as the ratio between the composite index of innovation for input drives and innovation composite index for output sites. According to the Report of the European Innovation Scoreboard 2005, the scientific research in Romania is placed last but one among European countries, having a performance superior only to Turkey (Figure 5).



Source: Annual Innovation Policy Trend and Appraisal Report, Romania, 2006, p. 82 <http://trendchart.cordis.lu/> consulted on 29 May 2007

**Figure 5. Values of innovation index for the year 2005**

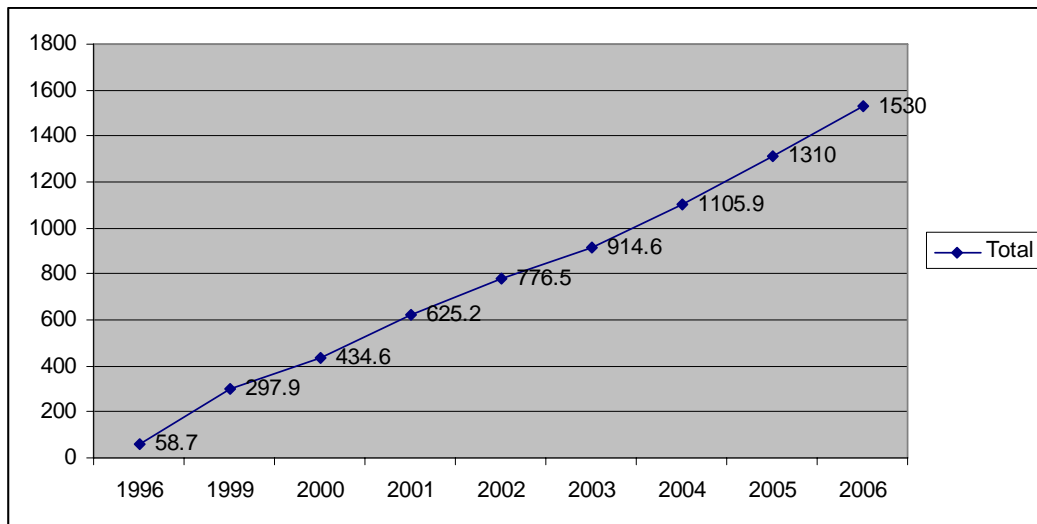
Innovation and knowledge are important and determinant factors of growing micro and macroeconomic competitiveness at the level of present regional economics, and is based more and more on producing added-value, which would be non-material. While conducting a study made by West ADR along with a team composed from 16 experts, the fact that the west region companies systematically create innovative activity (either on the product, process or organization), was made clear. Taking into consideration the fact that the research factor-development is not considered the most important competitive advantage from none of the companies, having (in the wide majority of cases) a medium importance, so, as a result, the innovative activities are developed rather when &quot; the market&quot; requests, and can not be only small-sized, compared with the sum of all companies' assets.

### 3. CONCLUSIONS AND PROPOSALS

We can notice that, in fact, the economic growth in Romania is based mainly on low cost labour and exports with low added value, and a low level of infrastructure and mechanisms of innovation, which are in an early stage of development having no significant contribution to the economic growth. These problems resulted in the mobility of the workforce searching for higher wages and creating imbalances on the labour market. Romania must bear such a cost in the long term with a view to rebalancing the labour market, boosting birth rates, investment in education, etc.

Figure 6 shows a significant and sustained increase in the average cost of labour from one year to another over the entire period from 1996 to the present, especially in the period 2000-2006, when it showed the strong economic growth. This

situation is all the more difficult as labour productivity has remained at relatively low levels.



**Figure 6. The development regarding the monthly medium cost of the work force in Romania**

Education and the investment in education should be considered key components to ensure human development in the long term. As Robert Schuman stated on 9 May 1950, "Europe is neither built at once, nor is it built as a construction of a whole: it will be done through concrete achievements"! Romania has the chance of a new beginning. Its welfare would depend on the way it will manage to resolve internal problems, following the catch-phrase: "Think globally and act locally!"

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## **MANAGERIAL OBJECTIVES OF THE ANNUAL FINANCIAL STATEMENTS. TRUE AND FAIR VIEW OR „USERS, BE CAREFUL!”**

**ALINA TEODORA CIUHUREANU, NICOLAE BALTEȘ,  
HORTENSIA GORSKI \***

**ABSTRACT:** *The financial statements represent the less expensive and the most widely spread managerial communication method. Starting from this aspect, the paper shows the managerial usefulness of the information offered by the financial statements. But, in order to take reality, and not „creativity” based decisions, the financial statements must offer a true and fair view of the company, the managers’ opinion regarding this matter being captured, through a selective research.*

**KEY WORDS:** *financial statements, accounting, true and fair view, managerial, balance sheet, profit and loss account, efficiency, financial situation*

### **1. INTRODUCTION**

Nowadays, the financial-accounting information lies at the bottom of all decisions, their accuracy and relevance having a crucial influence on reaching the proper level of the expected results. Accountancy offers a correlated and certified information system, not leaving place for subjectivity and promoting harshness and accuracy in displaying the economic and financial phenomena. The importance of managerial communication has increased as the company has widened its boundaries. Generally, the activities developed inside the company are too many to be individually reported to the people or the institutions outside of it. Moreover, each activity has its own characteristics and development strategies, as well as each user has its own necessities. It is now considered impossible to map all the activities for each user, the

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elaboration of some official financial statements trying to be a synthesis of all activities that would meet the external demands.

## 2. FINANCIAL STATEMENTS' COMPONENTS AND THE MANAGERIAL USEFULNESS

The financial statements represent a basic element of the management because they are the fundamental information means of communication towards users. *"The financial statements are the ones meant to meet the demands of the users who do not find themselves in the situation of demanding reports adapted to their specific needs for information. They are a structured financial representation of an enterprise's financial situation and of transactions done by that, having as purpose that of offering information about the financial situation, efficiency and cash flows, useful to a wide range of users for taking economic decisions. Moreover, they show how the resources entrusted to the enterprise's management have been handled"*.

According to regulations, the financial statements include the balance sheet, the profit and loss account, the situation of own capital's modifications, the cash flow situation, accounting policies and notes to the accounts. We shall not present these documents from the accounting perspective, as the literature is quite diversified regarding this subject. We shall try to capture their usefulness for the economic entities' managers.

Professor Schmalenbach introduced the concept of balance sheet as an image of the company's forces, discovering that it is much more important for managers to measure the company's health than to measure its assets' and liabilities' value. Therefore, Schmalenbach stated: *"in order to take useful decisions, the leader of an enterprise has to know if its business prospers, if it marks time or if it falls into decline...On the occasion of each great crisis, economists could notice that very many bankruptcies simply take place due to a late acknowledgement of their businesses' decline. But we do not only need to determine the result, when an enterprise begins to get in trouble; it is imperative that we take knowledge of its prosperity. A capable leader must take advantage of such a prosperity time, even if it is determined by a combination of circumstances or the economic structure. We can not let the favourable winds just pass and not make sail, as they (the winds) won't always blow"*.

Through the documentary potential, through the way it takes part into the "information-analysis-decision" circuit, the balance sheet becomes a reference basis, as a penetrating offer and with an accelerating effect for the company's general management. The balance sheet's purpose in the activity's management process has an increasing tendency, considering the social character of the production and the relevant nature of the information it contains. The specific characteristics which increase its informational valences are also given by the fact that the balance sheet does not only reduce itself to the condensed presentation of the data series assignable to the previous financial year, but, based on it, the analysis of the economic and financial processes and phenomena under the dialectic aspect is being carried out, the cause-effect relations between them are being identified, activity adjustment measures are being established, prognoses are being elaborated, decisions are being taken.

The information regarding performance is, first of all, offered through the profit and loss account. The performance explained by the financial statement called "Profit and loss account" is of a financial nature, since each financial-accounting information user actually has a financial stake within the company. Therefore, the profit is frequently used as a performance measure or as a reference basis for other indicators, such as the investment's profitability or the result on share. As in the case of the balance sheet, by imposing the listing format, the profit and loss account was also regarded only from the procedural point of view (finished product of the accounting activity) and from the control necessities of the public administration's point of view and not as an information instrument, an instrument which facilitates financial analyses, which supports economic decisions. *If for the small and medium-sized companies the model according to the nature is adequate, for the big companies, especially for the ones quoted on the exchange, the structuring on functions would have been much more adequate, this classification being favoured by investors and managers. Therefore, certain comparison criteria could have been answered, at an international level, precisely as a result of the financial markets' globalisation process.*

The situation of the own capital's modifications show in detail all variations that the net asset has suffered between the moment of the beginning and that of the end of the financial year. This document represents an informational basis of the management for analysing the capital's maintenance (or erosion) capacity, as well as the company's profit or general loss.

Treasury becomes "key" information "because, with it, the enterprise finances its activity and ensures its everlastingness, it contributes to the establishment of the management indicators and financial analysis, both on the short term, for measuring the solvability, and on the long term, for measuring the financial need. The information included in the cash flow statement, together with the offer made through the elaboration of the balance sheet, the profit and loss account and the situation of own capital variation, should help investors, creditors, stockholders and other users to evaluate the enterprise's liquidity and solvency, as well as its ability to get internal resources, to reimburse debts, to reinvest and distribute dividends.

The accounting policies and the notes to the accounts give a particularization and a description of certain information registered in the balance sheet and in the profit and loss account, proving users with a wider image over the assets', the debts', the own capitals' situation, over the financial situation (by calculating some liquidity, risk, profitability, activity indicators), as far as principles, policies and methods used in the accountancy are concerned. Thus, an informational excess regarding certain significant elements of the enterprise is ensured.

Using the financial statements, managers, and not only, can get information regarding the *financial situation*: the information is useful for anticipating the capacity to generate future cash flows, future credit needs and how to get this loans, the company's ability to fulfil the outstanding financial obligations etc.; *the performance*, which aims to evaluate the potential changes of the economic resources that the company will be able to control in the future, stating the reasons related to the efficiency of using certain resources; *the financial situation's modification* has in view the operating, financing and investment activity.

As a conclusion, the financial statements meet the managerial information necessities, provided that they offer a faithful image of the economic entity.

### **3. THE TRUE AND FAIR VIEW – PRIMARY OBJECTIVE OF THE FINANCIAL STATEMENTS**

Nowadays, the competitive economy generates, at an international level, two totally different tendencies: on one hand *hiding all information* that could be used by the competition in the disadvantage of the economic entity, and, on the other hand, the *demand to offer relevant and credible information* from the same entity. Both tendencies are offered through the accountancy. From this perspective, we believe that the managerial objectives of the financial statements consists of the supplying of a true and fair view of the financial situation, the performance, the enterprise's own capital's modification and cash flow for the given period, useful information for evaluating the enterprise's and its managers' strategic planning and accomplishments.

The true and fair view has become a European concept after the introduction of the Fourth Directive of the European Economic Community Council, which states the following: "annual accounts have to offer a true image of the company's patrimony, financial statement and results".

The old character of this concept did not however have as a result the existence of a clear, unitary definition. Alain Viandier and Christian de Lauzainghein therefore mention: "*For some, truthfulness is nothing but sincerity or even the sincerity's dominance over the compliance to the rules, which makes them ask themselves which is the real usefulness to designate, through some other name, a concept that already belongs to the accounting law. For others, truthfulness is a concept characterized by a particular energy which allows the formulation of rules. On the contrary, for others, truthfulness is not a real concept and it mostly represents a guidance role. Eventually, for the others, truthfulness is the simple combination between frequency and sincerity*".

In order to have a competitive accounting activity, the true and fair view has to be not only a training process for the professionals involved, that must offer those information that are in agreement to the reality, but it is also a way to train and inform users, in order to perceive correctly the sent signals, since the accounting "artists" do not live isolated, but they are present on a market where the financial-accounting information offer and demand face each other.

Although there is not a clear definition of the concept "true and fair view", we can however state that it is the equivalent of a real view obtained from the company's faithful representation. At the same time, the true and fair view is also a challenge, an incitation to research, reflection and improvement of the provided information's qualitative level, specialists being forced to permanently look if the put into practice of a legal provision ensures or not the sought true and fair view. Since the tax collection is still an obsession for the Romanian companies, managers are not interested in the information's qualitative aspect, but rather in the quantitative one. It is true that the legal provisions abound in sanctions for breaking the rules, but the concept of true and fair view offers a new meaning to the financial-accounting responsibility, which is



however not clearly perceived within the countries where the state imposes the rules of the game.

In our opinion, objectivity, good faith and seeking the truth are few of the characteristics that can be included in the definition of accountancy truthfulness, having as purpose the offering of certain information which would comply with the previously presented qualitative characteristics, so that the users of this information could take reality and not “creativity” based decisions. Therefore, “users, be careful”! We do not hesitate to mention that, in order to have a competitive management of the financial activity, which would lead to the efficiency’s maximization, trust gaining or the company’s permanent expansion, the true and fair view, must be sought and achieved.

#### 4. THE RESEARCH’S METHODOLOGY

The present paper aims to bring into attention the level in which the annual financial statements elaborated by the companies in Sibiu county offer a true view over the financial situation, the performance, the financial situation’s modification. This presentation is part of a much larger study regarding the concept, the role, the methodology and the mode of operation of the management in financial-accounting activities in firms, which was based on 29 objectives, supported by a number of 60 hypotheses.

Taking into account the set-up objectives, our investigation has been made up of two consecutive researches: *a qualitative research of an exploratory nature and a quantitative research of a descriptive nature.*

By using the qualitative research of an exploratory nature one had as aim determining the set of hypothesis which were the object of the quantitative descriptive research that was to follow and setting up the following priorities for the research. The methods used in this preliminary research are the following: the analysis of secondary data, which requires the usage of the available data coming from different sources with focus on discovering shortcomings, ideas, solutions; interviews with specialists with the aim of obtaining further pieces of information from those relevant in the fields of finance-accounting; group reunions or focus groups.

Taking into consideration the location of development the research has been made *in the field*, and in what concerns the frequency of development, the research has been made *on occasion*.

In order to establish an adequate poll basis for the study, we used the data provided by the statistic Registry, the Chamber of Commerce, Industry and Agriculture and the National Office for the Registry of Commerce. Thus, we have obtained information regarding the names of the firms, address, telephone number, the name of the manager, being thus able to contact the potential respondents.

In order to set the sample we used the method of *random sampling*, which was based on a *fixed sample with restrictions* (taking into consideration the organisational restrictions, we decided upon a sample of 110 respondents). We can state that the sampling method consists of a combination between the *multi – stages sampling method* and that of the *non-proportional stratified random sampling*.

In the context of research the recollection of data has taken place at the headquarters of the firms that have been selected, the researchers being directly involved. We had a preference for the field research since some of the questions have been more complex, the number of questions has been relatively high, thus choosing other methods (auto-administering the questionnaires, the phone or internet poll) being considered by the researchers as inadequate for it left room for more errors.

We consider that the most important margin of the conducted research is given by *the size of the sample* (110 respondents) and of the relatively high margin of error (9.4%) for a level of trust of 95%. However we feel the need to mention that when the size of the sample was determined one had in view the objectives of the research, considering that the study has a high degree of precision even if the sample is narrowed down. Another limit of the research derives from the choice made in completing the size of the sample, namely our choice for the non-proportional version. Regarding this aspect, we would like to argue that, even if by using the non-proportional alternative the subjects of the sample do not correspond to the statistic realities in what regards their weight on the total of firms in Sibiu county, we started from the hypothesis that certain strata, consequently that of the large, medium and small enterprises have a larger importance in the context of research, each of those having its own conceptions and perceptions. One must also specify that the basic objective of the selective scientific research has been to develop and test the instrument of research and not the precision of the estimates.

Considering the purpose of the completed selective scientific research, the distributed questionnaire was anonymous. The focus was not on a particular category of firms, as we tried to catch certain realities with the purpose of identifying the causes of the deficiencies declared at the level of the economic activity, as well as to formulate proposals in this field. From this point of view, the researchers based their opinions on the full confidence shown by the respondents who, thus, assured them of their full cooperation.

## 5. DEPICTED CONCLUSIONS AFTER THE RESEARCH

The obtained information after processing the answers to the question “How much do your company’s financial statements offer a true view over the financial situation, the performance, the own capitals’ modification?” are presented in table 1 and as a graph in figure 1.

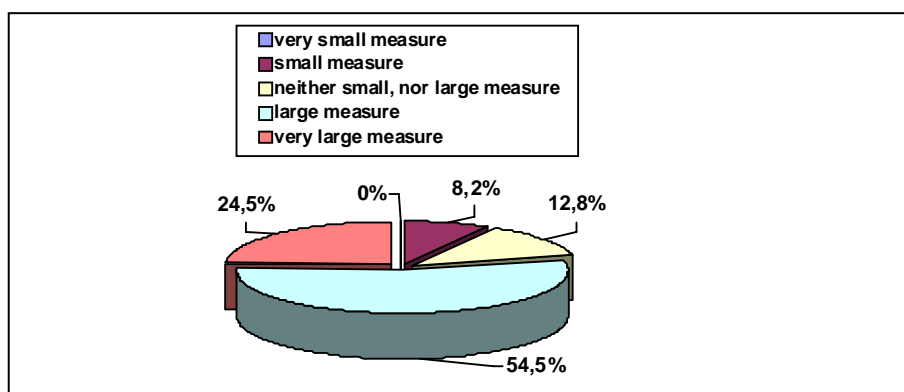
By processing the obtained information, we get that 54.5% of the companies consider that the elaborated annual financial statements meet in a large measure the true view objective, 24.5% consider that the true view is offered in a very large measure, 12.8% of the companies have a neutral opinion and 8.2% claim that they offer in a small measure a true view through the financial statements.

The calculated score for this question is of 3.95 (from 1 - in a very small measure, to 5 - in a large measure), therefore the hypothesis mentioned at the beginning of the research (*H - The Annual financial statements offer a true view in a small measure*) is being invalidated.

If we think however that for another question from the questionnaire, namely “Does your company use innovation and creativity in the management of the financial-accounting activity?” most of the respondents stated that they use such practices for negative purposes, such as the desire to cheat the tax collection, to get additional financing sources, to manipulate the result in order not to give dividends, we can only ask ourselves: “Shouldn’t the percentage of the companies that offer in a small measure a true view over the financial situation, the performance, the financial situation’s modification be bigger?”

**Table 1. The level of offering a true view over the company from the viewpoint of the annual financial statements**

		Frequency	Percentage	Valid percentage
Valid	110			
	in a very small measure	0	0	0
	in a small measure	9	8,2	8,2
	neither in a small, nor in a large measure	14	12,8	12,8
	in a large measure	60	54,5	54,5
	in a very large measure	27	24,5	24,5
	Total	110	100,00	100,00
<b>Average</b>	<b>3,95</b>			



**Figure 1. The true view over the company from the point of view of the annual financial statements**

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## **POSSIBILITIES IN ORGANISING AN INTEGRATED INFORMATIONAL SUBSYSTEM REGARDING STOCKS**

**ANCA CIUMAG, MARIN CIUMAG \***

**ABSTRACT:** *An informational subsystem concerning stocks will allow the management to observe the current situation of the company, to notice its opportunities, as well as its potential risks for the politics of the organization, both its advantages and disadvantages, as well as to take the most appropriate decisions and later on to control the derived effects. The existing information in the subsystem on whose basis the managers act can be corrected as a result of the amendment in the supply from providers or delivery to customers. Breaching the transacted contracts or the alteration of the contract terms along entail the reconsideration of the decisions concerning production of goods and services.*

**KEY WORDS:** *in organising an integrated informational subsystem, stocks, management*

The goal of an integrated informational subsystem regarding stocks will finally satisfy the demands for information that appear in the company which causes the absorption of functions and activities at superior levels of management and, at the same time, it provides the correlation of various operations as elements of stocking. Such a subsystem implies the working and the transmission of a great volume of economic information resulted from various fields of activity and which are meant to satisfy the need for information. This specific methodology implies collecting and recording data regarding stocks from primary documents, analyzing them in all the useful ways, generating reports and situations every time they are necessary without any intermediary transcription. Thus, its efficiency is considerable comparing to the other systems that analyze the economic information.

An integrated subsystem of stocks can not be achieved without an automatic analysis of information; on the contrary, all the aspects ought to be considered carefully, i.e. other technical instruments, either hand-operated or mechanical, that are used together with electronics in the process of provision and administration of

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material resources. Consequently, such a subsystem can be achieved only after a detailed analysis of all its components and after all the difficulties caused by these components had been solved. "The system should include people, machines, goals, stages and methods of the company as a whole."<sup>1</sup>

The content of the integrated informational subsystem of stocks contains a combination of economic information about the purchase, production and outlet costs, the automatically processing of information, the movement and the destination of information as outlet. The later depend on the informational need of decision-making support for different functional compartments. The informational demands are reflected in the combination of economic-financial indicators grouped in removal/outlet situations and reports based on utility criteria according to the legislation and the methodology establishing the stages of activity. The shape, content and circuit of documents ought to be in accordance to the law since they are meant for a third party and the management.

Whenever the informational subsystem outlet or the document grouping is conceived, they should take into account the activities that complete the goals, such as manufacture programming, launching and survey (calendars that order activities, work charts, programs that give allotments and level resources, production reports, etc), purchase and outlet (charts for purchases and deliveries, data sheets that keep the information of contracts, material consumption reports, etc).

The information outflow specific to the accounting subsystem ought to be analyzed according to applications in order to have them as modules. Later, the existing data in this system can be used for a great variety of removal documents relating to economic-financial analysis applications. The correlation of stock situation with the volume and the structure of production, the analyze of the contract obligations, the fixed assets and the profit and loss account lead to a global analyze of profit.

The influence of factors on levels can be included in video scripts in order to promptly inform the managers on the causes that generate the company's diminishing performances.

An ordered and systematized informational base is important in order to encode the entry elements that establish a parallel between the initial documentation, data analysis and removal situations.

When it comes to encoding, some rules ought to be respected: the use of the same norms established for the entry vocabulary or the structuring of elements; the use of an accessible and easily interpreted encoded language by its users; the certainty of a unique code so that only one element corresponds to one symbol only.

Another important issue is the establishment of the algorithms to obtain the output/removal documents (information) of the system. This means deciding on the content of data base by fixing tasks according to entities and accounting algorithms which take into consideration the result of the "top-down" and "bottom-up" informational analysis.

For every entity in accordance to its processing, there should be three main distinguishing categories of tasks:

- removal tasks as a result of taking and reproducing data from the entry documents. In this category we can include permanent data, such as, in stocks: codes, names, unit of measurement, number of documents, account symbol and name, sums and debtor/creditor balance, etc;
- taken and processed removal tasks as result of applying algorithms, such as: "existing = stock + entry-removal" or "value = quantity \* price";
- removal tasks as a result of processing are a less numerous category, but on the other hand more demanding, including economic-financial analysis tasks. For instance: the size of the factors' contribution in the final results, global and analytic trends found in the evolution of the stocking process, unit up-scaling and interpolation.

The data base must include relevant data while their managing should be enough for any informational need of the management at any level. The design of an informational system in modules with the same entry data in order to get all the removal documents specific to the requesting compartments, can pull out informational patterns used both in accountancy and in economic-financial analysis.

The principles applied in this informational system refer to: removal of any redundant information; removal of any department borders that cause latency, and encouraging communication inside task focused teams; available updated information; expanding on-line informational exchange with exterior; removal of any informational errors; a simple view on information; a shorter logistic flow and automatic information.

Connecting functional departments and compartments of the company to a system of information concerning stocks allows its users to have smaller costs and higher information quality and flexibility. However, all these would be possible on the condition that there is communication and collaboration among departments, a parallel involvement in the process, and, finally, the available information is shared. Thus, its advantages are: the removal of any formal borders between activities, of any sequential process of data in the system, and the focus on the desired goal or process.

We consider that the achievement of informational applications whose processing can generate data base used in the systems of information for the management and support for decisions is the solution for the desired goals.

When we create a new application containing all the folders, we must take in consideration:

- the list of stocks with the main data of identification of every element in stock; This folder contains permanent data about every article ( reference, name, storing place, providers, purchase price, retail price, discount , etc). The final content of the folder depends on the type of items so that in the case of raw material we can find information about the way they are stored and used, while in the case of deliverables and goods we can find information about the commercial management. A larger alternative for this folder may include information about the stock available, in store, orders towards providers, reserved by customers, prices, account stock, trade for the specific month.
- the trade affairs completed that include stock input and output as a result of data processing from the specific documents, stock and purchasing price update, output

value. The existence of this folder accounts for the quantities and the value of items in account stocks. The data in this folder can be processed related to: stock value, monthly movement, need of purchasing, different stock situations. A computerised management of the goods value in stock implies the existence of a permanent inventory, that is, a permanent survey of the amount in stock considering the entry and the removal. Entry from stock will be calculated at the purchase or production cost considering their origin. The goods with spotted origin are calculated at the real entry cost while the inter-changeable goods, on the other hand, will be calculated at an estimated entry cost (CMP); when they are removed on of the FIFO or LIFO methods will be applied to them.

The recorded and processed data are the basis for the following reports, situations and documents:

- the stock situation makes obvious the value and the amount of every item in stock at a certain moment;
- the list of providers identifies the provider/providers for every item with all the information in the entry documents;
- the list of orders from customers that helps to identify the demand over a certain period;
- the reception information of material values that emphasize the goods entry over a period of time as purchase or production;
- the report including the price variation which is used in order to control the changes appeared in value quantification of stocks It focus on the stock items that were modified and the date when it occurred.
- an analytic balance that emphasizes material values with no movement in every analytic account. It is an exceptional report that reflects the date of the last entry or removal of some items hose stock has not been modified over a longer period of time, as well as its existing amount.

In the supply activity, the structure of received data collected from contracts with suppliers and from received documents of raw materials and materials is completed in a disbursement report for analysts, as follows:

**Table 1. Disbursement report**

No	Materials name	UM	Supply in previous period	Of witch			Necessary in the plan period	Possible to insure		
				Supplier 1	Supplier 2	Supplier 3	total	Supplier 1	Supplier 2	Supplier 3
			total							
1	Green protection helmet	pcs	2800	1300	900	600	3400	1600	1100	700
2	Electro-insulating boots	pcs	1600	600	0	1000	1800	700	0	1100
3	Electro-insulating gloves	pcs	3400	0	2200	1200	3800	500	1500	1800
4	Protection goggles	pcs	1800	1400	400	0	2100	1600	500	0



Another aspect of interest within the supply market survey is the offer of material resources and suppliers terms, like: possible quantity to deliver in a period of time; insured quality of commodities; transport and payment terms; possible discounts. The data base that includes all possible suppliers can be structured as a list of suppliers for every material, so that the option for their choice can be made base don the correlation of direct and derived information. For example, the influence of the quality upon the specific consumption, transport, supply, costs, deliveries frequency.

**Table 2. List of suppliers**

No	Specification	Average price	Supplier's price	Quantity possible to deliver in batch (pcs)	Period between deliveries	Quality compared to the needs	Payment methods
	Electro-insulating boots	16.600		Min/Max			
1	Supplier 1		16.550	100/550	18	Compliant	CEC
2	Supplier 2		17.000	350/800	15	Superior	Transfer
3	Supplier 3		16.800	200/1000	21	Compliant	CEC/D.P.
4	Supplier 4		16.725	400/900	10	Inferior	Transfer

Managers are interested in the optimization process, the establishment of an adequate batch to order which involves the achievement of minimum total costs being the solution of this activity capitalization, and costs reduction in production. Computerized processing of current data resulted from the real status of supplies, compared to possible variants they refer to, facilitates operative decisions.

Another situation that has to be submitted to the attention of the supply department is hat of optimization of ordered batch and total costs, under the circumstances of practicing different prices depending on suppliers, depending on ordered quantities. Storage and consumption of goods in the production process is an operation equally concerning both the head of the supply department and the managers of the fabrication activity. Providing the continuity of lignite extraction activity is a vital condition, so that its monitoring and signalling of any faults that may perturb the activity in real time, through a computer application, is absolutely necessary.

The retail sale also supposes the relation of information with the production activity, being important to know the availabilities for the finished products that are already contracted and orders for a period of time. Data processing in the orders file, their correlation with the data related to the daily achievements of production and automated update of stocks file allows achieving sales reports by the heads of retail sale department, for them to be able to make the corrective decisions in useful time.

A model of this report could have the following structure (table 3).

This presentation of supplies, stocks and deliveries of material commodities with updated information allows the management to know the entire activity of this department and make decisions in useful time.

**Table 3. Report**

No	Product name	UM	Existing stock tS	Recorded orders Cr.	Invoice d orders Cf	Orders to be invoiced Cd=Cr-Cf	Achieved production P	Reserve stock R=S+P-Cr	Alert (R<100)
1	Lignit	thousands Tones	1273	1579	765	814	325	19	da

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## **THE CONTROL AND ADMINISTRATION OF THE RISKS AT THE LEVEL OF THE BANKING COMPANIES**

**LOREDANA CIURLĂU \***

**ABSTRACT:** *The banking companies assure their incomes, their profits from specific activities, namely from cashing and payment activities, loans, bank placements, financial consultancy, on assuming certain risks. Any banking activity supposes a risk which accompanies all the businesses and it is or it is not produced given the conditions. The risk management and control must be understood on a larger scale, as an action, and on a smaller scale, in an individualised manner on persons responsible with the risk supervision.*

**KEY WORDS:** *banking risk, banking regulations, banking risk categories, measurement and control indicators, techniques of administration of the banking risk*

### **1. IDENTIFYING AND CLASSIFYING RISKS IN THE BANKS**

The administration of the risks in bank is, first of all, the responsibility of its superior management and of the executive management, which must fulfil the directives of the top management. The main **objectives** of a good management and control system of the risks aim:

- The establishment of a mutually accepted definition of the risk, which is to determine the elaboration of a “map” of the risks of the bank;
- The overfilling and continuous elaboration of the existing and potential sources of internal and external risks;
- The establishment of a clear responsibility in the field of the risks management (up down) and of the reporting system (down up) in order to avoid confusions, the superposition of the efforts and the leaving out of some important aspects;
- The assurance of some transparencies, of an overfilling system of informing the management and of a monitoring and reporting system, which should present, analyse and communicate the effective exposures, winnings and losses which must be known and stocked for future references;

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- The elaboration of a system of measurement of the financial performances, which should take into consideration the foreseen loss (the cost of the activity cost), the unforeseen loss (the measurement of the risks), the capital allocation on each risk, where it is possible, and the incomes adjusted for each risk (the profitability of the capital adjusted with the risks);
- The evaluation in accordance to the market of the cost of the capital, of the minimum rate of the profitability and of the possibility and the limits of the organic increase of the exposures to risk;
- The definition and the use of the principles of diversification of the risks and of management of the portfolio.

The measuring and the interpretation of the risks which must be assumed in order to obtain the desired earnings (results) are very important for a banking entity. The bank takes the responsibility for all the specific risks, occurred as a consequence of the getting of profit, in a safe and calculated manner, considering the following factors: respecting the prudential measures imposed by the regulatory national authority; the forecasted must justify the risk exposure; the risk must be dimensioned, so that the loss produced by materialisation could be acceptable for the activity of the bank, and the image of the bank does not suffer; the possible losses should not strongly influence the financial situation of that particular year, being able to be covered from the already constituted provisions or from the profit;

In the specialty literature, and also in the practice of the banking activity and of the banking financial credit it is considered that there are the following **banking risk categories** at the level of the banking entities:

- **The credit risk**, which quantifies the probability of the non reimbursement on due term of the granted credits and afferent debts;
- **The liquidity risk**, which indicates the potentiality of the bank to support at a certain moment the cash necessary;
- **The interest risk** refers to the potentially negative effect on the cash fluxes, the value of the assets and the value of the debentures due to changing of interest rate;
- **The capital risk** or the solvability risk is assimilated to one of the functions of the banking capital, that of protecting the depositaries and the borrowers against a depreciation in the value of the assets.

To all these four categories is added the foreign currency risk, being regarded as a derived risk, but which has a great importance thanks to the liberalization of the monetary fluxes. The banking risks can be classified on more criteria:

1) in accordance to the **risk exposure**, we distinguish:

**a. the pure risks** are characterised through the fact that the risk exposure is generated by the banking activities and processes which have the potential to produce losses, in which are included:

- the physical risks, which can manifest the destruction of the building in course of construction, the phone lines etc.;
- the financial risks can appear as complete data losses, losses of checks in course of cashing, losses of effects, non retrieval of losses and so on;
- the criminal and fraudulent risks – entering in data-processing files, fraudulent use of the payment media;

- responsibility risks: the violation of the norms regarding the opening of accounts, effects losses in the account of the clients, administration errors of the accounts and of the services of fructification of the savings.

**b. lucrative or speculative risks**, the exposure is generated by the attempt to obtain a greater profit; this exposure can also generate supplemental expenses and thus, potential losses.

2) in accordance to the **banking operation range** which can generate risks and form these risks. These risk forms are shown in table no. 1.

**Table 1. Types of risk**

<b>Banking characteristic</b>	<b>Risk group</b>	<b>Type of risk</b>
Balance-sheet operations	financial	Crediting risk Liquidity risk Market risk and bankruptcy risk
Banking services	of providing	Operational risk Technological risk New products risk Strategic risk
Activity frame	environmental	Fraud risk Economic risk Competitive risk Legal risk

The risks identification, and also their localisation represent the first global administration stage *of risks, within it we must determine the risks associated to every type* of banking product and service. Once the associated risks are identified, it is necessary the elaboration of some possible scenarios to determine the frequency and the amplitude of each type of associated risk. After the identification of the risks on every type of banking product and service, the sketching of a liked image of the risk factors influence is necessary.

The methodologies of identification of the risks, and also of their evaluation can assure an effective, efficient estimation, of the risk profit for all the banking entities, and also on their whole.

After the identification of the risks and their localisation, the process continues with the objective analysis, which is never interrupted. In order to establish the departments responsible for the risk exposure from a bank and whose task is to make the analysis of the types of risk, and also of their treatment manner, are used: the annual administration report; diverse accounting reporting; the organization chart of the bank.

Important for the tracking down of the risks even before they become real are the permanent and open communication between the compartments of the bank, this fact offering the possibility of controlling the risk from the moment of its apparition and the moment of its discovery, through the analysis of the financial and accounting registrations. Another raised problem is that of the assumption of the risks by the

bankers, who are familiarised to the assumption of the risks in the daily activity, but they are reticent in the total or partial assumption of the accidental risks.

The identification of the risks also supposes a good training of those who work in the departments of the bank, both to know the conditions, events, states that can lead to the apparition of some risks specific to each sector, where the banking management acts, and also the methods and the techniques specific to the identification and monitoring of each risk type.

## 2. INDICATORS OF MEASURE AND CONTROL OF THE BANKING RISKS

Within the analysis of the banking risks, a special importance goes to their quantification, based on a system of specific indicators, which allow the statistic and dynamic re-evaluation of the risks, by reporting on international standards or the own historic experience of the bank. The measuring of the risks which relate directly to that of the incomes (because in order to obtain profit, a bank must assume risks).

Hence, the risk indicators get more relevance in a general context of the appreciation of the bank profitability and its competition on the market, the final objective of the banking manager consisting also in the maximisation of the incomes of the stock holders adjusted by the risks influence.

The specialty literature approaches the theme of the indicators for the measuring of the banking risks, proposing different associated variables, usually, to the main risk categories. In the practice of the Romanian banks the following indicators were confirmed for the quantification of the internal risks:

- the indicators of the crediting risk;
- the indicators of the liquidity risk;
- the indicators of the interest rate risk;
- the indicators of the foreign currency risk.

### 2.1. The indicators of the crediting risk

Almost all the banks, assume their crediting risk, which supposes the necessity of the careful analysis of the way in which the quality of the credits portfolio evolves, with a special impact on the profitability, the adequacy of the capital and the general trust in that particular bank. Thus, two reference indicators for the estimation of the crediting risk are determined based on the weak quality weight, which delays or do not allow the achievement of the anticipated incomes, namely:

$$\frac{\text{the volume pf the residual credits}}{\text{total credits}} \times 100 \quad (1)$$

$$\frac{\text{the volume of the non performing credits}}{\text{total credits}} \times 100 \quad (2)$$

Of course, the optimal is represented by the minimal values of the two indicators, tending towards zero, in the second case, the residual credits, but most of all the non performing ones engraving the financial activity and results of the bank.

Other indicators of the crediting risk use the formula of calculation of the reserves and provisions that the banks make for covering the possible losses, such as:

$$\frac{\text{reserves for credit losses}}{\text{total credits}} \times 100 \quad (3)$$

report which synthetically express the managerial expectations regarding the evolution of the quality of the loans portfolio;

$$\frac{\text{provisions for credit losses}}{\text{net credits}} \times 100 \quad (4)$$

report which reflects the prudence level adopted by the bank in its crediting policy.

$$\frac{\text{the gross profit}}{\text{provisions for losses from credits}} \times 100 \quad (5)$$

namely the cost of covering the crediting risk assumed by the bank.

The potential indicators of measuring the risk which can signal in advance, the variations of the incomes of the bank are: the geographic concentration and the concentration on economic sectors of the credits, the accelerated rhythms of increase of the credits volume, the high profitability of some credit categories. Although none of the indicators mentioned do not represent a perfect predictor, we can state that the inappropriate level of one of these constitutes a barometer of the future crediting problems.

## 2.2. The indicators of the liquidity risk

Thanks to the informational limits of the cash flux system, the banking analysts use a series of indicators for the measuring of the liquidity. The more cash or banking assets the bank has, the greater its capacity to cope with the deposits redrawing demands, and also the eventual delays in the reimbursement of credits. The commercial banks normally keep between 20 and 30% from the deposits as liquid funds.

The main indicators that the treasury calculates and verifies for the analysis of the liquidity are:

- *the global liquidity*, which reflects the possibility of the patrimonial elements of assets to turn themselves in short time into liquidities, in order to satisfy the contingent payment liabilities.

- *the immediate (treasury) liquidity*, which reflects the possibility of the patrimonial elements in assets to cope with the debts representing the total of the deposits and of the loans.

The treasury also determines the exposure of the bank in accordance to the deposits at sight (namely the report between them), which express the tendency of evolution of the deposits on term, comparative to that of the availabilities at sight with influence on the stability of the resources and the level of the costs.

Other indicators which are calculated for the estimation of the risks are:

- *the position of the liquidity*, indicator derived from the practice of the treasury administration, which is calculated on days, weeks and months and whose optimisation consists in the equilibration of the liquid assets with the immediate liabilities. In the case of a negative position, the liquid assets are insufficient for the integral honouring of the obligations, the bank having to appeal to urgent financing sources, such as: loans on the interbank market, loans from the central bank and the liquidation of some portfolio assets before the term. If the position of the liquidity is positive, the liquidity excess is placed on short term in deposits on the interbank market.
- *net liabilities*, namely the difference between the assets and the liabilities classified in accordance to the due term, an indicator which is calculated to signal a period of maximum liquidity need. The simple net (successive) liabilities are determined on each period, as a difference between the assets and the liabilities with the same due term. The net liabilities are determined as the difference between the cumulated liabilities and assets, corresponding to each period of time;
- *the liquidity index*, which represents the report between the amount of the liabilities and of the assets, both weighted with the average number of days or the current number of the group of that particular due term. If the liquidity index is:
  - = 1: then the bank must not make a due term transformation;
  - < 1: the bank makes the transformation from short term liabilities in long term liabilities, in the conditions of the ascending curb of the interest;
  - 1: the bank transformed the long term liabilities in short time liabilities, resulting the liquidity risk.
- *the liquidity rate* expresses the evolution of the indebtedness degree of the bank to the monetary market. This is periodically calculated, in accordance to the due term of the loan operations, according to the formula:  $\text{new contracted loans/loans due in the same period} * 100$ . A superunitary rate indicates the increase of the liquidity thanks to the increase of the indebtedness degree, the relation being inversed in the case of a subunitary rate;
- *the total report credits/total deposits* reflects the proportion from the resources drawn from deponents which is loaned to other clients. The greatest part of the credits is liquid.

The traditional measures of preventing the liquidity risk generally tend to focus on the liquidity of the balance sheet assets.



### 2.3. The indicators of the interest rate risk

❖ *The capital adequacy* has permanently constituted an essential preoccupation of the banking management and of the profile regulations, thanks to its signification regarding the solidity of the bank and the safety of the deposits. The adequacy of the capital also has an important competitive dimension, the well capitalised banks being more attractive for the attraction of resources whether from deposits or loans in advantageous conditions.

❖ *The interest rate risk*, which is determined as report between the productive assets and the interests bearing liabilities (the standard level being 1);

❖ *The absolute margin of the banking interest* expressed through the net incomes interests, reflect the capacity of the bank to cover the expenses with the interests discounted at deposits, deposit certificates etc. from the incomes obtained by cashing the interests at the granted credits. The interest margin must be established so that they assure the support of the banking task (the difference between other banking expenses and other banking incomes), and also the obtaining of a satisfying profit.

❖ *The gross percentage margin of the banking interests*, which result from the reporting of the absolute margin at the productive assets \* 100. Correlated to the level of the active/passive interests practiced by the bank, but also to the volume made by credits/deposits. A standard level of this indicator is contained in the 3 – 10% interval.

❖ *The net percentage of the banking interest rate* is calculated as a report between the average level of the active interest rate at the average level of the passive interest rate \* 100.

The management and control of the financial risks give a special attention to the interest rate risk, which relates to the foreign currency one on a short term, when the parity conditions exist. In practice, the banks use simulations in order to analyse their exposure to the interest rate risk, determining the impact of some modifications in the interest rate on different categories of due terms on the profitability and the market value.

### 2.4. The indicators of the foreign currency risk

The foreign currency risk is included by the specialists in the category in the market risks, being determined by the variations of the exchange rates, the deficits of the payments balances of payments, the penury of liquidities internationally. This risk is amplified for each participant to the performance of an external payments transaction. The measuring of this type of risk is achieved based upon the positions they take from the commercial banks, which establish their operation limit in accordance to their own standing. The bank whose debts exceed its payment obligations in a certain foreign currency takes a long position, if there is a high probability that the foreign currency enters an appreciation process. Contrary, the bank takes a short position. Due to the economical context in which they action, the Romanian banks prefer the long positions not matter the exchange rate.

The indicators of the foreign currency that the commercial banks calculate are:

❖ *The individual foreign currency position* is determined on each administrator foreign currency;

❖ *The global foreign currency position*, which represents the net balance of the debts in foreign currencies in report to the liabilities in foreign currencies, both converted in the reference currency for comparability: this indicator offers a general image on the foreign currency exposure of the bank.

The indicators used for the quantification of the different risk categories generally respond to some international necessities in the analysis and management process of the banking risks.

### 3. CONCLUSIONS

In conclusion, the banking risks are a source of foreseen expenses, their adequate administration can stabilize the incomes in time, having a shock bumper role. At the same time, the consolidation of the value of the banking actions can be achieved only through a real communication with the financial markets and the implementation of some adequate programs and administration of the banking risks. All the banks and the financial institutions must improve their comprehension and the practice of the administration of the banking risks in order to successfully administrate their range of products. If the process of administration of the banking risks and the global management system are effective, then the bank will be successful. The banks can successfully administrate the banking risks if they recognise the strategic role of the administration of the risks, if they use the analysis and administration paradigm for increasing the efficiency, if they adopt precise measures of adapting the performance to risk and if they will create mechanisms of reporting of the performance in accordance to the risk, in order to make sure the investors understand the impact of the administration on the value of the bank.

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## **CONSIDERATION REGARDING THE DETERMINATION AND APPRECIATION OF THE EFFICIENCY OF THE FINANCIAL CONTROL**

**LOREDANA CIURLĂU \***

**ABSTRACT:** *The concept of economical efficiency expresses the report between the useful effect or the result and the effort and the expense occasioned by its obtaining. The greater the effect achieved on the expense unit or the other way around, the smaller the expense occasioned by the producing of a certain useful effect, the economical efficiency is higher. From the theoretical and practical point of view, the economical efficiency has general applicability, since, without a certain work expense, a certain result is not possible, the work always being the cause, and the obtained product, its effect. And in order to determine the efficiency of the financial control it is necessary to start from a report between effect and effort, obviously adapted to the specific of this activity.*

**KEY WORDS:** *the efficiency of the financial control, the system of indicators, rules, norms, expenses with the financial control*

In the conditions of the globalization of the economy and the internationalization of the businesses, the control as form of knowledge of the reality consider basically three positions of economical-financial interests.

- The interests of the economical agents, through the certification of the patrimonial situation of the economical agent through which there are assured the commercial relations based on trust and certitude;
- The interests of the future investors regarding patrimonial goods and capital operations;
- The interests of the state regarding taxes and fees.

The knowing of the patrimonial and financial situation of the economical agents is achieved thanks to the primary documents, of the technical-operative and accounting record, and also with the help of the annual financial situations, which contain: balance sheet; profit and loss account; the situation of the modifications of

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own capital; the situation of the treasury fluxes; explicative notes to the annual financial situations.

The difficult problem is to commensurate both the effect and also the effort of the financial control activity thanks to the special complexity of the situations in which appear the effects or the efforts are made.

A first appreciation regarding the effect of the action of the financial control is expressed in the results obtained upon the application of the measures of its action, which can be generically grouped in two categories: *direct and immediate effects* based on the quantifiable elements which can be known, followed and added up from one period to another; *indirect effects* which materialise in time, sometimes diffuse and propagated, which are cannot be fully or at all commensurate and evaluated.

As for the effort for the achievement of the financial control, we must consider all the expenses occasioned by the activity of the control apparatus. Approached from another point of view, the efficiency in the control activity can be appreciated both in a larger sense and also in the strict sense of the notion. Thus, the financial control as a concrete manifestation of the finances aims the manner of performance of the fluxes of formation and utilisation of the financial funds formed at different levels and structures of the financial system.

The decisive factor of the efficiency of the financial control is represented by the assurance of a perfect order and discipline in the formation, but especially in the utilization of the material and moneyed funds. The financial control is able to signal the possible deficiencies and violations from the methodology and specific techniques of formation and utilization of the financial resources from these funds. For the decision factors it constitutes the signal of the intervention through adequate decisions for the remediation of the noticed anomalies.

The efficiency of the financial control depends both on the reliability and the reality of the observation of the violations, deficiencies and damages, and also on the firmness and legality of the valorisation of the observations made. The efficiency of the financial control is determined by its contribution to the prevention and remediation of the violations, the recuperation of the damages and its continuous perfecting of the general management in the financial system.

In a more limited sense, the efficiency of the financial control represents the reporting of the effort determined by this activity to the registered positive effects. Both the efforts, but especially the effects can be commensurate or non commensurable, foreseen. The efforts can be measured through the expenses occasioned by the exercise of the control, the time given to certain concrete actions etc. and the non measurable ones are referring to the guidance and perfecting of the professional training of the persons from the verified units.

The commensurable effects are concretised through valorisation, the establishment of the responsibility etc., but the foreseen effects retrieved in a general improvement of the activity, in the possible avoidance of the past deficiencies. The preventable operative observing, the reliable knowledge of the economical-financial reality of the verified units, is a first condition of the efficiency of the financial control, but it has not the anticipated effect if it does not contribute to the solution and

valorisation of the observations, if it does not offer suggestions, proposals of measures and solutions which should offer the possibility of the performance of an efficient activity in the future. Through mining, the efficiency of the financial control is determined in the last resort, by the unit of its two organic sides: its preventive-operative observing and immediate valorisation.

Under this aspect arises the question of some effective determinations based on some specific indicators. Such an indicators system can be constituted by certain criteria, among which:

- *upon the forms of the financial control*, we can distinguish: indicators characteristic to the preventive financial control; indicators specific to the subsequent financial control;
- *upon the level of the organisational structures to which they are exercised*, they can be: indicators regarding the financial control of the National Bank of Romania; indicators specific to the own financial control.
- *in accordance to the report effort/effect*, we can determine: the indicators of the effort can be: indicators which can also be expressed in relative (percentage) form through the degree of efficiency of the effort; the indicators of the effect can be:

$E_f$  = the expenses with the financial control/the value of the uncovered damages  
(recuperated)

$E_r$  = the time destined to the financial control/the value of the observed damages  
(recuperated)

The indicators specific to the preventive financial control can be: the value of the documents stopped from the preventive control visa; the degree of prevention of the damages calculated as a report between the number of actions rejected at the visa and the number of verified actions, multiplied by 100; or in other words: the value of the documents stopped at the visa and the total value of the documents verified for the visa (in percents).

The indicators specific to the financial control can be: the value of the uncovered damages; the value of the cash operative recuperations; applied contravention-related fines; pluses of material and moneyed values identified and inscribed in the records of the verified units; the value of the liquidated debits; applied disciplinary sanctions.

Far from being limitative, the system of indicators presented would assume the pursue of the report they are found in, can allow the permanent appreciation of the effects of the financial control and the efforts for its achievement, being possible for us to draw conclusions and take appropriate measures, from one period of time to another.

The efficiency of the financial control is influenced by a series of factors which can be grouped in:

- *factors with direct influence*: factors social-political; factors regarding the degree of organisation; factors which are related to the degree of training of the control organs; factors of technical order aiming the endowment degree.

- *factors with indirect influence*: factors of normative-legislative order; psychological factors and so on.

The necessity of increasing the financial control efficiency is determined by the greater and greater demands which are imposed for this activity, generated by the manifestation in more and more comprehensive sphere of the financial activity. At the same time, this necessity is also determined by the fact that the transition to the market economy has considerably multiplied the number of economical agents with which the banks go into business relations, including the criminal phenomenon from the economical-financial domain.

In order to cope with these situations, in the conditions in which the control apparatus knows objective limitations, it is imposed the increase of the efficiency of the financial control activity.

In this sense, the financial practice and theory has searched and is still searching for new ways, the old ones adapted to some changed conditions, through which it tends to a more increased efficiency, among which the most significant are:

- the permanent modernisation of the exercise of the financial control through the use of certain methods, techniques and procedures adequate to the pursued purpose and objectives. Nowadays, the main direction of modernisation of the process of exercise of the financial control of electro-technique equipments of record and calculation, which determined major mutations in the traditional techniques of control;
- the elevation of the degree of professional training of the control organs supposes their permanent adaptation to the great mobility of the legislative process and the alignment to the European Union standards. The lack of training or the insufficient training of some financial control organs, which for this reason practice a routine control, pattern and based on improvisations, reduce a lot the efficiency of the control activity;
- the rational organisation of the control work represents another way of raising the quality and the efficiency of the financial control. For that, in the control activity we need to respect a series of rules and norms, which arrange the entire process of the control in a logic and chronological order of its phases and stages;
- the assurance of the independence of the financial control in the signalling and sanctioning of the violations from the legal norms;
- the increase of the co interest of the control organs is able to actuate the control potential, including that of the personal liability and so on.

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## **USING EXPERT SYSTEMS IN THE MANAGEMENT OF INDUSTRIAL EQUIPMENT MAINTENANCE**

**IOAN CUCU, CODRUȚA DURA,  
IMOLA DRIGĂ\***

**ABSTRACT:** *The term “expert system” generally evokes new management techniques in various fields of activity. The definition of the expert systems in terms of their architecture reveals three basic elements: the knowledgebase containing specialized knowledge in a certain area, taken from the human expert in that field; the facts which include information related to the situation of management and data concerning a certain problem to be solved and the inference engine which is intended to exploit the set of knowledge in order to solve the problem. Examining the causes of equipment failure and malfunction is a central application field of expert systems.*

**KEY WORDS:** *expert system, data base, the knowledgebase, the facts, the rules, the inference engine*

### **1. GENERAL PRINCIPLES IN CREATING EXPERT SYSTEMS**

Examining the causes of equipment failure and malfunction is a central application field of expert systems or of data bases, in general. The term “expert system” generally evokes new management techniques in various fields of activity and they are now referred to as “the content of a data base management”.

The appearance of these systems was possible due to the development of the artificial intelligence in a computer field. The theoretical analysis of expert systems both in the field of informatics and in mathematical logic has been the subject of several studies prepared by well-known analysts of the two areas.

As far as the content of expert systems is concerned, this analysis must begin by explaining the basic terms:

- The concept of "expert" has the general meaning of a certification of a person or of a system to have extensive knowledge in a field. Thus,

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according to Romanian Dictionary, this term is given the following definition: "A person competent in a particular area or a person required to make a survey in a given field."

- The concept of "expert system" refers to a program that uses specific knowledge from various fields of activity in developing a resolution for each problem that may occur in a well-defined area. Therefore, the expert system "aims at making use of a person's experience and knowledge in order to replace him." This lays the foundation of a "knowledge base" which is one of the main components of these systems in relation to information systems. Expert systems also involve the development of a "database", a flexible database not a rigid one like in the case of information systems; in expert systems it is known as the "basic facts".

In defining expert systems in terms of their architecture, as mentioned in the composition of these systems and in the applications of these systems, we can identify three key elements. The basic representation of an expert system through its basic components in the context of its use in industrial maintenance can be seen in Figure 1, where we can identify:

- *The knowledgebase* - containing specialized knowledge in a certain area, taken from the human expert in that field. Regarded as general, knowledge reflects the "objects" of the real world and the relations between them. There are several methods of representing knowledge, among which the most important are: semantic networks, production rules and frames.
- *The facts* contain information regarding the situation of management, and data concerning a certain problem to be solved, the enunciation of the problem and the facts resulting from the arguments given by the inference engine regarding the knowledge base.

However it is necessary to distinguish between the knowledge describing the ways of solving certain problems and the facts presenting initiation statements of that certain type of problem.

- *The inference engine* is intended to exploit the set of knowledge in order to solve the problems and it represents the actual element of processing expert systems, which starting from the facts (input data of the problem), activate specific knowledge from the knowledge base, thus revealing judgments that lead to new facts called new facts.

Thus, this method builds a solving plan depending on the specific problem, using knowledge from that field, as a result of rendering the inference engine into function. In a certain context, taking into account the nature and the characteristics of the solved problems, the knowledge base is enriched by adding new elements or by modifying existing ones.

In conclusion, the inference engine is a program that implements judgment algorithms such as: deductive, inductive, and mixed, but which is independent of the knowledge base.



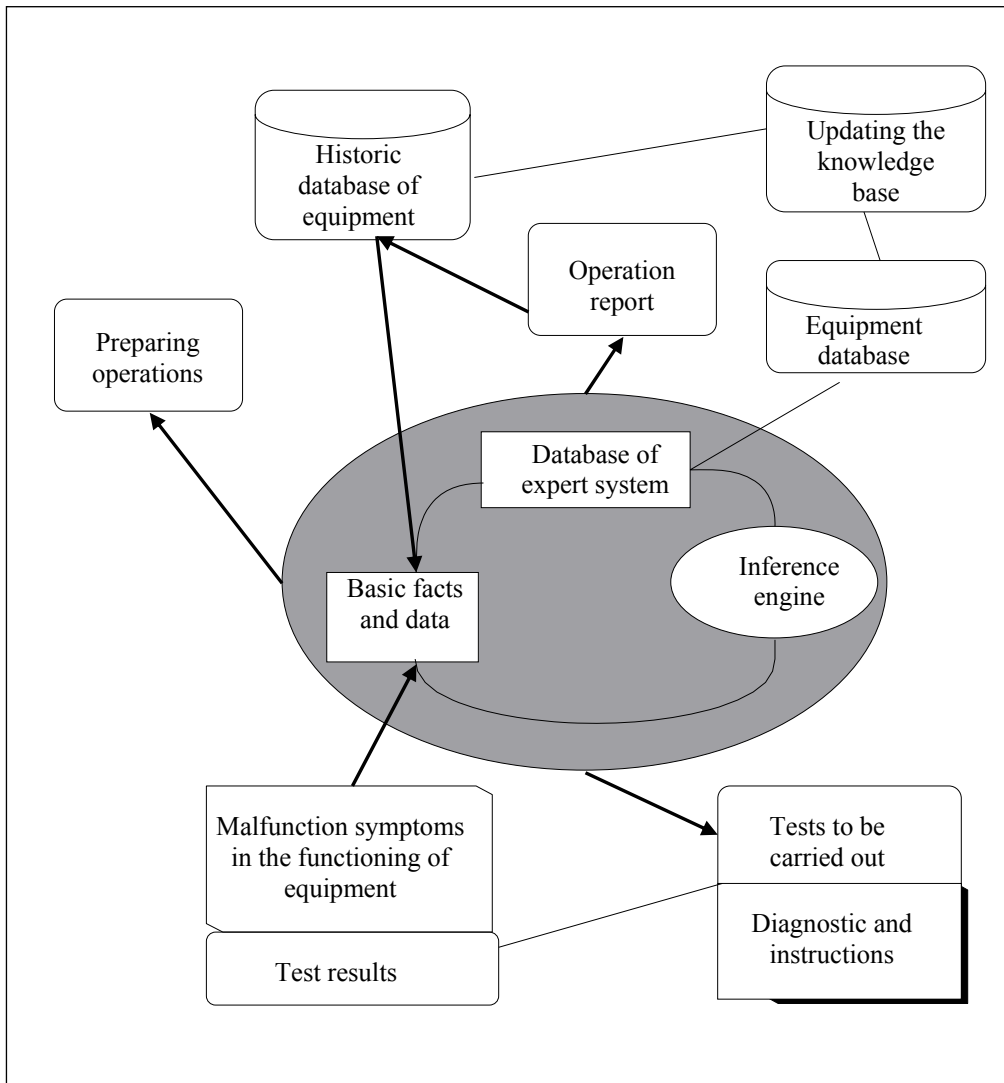


Figure 1. Basic representation of an expert system in industrial maintenance activity

## 2. TECHNICAL ASSISTANCE OF EXPERT SYSTEMS IN INDUSTRIAL MAINTENANCE

Modern techniques used in computer-aided industrial maintenance can be grouped into three types of characteristic systems, each of them being associated with different ways of solving the maintenance problems of technological equipment:

1. *Support system to increase operational availability of technological equipment.* This type of system uses computers to ensure the optimal availability, which means solving two main functions:

- a function to acquire data on the operation of technological equipment which can be achieved by implementing a system connected to automated processes;
- the processing of information;
- the results of these processes will be presented either in accordance with the operation regulations of works established within the industrial unit or based on some general rules accepted by it.

2. *Support systems for the diagnosis of malfunctions.* Support programs regarding the examination of the initial causes of equipment malfunctions can be various and they can have different configurations; among these it is worth mentioning the following:

- Integrated Systems such as piloting programmable automatons; this type of system is designed for equipments with digital controls. These systems operate based on special programming completed with programs tailored for calculating the parameters of tracking equipment, programs that can exceed the basic volume;
- Diagnosis systems or data acquisition systems, which provide real-time comparison of the cycles or of the states of a piece of equipment subject to monitoring in relation to the good working state from the beginning or as it was theoretically established. These systems are programmed so that they can be provide with a continuous training in relation to events occurring in the functioning of the equipment in question;
- Programmable diagnostic systems encourage the setting of a pre-diagnostic and they control simultaneously the operation of technological equipment in terms of production achieved;
- Expert system generators allow the examination of the initial causes of equipment malfunctions and must be connected to the database of the main system.

3. *Expert systems.* Expert systems used in the process of diagnosing the operation of equipment are characterized by the existence of limitations due mainly to the skills of human experts in the research conducted at the beginning of the expert program as well as to the possibility that the expert program can permanently train itself, just like a human expert can train himself in his daily activity.

Regarding the ability to train expert systems, it is worth mentioning the fact that they use formal rules in the training processes, which makes these systems similar to an apprentice in equipment troubleshooting and diagnostic techniques.

Moreover, we can take into account the hypothesis that human intelligence may be the object of a transfer towards the knowledge base of the system, since the limits of the self-training ability are acknowledged for this type of systems as well. Verifying the equipment used in creating an expert system; the validation of resolutions; the analysis of the system's efficiency; calculations of profitability; opportunities for improving (after the implementation of the system) the characteristics of accuracy and speed of the system; all these represent elements which contribute to the success of using expert systems in industrial maintenance.

Regarding the use of these systems in industrial equipment maintenance, we forward a list of questions which should include:

- if an investment in this area is achieved, is there a possibility for another facility to take advantage of the implemented system or is it necessary to establish a new application?;
- who of the specialists should be called upon to explain some specific aspects of using the system?;
- is the conceptual characteristic of the system going to bring about the risk of having, after implementation, a program incompatible with the company's computer system?;
- can the recommended system be put into operation in time to eliminate probation costs and the temporary malfunction costs that may occur at the beginning?

### **3. KEY ASPECTS OF THE ACTIVITY OF EXPERT SYSTEMS**

#### **3.1. The stages of the basic cycle of an inference engine**

The inference engine represents the heart of an expert system, due to the fact that using the knowledge base; it can build dynamic judgments by running the rules which are to be implemented and establishing their order. Regardless of the method of reasoning, the basic cycle of an inference engine undergoes four stages: selection, filtering, conflict solving and the implementation itself (activating conflicts and implementation).

The selection stage extracts among the rules and the facts the elements which characterize the sub-field of solving the problem; that is to say, we can create a partition of the knowledge base that will shorten the period of time needed to search for the next stages. This phase is necessary when the knowledge base is big enough, trying to cover more fields of knowledge. Filtering means to compare assumptions, the rules previously selected with the facts that characterize the problem to be solved, in order to determine the subset of active rules. If we do not get any active rule, that means that we experience failure, a situation which the expert system must explain or in which the user must answer a series of questions asked by the expert with a view to complete definition of the problem.

Solving conflicts is necessary when the filtering stage resulted in more rules that can be used and only one should be chosen for implementation. Among the main choosing criteria that can be used during this stage, it is worth mentioning the first rule in the list, the most complex one (the one with the greatest number of facts in the premise) or the one which is used more often.

The performances of the inference engine depend on the quality of this choice; thus a solution to the problem can be found easier or harder. It is difficult to indicate one or the other among the criteria, because this choice depends on the context in which the knowledge base can be found at that certain time. The implementation of the rule chosen consists in adding one or more facts to the facts system; during this stage it is also possible to resort to external procedures, to having access to the database and to table processors, or to ask the user several questions. In order to solve a problem, the

inference engine must run several basic cycles and it should stop according to the type of reasoning used.

### **3.2. Types of reasoning**

The inference engine can use three types of reasoning: deductive reasoning (going forward), driven by facts; inductive reasoning (going backwards), driven by purpose and mixed reasoning.

### **3.3. Deductive reasoning**

In this type of reasoning, the inference engine, starts from the facts and looks for a specific purpose or objective. The filtering phase consists in extracting from the knowledge base only the rules that have as premises facts which define the problem, that is to say input data. After the phase of solving conflicts, we can choose a single rule to be enforced. The process repeats itself until the intended purpose is achieved, or until there are no more rules to be implemented, in which case we experience failure.

The stages of this type of reasoning are the following:

- initial input of facts and purposes;
- the beginning of reasoning - the filtering stage, determining active rules, checking the set of active rules (if empty or not);
- implementation: the stage of conflict solving, implementing chosen rules, changing active rules.

Deductive reasoning brings two major advantages, namely: encourages the generation of all possible solutions; provides an enrichment of the facts in each cycle of the inference engine, which further simplifies deductions.

However, this way of reasoning has some disadvantages, such as:

- the facts must contain sufficient data so that the system reaches its target, that is to say the problem can be defined in detail;
- all applicable rules are implemented, even if some of them are not interesting;
- in certain situations, when number of rules and facts is very high and the target cannot be achieved, there is a risk of reaching a combinative explosion regarding the number of basic cycles of the inference engine;
- is not interactive during inferences, which makes it possible for the user not to be questioned or admonished for the situation in case of a wrong solution / decision that comprises a small number of unknown facts during the process of system analysis.

### **3.4. Inductive reasoning**

This reasoning begins with the purpose, with the problem to be solved, and divides it into sub-problems until we get primitive problems or proven or questionable facts. Therefore it is said that this way of reasoning is driven by the purpose to find the

facts which help achieving targets, unlike deductive reasoning. Selected rules are those which have the initial purpose specified in conclusions and the premises will become sub-purposes that need to be determined. This process is repeated until all sub-purposes are demonstrated or until the set of rules from the filtering stage is null, which reflects failure.

By summarizing these steps we obtain the following algorithm:

- introduction of the problem;
- start processing - filtering stage;
- determining the rules or applicable rules;
- checking the rules (if it is empty or not);
- implementing the program - the stage of solving conflicts;
- the stage of implementing additional rules;
- keeping the premises from the chosen rules;
- creating sub-purposes;
- if the problem is not solved, the cycle resumes.

The main advantage of this method of reasoning lies in the need of a small internal memory, because the search engine is very small. Another advantage lies in small period of time needed to find solutions because the search is made only for the sub-purposes which have a chance of validation.

#### **4. CONCLUSIONS**

The implementation of an expert system in the industrial maintenance activity may bring benefits to the company, among which we mention:

- reducing the time to diagnose the causes which led to malfunctions;
- permanent availability of a tool for diagnosing malfunctions;
- creating a database regarding the operation of technological equipment;
- creating a knowledge base regarding the flaws of technological equipment and how they were resolved in the past;
- the ability to simultaneously benefit from the knowledge and the experience of experts in solving a malfunction of a piece of complex equipment.

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## **THE ANALYSIS OF SOCIAL SECURITY FOR UNEMPLOYED DURING THE PERIOD 1991-2008**

**OANA DOBRE-BARON, ALINA FLEȘER \***

**ABSTRACT:** *After tens of years during which unemployment was not officially admitted, centrally planned economy claiming complete labour employing, this phenomenon has appeared since 1990. The transition to the market economy and the massive re-structuring of certain branches of the economy considered as non-viable imply raised social costs, one of these being the increase of the number of unemployed; especially of long term unemployed ones. That's for this social category that authorities should develop a system of unemployment social assurances which, on the one hand, has to protect those persons in difficulty, and, on the other one, to determine such persons whose income is unemployment aid not to abandon the idea of getting a job.*

**KEY WORDS:** *labour market, unemployment, unemployed, social protection for unemployed, unemployment programs, unemployment support*

One of the main goals of the system of social protection of unemployed, established in 1991, is to assure an income that can replace the salary of those who lose their job out of reasons that do not depend on them, or to assure an income for those graduates who are not able to get a job.

In Romania, until the 1989 revolution, the centrally planned economy had as a main feature complete labour employment, unemployment being a phenomenon that was not officially admitted. The new circumstances determined by the transition to the market economy have determined unemployment, as an inevitable phenomenon, which up to a certain level, is supposed to have positive effects on labour market.

Due to the fact that transition to the market economy resorted in our country to economic re-structuring, people have witnessed, on the one hand, an increase of the number of persons who lost their jobs, and, on the other one, the new graduates who do not manage to get a job. Under such circumstances, unemployment has become a chronic phenomenon that registered a continual increase during the period 1991-1994, an insignificant decrease during the years 1995-1997, a new raise during 1997-1999,

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and again a clear tendency of decrease during the period 2002-2008 (Table 1). Accordingly, in 1994, 1999, 2000 and 2002, unemployment registered the highest levels: 11%, 11.4%, 11.2%, and 10.2% (Figure 1).

**Table 1. Number of unemployed persons and unemployment rate during 1991-2008  
(Annual rate)**

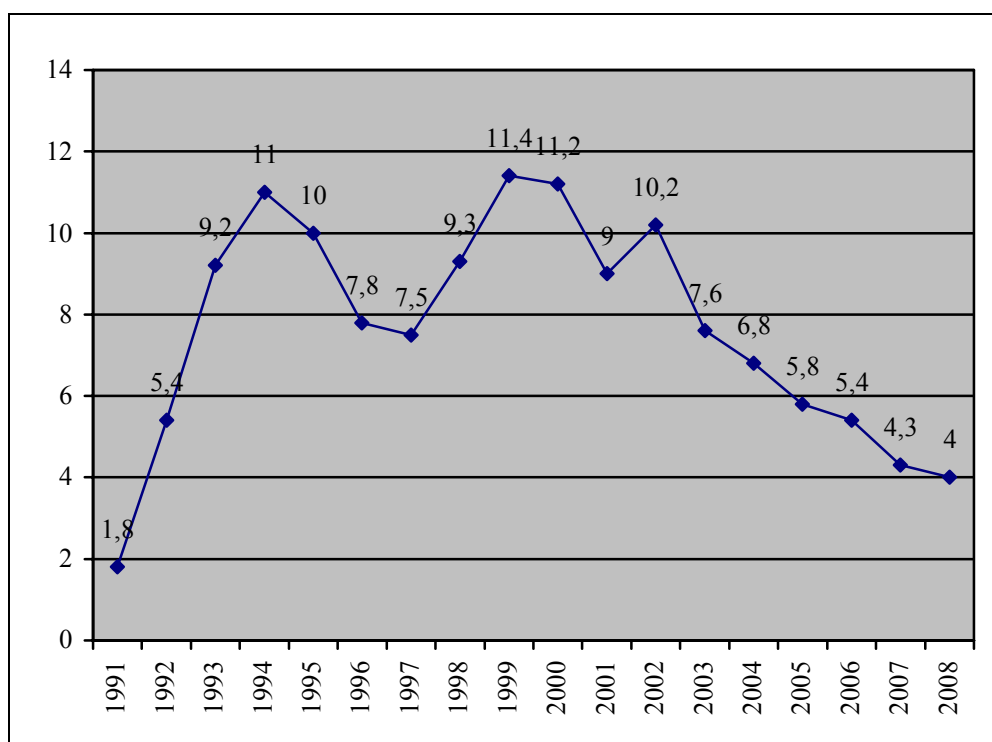
<b>Years</b>	<b>No. of unemployed persons</b>	<b>Unemployment rate (%)</b>
1991	201875	1,8
1992	605350	5,4
1993	1047260	9,2
1994	1229748	11,0
1995	1111327	10,0
1996	814292	7,8
1997	748982	7,5
1998	917069	9,3
1999	1118877	11,4
2000	1067206	11,2
2001	866498	9,0
2002	954546	10,2
2003	689531	7,6
2004	607192	6,8
2005	513721	5,8
2006	484698	5,4
2007	386667	4,3
2008	362429	4,0

*Source: The National Agency for Labour Employment, Statistics*

As regards the average duration of unemployment, it has maintained at a raised and clearly ascendant level, being of almost 18 months, the lengthiest unemployment duration being registered in the case of 25-34 years old age groups (19-24 months) and 35-49 years old (16-26 months). Unemployment having duration of 12 months affected 41-57% of unemployed.

Unemployment as a social phenomenon is strongly different at the level of the country; areas where unemployment rate is higher than the average rate at the level of the country have already appeared. The categories of labour negatively influenced by the phenomena and mechanisms of the labour market in our country are the following: women, young people, those persons having a lower level of education and training, the persons of over 50 years old, and the population in poorly developed areas.





**Figure 1. The evolution of unemployment rate during the period 1991-2008 (%)**

Returning to the characteristics of the system of security of unemployed persons, unemployment support was introduced in Romania at the beginning of 1991 as a part of the new system of social security, being considered a vital instrument for socially accepting the private form of property and the re-structuring of economy.

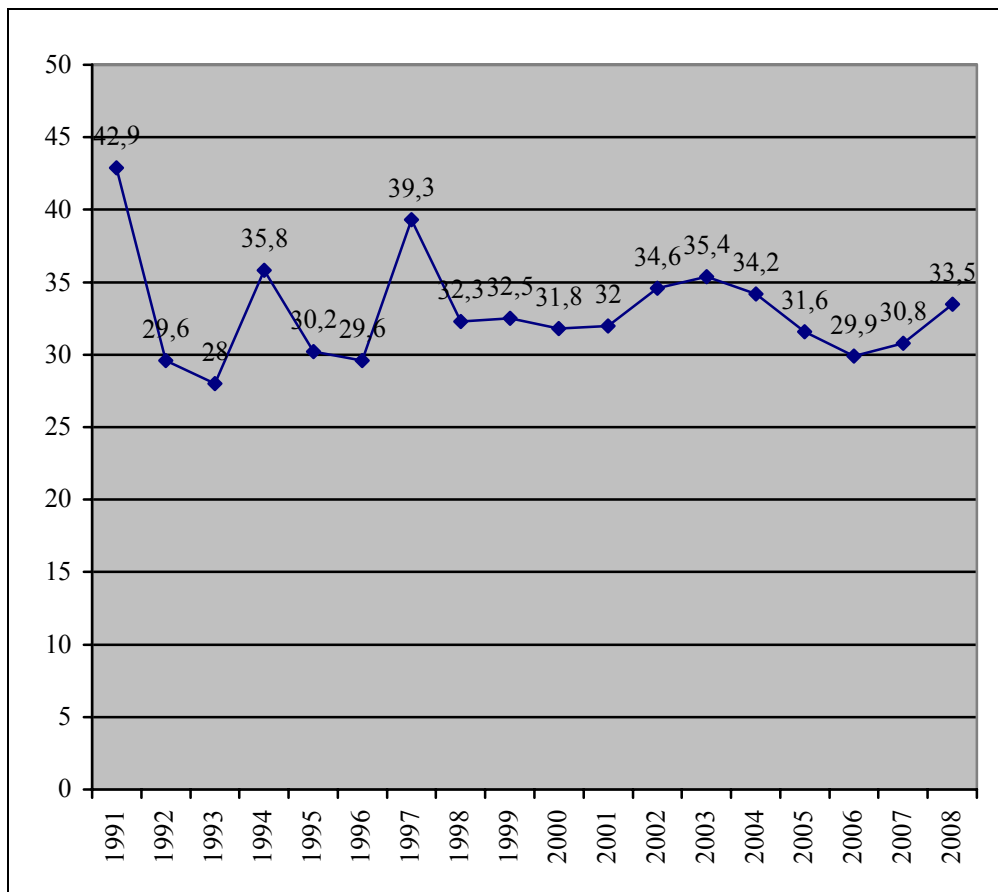
From the beginning, the system of unemployment support had in view two goals: on the one hand to provide a satisfactory replacement of the salary, accordingly making acceptable job change; on the other one, it had to be conceived in a manner that would not determine dependency and create lack of motivation for the rapid re-integration in the labour system. In order to attain this second goal, from the beginning, the level of unemployment support was not too high; yet it was nevertheless in accordance with the salary it replaced; at the same time, it was given for a short period of time: 6 months according to the 1991 laws.

In the absence of a system of a minimum guaranteed income (social support), it was extended to 9 months, when it was obvious that unemployment determined by the first shock of re-structuring was not satisfactorily dealt with. Further it continued with an even smaller support allocation (which was a fix sum, irrespective of the previous salary) during 18 months. In fact, the other countries in transition also witnessed a quite severe system unemployment support as compared with that of Western Europe, due to the same reasons as those previously mentioned.

These being the initial intentions, it seems that the system had a somehow contrary evolution: the level of unemployment support decreased as compared with the

salary it replaces (Figure 2), but its duration increased. With the decrease of the amount of unemployment support, its social and psychological functions of facilitating professional re-orientation also depreciated.

The perspective of being an unemployed has become less and less acceptable. As an effect of this depreciation of the system as well as in order to avoid social tensions, in 1997, the government appealed to a completely non-standard method with a view of making socially acceptable the re-structuring of certain important units or industrial branches: in the case of the units being mainly detained by the state, forced to massively fire personnel, compensations of 6-12 average salaries at the level of the economy, depending on the number of worked years, are granted, beside the benefits of unemployment support. (Order no. 9/14.04.1997).



**Figure 2. Dynamics of unemployment support as % of the average salary of the year during the period 1991-2008**

Under the pressures of the mining trade-unions, Order no. 22/29.08.1997 significantly increased the compensations for the mining industry and geological prospecting: between 12 and 20 average salaries at the level of the mining branch, that

is more than the average at the level of the economy. In this case too the initial intention was not achieved due to the lack of means capable to implement it. Such discrimination among the various types of unemployed persons was initially justified as being part of the program of active measures. The extremely high compensations were treated not as a means of avoiding social tensions and making unemployment acceptable, but more as a means of supporting private initiatives. The existing data show that these compensations, in their majority, have been consumed and not invested.

The programs of the system of security of unemployed persons are the following:

- unemployment support;
- professional integration support;
- support allocation;
- expenses with unemployed persons' qualification and re-qualification;
- graduates payment;
- compensatory payments within re-structuring, liquidation and changing to private property programs;
- other expenses.

These categories of expenses (except compensatory payments), represent sums given according to Law no. 1/1991, regarding the system of unemployment assurance and stimulation of labour employment, re-published in 1994 and completed by the Emergency Order of the Government no. 47/1997.

Law no.1/1991 was afterwards modified by Law no.76/2002 that began to function on 01.03. 2002; Government Decision no.174/2002 approved Methodological Standards of implementing it.

The new law stipulated, beside the old unemployment programs, new ones (Table 2):

- payments stimulating unemployed who get a job before their unemployment period expires;
- payments for stimulating labour mobility;
- payments for stimulating the employers who employ less favoured unemployed persons.

At the same time beginning with 2006 payments are also given in order to:

- stimulate graduates;
- prevent social marginalization.

The amount of unemployment payments rose from one year to the other, but the most spectacular increase was witnessed in 1997. As compared with the total amount of the expenses registered in 1996, of 754,503 million lei, in 1997 they represented 3,215,599 million lei, namely 4.2 times bigger.

The reason is quite simple and regards the introduction of compensatory payments within re-structuring programs. The huge value of the payments done in 1997 which rose to 54% of the total expenses with unemployment during that year is a consequence of the massive firings, especially in the mining industry and above all in the Jiu Valley.

**Table 2. Expenses with the social protection of unemployed persons (million lei)**

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	(million lei)											(million RON)			
<b>Total, out which:</b>	482134	717406	754503	3215599	5332475	8290324	9333053	9404370	11344334	14690775	16579518	1535	1543	1447	1386
Unemployment support	292805	205037	183643	625065	1334908	2252600	1951695	2810186	4246386	6214640	8238027	812	805	724	634
Professional integration support	4998	59405	58315	101933	200850	283047	370661	434120	451662	388682	569466	55,5	36,3	29,2	29,7
Support allocation	106826	229247	200166	215599	497681	1043516	1346319	1166913	1089159	254149	2687	-	-	-	-
Unemployed qualification and re-qualification	1269	1602	2986	14012	19212	25432	30183	24197	40510	64631	101536	18,2	25,3	24,7	27,4
Graduates payment	5404	4520	4856	8088	42000	66024	89476	118634	201231	356019	489483	68,1	64,7	59,7	56,5
Payments for stimulating graduates	-	-	-	-	-	-	-	-	-	-	-	-	1,67	2,97	3,55
Payments stimulating unemployed getting a job before their unemployment period expires	-	-	-	-	-	-	-	-	117873	277701	340937	14,1	12,4	13,2	14,4
Prevention of social marginalization	-	-	-	-	-	-	-	-	-	-	-	-	7,70	11,8	15,9
Payments for stimulating labor mobility	-	-	-	-	-	-	-	-	16531	42931	68206	5,38	5,60	5,72	6,48
Payments for stimulating the employers who employ less favored unemployed	-	-	-	-	-	-	-	-	61437	420978	622989	64	75	90	101
Compensatory payments within re-structuring, liquidation and changing to private property programs	-	-	-	1739203	2303917	3319147	3186215	996191	1131180	1317728	1569773	86	45	44	59
Other expenses	70832	217595	304537	511699	933907	1300558	2358504	3854129	3988365	5353316	4576414	411	463	439	436

Source: INS, *Statistics Annual Report of Romania, 2007*, INS, *Tempo on-line data sources*

The distribution of the payments of the social protection of unemployed according to categories of expenses emphasizes the fact that the most important share is detained by unemployment support, about 50% while the most decreased one, under 0.05%, is detained by support allocation. The last one, as one can notice, hadn't been granted since 2005.

We have previously mentioned that as regards the amount of unemployment support and of support allocation, they are not satisfactory from the point of view of the person who gets them as their levels are reduced when compared with the salary the unemployed would get in case he/she had a job (Table 3). This situation may have two consequences: on the one hand, it incited the search of a job and labour re-integration, on the other one, unemployed persons, and especially those who are long

term unemployed, increase the number of poors, circumstances that are difficult to be faced.

**Table 3. Unemployment payments - monthly average**

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	(lei/person)											(RON/person)			
Unemployment aid	50834	63750	95000	248685	337228	495237	680484	966720	1311807	1714512	2046378	236	259	321	401
Professional integration aid	35000	42544	54700	118935	186997	276580	381440	541807	712182	1076202	1292428	160	162	180	236
Support allocation	20385	39275	50500	97472	153117	222151	281326	344648	455030	547903	270093	-	-	-	-

Source: INS, Statistics Annual Report of Romania, 2007, INS, Tempo on-line data sources

Beside the analysis previously done regarding the size of unemployment support as compared with average salary, it is necessary to draw out an analysis of unemployment indemnifications as compared with the minimum salary at the level of the economy (Table 4).

As regards unemployment support, the situation proved to be changing during the analyzed period the highest level was attained in 1997 when unemployment support was 35.8% higher than the minimum salary. At the opposite pole we find year 2003 when unemployment support represented only 68.6% of the minimum salary. Although the rate increased in 2004 when compared with the previous year, yet its level of 73.1% does not represent a significant improvement. During the period 2005-2008 unemployment registers a new increase until 2007; afterwards, it begins to decrease again, its 2008 value being almost equal with that of 2006.

**Table 4. Unemployment indemnifications as % compared with the gross minimum salary at the level of the economy**

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Unemployment support	102.7	97.4	112.9	135.8	103.8	118.9	96.6	72.5	77.5	68.6	73.1	76.1	78.5	82.3	78.6
Professional integration support	70.7	65.0	65.0	65.0	57.5	66.4	54.2	40.6	42.1	43.0	46.2	51.6	49.1	46.2	46.7
Support allocation	41.2	60.0	60.0	53.2	47.1	53.3	40.0	25.8	26.9	21.9	9.6	-	-	-	-

Source: INS, Statistics Annual Report of Romania, 2007, INS, Tempo on-line data sources

Another analysis regards the professional integration support and support allocation. In the case of the first one, the rate compared with the minimum salary continually decreased during the period 1994-2004, dropping from 70.7% to only 46.2%. 2005 represents a new increase, but until 2008 it attains again a value similar to that of 2004.

In case we have in view the support allocation, Table 3 clearly shows that its monthly average in 2003 was of 547,903 lei/person, and in 2004 of 270,093 lei/person, that represents half of the first one. This allocation represented in 2004 only 9.6% of

the gross minimum salary at the level of the economy. This decreased value is exactly the reason why support allocation hadn't been given since 2005.

It is well-known that in Romania the minimum salary at the level of the economy is very small, those having to live out of it having a poor living standard; subsequently, 9.6% of this salary represents nothing.

The financing of the expenses for the social protection of unemployed persons is done out of the Unemployment Fund.

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## **IMPACT OF TAX POLICY IN ROMANIA ON BUDGET REVENUES**

**GABRIELA DOBROTĂ, MARIA FELICIA CHIRCULESCU \***

**ABSTRACT:** *Using the state fiscal levers in order to influence the economic system and the macroeconomic variables is known from the ancient times. Fiscal policy decisions reflect the related tax system and ensure its functionality in order to obtain the aimed economic effects. Analysis of fiscal policy measures and their effects should follow the level of taxation, the budget deficit, the level of the general consolidated budget revenues in line with GDP. The paper work presents practical aspects of fiscal policy and measures which should be adopted in the Romanian economy.*

**KEY WORDS:** *Fiscal policy, budget revenues, global domestic product, taxation degree*

### **1. THE ROLE OF FISCAL POLICY IN A MARKET ECONOMY**

Manifestation of phenomena and economic and financial processes is done differently from country to country, from a development stage to another but against a background of mutual inter-connection and sometimes with negative effects for the economy of that country that require state intervention. To prevent or limit the economic and financial crisis, public authorities have sought solutions to financial policy formulating and applying the two essential structural components, namely fiscal policy and budget policy. Fiscal policy translates practical option for state taxes, based on projected developments for economic variables, in compliance with the essential principles of taxation.

Although the main role of taxes is procuring state budget revenues needed to fulfil its functions in the market economy there is an orientation of fiscal policy objectives and to eliminate or mitigate the consequences of disturbing factors on economic development. Fiscal policy measures generate effects in both short and medium term and long term. In the first category fall changes made to aggregate

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demand and in the second those relating to investment, economy and growth. In other words, not only immaterial amount of proceeds from the collection of taxes but also categories of taxpayers included in the scope of taxation, the rate at which revenues are affected, the potential economic effects resulting from the use of amounts affected in this way. Even if there are opinions that the state should not interfere in any market mechanism but also contrary opinions, may easily find that in recent decades have often turned to state attributes in order to ensure the macro-economy stability.

But it should be noted that sometimes tax measures adopted were contrary to the expected economic effects especially in the case when it adopted a fiscal policy that led to the lack of excessive growth target set by the governments concerned.

## 2. THE LEVEL OF TAXATION IN ROMANIA

Fiscal policy measures promoted by the tax authorities of our country in the period 1990-2008 have a decisive influence in volume, structure of tax revenues and the pressure of these along with other factors such as quality management of state tax claims and the degree to voluntary tax compliance. In this regard it is suggestive presentation of general and partial tax level, during 1990-2008 (Table 1.)

**Table 1. Evolution of taxation level in Romania, during 1990-2008**

Year	General tax level (tax revenues/GDPx100)	Partial tax level (dues and taxes/GDPx100)
1990	35,5	27,6
1991	33,2	28,2
1992	33,5	22,1
1993	31,3	20,6
1994	28,2	19
1995	28,8	20,7
1996	26,9	19,4
1997	26,5	19,6
1998	28,2	20,0
1999	30,1	19,5
2000	29,3	18,6
2001	28,0	17,5
2002	27,6	17
2003	28,0	18,2
2005	27,9	18,5
2005	27,3	18
2006	28,6	18,5
2007	28,9	19,5
2008	28,6	20,2

Source: Yearly reports of NBR for 1999-2008; [www.mfinante.ro](http://www.mfinante.ro)

From the data presented, it is noted that the degree of general taxation, calculated by taking into account all taxes, fees and contributions received by central and local public authorities, recorded, with small oscillations, a continuous downward



trend, from 35.5 %, in 1990, to 28.9% in 2007. Overall, the level of general taxation has decreased during the period considered by some 7 percentage points.

The degree of taxation determined solely on the basis of revenue received from taxes has fared somewhat sinuous. Starting from a level of around 28%, at beginning of period considered, it was reduced to 19%, in 1994, has fluctuated around 20% during 1995-1999, then stabilized around 18% to end-examined, in 2007 grew by 1 percentage point over the previous year. During 1990-2005, the fiscal pressure exerted by taxes declined by about 8 percentage points

Reducing tax level in the period 1990-1997, can be estimated to be caused by the decline in the real economy, easing further, the expression real gross domestic product and, therefore, to reduce the tax base. Also, changes in the level of taxation are determined by the evolution of mandatory levies collection level, in conjunction with voluntary compliance of taxpayers to pay them. Given that, after 1999, GDP began to grow from year to year in real terms, the trend of decreasing level of taxation can be assessed as a result of the general line of fiscal loosening over the past seven years manifested. By way of example can be mentioned in this connection, the reduction from January 1, 2000, the corporation tax rate from 38% to 25%, and then to 16% from January 1, 2005, reduce all the from January 1, 2000, the general VAT rate from 22% to 19% and reducing the tax burden carried by social security contributions from 55% in 2001 to 49%, in 2005, 47.5 % in 2006, 45.5% in 2007 and 2008.

Evolution of the degree of taxation is presented in Figure 1:

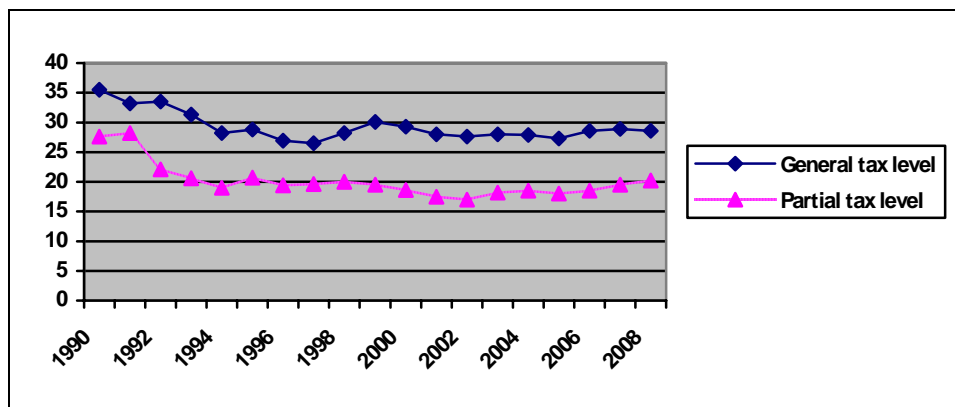


Figure 1. Evolution of the degree of taxation in Romania during 1990-2008

If we compare the level of taxation in Romania as in other countries, it is found that is less. And yet, economic agents, population, foreign investors, talking to an excessive level of taxation. The explanation can be given both by the large number of taxes and the fact that this indicator is calculated using tax revenue collected and not those involved. Yet, as we known in our country the degree of removal of the tax is high, accounting for underground economy lately growing higher share in GDP (one can say that in 2009, the fiscal measures taken have not had the expected effects since the underground economy was estimated at about 40% of GDP).

Another indicator that can be used to express the level of taxation is **relatively taxation index**, represented essentially by the sum amount of taxes levied to companies and individuals. If, during the period 1997-2000, the index of taxation in Romania increased by about 16 percentage points, between 2001-2004, following the orderly development of legislation (the Tax Code and the Procedure Tax Code), there were slight decreases of tax rates, in particular those related to employment. The trend continued in 2005-2008, particularly following the introduction of flat tax. As the level of taxation, relative index of the Romanian tax was not and is not among the highest, and the reduction in a single year (2005) to its more than 30 percentage points is actually a less common fact to an economy. Thus, for fiscal 2005 the relative index is 100% to 133%, in 2004. A slight decrease was registered in 2006, this reached about 98% (Table no. 2).

**Table 2. Relative index of taxation in Romania during 2004-2007**

Elements	2004	2005	2006	2007	2008	2009
Profit tax	25%	16%	16%	16%	16%	16%
Income tax	40%	16%	16%	16%	16%	16%
VAT	19%	19%	19%	19%	19%	19%
Employer contributions	32%	32%	29,25%	29%	28%	28,5%
Employees contributions	17%	17%	17%	17%	15,2%	16,5%
TOTAL	133%	100%	97,25%	97%	94,2%	96%

### **3. ANALYSIS OF TAX POLICY IN TERMS OF MAJOR TAX GENERATING BUDGET REVENUES**

Any tax measure has implications in a lesser extent or more and the economy. Basically, state by budget revenues charging to the income remaining influence of economic and hence their behaviour on staff, investments made, the expense, the savings. Viewed from this perspective, taxes can be regarded as instruments of intervention in the process of distribution and redistribution of GDP in line medium and long term objectives of economic and social policy. Also, on short term, a reduction in the weights required to stimulate private sector can have negative effects on budget balance (the growing budget deficit that requires procuring the necessary resources to cover other arrangements such as loans or money issue, but creating additional burdens for the future or inflation). In this context, it is clear that fiscal policy should establish always a correlation with the constraints generated by economic and social processes reflected in the consolidated budget. So, the formulation and implementation of fiscal policy should aim to use fiscal levers so as to achieve economic and social objectives continuing the macroeconomic balance. For a suggestive reflection of the above statements will make a presentation of the consolidated budget balance evolution but also on budget revenues as a percentage of GDP.

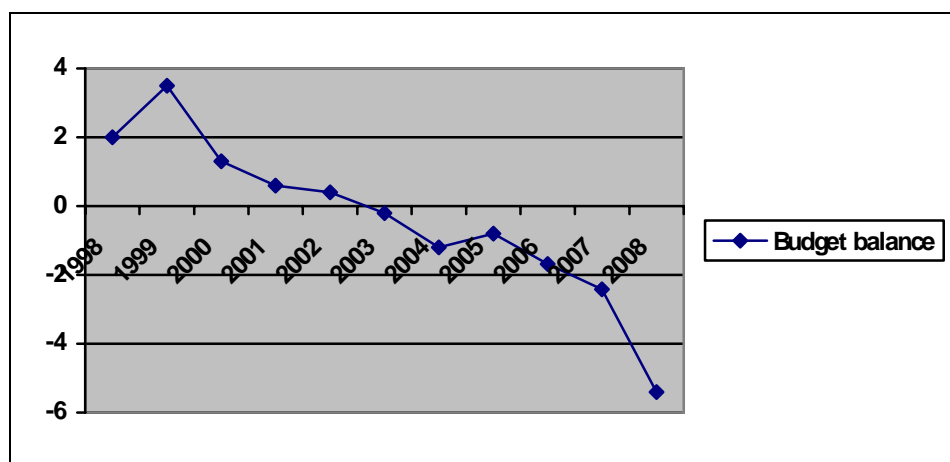
Thus, the budget surplus or deficit recorded in our country has resulted largely in tax measures adopted in the Romanian fiscal system (table 3).

**Table 3. Consolidated budget balance in the period 1998-2008**

Years	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Budget balance	2	3,5	1,3	0,6	0,4	-0,2	-1,2	-0,8	-1,68	-2,42	-5,4

Source: Yearly report of NBR, 1998-2007, Monthly reports of NBR, 2008

For a better view, it may reflect graphically the evolution of budget balance for the reporting period (figure 2):

**Figure 2. Consolidated budget balance between 1998-2008**

From the data presented, there is a deterioration in the budget balance, which shows weaknesses in formulating an appropriate tax policy appropriate to realities of the Romanian economy. These issues result also of the data reflected in Table 4 on developments in GDP share of total revenues highlighting the downward trend in the period under review.

The impact of fiscal measures on the budget revenues can be determined by simultaneous analysis of the share of revenues generated by a tax share of GDP and the tax that is charged (it can be thus determined as a percentage point of tax rate as a percentage of GDP). For example, the ratio between income from tax revenue in GDP and the tax rate increased from 0.15 in 2006 to 2.16 in 2008.

#### 4. CONCLUSIONS

Ensuring the macroeconomic balance, at some moment and in dynamic impose a correlation of tax, budgetary and monetary policies in concordance with the economic realities in this area and the objectives aimed in employment area and inflation. Public authorities should be aware that any reduction in budget revenues is due to a decrease in the level of taxes collected. Increasing revenue from taxes and duties can only be achieved amid increase the tax base, but this can not be guaranteed

in terms of real economic growth stimulated by a reduction in taxation and improving the process of collecting the tax liability (unfortunately in our country the economic and financial crisis was not countered by appropriate fiscal measures, a good example being the minimum tax borne by traders led to rising unemployment and bankruptcy of small firms).

**Table 4. The evolution of budgetary revenues as a percentage in GDP**

Years	2003	2004	2005	2006	2007	2008
<b>REVENUES-TOTAL</b>	30,1	32,1	33,5	28,4	28,3	28,1
<b>Direct taxes</b> , consisting of:	16,8	16,0	15,5	15,2	15,2	14,8
Profit taxes	2,1	2,8	2,5	2,4	2,5	2,6
Incomes and wages taxes	3,2	3,0	2,6	2,7	2,8	2,9
Other incomes, profit and capital gains taxes		0,6	0,9	0,9	0,9	0,8
<b>Indirect taxes</b> , consisting of:	11,2	12,4	13,0	13,2	13,1	13,3
V.A.T.	6,7	6,9	7,8	8,0	7,9	8,1
Excises	2,5	3,4	3,2	3,3	3,6	3,8
Other impositions and taxes		1,4	1,3	1,3	1,1	1,0
Tax on foreign trade and international transactions (custom taxes)	0,4	0,7	0,7	0,6	0,5	0,5
<b>Contribution to social security</b>	10,5	9,5	9,5	9,3	8,9	8,4
<b>No taxation incomes</b>	2,0	3,0	3,3	3,1	2,8	2,6
<b>Grants</b>	-	0,6	1,6	1,4	1,1	1,2

Source: [www.mfinante.ro](http://www.mfinante.ro), [www.bnr.ro](http://www.bnr.ro), [www.insse.ro](http://www.insse.ro)

To be an effective fiscal policy it requires simultaneous monitoring of the process of collecting tax revenue and the need to issue laws with clear explanations, no loophole that allows for the shelter of the phenomena of evasion of the law in order to ensure increasing economic development. Also, financial policies should be formulated on the medium and long term, allow for a safe business environment (legislative changes repeated distort economic activity, which is abundantly shown by the example of the Romanian economy in recent years). Adapting tax on real cases registered in the economic agents, eliminate bureaucracy, ensuring an optimum flow of tax information, ensure the neutrality of fiscal measures, eliminate inequities in the tax and generalized the right of option tax may lead to improved use of fiscal levers in order to achieve the objectives of economic stability.

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## **EVALUATION AND ESTIMATION IN ACCOUNTANCY. CONCEPT-EVOLUTION**

**OVIDIA DOINEA, CLAUDIU ȘERBAN \***

**ABSTRACT:** *Defining the terms of accounting evaluation and estimation has a significant importance for the impact these concepts have on the enterprise's financial position and performance. Evaluation is described as the method of quantifying and measuring in a value expression, respectively in monetary standard of the existence, movement and transformation of the economic patrimony and of the results obtained by its capitalization. Accounting estimation is approach as an appreciation of the monetary value regarding the measurement standards for debts, capitals, incomes and expenses or as a judgment based on presumptions and future projection concerning the elements that can be precisely evaluated in the present.*

**KEY WORDS:** *accounting evaluation, accounting estimation, estimation techniques, evaluation process, financial statements*

In the process of accounting evaluation and estimation, the defining the terms of accounting evaluation and estimation has a significant importance for the impact these concepts have on the enterprise's financial position and performance, or in other words on the balance sheet and the profit and loss account. Starting from this objective, we will try to present the evolution of the evaluation concept in order to point out the necessity of the evaluation process in the measurement of the enterprise's financial position and performance.

The concept of evaluation is brought in discussion since antiquity when the Greeks associated to the cashing another value than that of the currency. At the same time Luca Paciolo, author of an accounting written text, in 1494, considered accounting to be a process able to point out a person's transactions and to determine its wealth, and was the first to be aware of the evaluation as a process. The projection of evaluation made over the entire wealth, it can be affirmed the necessity for a basis of evaluation and some evaluation criteria for establishing the size of the wealth to exist was really necessary.

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The process of evaluation was initially approached from the perspective of the quantitative measurement. From the oldest times, the accounting was oriented towards identifying the events and transactions that generate cashing and payments, and less towards the evaluation of the elements resulted from these transactions. So, though the accountancy is by definition a science of evaluation by which monetary elements are projected, (respectively measurable elements), the evaluation concept developed relatively late. This shy and slow evolution of the evaluation can be explained by the fact the transactions were made exclusively by cashing and payments, materialized in cash (a value with quantitative/physical form that could dissimulate the necessity of adopting some evaluation criteria).

The evaluation theory has appeared at the end of the 19th century. The first economist that established the basic elements by which the value of a property can be determined was Alfred Marshall. In his conception in order to determine the value of a property, the following must be taken into account: the direct market comparison, the replacement cost and the incomes' capitalization.

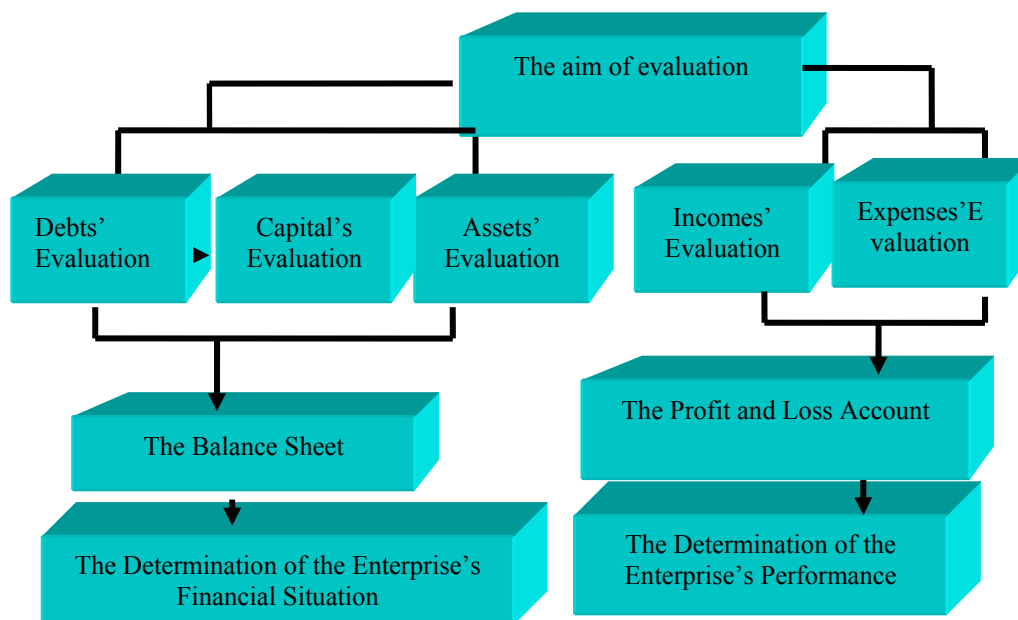
Irving Fisher, neoclassical American economist, has developed the theory of value-income, which adopts the approach of value based on income. Fisher sustains that the value of a property is depending on the size of the future incomes brought to day (annuity, rent, profit and cash flow) generated by the property (Stan S., 2000). These methods of determining a property's value find applicability even nowadays, especially in the branch of the real estate evaluation, even the name given by Alfred Marshall and ulterior by Irving Fisher has been maintained.

The IASB general frame defines the evaluation these days like that: "evaluation is the process determining the values at which the structures of the financial statements will be recognized in the Balance Sheet and in the Loss and Profit Account". Starting from this definition given by the IASB general frame to the evaluation frame, the conclusion drawn points out the fact the aim and the necessity of evaluation are imposed by one hand by the determination of the enterprise's financial position and on the other hand, by the determination of its activity's result. Therefore, in this context, the evaluation can be defined as the method of quantifying and measuring in a value expression, respectively in monetary standard, of the existence, movement and transformation of the economic patrimony and of the results obtained by its capitalization.

In order to evaluate the financial position of an enterprise it is necessary to evaluate its assets and debts and by their means to evaluate the capital. On the other hand, for the evaluation of the enterprise's performance the evaluation of incomes and expenses is necessary, and to the capital's evaluation a general conception is associated. The next schematic presentation can be associated to the aim targeted by evaluation, which represents in fact the principal pylon to fundament the theoretical aspects regarding this concept.

The specialized literature includes many definitions given to the accounting estimation as follows: the estimation is considered: an appreciation of the monetary value regarding the bases of measurement for debts, capitals, incomes and expenses (Feleagă, Malciu, 2004); the estimations „represent judgments based on presumptions

and future projections regarding the elements that can be appreciated precisely in the present” (Cecilia Ionescu, 2007).



Source: Projection realized by the authors

**Figure 1. The aim of evaluation**

If we refer to the techniques of estimation, these are methods and estimations adopted by an enterprise in order to determine the monetary values that correspond to the bases of evaluation (measurement) selected for the elements that compose the financial statements.

The delimitation of the accounting policies – estimation techniques become even more difficult because both of them imply that the enterprise must recourse to one or more measurement bases (the monetary attributes of the elements composing the financial statements). The methods use to reach to the adequate monetary values, corresponding to the selected measurement bases, do not represent accounting policies (example: the reporting at the exit price of a similar good), but estimation techniques.

For example, the estimation techniques include: estimation of the different depreciation adjustments' value, estimation of the utility period of the fixed assets and their residual value, estimation of the present works' percentage of advance, estimation of the utility period of the tangible and intangible fixed assets, in order to determine their return value and implicitly the depreciation of the assets.

So to create an efficient informational system, relying in estimation techniques, there must be identified first of all the elements from the financial statements that have to be evaluated by using estimations capable to lead to the obtaining of a current value in the financial statements. Therefore, generally speaking, the estimations represent rational appreciations of some facts and events.

Using objective estimation is essential in the elaboration of financial statements and must not leave from the presumption that this situation might weaken the credibility (viability) of the information presented in these statements.

The international organism recommends however, the presentation of the information regarding presumptions and other sources of uncertainty in estimation when the balance sheet is done in order to increase the relevance, viability and intelligibility of the information reported.

Consequently, it can be pointed out correctly the relation between the accounting evaluations and estimations by the fact that, in the case when some elements from the financial statement can not be evaluated precisely, the evaluation process has to recourse to estimation techniques closely related to the evaluation bases and the principles of accounting evaluation, so to determine the monetary values corresponding to the evaluation bases selected for the presented statements. Therefore, the evaluation bases represent accounting policies that might affect considerably the balance sheet and the profit and loss account.

Considering that „the various evaluation bases are used within the financial statements in different combinations and degrees of utilization”(the IASB general frame) but, taking into account, that no ne of the evaluation bases has a general validity and is not totally satisfactory, the impact of the accounting evaluations and estimations on the enterprise’s financial situation and performance represents in fact the modality by which the enterprises succeeds to select those evaluation bases for the elements from the financial statements, so the ensure the credibility and relevance of the information offered and to present a true and fair view of the enterprise’s activity.

It must also be mentioned that most of the times the effect of the accounting estimations take the shape of incomes and expenses, which means they affect the profit and loss account of the budgetary year in which the estimation is done as well as the future budgetary years, if the estimated element is spread on more periods of time.

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## **A COMPARATIVE ANALYSIS OF CERTIFICATION SCHEMES IN THE BRAZILIAN FRUIT SECTOR**

**ANDRÉA CRISTINA DÖRR \***

**ABSTRACT:** *Certification has become increasingly relevant as a marketing signal for agribusiness especially in the fruit sector over the past few years. Substantial parts of many value chains are by now certified by standards as GlobalGAP, Fair Trade, Integrated Fruit Production and Organic. At the same time, in developed countries, particularly in the European Union and the United States, demand for higher levels of food safety has led to the implementation of certification programs that address more types of safety-related attributes and impose stricter standards. Certification systems play an important role in any market that is burdened with a high degree of information asymmetry and quality uncertainty. Thus, producers and exporters of fresh fruit and vegetables from developing countries like Brazil are increasingly required to demonstrate the safety and traceability of their produce up to the consumption stage. The comparative analysis of the four certification schemes which exist in the fruit sector in Brazil has shown that GlobalGAP and the Integrated Fruit Production (PIF) are similar certification schemes. However, they differ with respect to the number of requirements and their distribution over various stages (e.g. production, post-harvesting). Contrary to PIF and GlobalGAP, Fairtrade certification concentrates on producers' organizations and cooperatives where small-scale farmers belong to and not on individual farmers. In addition, a lot of attention is paid to the labour and environmental conditions, besides the guarantee of a minimum price for farmers. With respect to organic certification, the requirements are not directed to a particular product or crop and their level of compliance is not indicated. Major emphasis is put on the production system. Organic and Fairtrade certification do not have an own book keeping for records.*

**KEY WORDS:** *certification, fruits, Brazil*

### **1. INTRODUCTION**

Producers and exporters of fresh fruits and vegetables from developing countries like Brazil are increasingly required to demonstrate the safety and traceability of their produce up to the consumption stage. In order to access international markets such as the European Union (EU) and the United States (US), fruits producers need to

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meet the requirements from the buyers and comply increasingly with certification systems. In Brazil, these are specifically the Integrated Fruit Production (PIF), GlobalGAP, Fairtrade and Organic certification schemes. Not clear is the impact these certification schemes have on Brazilian fruit farmers. There is some evidence in the literature, that certification contributes positively to the development of specific export sectors in developing countries. In fact, the Brazilian export market is still relatively underdeveloped, with an export share of only 2.4% of the total produced volume. Brazil is the third largest producer of fruits among developing countries, after China and India. Its total production was 43.8 million tons in 2004, representing 3.2 % of the production of all developing countries. However, it is estimated that only around 2% of the country fruit production (in terms of volume) is exported generating US\$370 million (Brazilian Fruit Institute (IBRAF), 2004).

Grapes and mango exports have been the most successful cases, with around 260,000 tons and 550,000 tons each being cultivated. The regions of Petrolina and Juazeiro, which are part of the Sao Francisco river basin, are responsible for this export performance. This region produced 99% and 88% of the country's grapes and mango exports (IBRAF, 2004). VALEXPORT (2006) estimates that the sector generates a total of 240,000 jobs directly and 960,000 jobs indirectly in the region.

Given the trend towards tighter food safety requirements in international markets, in 1999 Brazil started to develop the Integrated Fruit Production (PIF) scheme, a national quality assurance program. The Ministry of Agriculture, Food Supply and Livestock (MAPA) requested the Brazilian Agricultural Research Company (EMBRAPA) to further develop the scheme for implementation. The pilot projects involved apples, grapes, mangoes and citrus. As part of the Fruit Production Development Program (PROFRUTA), this system contributed to strengthen the ties between the public and private sectors, to aim at improving quality, competitiveness and share of national fruits at the international level (Andrigueto et al., 2002).

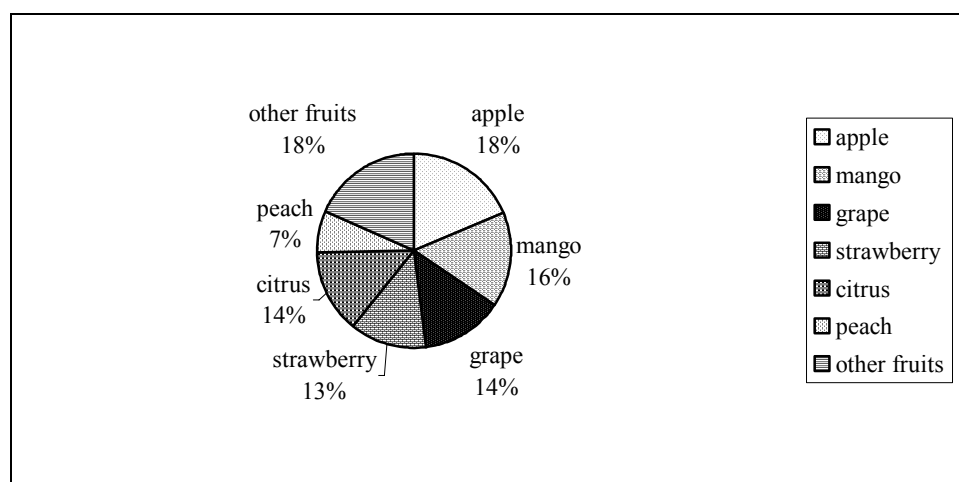
Nevertheless, besides the effort of the Brazilian government in developing and implementing a national certification scheme, the acceptance at both national and international levels was below the expectation. Indeed, as Vitti & Cintra (2003) highlight, supermarkets in the European Union started to require the Global Partnership for Good Agricultural Practice (GlobalGAP) certification, instead of PIF, from Brazilian fruit exporters at the end of 2003. Thus, certification has become increasingly relevant as a marketing signal for agribusiness especially in the fruit sector over the past few years. Substantial parts of many value chains are by now certified by standards as GlobalGAP, Fair Trade, Integrated Fruit Production and Organic.

The objective of this paper is to present a comparative analysis of the different certification schemes which are applied to fruit production in Brazil and to highlight their importance to enhance the competitiveness of the chain. These are GlobalGAP, Integrated Fruit Production (PIF), Fairtrade and Organic.

## **2. THE ROLE OF CERTIFICATION**

There are a few studies on certification which have been carried out in Brazil. Major results will be briefly presented. A more detailed description of the four

certification schemes will follow in the next section. The adoption of selected certification schemes in the fruit sector differs by region and product in Brazil. According to the statistics from INMETRO (2007), there are more than 1,500 producers with Integrated Fruit Production (PIF) certification or being in process of having it. They are responsible for nearly 1 million tons of fresh fruit produced on 40 thousand ha. Figure 1 shows the percentage of the total 1,521 producers spread over the country producing one of the 16 types of fruits. In the Sao Francisco Valley, there are totally 49 mangoes producers and 101 grapes producers who adopted PIF certification.



Source: INMETRO (2007)

**Figure 1. Number of producers with Integrated Fruit Production in 2006**

With respect to organic certification, Darolt (2000) verifies the evolution of organic production in Brazil and points out that the lack of updated statistics makes it difficult to evaluate this alternative agricultural system. Nevertheless, the author gathered data from the organic certifying companies and associations and concluded that around 100 thousand ha have been planted by 4,500 farmers concentrated mainly in the states of Paraná, Sao Paulo, Rio Grande do Sul and Espírito Santo in the year 2000. Agrotecnologia (2007) presents data regarding the number of farmers with GlobalGAP certificate. In 2007, there were more than 68,000 producers spread all over the world, with approximately 10,000 being fruits and vegetables growers. In total there are only 540 Brazilian farmers who are certified according to GlobalGAP standards. This national figure is - in comparison with the global figure - relatively small. Most of the certified farmers are grapes (45%) and lime growers (33%). In terms of land, soybeans and maize crops require huge areas, occupying 48% of the total area certified involving only 8 farmers. On the other hand, fruit culture is characterized as an activity with intensive labour and is compatible with small productive areas. Therefore, it represents an important alternative to producers who depend largely on family labour force. There are no official data available on Fairtrade certification in

Brazil though it does play some role in the survey regions. Implementation of Fairtrade certification started in 2005 only.

### 3. METHODOLOGY

A survey of 303 farmers was conducted between July and October 2006 in the Sao Francisco Valley, on the surroundings of Petrolina (state of Pernambuco) and Juazeiro (state of Bahia) in Brazil. The two-stage stratified sampling technique was applied as outlined by Levy & Lemeshow (1999). The first stratum included small<sup>1</sup> (<12 ha), medium (>13 and <49) and large producers (>50 ha) in both regions. The final step involved the identification of producers with certification, the ones without certification and those in the process of becoming certified. A total of 18 strata were identified. To ensure that this sample population could yield significant results from econometric analysis, a statistical power analysis was made to determine the sample size, whereby expected effect size, i.e. expected differences of means of two populations or the alternative hypothesis, can be detected with a certain power and significant level. This approach requires information on population means ( $\mu$ ) and standard deviation ( $\sigma$ ) based on lists of producers. The sample size of each stratum was calculated using the program Russlenth<sup>2</sup>.

The paper focuses largely on comparisons among Integrated Fruit Production (PIF), GlobalGAP<sup>3</sup>, Fairtrade from the Fairtrade Labelling Organizations International (FLO), and Organic Certification. Similarities and differences among them are investigated regarding the requirements for fruit producers. The materials used in this analysis are based on information from Normative N. 012 (2003) for mango production and from Normative from N. 011 (2003) for grapes concerning PIF and GlobalGAP (2007a) for GlobalGAP. Data on Fairtrade standards for fresh fruits are based on FLO (2007) and standards on organic production are based on (International Federation of Organic Agriculture Movements IFOAM, 2008).

### 4. DISCUSSIONS AND RESULTS

#### 4.1. Integrated Fruit Production (PIF)

Integrated Fruit Production was first implemented in Europe in 1970 aiming to reduce the level of pesticides used in fruit production. Argentina, South Africa, New Zealand, US and Chile adopted the program in 1993, 1994, 1996 and 1998, respectively (Associacao Gaúcha dos Produtores de Maçã AGAPOMI, 2005). In Brazil, the Integrated Fruit Production (PIF) scheme started with apple production in the cities of Vacaria-RS and Fraiburgo-SC, in 1998. The producers' concern was that, without an adequate certification program they would certainly be out of the international market. Furthermore, other regions in the country started to implement the program supported by the Ministry of Agriculture, Food Supply and Livestock

<sup>1</sup> Definition of land size according to SEBRAE of Petrolina

<sup>2</sup> Available on the website: <http://www.cs.uiowa.edu/~rlenth/Power/> (Accessed on August 2006)

<sup>3</sup> Since 07<sup>th</sup> of September 2007, EUREPGAP has changed its title and logo to GlobalGAP

(MAPA) (AGAPOMI, 2005). PIF is a program which was created in Brazil by the Normative N. 20 in 2002. The Normatives N. 11 (2003) and N. 12 (2003) establish the requirements for grapes and mango production, respectively. In 2006, the Normative N. 58 instituted the control of agro-toxic residues in fruits designated to the European Union, in compliance with the MAPA in the National Plan of Security and Product Quality of Vegetal Origin (PNSQV). The purpose of this instruction is to guarantee the fruits' quality and safety as well as the environmentally-friendly production.

Regardless of the fruit type, there are many requirements to be met by the producers to acquire the certificate. The level of compliance of requirements is divided in mandatory, recommended, forbidden and allowed with restrictions. Data were compiled considering each sub-thematic area within the major thematic area as one requirement having a different level of compliance. There are a total of 115 requirements of which mandatory thematic areas and recommended ones represent each around 37%. The forbidden sub-thematic areas relate to 16% of all requirements, while the remaining 10% is allowed with restrictions.

However, differentiating between the three stages (i) crop management, (ii) harvest and post-harvest and (iii) the remaining areas, it was found that the crop management stage represents almost 50% of total requirements, followed by harvest and post-harvest with 35% and finally nearly 15% for the remaining topic (Figure 2). Technical training of the farmers regarding Good Agricultural Practices (GAP), including all stages of the crop development, until the post-harvest process, is provided.



Source: Normative N. 11 and N. 12 (2003)

**Figure 2. Summary of the PIF requirements**

For PIF certification, book keeping records are required for inspections. The book keeping process along the production chain is well-defined, including three stages. While the book keeping 1 includes more general information, climate

conditions and machinery, field book keeping 2 contains data with respect to each plot of the productive area. In this section, the producers have to control for possible diseases, plagues and natural enemies which may occur during the different stages of growth. The data regarding crop management, fertilizers, agrochemicals, irrigation and crop protection is also required in detail. The post-harvest book keeping is related to data about the identification of the fruit, and an analysis of defective fruits. Furthermore, producers have to fill in the form of the packed fruit, the control of the sample quality, the hygienic control of the packing house and calibration control of the equipment.

Andrigueto (2002:42) describes the procedure when an individual or entity decides to become part of the Integrated Fruit Production system. Roughly, they must go through a waiting period necessary for provisions and requirements (Normative N. 20) of the PIF system, according to the individual fruit species, as published by the Ministry of Agriculture, Livestock and Food Supply. The waiting period corresponds to one agriculture cycle. The conformity to acquire the PIF certificate is developed into six stages: regularization; request; auditing; decision; acquiring the certificate and maintenance.

#### **4.2. GlobalGAP**

GlobalGAP started in 1997 as an initiative from retailers belonging to the Euro-Retailer Produce Working Group (EUREP). It has subsequently evolved into an equal partnership formed by agricultural producers and their retail customers. Their aim was to develop widely accepted standards and procedures for the global certification of Good Agricultural Practices (GAP) (GlobalGAP, 2007b).

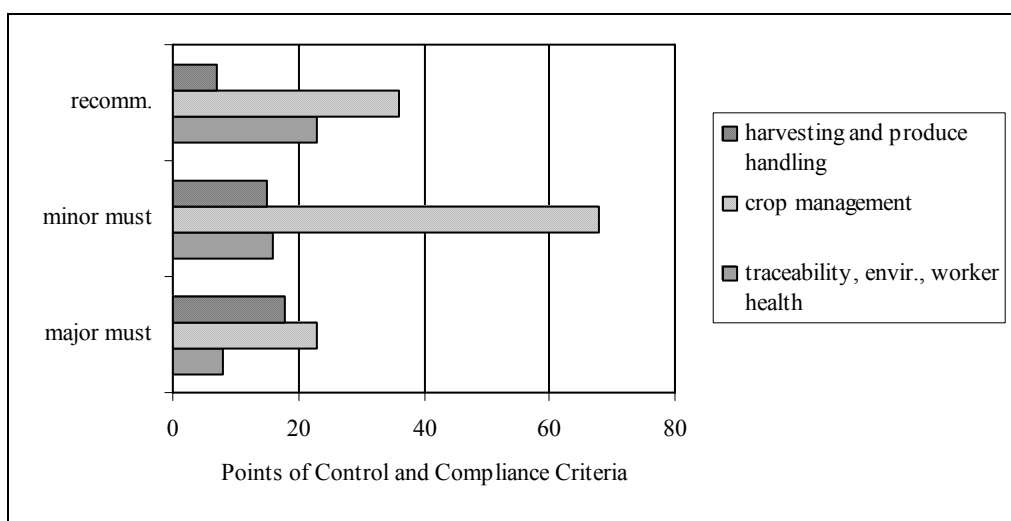
GlobalGAP is a private sector body that sets voluntary standards for the certification of agricultural products. The standard is primarily designed to reassure consumers about the way food is produced on the farm by minimising detrimental environmental impacts of farming operations, reducing the use of chemical inputs and ensuring a responsible approach to workers' health and safety as well as animal welfare (GlobalGAP, 2007b).

The characteristics of GlobalGAP which can be summarized as (a) a pre-farm-gate standard, which means that the certificate covers the process of the certified product from farm inputs like feeding or seedlings and all the farming activities until the product leaves the farm; (b) including annual inspections of the producers and additional unannounced inspections; and (c) consisting of a set of normative documents. These documents cover the general regulations, the Points of Control and Compliance Criteria and the checklist (GlobalGAP, 2007b).

Even though the organization possesses an updated version from July 2007, the analysis considers the former version, Version 2.1 from October 2004, valid during the data collection of this survey. There are three types of points of control within the GlobalGAP program that producers need to meet to obtain the GlobalGAP recognition: "major musts", "minor musts" and "recommendations". As regards "major musts", a 100% of compliance is required, while for "minor musts" it is 95%. The "recommendations" do not require a minimum percentage.

In total, there are 214 control points and compliance criteria of the GlobalGAP certificate. They are categorized as major musts which represent 23%, minor musts 46% and recommended 31%. Within the highlighted compliance points classified as major musts are crop protection with 31% and production handling with 24%. The item crop protection is also a control target in the minor musts category with 43%, followed by fertilizer use with 15% and finally, both produce production handling and worker health, safety and welfare with 14% each. Recommendations emphasize fertilizer use with 23% compliance points, worker health, safety and welfare with 14% and environmental issues with 12%.

The same requirements cited above were grouped into three sets: the first one refers to all stages related to crop management (soil, fertilizer, varieties, etc); the second includes after harvesting and production handling and the third comprehends the remaining points such as traceability, environmental issues, book keeping, worker health, safety and welfare. According to the compilation, nearly 60% of the three categories of compliance relate to the crop management; within this, minor musts requirements sum 46% of the total, 31% are recommendations and finally 30% are major musts (Figure 3).



Source: Own compilation based on EurepGAP checklist (2004)

**Figure 3. Summary of GlobalGAP requirements**

GlobalGAP (2007b) highlights that the standard requirements have to be applied equally around the world. Due to structural reasons small-scale farmers often face more difficulties to meet the requirements to the same extent as medium and large producers. As a result the small-scale farmers are at risk of missing out market access. GlobalGAP has, therefore, implemented group certification to facilitate market access for small-scale farmers. Group certification implies that smallholders form a group and obtain a certification together. It allows the farmers to significantly reduce certification costs such as inspection charges and overhead costs. In addition, since many

requirements necessary for GlobalGAP certification can be centralized (e.g. pesticide controls), farmer groups can benefit from the scale effects. Group structures are also an easier way to provide farmers with advice regarding the implementation of the standard. The monitoring is done twice a year. The farmer is aware about the time of the first visit, while the second one takes place without informing. The certificate is valid for 12 months.

### **4.3. Benchmarking among GlobalGAP and other schemes**

Initially, individual supermarkets had developed their own systems and labels. For example, in the UK, Tesco has developed “Tesco’s Nature’s Choice,” and Marks & Spencer created the “Farm to Fork” label. As a result, the various companies’ codes of practice became increasingly confusing, and the multiple inspections were costly and time-consuming. In response, firms have organized collective action to formulate and apply joint or industry-wide protocols embodying the core elements of GAP, Good Manufacturing Practices (GMP), and HACCP. In doing so, they hoped to reduce problems created by having a plethora of industry standards. EurepGAP has been one prominent initiative as such at the level of primary production which developed into GlobalGAP later on.

Jahn, Schramm & Spiller (2004b) argue that a wide variety of certification systems lead to increasing transaction costs. Therefore, they recommend an international benchmarking and the harmonization of standards. Retailers in particular introduced umbrella organizations to ensure the same quality level for all their products independent of the country of origin. GlobalGAP has developed certain benchmark procedures. Recently, the Belgian, Dutch, Danish and German meat sector has founded the “European Meat Alliance” to create common standards.

On the contrary, as highlighted by WTO (2005:26), “harmonization to international standards is not always desirable, as it reduces product variety. Besides, it may not always be easy to agree on a global standard as local standards are often the outcome of specific technical requirements of domestic producers as well as the reflection of social values in a society”.

The benchmarking process is based on existing national or regional farm assurance schemes recognized as an equivalent to GlobalGAP. Examples of benchmarking processes can be seen in South and Central America, Africa, and Asia, most recently in Japan and Thailand [such as ChileGAP, ChinaGAP, KenyaGAP, MexicoGAP, JGAP (Japan) and ThaiGAP]. They are backed by national governments, retailers, producers and exporters. The figures presented by GlobalGAP (2007b) show that worldwide 11 processes of benchmarking between a national certification scheme and GlobalGAP of fruit and vegetables as well as flowers have already been approved, 6 cases are provisionally approved and 7 cases are in process.

Garbutt & Coetzer (2005) explain in their paper that the GlobalGAP certification system tries to set the benchmark for the procedure and the importance of harmonizing different private sectors. The GlobalGAP certification system also tries to guarantee food assurance standards on a global level. The benchmarking process consists of a multi-staged process: (i) application; (ii) the technical review process



(preliminary technical review, peer review, independent technical review, independent witness assessment, technical and standards committee review) and (iii) formal recognition of applicant's standards.

In a discussion by Espanion et al. (2005), benchmarking between GlobalGAP and PIF systems for fruits and vegetables in Brazil was mentioned. The authors pointed out some equivalence between PIF and GlobalGAP such as the guarantee of food safety, traceability, and the use of pesticides registered in the exporting or importing country as well as safety of the worker. While PIF shows the details of each product, for example, colour of the fruit, size, level of sugar, pH, texture, etc. GlobalGAP represents generic requirements for fruits and vegetables, meat, seeds, etc. The attempt of the Ministry of Agriculture, Livestock and Food Supply to benchmark is still ongoing.

#### **4.4. Fairtrade**

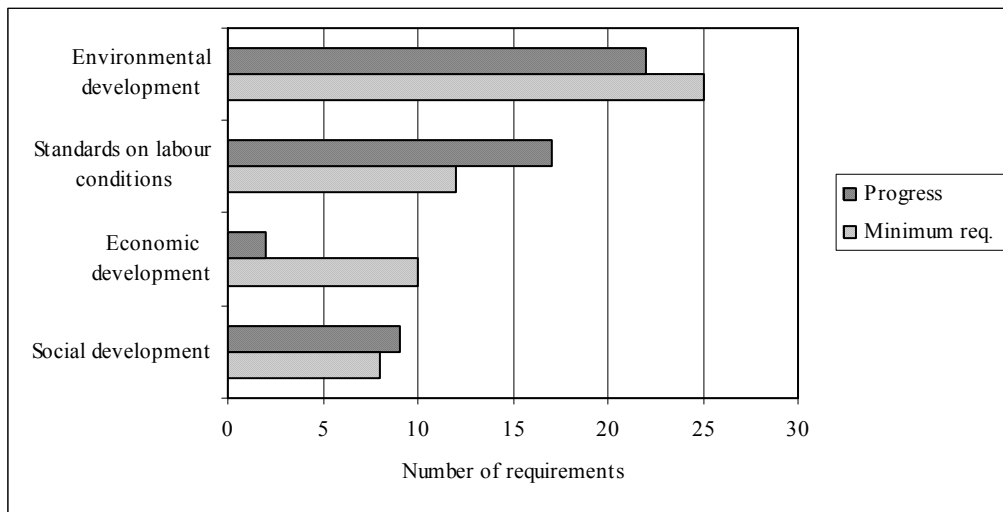
The Fairtrade Labelling Organization (FLO) was created in 1997. It is recognized as a non-profit organization which offers the development of standards that benefit small farmers and their employees and also promote sustainable production as well as guarantee fair prices and an extra premium. Besides the minimum requirements, FLO expects that producers continuously improve the working conditions, increase the environmental sustainability and also invest in human capital. Furthermore, FLO supports producers with information regarding new business and market opportunities. Apart from fruits and vegetables, the range of products to which FLO is applied includes tea, coffee, cocoa, honey, juices, wine grapes, dried fruits, nuts and spices and non-food products such as flowers and plants, sports balls and cotton seed (FLO, 2006:3-5).

According to FLO (2007a), Fairtrade requires fair and transparent trading conditions concerning prices, payment and quality procedures. The standards require that all products sold with the Fairtrade label must be produced by certified producers. Considering prices and price premium, the buyers shall pay the producers' organizations at least the minimum Fairtrade price set by FLO. Producers and buyers should have a contract establishing the volume, quality, price and payment conditions. The payment requirement is for example that 50% of the price should be paid at the moment the product is delivered and the payment of the rest should follow 48 hours after receiving the product.

According to FLO (2007) the total number of requirements is 105, 55 being considered as "minimum" (or 52%) and 50 considered as "progress" (48%). The "minimum" must be achieved by all producers, while with respect to the "progress requirements", permanent improvement must be visible as documented through a yearly report by the producer organizations. FLO tries to ensure that fair trade benefits are reaching small farmers and small producers' organizations which have potential for development. In addition, FLO requires that these organizations should always follow the national legislation and in case of standards being higher than those issued by FLO, the former ones should prevail. The standards applied to small producers'

organizations are divided into four sections: social development, economic development, environmental development, and standards on labour conditions.

The first section considers social aspects such as democracy, participation, transparency and non-discrimination, among others. In the economic development part, the concerns are about the premium, the ability to export and the organizational improvements. The environmental part focuses on the assessment, planning and monitoring based on an environmental plan, with each producer being responsible for ensuring his/her compliance. Thus, the maintenance of protected areas, the sustainability of native species, the improvement of the environmental and agricultural practices should be planned and reported. The concern is extended to the conservation of fauna and flora and to water management issues. The details about the use and non-use of agrochemicals are well defined. Recycling materials, fire, soil management and non-use of Genetically Modified Organisms (GMO) deserve some attention in the analysis. The last section sets the standards on labour conditions according to International Labour Organization (ILO) Conventions. An overview of the four sections is presented in Figure 4. There is higher emphasis on environmental development issues (45% of the minimum and 44% of the progress requirements) and standards on labour conditions (22% and 34%, respectively).



Source: Own compilation based on FLO (2007)

**Figure 4. Summary of Fairtrade requirements**

Fairtrade certification is accomplished by an international certification company, the FLO-CERT GMBH, in more than 70 countries (FLO, 2006; FLO-CERT, 2007). The steps to be followed for certification can be divided into: application, initial inspection, evaluation, acquiring certification and after certification.

The application process begins with filling the application form. The purpose is to provide some information and clarify the rules of FLO. Afterwards the inspection takes place in order to evaluate the compliance of the producer or trader with the

relevant Fairtrade standards. In a next step, the correction of the earlier non-conformities is evaluated. Once all of them are fixed, the organization issues a one-year period certificate. Before the end of a certification cycle, a renewal inspection is done in order to verify the compliance with the standards.

#### **4.5. Organic certification**

According to IFOAM (2007), organic standards have long been used to create an agreement within organic agriculture about what an “organic” claim on a product means, and to some extent, to inform consumers about it. Certification is a voluntary activity, although the market began to demand it for sales transactions. The Organic Guarantee System (OGS) Committee is designed to facilitate the development of organic standards as well as to provide an international guarantee. It unites the organic world through a common system of standards, verification, and market identity. Furthermore, organic certification is a procedure to verify that the production process conforms to certain standards. In other words, certification is primarily an acknowledgement that these products have been produced according to organic standards.

According to IFOAM (2008), the organic requirements are divided in (i) organic system, (ii) type of production (plant and crop production and genetically modified organisms); (iii) processing and handling; (iv) labelling; and (v) social justice. The 70 organic agriculture’s requirements are classified in “required” and “prohibited” standards. The requirements on the sections which address more attention are crop production and processing/handling with 14 or 25% of the required standards for each of them. However, processing/handling also has 7 of the requirements classified as prohibited. The requirements on the sections GMO, labelling and social justice are fewer. Regarding ecosystem and biodiversity principles, IFOAM (2008) notes that organic standards must ensure firstly that the biodiversity is maintained or enhanced on the farm holding on crop and/or non-crop habitats. Secondly, socially significant elements of the landscape on the farm holding such as historic features or sacred sites must be preserved. The principle applied to resource management relates to a set of requirements that standards have to meet.

The conversion of a plant production system takes at least 12 months. The objective is to establish a suitable period of organic management prior to the organic status of a crop, during which contaminants are reduced and healthy soils and sustainable ecosystems are being established. The organic management aims at sustaining production at all production stages in order to ensure that organic practices are implemented along the entire production chain from propagation to the final product including the production of seeds and propagation materials. Further, organic crop production sustains and enhances the health of the soil and ecosystem. The management of soil fertility requires the enhancing of the soil-ecosystem by incorporating green manure and other biodegradable inputs. The substances used are on the IFOAM Indicative List of Substances for Organic Production and Processing. The prohibited practices refer to the use of synthetic nitrogen fertilizers, phosphates and sodium nitrate as well as producing crops in hydroponics systems (IFOAM, 2008).

The standards on processing and handling require that risks of product contamination and environmental pollution are identified and minimized, transparency and traceability in the organic processing chain are guaranteed, and measures are taken to prevent co-mingling of organic products with non-organic products in processing, packing, storage, and transport. A product labelled as organic or in-conversion should comply with the applicable organic standards where 95 to 100% of the ingredients are organic. The labels identify the person or company responsible for the product and the body that assures conformity to the applicable organic standard (IFOAM, 2008).

Organic agriculture has a social policy that is in accordance with the International Labour Organization's (ILO) conditions; employees and contracted workers have the freedom to associate, to organize, to bargain collectively, to have equal opportunities, are not discriminated and are guaranteed human rights and fair working conditions (IFOAM, 2008). According to FAO (2001) producers and exporters of organic fruits and vegetables seeking to sell their products under the organic label in developed countries have to obtain organic certification. This can be done by the certification bodies of the countries targeted for export, or by other foreign certification bodies, or under a partnership agreement between these two types of certification bodies. To date, relatively few developing countries have certification bodies within their borders, although the situation is changing.

In Brazil, according to the Organic Planet (2007), there are 18 certifying companies able to certify organic products such as fruits, vegetables, dairy products, sugar, poultry, coffee and grains. The Institute of Biodynamic Certification Association (IBD) is one of the companies which deals with the certification and control of organic and biodynamic production. According to this company, the certification procedures involve, apart from other requirements, a process to convert the land lasting from 2 to 3 years. This process is accompanied by extension workers who inspect the land and guide the producers during all stages. The monitoring is done once a year (IBD, 2007).

## **5. CONCLUSION**

This paper presents a detailed review of the PIF, GlobalGAP, Fairtrade and organic certification schemes. Farmers have a certificate assured for 12 months. The monitoring occurs three times a year for PIF certified farmers, twice for GlobalGAP and once for organic and Fairtrade ones. Particularly, farmers with PIF certification have to comply with 115 requirements. In order to acquire GlobalGAP certification, farmers have to comply with 214 requirements. A comparison of the compliance points of PIF and GlobalGAP reveals that PIF has 85 of the total requirements set as mandatory or with some restrictions, while GlobalGAP has 148 major and minor musts. Most of the requirements from GlobalGAP are inclusive in PIF, but differences exist with respect to their level of importance and distribution over various stages. PIF focuses with 57 of the total requirements on the crop management compared to 128 of GlobalGAP. In both cases, the second major stage is the post-harvesting process and related issues. Additionally, it has been found that farmers with GlobalGAP certification utilize the book keeping provided by PIF, although GlobalGAP itself does not require any book keeping. It means that the process to certify with GlobalGAP

becomes easier and faster when the farmer has already PIF. PIF provides through normatives, specific procedures with regard to plant management and post-harvesting for each type of fruit. GlobalGAP in contrast presents overall requirements to be applied for all fruits and vegetables, not observing their different characteristics.

The analysis of the Fairtrade requirements reveals that it focuses on small producers' organizations. All producers must achieve 55 out of the 105 of the requirements. Considering both types of requirements, minimum and progress, it was found that the stage which receives most attention is the environmental part with 48 requirements, followed by the labour conditions with 29. Fairtrade certification does not have its own book keeping. It focuses more on the overall process instead of on particular characteristics and procedures of the production system. It guarantees a minimum price premium for farmers, in contrast to other certification systems.

An analysis of the organic certification standards reveals that the program disposes requirements as required (total of 57 out of 70) and prohibited (total of 13) but does not specify their level of compliance. In addition, the requirements are not directed to any kind of product or crop in particular. Major emphasis is put on the production system. Organic certification does not include any book keeping obligation.

Based on the findings, adopting certification is considered a catalyst to increase fruits exports, with farmers benefiting in economic and environmental terms. On the one hand, farmers have an incentive to upgrade and are able to access the international market with certification. Mango and grapes producers having a certificate are more likely to find customers in the international markets. Thus, certification is indeed a passport to access international markets. On the other hand, certification excludes less capable growers from the market, meaning that the increasing level of requirements *per se* selects the farmers who are able to comply. But also the access to information may also restrict farmers from participation in certification programs. Thus, organizations supported by government should assure that information is available and that certification is a transparent and a voluntary process. The Brazilian government and the private sector could promote the consumption of certified fruits via campaigns on the TV or fairs in strategic geographical locations. Domestic consumers should become aware of the environmental benefits of certified products. In particular, focus should be given to the benefits of consuming healthier fruits. In addition, promoting the consumption of certified fruits would give incentives to more farmers to adopt certification.

## **6. ACKNOWLEDGEMENTS**

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## **PRIVATE BANKING AND WEALTH MANAGEMENT SERVICES OFFERED BY BANKS**

**IMOLA DRIGĂ, DORINA NIȚĂ, IOAN CUCU \***

**ABSTRACT:** *The paper examines the features of private banking business focusing on the substantial growth in private banking over the last decade as commercial banks have targeted upmarket high net worth individuals. The accumulation of wealth has prompted the development of private banking services for high net worth individuals, offering special relationships and investment services. Private banking is about much more than traditional banking services of deposits and loans. It's about providing a one-to-one service by a relationship manager or a private banker to clients with a certain level of wealth. The globalization of financial markets provided access of private banking clients to a broader array of products, thus rendering greater portfolio efficiency and optimization of return through diversification. These kinds of services include: protecting and growing assets in the present, providing specialized financing solutions, planning retirement and passing wealth on to future generations.*

**KEY WORDS:** *high net worth individuals, client segmentation, private banking, wealth management*

### **1. INTRODUCTION**

Worldwide, private banking and wealth management are business models that continue to be attractive to financial institutions, despite a temporary setback during the global financial crisis of 2008-2009. These services are relatively 'low risk' when compared to other activities, such as investment banking or extending credit to businesses and consumers, although private banking is not totally independent of failure in other areas due to perceived credit and reputational risks.

Private banking is a term for banking, investment and other financial services provided by banks to private individuals investing sizable assets. The term "private" refers to the customer service being rendered on a more personal basis than in mass-market retail banking, usually via dedicated bank advisers.

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Providers:	Presence		Service		Range		Targets:
	Local	Global	Standardised	Personalised	Narrow	Wide	
<b>Category I:</b>							
Universal /Commercial banks		X	X			X	Globale clientele
Merchant/investment banks		X	X			X	
Trust banks		x	X		X		
Traditional private banks	X		X			x	
<b>Category II:</b>							
Financial boutiques	X		x		x		HNWI's UHNW's
Ateliers	X			X		X	
Independent asset managers	X			X	x		
Intermediaries	X			X	X		
<b>Category III:</b>							
Mutual fund companies	x		X		X		Affluent
Life insurance companies	X	X	X		X		
Brokerage companies	x		X		X		
Special discounters	x		X		X		

*X and x defines a different strength of the item: X means strongly related to the item; x weak relation to the item*

Source: Svend E., *International Private Banking*, Zurich, Verlag Paul Haupt, 1997

**Figure 1. Types of private banking providers and their targets**

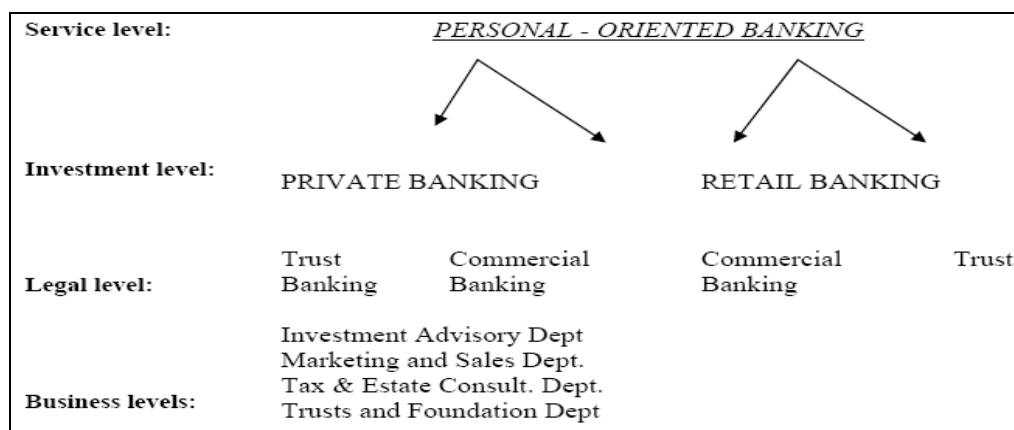
Private banking is a much more personalized banking service given to individuals who invest substantial sums. Private banking is about much more than traditional banking services of deposits and loans. The most noticeable difference between retail and private banking services are that private clients receive customer service on a 1-1 basis via a relationship manager or a private banker. It's about finding solutions to help affluent individuals manage their wealth today and develop new sources of wealth for future generations. Private banking means personalized financial and banking services that are traditionally offered to a bank's rich individuals. For wealth management purposes, high net worth individuals have accrued far more wealth than the average person, and therefore have the means to access a larger variety of conventional and alternative investments. Thus, banks aim to match such individuals with the most appropriate options. In addition to providing exclusive investment-related advice, private banking goes beyond managing investments to address a client's entire financial situation. Services include: protecting and growing assets in the present, providing specialized financing solutions, planning retirement and passing wealth on to future generations.

Private banking in the present socio-economic context represents the activity of personal financial counselling and wealth management for high net-worth individuals. Private banking services take into account each client's unique financial needs. In order to build a coherent and tailored private banking portfolio, the selection and allocation of products takes into account the client's risk appetite, investment objectives and horizon and also the desired structure. Investment objectives relate to what the client wants to accomplish with the portfolio. Objectives are mainly concerned with risk and return consideration.



Usually the private banking arm of a bank is separate from the retail banking arm and the service is completely distinct. Only very affluent clients demand wealth management where private bankers manage an investment portfolio for a family or an individual. The fee for this service varies from bank to bank and is charged yearly as a percentage of the total amount invested. The return of a portfolio will also depend on the standard of the private banking service. While some will provide excellent returns, others will continue to charge high fees while investing client funds in the bank's own investment funds, regardless of whether or not this is beneficial to the client.

A popular alternative to wealth management is self-directed private banking, where the client manages his own portfolio, at times calling on advice from the bank. The advantages of this type of account are lower fees and greater personal control. Private banking concerns the high-quality provision of a range of financial and related services to wealthy clients, principally individuals and their families. Typically the services on offer combine retail banking products such as payment and account facilities plus a wide range of up-market investment related services. Market segmentation and the offering of high quality service provision forms the essence of private banking and key components include: tailoring services to individual client requirements, anticipation of client needs, a long-term relationship orientation, personal contact, discretion, investment performance.



Source: Molyneux, P.; Omarini, A. - *Private Banking in Europe - Getting Clients and Keeping Them*

**Figure 2. Private and Retail Banking Overlaps**

## 2. PRIVATE BANKING AROUND THE WORLD

Historically private banking has been viewed as very exclusive, only catering for high net worth individuals with liquidity over USD 2 million, although it is now possible to open some private bank accounts with as little as USD 250,000 for private investors. An institution's private banking division will provide various services such as wealth management, savings, inheritance and tax planning for their clients. A high-level form of private banking (for the especially affluent) is often referred to as wealth management. While an individual may be able to conduct some private banking

with USD 50,000 or less in investable assets, some exclusive private banks only accept clients with at least USD 500,000 worth of investable assets. The rationale is that such high levels of wealth allow these individuals to participate in alternative investments such as hedge funds and real estate. Furthermore, this level of wealth often prevents liquidity problems. As a primitive form of private banking, exclusive services have been offered to certain clients even from the beginning of institutionalized banking activities. Although materialization of the private banking activity into a distinct service has taken place early in the 19<sup>th</sup> century, the term "Private Banking" has been used to depict this service only beginning with the inter-war period (between the first and the second world war). Private banking, for the most part, was an art developed offshore in London, Zurich and Vienna. Over two centuries ago Mayer Amschel Rothschild (1743-1812), founder of the famous international banking dynasty, created private banking. The House of Rothschild filled a void, creating a profitable continental money system that influenced the course of European history by financing its rulers and wars. Now, that was private banking.

Private banking has come to mean investment management beyond offering a confidential relationship with a person to whom you entrust your money. Those personal relationships still exist in the traditional places such as The City in London. But they apply more to extremely rich people than to moderately wealthy people who want more personalized treatment than they can get from their local bank branch or on the Internet. In this case, private banking means investment management offered on a personalized basis by a bank to an individual (or his company, trust or family foundation) with disposable wealth of more than USD 100,000.

Until relatively recently, only the wealthiest investors could benefit from having any kind of offshore bank account. Now, after dramatic changes in international banking, almost every bank offers special rates of interest to wealthier private depositors under the heading of "private banking." Minimums have fallen to USD 25,000 (or lower) in some cases, although many banks still maintain more traditional entry levels of USD 100,000 or much higher (USD 250,000 in Swiss banks) before offering special treatment to their clients.

The globalization of financial markets provided access of private banking clients to a broader array of products, thus rendering greater portfolio efficiency and optimization of return through diversification. A private banking relationship manager attends each client's needs as the sole representative of the bank. Thus, the private banking relationship manager is the link between the client and all of the bank's departments and directorates.

According to Euromoney's annual Private bank and wealth management rankings, which consider assets under management, profitability, ratio of clients to relationship managers and services offered, global private banking assets under management are up over 128% year on year. Best private bank for ultra high net worth (\$30m+) 2008. Table 1 displays results of one category of the private banking awards.

It has been estimated that the top 10 private banks in Europe manage around 20% of HNWI wealth, and within a country no player has more than 5% of the domestic private banking market. Note however that in Switzerland, UBS and Credit Suisse are major managers of offshore wealth - Switzerland being the capital of

offshore private banking. Switzerland, in particular Geneva, is a major location for private banking. Swiss banks hold an estimated 35% of the world's private and institutional offshore funds, or 4.6 trillion Swiss francs.

**Table 1. Best global private bank for ultra high net worth in 2007-2008**

Company	Rank 2008	Rank 2007
Citigroup	1	1
Goldman Sachs	2	2
UBS	3	3
Credit Suisse	4	5
JPMorgan	5	4
Morgan Stanley	6	8
Merrill Lynch	7	9
HSBC	8	6
Pictet & Cie	9	7
Deutsche Bank	10	11

Source: *Euromoney magazine, January 2008, Annual rankings*

But in 2009 the private banking sector had decreased. For example, a study of The Italian Private Banking Association emphasised the impact of the crisis on the private banking market. After five years of growth at an average of 7.4 per cent per annum, private wealth around the world in 2008 lost 14.7 per cent of its value, returning to 2005 levels. According to the study, which focused only on the Italian market, in 2008, private wealth dropped in value by 6 per cent. The situation has been caused by the slowdown in the world economy, the rapid fall in share prices, and the drop in private banking deposits. The overall wealth of affluent individuals with assets worth more than ten million euro decreased by around 23 per cent. The intermediate category of individuals with assets worth between five and ten million euro, on the other hand, grew significantly in number, up by 29 per cent. In contrast, the number of individuals with assets worth between one and five million euro remained largely unchanged, whereas the number of individuals with assets worth between 500,000 and one million euro dropped by 15 per cent.

### 3. DEVELOPMENT OF PRIVATE BANKING IN ROMANIA

In Romania, the increase of individual income and accumulation of capital as a result of economic development determined more and more banks to offer private banking services to high net worth individuals. The first private banking services have been offered in Romania starting with the year 2001, but the extension of the service throughout the Romanian banking system hasn't happened until 2005, when the movement of capital has been completely liberalized. This measure eliminated all restrictions with regard to investment of non-resident individuals on the local market.

In Romania the private banking market targets entrepreneurs and managers rising to the top of local branches in blue chip companies. Liquid assets are becoming more important, and therefore private banking has a key role. Private banking services

are offered by banks to their top clients in exchange for a commission or a fixed tax (monthly or yearly), depending on each bank's strategy.

The accumulation of wealth has prompted the development of private banking services for high net worth individuals, offering special relationships and investment services. RBS Romania (former ABN AMRO) has been one of the pioneers of private banking in Romania, but many banks now have separate private banking departments or divisions (BCR, UniCredit Tiriatic Bank, Bancpost etc.). UniCredit Tiriatic Bank adjusted its private banking strategy by focusing on higher income clients – the minimum access threshold for the bank's services was tripled to EUR 300,000. Although Volksbank had announced that its private banking division would become operational in October 2008, the service has not been introduced yet.

While ING started private banking operations in Romania at the beginning of the decade, the two largest banks the Romanian Commercial Bank (now BCR Erste) and BRD Groupe Societe Generale created departments in 2004. By 2007 smaller banks in Romania, such as Credit Europe Bank, ABN Amro (now RBS – The Royal Bank of Scotland) and MKB Romexterra, with its new status as part of the Bayern Lb Group, have entered the market. The latest entries are OTP bank, which began providing a private banking service since December 2007 and Transilvania Bank (BT) that started providing private banking services, in September 2008.

Only nine months after it launched private banking services, BT has become a market leader, with assets managed exceeding EUR 400 million. The bank targeted mainly its existing client portfolio for private banking services, given that Romania is in the middle of an economic and financial crisis and the market is stagnating. When the bank started providing private banking services, in September 2008, over 500 bank clients already had a profile suitable for these services. The bank's specialized managers are now working for more than 3,600 clients all over the country, from which clients from Bucharest own EUR 150 million of the bank's total assets.

The number of potential clients for private banking services in Romania is estimated at around 100,000 individuals, representing approximately 0.5% of the total population. At present, the private banking market leader is BCR, owned by Austrian Erste group, with assets managed exceeding EUR 1.1 billion and some 4,500 clients. Other top players are Raiffeisen Bank, with EUR 6,000 million in assets and 2,000 clients and UniCredit Tiriatic Bank, with assets worth EUR 280 million and 1,500 clients. As in 2007, most private banking branches were based in the north of Bucharest. BCR Erste had employed six people in its Bucharest branch and 24 people over the country covering cities such as Brasov, Timisoara, Craiova, Constanta, Iasi and Cluj-Napoca, while Raiffeisen had four branches in Bucharest and in Constanta, Iasi, Timisoara, Brasov, Cluj-Napoca and Ploiesti. ABN Amro (now RBS) had a 'preferred banking' salon in the capital and intended to add another branch in Bucharest, as well as in other major cities. UniCredit Tiriatic Bank's private banking operations were only available in Bucharest, but the bank had plans to cover the country. The Romanian private banking market offers services from bank deposits with negotiated interest rates, state bonds, municipal bonds and banking insurance products - they also put customers in contact with other branches of their bank that offer specialized services.

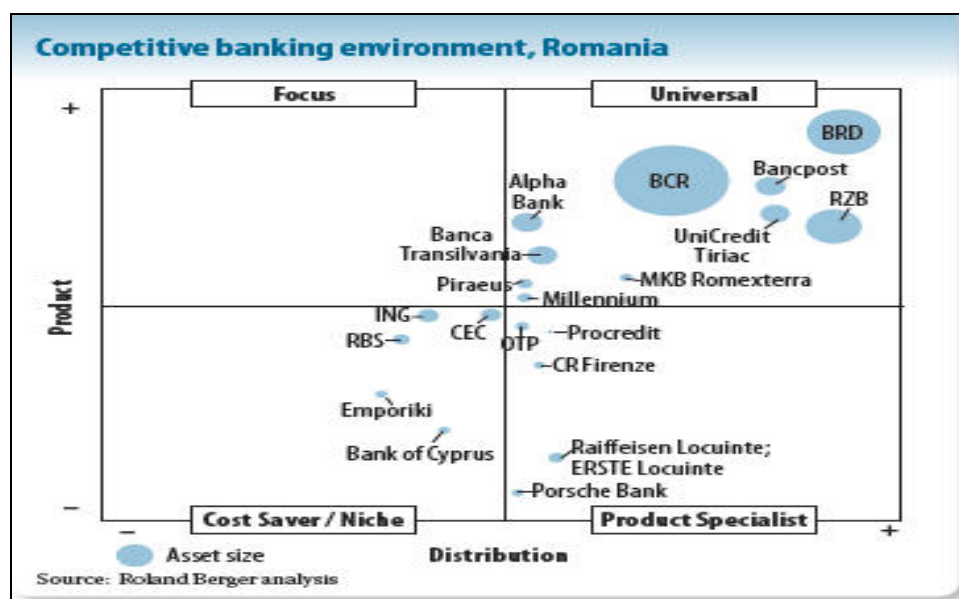


Figure 3. Competitive banking environment in Romania

In BRD Groupe Societe Generale, for example, the management of the client investment portfolio also involves the capital market, managed through BRD Securities. ING offers bonds, bills, shares and advice to individuals on where to invest. For relationship managers the basic principal is to advise diversification. UniCredit Tiriatic presents portfolios based on risk profiles and expectations of customers because some investors are active on the stock market, some are conservative and for them a portfolio mainly consists of bonds and long-term deposits and government securities and very few stocks. The clients of Raiffeisen usually invest around 70% in safe products and 30% in shares and deposits and products that have a higher risk. B.C.R. Erste runs an asset management portfolio, but only around ten per cent of its private banking customers exploit this service.

As early as at end-2008, the clients' tendency to turn their liquidity to the banks and put it in term deposits or investments carrying a very low risk has become obvious. The trend was the result of the steep fluctuation of the exchange rate as well as of the very high volatility in the real estate market. The term deposits offered such advantages as the high degree of liquidity, amid the current economic circumstances, and also the safety and diversity of the alternatives depending on each client's appetite and risk profile. Therefore, the Romanian private banking market grew spectacularly in 2008.

The banks have become increasingly attracted to managing the individual clients' wealth in the last two years, with the statistic figures showing such market niche had a potential of EUR 1.8 billion in 2007. The assets managed by the private banking services surged 40% in 2008 to more than EUR 3.1 billion. This year, the clients seem to have a more conservative approach, as they prefer to preserve what they have. However, the figures in the first four months point to a continued slight increase in the private banking.

The *Romanian Commercial Bank* (B.C.R.) is leader on the Romanian Private Banking market, being focused on creating tailored solutions designed for customers' needs. The bank has a pro-active and customer oriented attitude and provides different services one customer to another, being adapted to every customer's needs. Private banking services offered by the bank include not only banking products, but also advisory on investments, the capacity of performing operations for the customers and support them when making transactions. With the help of the personal banker, the customer is directed not only to typical banking products, but also to other financial products, such as brokerage, financial advisory, leasing. The bank promotes excellence in servicing customers and act with responsibility, loyalty, flexibility, integrity, commitment and professionalism in order to satisfy our customers' needs.

Concerning the retail & private banking business line, in 2007 the bank's efforts went towards intensifying the retail banking activities, exploiting B.C.R.'s experience in this area and that of Erste Bank Group for increasing products and services sales to individuals and for promoting attractive financing offers aimed at micro enterprises and small entrepreneurs. An important objective in this area was adapting the territorial network to the new concept of client servicing, going forward with its development by means of small branches located in commercial and densely populated areas and by creating real estate centres. Taking into consideration the range of products, B.C.R. tried to improve the existing ones – especially those pertaining to lending, current account and electronic banking services and related products, as well as creating attractive product packages. The major objective of the project was to create a new unitary framework, aligned to the best practices and standards of the Erste Group. Within the new servicing model, a new definition of the private banking clients and a centre dedicated to these clients were developed, new quality standards were implemented and new specific products were developed, respectively investment products of funds type.

*UniCredit Tiriac Bank* offers not only tradition and innovation, but also the competency of more than 1,500 private banking personal advisors, working in 19 countries to offer on-shore and off-shore services. Innovation is represented by the Private Banking businesses that UniCredit Group has in the Central Eastern European countries as well as continuous development in services and products offered by BankPrivat (Austria), HVB Private Wealth Management (Germany), UniCredit Private Banking (Italy), Bank Pekao (Poland), Yapi Kredi Bank (Turkey), UC Suisse (Switzerland). UniCredit Tiriac Private Banking has now deep roots on the Romanian market. Since 2003, when it started under the HVB Group umbrella, it has been and is now offering superior investment services and financial consultancy to clients that choose to benefit from a complex management both of their banking portfolio and their investments. The private banking business in UniCredit Group is currently serving 200,000 clients, managing assets for more than 120 billion Euro. The bank's private banking system boasts many strong points: the experience of our consultants, deep knowledge of the markets and effective financial strategies, which have made it possible for UniCredit to impressively increase the number of clients and the assets handled.

*MKB Romexterra Bank* has introduced private banking services to the Romanian market starting with the year 2007. *MKB Romexterra Bank* offers its Private Banking services to resident or non-resident individual clients who want to invest sums of at least 100,000 EUR or the equivalent in another currency. By signing the private banking contract with *MKB Romexterra Bank* the client benefit from the services of a dedicated relationship manager, who will advise him in all financial and banking matters and also receive and execute the client's orders in regard to the investment process. After determining the risk profile, the private banking relationship manager will present the investment possibilities and the customer will be directly involved in taking the decision upon the investment strategy, products and instruments.

The *OTP* private banking service was launched in Hungary in 1995. In 2002, the *OTP* private banking re-positioned the service and elaborated a new private banking value proposition. The success of the work performed so far, is indicated by the fact that the assets managed have tripled since 2002, while the number of clients nearly doubled. As a result, *OTP* private banking has grown and became market leader, with an estimated market share around 35 %. Currently, 12,700 clients have their assets worth nearly EUR 1.6 billion managed by *OTP* private banking; such an impressive volume is perceived as outstanding not only in the domestic market, but also at international level. In 2009, *OTP* private banking has been awarded by *Euromoney* the prize for "Hungary's Overall Best Private Banking Service Provider".

Also, *OTP Group* already started to implement its successful Private Banking business model in subsidiaries, in order to build up a service network for the high net-worth clients in the Central and Eastern European region. Romanian clients can also start enjoying the privileges offered by the *OTP* Private Banking services, sustained by the international group's experience and know-how. *OTP Bank Romania* private banking offers an enhanced level of service to the most demanding high net worth customers for their financial services requirements. The Private banking package provides a convenient solution from a single complete package for the client's day-to-day banking needs, as well as attractive discounts on other standard banking services and products. *OTP Bank Romania* private banking is a personalized service delivered through a dedicated private banking relationship manager who works with the clients, helping them discover their long-term goals and translating them into clear financial objectives. Experienced and trustworthy private banking relationship managers with exposure to financial industries build long lasting relationships and provide a high degree of confidentiality and support.

#### **4. CONCLUSION**

In private banking, the majority of Romanian customers are still not taking the long-term view nor are they looking at complicated products. The offer of high end financial products as seen on developed markets is still in an infant stage in Romania, but the size of the demand for private banking services is increasing. Customers are still not saving for the future, long-term savings being very rare because people are not thinking about instruments for five to 15 years and clients are still looking for facilities for under one and a half years.

In Romania, the most common private banking customers seem to be those over 30, with a university degree, mostly male, who have made money from, for example, an IT and telecom business, through real estate or a CFO or CEO in a Romanian branch of a blue chip company, as well as sportspeople and entertainers. This is unlike the West, where customers are closer to retirement age. There is also more interest among doctors, lawyers and surgeons, those from the so-called liberal professions, as well as a growing number of women interested in private banking. The latest trend for customers is people exiting from business. They want to keep their money safe and are looking for the best deal. They want double digit yield rates with no risk at all. Such customers are placing their money in property, reinvesting in their own business and in time deposits. Some have sold out part of their company and are looking to place their money in a secure place. They are not looking for a risky investment from a bank, because their own business is their high risk venture. They want security from private banking because, overnight, a business can vanish. On the whole, customers are not yet thinking of trust funds for their kids. This is similar behaviour to the new rich of Russia - where private banking customers are not discussing, for example, school fees financing. Right now they are thinking about themselves.

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## ROMANIAN 2004 - 2009 E-ECONOMY REVIEW

EDUARD EDELHAUSER, ANDREEA IONICĂ \*

**ABSTRACT:** *The paper aim is to find the best opportunity for the Romanian companies, through combing the attraction of EU's structural funds for increasing the competitiveness (amounted to 2,554 billion euro for Romania), and using the best Enterprise Resource Planning (ERP) software solution for offered by the most experienced software companies (the largest ERP vendors worldwide according to Gartner Dataquest are SAP with 28.7 market share, Oracle with 10.2 and Microsoft with 3.7. The authors have made a previous research in the field of ERP implementation in Romanian companies (ERP implementation in the whole Romanian mining industry in 2004 year). That research was based on a managerial research, made over 9 companies and 40 firms having over 47,000 employ. The study was focused on the IT level of this companies, and has reveal many interesting facts about hard and soft facilities and also about ERP implementation. Now the authors have made a similar managerial research over companies from different areas of activity, companies that have implemented a ERP, CRM or SCM software using the software made by representative ERP software companies (SIVECO, Oracle and Microsoft). After 2007 (using the opportunity of the National Strategic Reference Framework (NSRF) 2007-2013) in conjunction with the 2008 financial –economic crisis, all Romanian companies must use the Sector Operational Program (SOP) “Increase of Economic Competitiveness” for implementing the e-economy (a collection of enterprise resource planning (ERP), customer relationship management (CRM), and supply-chain management (SCM) computer applications ), and some of them have already made it, and the paper present such results. Because Romania attract only a few EU structural funds, and also because the ERP implementation in Romania has a low rate, such a research has never been made, for the Romanian companies, and also the conclusion are very useful for a best ERP implementation.*

**KEY WORDS:** *Enterprise Resource Planning, National Strategic Reference Framework, Increase of Economic Competitiveness*

### 1. INTRODUCTION AND OBJECTIVES

“The IT industry is an extremely dynamic environment both on local and international level. On the long term, the software and the IT service segment are

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expected to rival for IT investments in Romania. With ERP systems remaining the strategic sector for most local IT developers, the market of IT services could even witness a development in 2009, particularly in the ERP area,” said Irina Socol, Siveco Romania president and general director. The paper deals with a large and dynamic field, considering that the ERP and BI (Business Intelligence) market was dominated by four major players named SAP (System Applications and Products), IBM, Oracle and Microsoft, and the total revenue of these four companies exceeds 35 billion dollars in 2006. So the big four vendors called “bright lights” of BI, acquire over 50% of a 70 billion dollars BI market. This research is an attempt to investigate the IT field of the public companies. The study is limited to the mining companies and deals with the dependence between existing PC’ s, software programs and the level of business software implementation in every business function of the 40 firms. The paper consists of three parts, the first is dedicated to presenting world wide major BI vendors through Magic Quadrant, the second presents the research methodology and the results for Romanian companies, and the last consists of presenting the EU funds as a solution for the ERP market.

## 2. THE GLOBAL AND THE ROMANIAN ERP MARKET

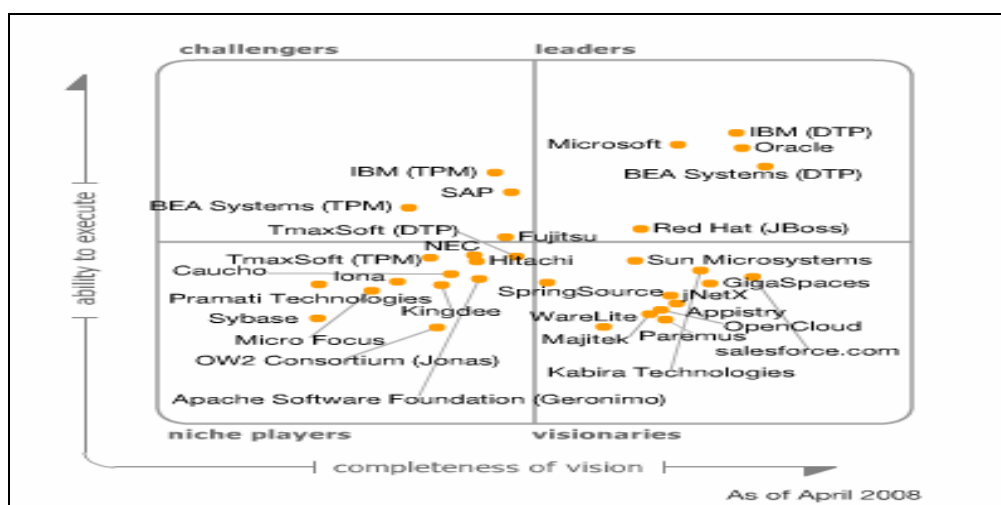
The ERP market is now dominated by IBM, SAP, Oracle, and Microsoft. Year 2007 was a massive consolidation in the business intelligence market. This year, it's about making decisions. The four largest vendors (SAP, Oracle, IBM and Microsoft ), are promising the world that they will offer an entire infrastructure for all BI and data management needs. They each want you to buy their vision of a BI platform. Understanding their strategies will help a Romanian ERP client to decide whether to listen or walk away.

Vendor	Revenue <sup>[3]</sup> (Native currency)	Revenue <sup>[4]</sup> (million \$)	Year
SAP	9.4 billion EUR	12401.4	2006
Oracle Applications	14.38 billion USD	14380.0	2006
Infor Global Solutions	2.1 billion USD	2100.0	2006
The Sage Group	935.6 million GBP	1832.0	2006
Microsoft Dynamics (Formerly Microsoft Business Solutions)	44.2 billion USD	44200.0	2006

Source: [www.idc.com](http://www.idc.com)

**Figure 1. Vendors of popular ERP software**

Users and vendors in the EAS market are driven to support enterprise-class software development projects. These projects often differ broadly in scope and specific requirements, as well as user circumstances. These differences lead users to a variety of solutions, and this range of demand supports broad supply options. We have used Gartner Magic Quadrant to depict ERP and EAS markets in the middle phases of their life cycle by using a two-dimensional matrix that evaluates vendors based on their completeness of vision and ability to execute.



Source: [www.gartner.com](http://www.gartner.com)

**Figure 2. Magic Quadrant for EAS 2008**

Based on this ERP and EAS Gartner global evaluation, and observing that Oracle, SAP, IBM and Microsoft are leaders, we will study the Romanian market in order to find opportunities to implement such applications in 2009. On this market SAP offers Business Suite 7, the most current versions of SAP's business applications, including modules for managing supply chains, product life cycles, and customer relations. SAP Enterprise Application Software (EAS) market share was 22,4% in 2007. SAP ERP Romanian implementation made in public or big companies (over 1000 employee) were: TAROM, Casa de Economii si Consemnatuni, Electrica SA - Filiala Banat, Ministerul Sanatatii, Primaria Iasi, Primaria Sibiu, RATB, S.C.D.G.N DISTRIGAZ SUD S.A. and Societatea Romana de Radiodifuziune. SAP ERP Romanian implementation for private or medium companies (over 250 employee) were: Apa Canal SA Sibiu, DESPEC Romania SRL, Materom SRL, PIC S.A., Vasion SRL, BCR Asset Management and Alexandrion.

Romanian business software developer Siveco Romania controls 21% of the EAS market and 15.9% of the market of software systems integrators, appearing as the only software integrator that ranks both among the top suppliers of business solutions and of suppliers of IT services, reads a company release. By the specialized segments of the EAS market, Siveco Applications asserted itself as a leader of Enterprise Resource Planning (ERP) solutions, with an estimated market share of 24.7%. Siveco ERP Romanian implementation made in public or big companies (over 1000 employee) were: Administratia Porturilor Maritime Constanta, ALRO Slatina, Arpechim, Centrala Nuclear-Electrica Cernavoda, Dobrogea Grup, Colterm Timisoara, ermoficare 2000 Pitesti, CNAS si sucursale, Ministerul educatiei, APIA, Severnav Drobeta, Directia Generala a Vamilor si sucursale, Aerostar and RAAVJ Petrosani. Siveco ERP Romanian implementation for private or medium companies (over 250 employee) were: Aerotim Timisoara, Carpatair, Astrabus Arad, Anticorosiv, Butan Gas, Meva Drobeta, Romvag, Urban, AKER Tulcea, URSUS, Hidroserv Hateg and

Hidroserv Portile de Fier. Oracle ERP Romanian implementation are only a few Prefab SA, Raiffeisen Bank and Transylvania Bank. So there are only a few representative companies who decided to implement performant ERP application.

### **3. MANAGERIAL RESEARCH IN THE ERP FIELD, FOR ROMANIAN NATIONAL NATURAL RESOURCES COMPANIES**

We have investigated the main national companies (most important one in coal, metal and salt - natural resources): CNH (National Bituminous Coal Company), CNLO (National Brown Coal Company), MINVEST (National Copper, Gold and Iron Company), SALROM (National Salt Company), and REMIN (National Precious Metal and Non-Ferrous Company).

#### **3.1. Methodology. The research's instrument and data processing**

The instrument used for collecting data was the questionnaire and we have used SPSS Statistics 17.0 to operate the answers. Data computing was based on data obtained from 40 firms, organized in 9 companies (90 % of the Romanian mining companies). To this purpose we have use the statistical analysis software SPSS as well as Excel graphs and tables. Thus the method used in data processing where the SPSS tools (multiple linear regression and curve estimation of regression lines). The questionnaire was built on the basis of a study made by professors and specialist of Auburn University of Alabama, study oriented on identifying the differences existing between the use of the information systems in the human resource management in the public and private sector. In our case the questionnaire was extended over five business functions of a company, and contains eight general questions and five questions for each business function.

#### **3.2. Results and statistical correlations analysis**

We used an econometrical model to explain the existing situation and the intensity of the link between the variables studied using the correlation analysis, while the regression analysis is used to estimate the value of a dependent variable taking in account the values of other independent variable, and appraise the degree wherein the effect can be explain by cause. The managerial research was made through a variety of business functions such as manufacturing, supply chain management, financials, human resources and customer relationship management. In every business function we focus on 4, 5 or 6 important and usually applications. As we suppose the financial business function through using ERP is almost 100 % implemented in every company, but the new concepts of CRM and SCM have a very poor implementation (under 30%). For most significant 22 firms (of 40), we have studied the correlation (R) between the independent variable PERS (the employee number of the organizations), and the dependent variable PC (the number of personal computers owned by the organizations). The following figure shows the evolution of linear regression computed through correlations and square average deviations.

Company % implement	CNH	CNLO	MINVEST	SALROM
AFC1	0,62	0,31	0,31	0,23
AFC2	0,62	0,31	0,31	0,23
AEC3	0,54	0,31	0,31	0,23
AFC4	0,00	0,00	0,00	0,00

Company % implement	CNH	CNLO	MINVEST	SALROM
AC1	0,46	0,31	0,31	0,23
AC2	0,15	0,23	0,08	0,15
AC3	0,08	0,00	0,15	0,00
AC4	0,31	0,31	0,00	0,08
AC5	0,08	0,00	0,00	0,00

Financials	Customer Relationship Management & Supply Chain Management
AFC1 Accounts Payable and Receivable ( Trial Balance, General Ledgers, Stocks )	AC1 Invoices and Bills for Customers and Suppliers
AFC2 Business Transactions, Inventory	AC2 Customer Management
AFC3 Fixed Assets	AC3 Loans
AFC4 Others	AC4 Contract
	AC5 Others

Figure 3. Financial and CRM – SCM business function for the most important mining companies

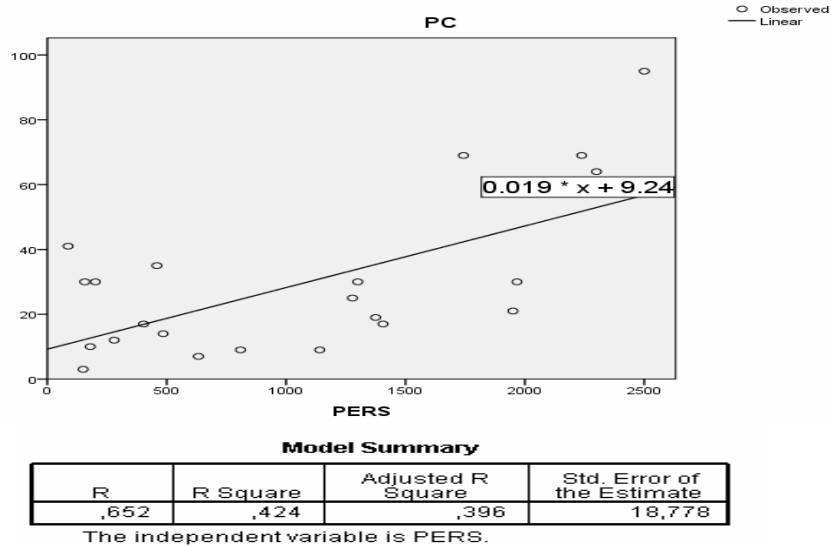
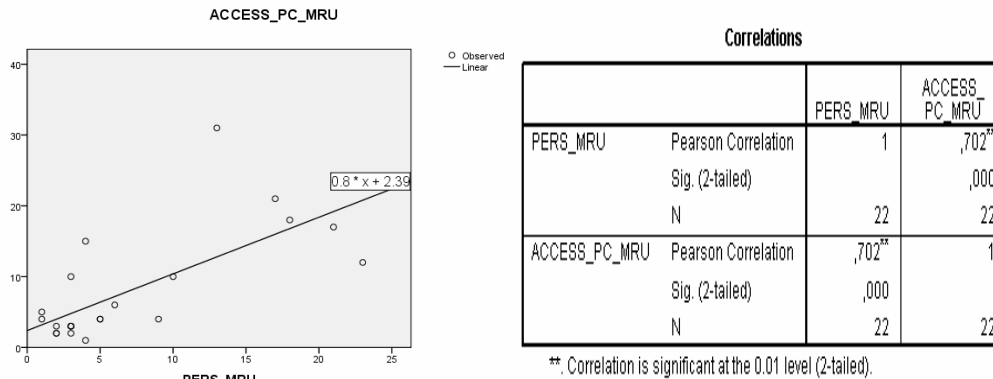


Figure 4. Linear regression analysis between an independent variable called PERS and a dependent variable called PC

The quotient used for the statistical analysis shows a functional dependency between the two variables, in fact the correlation is 0.652 and the adjusted R square is 0.424. We can conclude that a linear correlation exist and the additional statistics parameter are estimates “constant” a=0.019, and "slope" b=9.24, and the equation is linear. We have also studied the correlation between the independent variable PERS\_MRU (the number of personal involved in the HRM department) and the dependent variable ACCESS\_PERS\_MRU (the number of personal that can access

personal data through the HRM - ERP system). The quotient used for the statistical analysis shows a functional dependency between the two variable, in fact the correlation is 0.702, and also a linear correlation exist (a=0.8 and b=2.39).



**Figure 5. Correlate analyze and linear regression analysis and curve estimation between an independent variable called PERS\_MRU and a dependent variable called ACCESS\_PC\_MRU**

We can conclude that in Romanian public natural resource companies have a poor ERP implementation and also a small or reduced correlation ( $R=0.65$  and  $R=0.7$ ) between hard, soft and IT qualification. One of the solutions could be the use of structural funds for better ERP implementation.

#### **4. STRUCTURAL FUNDS DESTINED TO INFORMATION TECHNOLOGY AND COMMUNICATION (IT &C), FOR PRIVATE AND PUBLIC SECTORS**

Since its accession to EU on 1 January 2007, Romania is eligible for EU structural and cohesion funds.

##### **4.1. Operational Program Increase of Economic Competitiveness (OP-IEC) or Competitiveness**

Operational Program 2007-2013 contains the 5 priority axis. From this axes, the priority axis 3 named "Information and Communication Technologies for private and public sectors" has the following key areas of intervention: Supporting the Information and Communication Technology; Developing and increasing the efficiency of electronic public services and Sustaining the e-Economy. The 3<sup>Rd</sup> key area of intervention "Sustaining the e-Economy" has as indicative operations: Support for IT Integrated Systems through introducing and developing Integrated Systems for business management (ERP and CRM), and introducing Information Management Systems; Sustaining electronic applications for business; Support for introducing electronic tender systems and Support for ensuring more secured electronic transactions. Under this key area of intervention, financial support is directed towards

IT&C applications and their interoperability, adoption of integrated solutions for companies leading to long term cost-cutting, thus facilitating the access to internal and international market and sustaining more efficient management processes, observing at the same time the increased security of the electronic networks and the adoption of anti-fraud solutions in order to develop a secure and dynamic e-Business sector. The financial allocation for OP-IEC is around 3.78 billion Euros (2.55 from EU funds (13% of 19.2 billion Euros) and 1.23 as national counterpart)

#### **4.2. Romanian IT&C sector, the economic crisis and EU funds in 2008**

The Romanian IT&C sector registered a market value above 7 billion Euro in 2008, making a 10% contribution to the country's gross domestic product (GDP). The sector has attracted substantial investments, high quality human resources and public prestige. BMI (Business Monitor International) projects that Romania will be one of the fastest growing IT markets in the CEE region. Despite a slight slowdown due to the global economic situation, around 1 million PC units are projected to be sold in 2008, an increase of about 25% in volume terms. In 2008, total IT market growth is likely to be about 12% in dollar value, slightly below last year's level. Overall PC penetration is around 22%, and the market remains underdeveloped by most indicators, representing consumer growth potential as incomes rise. (Romanian Information Technology Report 2009). The government announced that IT service providers will be in line to receive EU structural funds worth over 559 million euro during the 2007-2013 period under the EU program to increase economic competitiveness.

The total amount of money dedicated to strengthening the sector is 559 million, with an EU contribution of 68.5% (383 million), and co-funding from the public and the private sector. The EU funding is targeted at three main areas: developing IT&C use (149 million), strengthening electronic services (119 million), and sustaining the e-economy (115 million), with a more substantial resource allocation to IT&C use. For operation "Support for the implementation of IT integrated systems and of other electronic applications for business management", the overall value of projects registered on the web site was of about 103 million RON. Within this operation, projects may be financed for the enforcement or expansion of ERP systems, CRM, implementation of software solutions for design and production, for improvement of the management of products life cycle (PLC), of IT products of BI systems. For using the structural funds the authors have proposed as members in the implementing team, in the Sector Operational Program for Human Resources Development (OP HRD-POS DRU) a project called e-Master for the "University for the labour market" call, in partnership with Technische Universität Bergakademie Freiberg.

#### **4.3. Structural Funds bringing in growing profits for ERP vendors, but also may be their escape**

Estimating that the structural fund market will bring new impetus to the ERP market, estimated in 2007 at 125 million Euros, experts expect ERP systems to bring in

more and more revenue. Having in mind that the global IT services market has been estimated by research companies to reach 390 million Euro, ERP represents about 30%. “The local market is consolidating, especially after integration, with competition sharpening. This drives the business software sector, which we estimate will be dominated by large companies, with market power, with European level solutions, and a diverse business expertise”, said Irina Socol, president & CEO, SIVICO Romania. The SIVICO ERP product, SIVICO Applications, is used by 550 customers in the country in all sectors of activity, as a Romanian solution of European level performance. In its turn, Oracle Romania will be focusing on projects dedicated to the public sector and growing medium sized companies. “I think structural funds will drive business starting this year. We will continue to focus on industries such as public sector, finances and banking, utilities, telecom, distribution and production oil and gas”, said Sasa Pastor, applications sales director, Oracle Romania.

## 5. CONCLUDING REMARKS

The research has finally revealed the global IT and specific ERP implementing level in the Romanian natural resource companies as well as some problems that are country-wide valid. As we have supposed the financial business function through using ERP is almost 100 % implemented in every company, the new concepts of CRM and SCM have a very poor implementation (under 30%), the payroll of HRM is almost 100 % implemented, and there is a good relationship between computers and personal. According to the research, but also having in mind the indispensable use of structural funds we can conclude that because an ERP implementation in a company is estimated around hundreds thousands euro, and the 2007-2009 world financial crisis conduct to a lack of resources, Romania also have the opportunity to use the Structural Funds. The tendency for next years must be the use of these funds for the implementation of the e-business solutions. We must say again that the funds are allocated by the European Union, and Romania is eligible for €19.7 billion of funds from the EU in 2007-2013.

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## PSIHONOMY - PSYCHOLOGY INVESTORS

MARIA ENESCU, MARIAN ENESCU \*

**ABSTRACT:** *Article highlights methods for classifying investors according to their typology, professionalism and courage in investment activity, methods that provide a useful financial tool. Evaluation of investment behaviour in Romania during the transition period ending with the investor profile psihonomic. Psychological profile and classification systems gain popularity there are a lot of sense that in some years, many firms will use it regularly, adjusting investment advisory services to the current needs of customers.*

**KEY WORDS:** *psihonomy, investment, investor, economic psychology, psihonomic profiles*

In recent years, research psychologists have discovered that investors appear under different types and so-called "type" investor behaves a certain way of thinking investment. This has led to the emergence of a new branch of psychology - psychology psihonomy or economic with an important role in macroeconomic analysis.

Each investor is different, the goals / targets financial varied with different tolerances to risk, different personal situations and different desires. In terms of investment management, these characteristics are often precisely defined at mal objectives (benefit type) and constraints (time horizon, how liquid the investor is, readiness to risk) the fact that led in recent years, development a classification of them according to their typology, professionalism and courage in the investment business, is ultimately a very important aid in the analysis [1].

**Model "of the two paths"** of Marlyn's MacGruder Barnwell, created in 1987 for the agency MacGruder (Model Barnwell) is the easiest part, but also misleading, that investors are classified into two groups: passive and active.

1. Passive investors are wealthy individuals who are in the passive - through inheritance, career or risking the money of others and not their money; in this category include, in general, the following occupational categories: physicians (other than surgeons), executive directors, lawyers and accountants working in companies. Reasons why they belong to this group are as follows: in the first years

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of probation, their financial resources are not very large, must wait a certain period to earn large salaries, therefore they are very careful with their money, with great need safety. For these investors is more important as safety risk.

2. Investors are active adherents of the risk individuals, who have won a fortune or have had significant pay good for the lifetime, in this category included: individuals who have developed their own business, surgeons, free professional lawyers, accountants). They accept the risk of investment experience in creating personal wealth; engage in direct control of the investment being in close connection with self-confidence and personal skills, considering that direct involvement by default helps reduce the risk.

**Model "of five ways"**, [2] developed Bailard, Biehl and Kaiser (BB & K model), probably one of the most sophisticated models, approaches the level of investor confidence and preferred ways of action. The trust is reflected in emotional choices based on how much the investor is concerned about certain actions and decisions, ranging mostly from trust to anxiety (concern).

The manner of operation is reflected in the following characteristics of the investor: as the method is investor, how analytical and intuitive is it going to look at raging.

The model defines five types of personality:

- *adventurous* - followers of the style of "go for it", strong and determined and ready to try their luck;
- *celebrities* - which is considered "belly earth", but which in reality are not able to finance and control;
- *individualistic* - people methodical, careful, balanced analysis, characterized by confidence in their own forces;
- *prudential* - investors, usually elderly, who intends to keep the property safe, avoiding emotional situations;
- *those who "guns"* (straight arrows) - are not included in any of the extremes types personalities top of the bank, which are generally balance which assumes a moderate risk.

**Model "of the nine money personalities that are"** made by Kathleen Gurney of Financial Psychology Corporation classifies investors by stress over money and emotional reaction of individuals to financial decisions.

The nine distinct personality types are identified in research on how individual, which earns, spends, saves and invests. Types described in this model are:

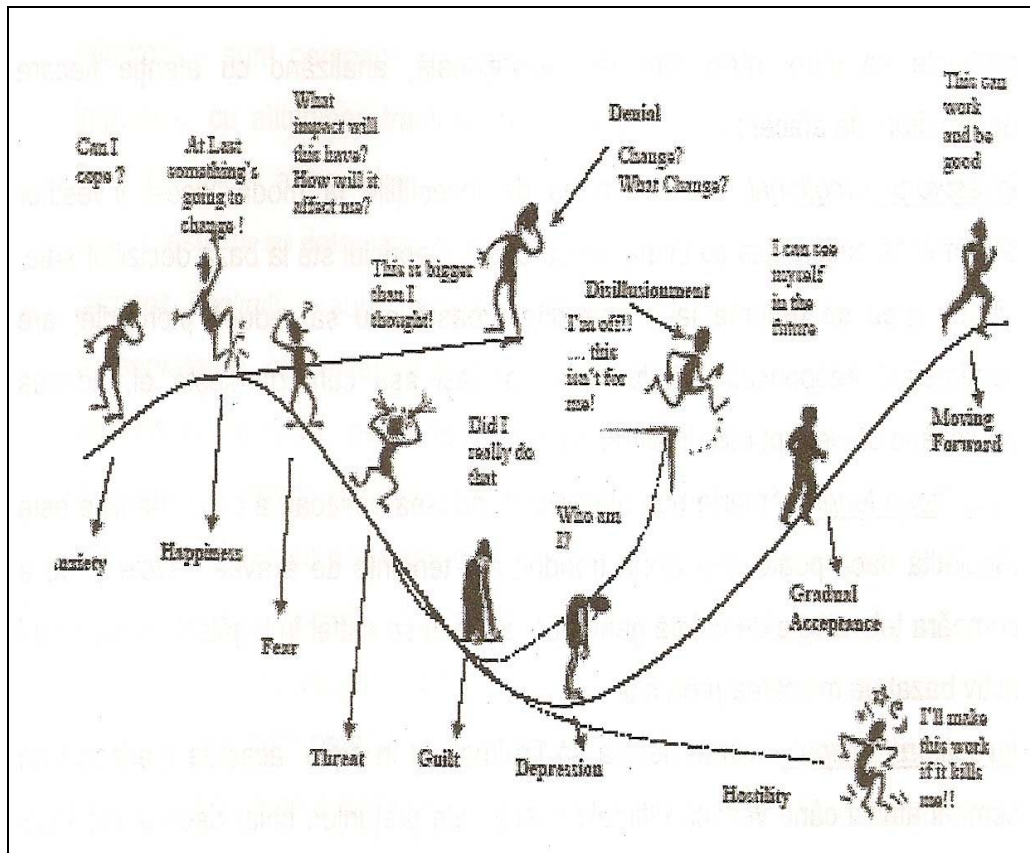
- *players themselves* - choose the path of minimum resistance, being concerned primarily with safety and security of investments, performing the same actions they have previously;
- *entrepreneurs* - especially in men whose profit is driven by passion for excellence and commitment, whose motivation is not money, financial success is a card recording the results for its investment in shares as a method of implementation and demonstration of success;
- *optimists* - are people close to retirement-oriented investments not risky not want to be too involved in their financial management;
- *hunters* - are educated people, mostly women, who earn very much, impulsive, with attitude when living with a strong work ethic from.

- *old people* - are people more often married, better educated, conservative, high income, with risk aversion, who like to control the revenues, so as their assets are protected and in safety, believes that the work supported is the only source of financial gains;
- *perfect man* - are people who are afraid to not make financial mistakes, not confidence in their abilities, they tend to avoid the decision to invest, afraid to not make any financial blunder, not knowing to assess risk;
- *producers* - are powerful people involved in their work, it is possible to earn less because of distrust in its financial management, basic financial knowledge not allowing them small to properly assess the risk;
- *searchers high class* - high rollers - they are creative people and extrovert, seeking power, work and play many strong, being involved in investment risk, which implies a very high value of their assets.
- *money masters* - are people determined, very difficult to back out of the way, who like to be involved in choosing their investment and money management, which leaves things go wrong, having a balanced view of the future financial situation, this giving them satisfaction and safety.

**Psichonomic profiles of investor.** This type of investor profiles determined following final psichonomic investors [3]:

- *prudent investor / discreet* - very conservative, this investor needs financial security, he can avoid trade actions with high risk and may not take into account advice professionals, preferring to lead their own financial affairs, not to lose or accept the lowest amount of money and not hurry to enter a business investment, carefully analyzing each business opportunity, the investor
- *emotional investor* - very attracted investments fashionable, this investor acts sentimental heart not head.
- *technical investor* - very observant, often obsessed, whose worth is rewarded if it can forecast the trend, has tended to be and needs to buy the latest generation technology, thus being related to trade based on active movement of prices;
- *busy investor* - feel the need to be involved in the markets, they provide a signal when checking the last movements of the prices, even if this is done of the bank many times a day;
- *investor accidentally / incidentally* - is deemed sufficient to make investment often forgetting that he did it, very rarely check their financial affairs;
- *informed investor* - use information from various sources and is carefully investment, markets economy; seeks financial opinions and assessments of experts, acting against the market only after it very well balanced pros and cons.

For the transition period in Romania which was very suggestive presentation of the figure below, where the attitude of investors should be consistent with the period covered in the analysis.



Source: Fisher, J., *Process of Transition Curve*, Leicester University, England, 2003, p. 3-10

**Figure 1. Psychology of investors during the transition period**

**Conclusion.** For investors, any method which clearly demonstrates where they made mistakes in making investments is, by definition, a useful financial tool. Psychological profile and classification systems is gaining popularity and there are a lot of feeling in a few years, many companies they will use on a regular basis, adjusting investment advisory services to the needs of current customers.

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## ROMANIA'S ABILITY TO DRAW EUROPEAN FUNDS

DANIELA FLORESCU, PETRE BREZEANU \*

**ABSTRACT:** *The European funds do not represent an inward purpose, but instruments in reaching the objectives established at the level of the European Union, of the EU member state, based on the implementation documents. This research work displays diverse aspects concerning the Romania's ability draw of irredeemable funds in period 2007 - 2009. Furthermore, starting, on one side, from the comprehension of the spirit, philosophy and reasoning of the European Union objectives, and on the other hand, from the definition and general characteristics of any program destined to engaging such funds.*

**KEY WORDS:** *structural funds, irredeemable financing, absorption capacity, operation programs, convergence*

Categorically, the financial crisis, started worldwide about two years ago, creates big problems to the entrepreneurs who either benefited from a credit line and now they are hardly coping with the debts, or are at the very beginning and, since they no longer find financing sources, they are about to take a step back or even to definitely give up the project.

Today, every one talks about the crisis, even the astrologers make fuzzy forecasts. On everyone's lips one can read questions such as: What is the propagation speed of the crisis? Up to what level shall we see its effects? How does the crisis affect our business? What is the good direction to turn to, so that to be less affected? In short:

What's to be done?

If that's how things really were, we only have one solution: to find a cheap financing source, that would allow us to develop new businesses, adjusted to the new requirements and to the new conditions. This particular source is represented by the structural funds, known the fact that Romania being able to benefit from non-redeemable funds in amount of Euro 32 billions for the period 2007-2013.

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The structural funds are post – adhesion funds paid from the European Union budget, whose main objective is to provide support for the member states so that the economic and social disparities between the European Community regions diminish.

They are used to support investments in:

- education and health;
- development of IMMs (small and medium sized enterprises);
- infrastructure and transport;
- environment;
- energy sector;
- agriculture;
- tourism;
- research;
- professional training etc.

The structural assistance allocated to the Member States from the EU27 for 2007-2013 is of 308 billion euro, which represents 35% of the EU budget of an 862 billion euro value. The amounts allocated to the new Member States for the 2007-2013 period are significantly larger than Bulgaria, the total amount allocated is of 175 billion euro, representing more than half of the entire budget allocated in the first exercise. For the EU 8 plus Romania and for the cohesion.

When it comes to such amounts, everyone is questioning the manner of improving the capacity to manage the structural funds.

In a report by the Ministry of Finance indicated that up to September 30, 2009 were 12.975 projects submitted amounting 99.646,854 million lei of which were approved in total 2.672 project ( Tab. 1). From them:

- Within the Regional Operational Program 2.455 projects were submitted in amount of over lei 26.38 billion. Also, 616 projects were approved so far, in amount of lei 6.05 billion, out of which around lei 4.09 billion represent EU funds;
- With regard to the Environment Regional Operational Program, 113 projects were submitted in amount of over lei 6.69 billion. Also, 61 projects were approved so far, in amount of lei 5.76 billion, out of which around lei 3.79 billion represent EU funds;
- For the Transports Regional Operational Program, 37 projects were submitted in amount of over lei 9.45 billion. Also, 16 projects were approved so far, in amount of lei 3.03 billion, out of which around lei 677 million represent EU funds;
- With regard to the Program „Growth of the Economic Competitiveness” Sector Operational (POS – CCE) 4.715 projects were submitted, in amount of lei 24.56 billion in the filed of IMM investments, research and information technology, they still being under evaluation. Also, 1.082 projects were approved so far, in amount of lei 3.67 billion, out of which around lei 2.07 billion represent EU funds. MEF representatives anticipate that the financing contracts would be signed sometime between April - October 2009. Moreover, also within POS-CCE, the Financing Agreement between the Romanian

Government and European Investments Fund for the JEREMIE program in Romania was approved: based on this agreement, Euro 100 million are to be used to finance the operation Support for the development of guarantee funds within the IMM Access to financing Major Intervention Domain;

- With regard to the „Human Resources Development” Sector Operational Program, 5.007 projects were submitted, in amount of lei 31.79 billion. At the same time, 782 projects were approved, in amount of lei 3.41 billion, out of which around lei 2.79 billion is represented by EU funds;
- Within the „Growth of Administrative Capacity” Operational Program 627 projects were submitted in amount of over lei 599.87 million. Also, 103 projects were approved, in amount of lei 191.42 million, out of which around lei 157.2 million represent EU funds;
- With regard to the „Technical Assistance” Operational Program, 21 projects were submitted in amount of lei 181.38 million. Also, 12 projects were approved, in amount of lei 124.04 million, out of which around lei 79.25 million represent EU funds.

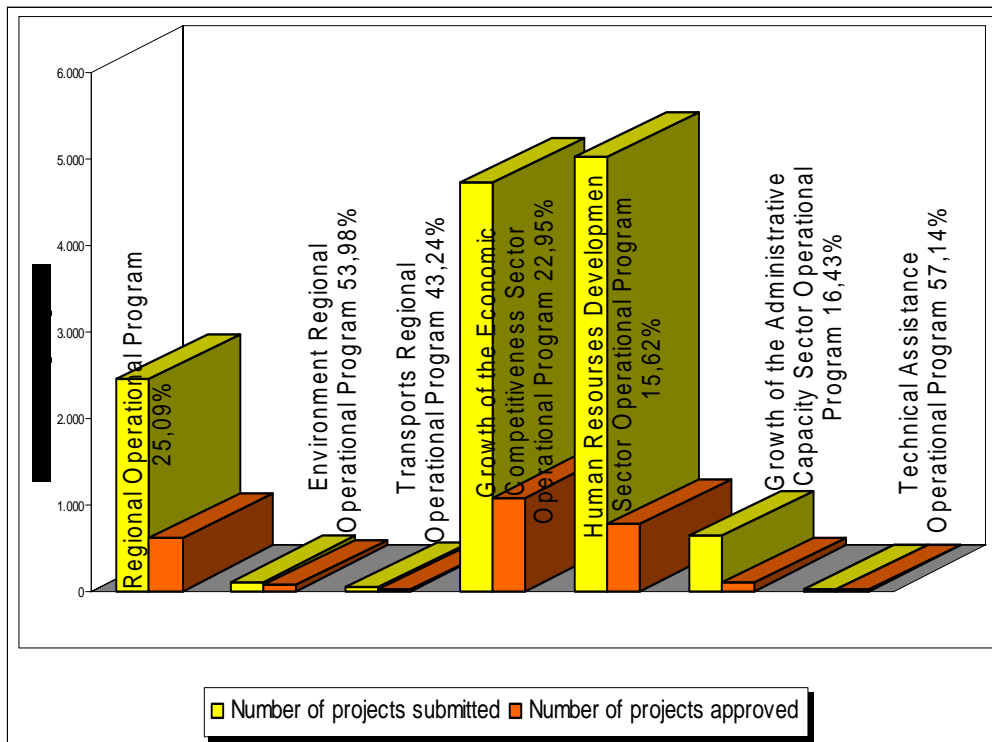
**Table 1. Absorption capacity January-September 2009**

Operational Programs	Reporting Period	Total Funds Allocation Mil Lei	Projects Submitted			Projects Approved			Total Payments Sept. 30 2009 (Mil Lei)
			Number of projects	Total allocations (mil lei)	Total assistance EU (mil lei)	Number of projects	Total allocations (mil lei)	Total assistance EU (mil lei)	
Regional Operational Program	31.01.09	4.964,78	1.418	14.038,68	8.881,63	64	2.134,30	1.515,36	430,79
	30.09.09		2.455	26.367,06	17.552,04	616	6.054,82	4.093,72	
Environment Regional Operational Program	31.01.09	5.441,03	69	5.789,97	3.844,63	32	4.185,41	2.796,66	722,77
	30.09.09		113	6.692,75	4.436,42	61	5.757,25	3.794,82	
Transports Regional Operational Program	31.01.09	5.523,20	16	4.401,61	1.535,71	6	127,17	28,49	47,65
	30.09.09		37	9.450,93	4.076,43	16	3.033,16	677,61	
Growth of the Economic Competitiveness Sector Operational Program	31.01.09	3.084,50	2.880	16.721,61	8.221,13	337	1.787,57	1.221,70	809,24
	30.09.09		4.715	24.560,70	11.686,45	1082	3.667,21	2.071,09	
Human Resources Development Sector Operational Program	31.01.09	4.205,64	2.834	10.180,65	8.254,10	249	1.586,97	1.272,4	203,30
	30.09.09		5.007	31.794,17	28.778,43	782	3.413,03	2.793,86	
Growth of the Administrative Capacity Sector Operational Program	31.01.09	376,58	206	318,95	270,39	30	54,31	44,06	2,51
	30.09.09		627	599,87	485,69	103	191,42	157,21	
Technical Assistance Operational Program	31.01.09	238,05	7	73,56	45,46	5	62,39	37,76	0,22
	30.09.09		21	181,38	118,98	12	124,04	79,25	
TOTAL	31.01.09	23.833,78	7.430	51.525,03 0	31.053,05 0	723	9.938,120	6.916,430	2.216,48
	30.09.09		12.975	99.646,85	67.134,45	2.672	22.440,92	13.667,55	

Source: Authority for Coordination of Structural Instruments

The projects were submitted in a very large number, but as can be seen (Figure 1) less than 21% of them have been approved. The large number of projects indicates so, if Romania case, only wish funding applicants not their ability to attract these funds. The reasons are multiple and vary from one program to another. The local authorities, difficulties arise from the moment of writing projects.

Even management authorities have come to recognize that the documentation required is too dense leading to delay submission of projects, in certain situations. Entrepreneurs are actually suffocating the large number of approvals they need to obtain for the compilation of the dossier.



**Figure 1. Situation of numbers the project approved in all numbers of the projects submitted**

On a careful analysis of the situation, it can be noted that Romania is facing a whole chain of problems. Although the projects were submitted more than one year ago, they have not received a solution yet. The explanation of the representatives of the competent authorities is simple: they have a small number of available personnel, working on the signing of the contracts and preparing the Guide for launching the financing line of this year. Before the Government approved a staff increase by 30 jobs for each management authority, but everything was cancelled once the expenses salaries budget diminishing policy of the actual Government was implemented.



This is a vicious circle. Everyone knows it, but no one has a solution. This is a system problem, but nobody cares to solve it. If the budget expenses cannot increase in 2009, because the deficit must be kept under control, it is obvious that other solutions need to be sought for. Every time, the Government people take pride in the methods of simplifying the funds accessing procedures, but the solutions prove to be unreliable.

If the number of projects submitted Romania it boasts a conspicuous place, as regards absorption capacity, the end of September, it reached only 9.30%, the Program „Growth of the Economic Competitiveness” and the Environment Regional Operational Program registering the highest values, 26.24% and 13.28% respectively (Figure 2).

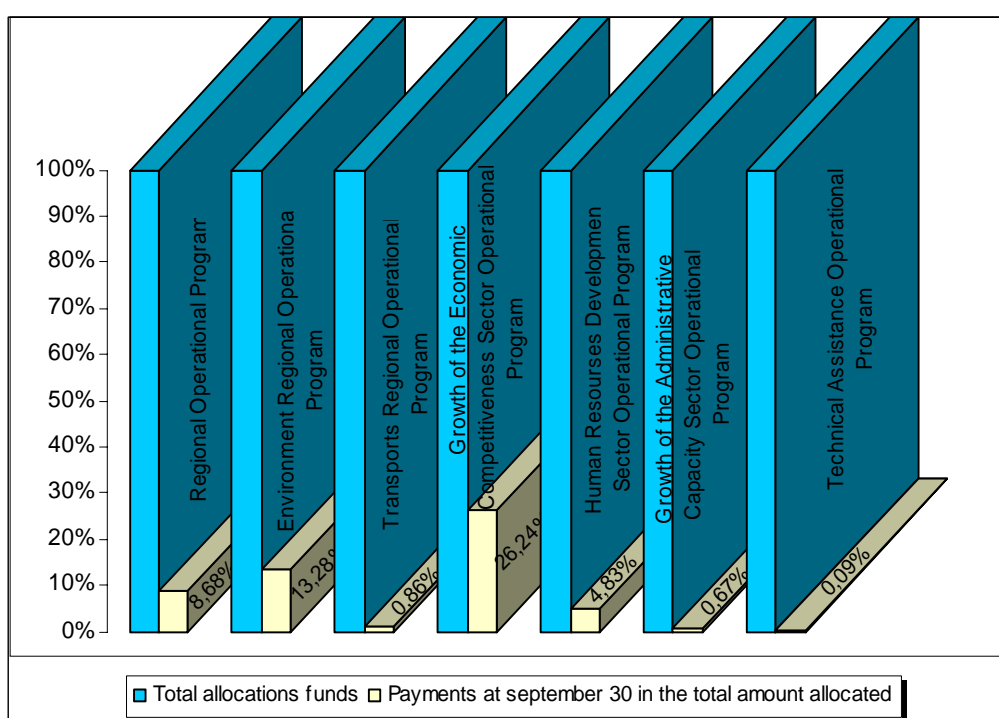


Figure 2. Capacity to absorb structural funds

A huge gap was created between the period when the projects were submitted and the time when they get solved, a gap which caused many of the entrepreneurs to give up, while others made the impossible to maintain their initial activity and investments plan.

Despite these difficulties Europeans Funds may be a golden hand for any entrepreneur, small or large, in the city or in the village, just simply fact they are non-refundable. The storm on the financial markets will slow down, but the loans will be more and more expensive. Perhaps that is why to this form of financing is long and full of obstacles.

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## **REGIONAL DEVELOPMENT IN SUSTAINABLE DEVELOPMENT CONTEXT**

**FLORIN FRANT** \*

**ABSTRACT:** *The concept of sustainable development is built on the premise that human civilization is a sub-system of the Ecosphere and is dependent on its material and energy flows, on its stability and capacity for self-adjustment. Public policies that are being developed on this assumption, such as Romania's National Sustainable Development Strategy, seek to restore and preserve a rational and enduring equilibrium between economic development and the integrity of the natural environment in ways that society can understand and accept.*

**KEY WORDS:** *development, sustainable, economy, region, integration*

The debates on the successive drafts of this thesis that took place in the eight development regions of Romania confirmed the findings of the Regional Operational Programme 2007-2013, which was adopted in April 2007, regarding the weak points identified at region level:

- Concentration of economic growth and of foreign direct investments around the city of Bucharest and increasing disparities compared to the other regions, accompanied by worsening congestion of the capital;
- Socio-economic decline of a significant number of large cities and their diminished role in the development of the adjacent areas and of the regions;
- Increasing demographic imbalances at regional level, with severely altered age structure and population ageing, showing an alarming trend especially in the southern part of the country;
- Loss of urban functions in many small and medium towns, especially in monoindustrial localities that were affected by restructuring and the resulting deterioration of social problems;
- Re-emergence of the historical development imbalance between the eastern and the western parts of the country, economic decoupling of traditionally underdeveloped areas in the eastern, northern parts of the country and the areas along the Danube;
- Poor accessibility of certain areas, with a negative impact on local development;

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- A labour force deficit in large areas, due to decreasing population, massive temporary migration and ageing, adding pressure on social and health services;
- Potential economic stagnation in mountain areas;
- Low competitiveness of many businesses, especially in tourism, poor level of labour productivity and capital investments, lack of managerial skills, low degree of modern technology use;
- Poor quality of public infrastructure, degradation urban utilities, inability to preserve historical and cultural assets;
- Limited experience and ability of local public authorities to manage complex sustainable development programmes including the economic, social and environmental components.

These observations provided the background for the measures to be taken by regional, county and local authorities with a view to remedy and significantly improve the situation in the short and medium term.

**Horizon 2013.** Strategic Objective: To support sustainable and territorially balanced economic and social development of the Romanian regions according to their specific needs and resources by concentrating on urban poles for growth; improving infrastructure and business environment so as to make Romanian regions, especially those lagging behind, more attractive places to live, visit, invest in and work.

For this purpose, the provisions of the Regional Operational Programme will be implemented, following the specific objectives:

**1.** To enhance the economic and social role of urban poles by adopting a polycentric approach with a view to a more balanced development of the regions. It is envisaged that funds allocated to urban development be spent as follows: 60% for urban public infrastructure, 25% for social infrastructure and 15% for improving the business environment. Considering previous EU experiences, the main instrument for intervention will be the integrated urban development plans, organically combining economic, social and environmental elements according to sustainable development principles. Such plans, to be prepared in a broad participative framework and involving all relevant actors, shall comprise projects addressing the following types of actions:

- Rehabilitation of the urban infrastructure and improvement of municipal services, including transport, by means of: physical and functional renovation of buildings having historical, cultural or artistic value; planned demolition of abandoned structures or badly deteriorated buildings that are not listed as belonging to the national heritage; modernisation of public areas and related infrastructure (street network, pedestrian areas, sidewalks, public lighting, etc.);
- Development of the business environment by cultivating entrepreneurship, improving business infrastructure and supporting economic activities that make optimal use of the local human and material resources.
- Modernisation of social infrastructure by means of physical and thermal rehabilitation of multi-family housing owned by the city administration and support for house owners' associations to undertake such work; provision of premises and proper endowment for social services (child-care centres, old people's homes, centres providing assistance to disabled persons, youth centres); measures in support of public order and citizens' safety. By 2015, integrated urban

development plans will be implemented in 30 localities, benefiting about 400,000 people; 400 companies will receive support to set up business leading to the creation or preservation of 1,500 jobs.

2. To improve access to regions, in particular to urban centres and to provide links to neighbouring areas. Besides the targets mentioned in Part III, Chapter 1.2 (Sustainable transport), the county road network will be rehabilitated and upgraded over a length of 877 kilometres and the urban street network (411 km) by 2015, the ring roads (up to 219 km) will be built or upgraded, leading to an increase of road freight and passenger traffic by 10%, while improving safety conditions. Taking into account the specific needs resulting from the development level of each Romanian region and considering that the regions have an insufficient and uncompetitive transport infrastructure, which does not meet the requirements of the EU Single Market, it is expected that the profitability, value added and lateral benefits of investments in infrastructure will be considerable.

3. To improve the social infrastructure of the regions. The measures and targets that are envisaged in the short and medium term in order to decentralise health and education services, to improve their effectiveness and to strengthen the accountability of regional, county and local authorities are detailed

4. To strengthen the regional and local business environment, with the following key areas of intervention:

- Development of sustainable business support structures of regional and local importance, drawing on the positive experience of the industrial park projects that were financed under the PHARE CES 2004-2006 programme: building, rehabilitation or expansion of buildings devoted exclusively to production and service activities, except for those hosting business incubators; rehabilitation and expansion of the street networks within the business structures and of access roads; provision of basic utilities and broadband cabling and connection; demolition of redundant buildings inside business areas, rubble and waste removal, garbage collection services; promotion activities.
- Rehabilitation of unused polluted industrial sites and preparation of such sites for new activities (brownfield development): clean-up and ecological rehabilitation; demolition of unusable buildings and levelling the ground; rehabilitation and expansion of buildings that can be used for production or services; making the public utility infrastructure fully operational; cabling and Internet connection, etc.
- Support for the development of micro-enterprises in order to revitalize the underdeveloped areas, especially small and medium-size towns, with a view to using the specific potential of the regions and promoting new technologies and innovation by facilitating the acquisition of state-of-the-art technologies for production, services and construction, as well as of digital equipment and software; re-locating the micro-enterprises into business structures; providing logistical services.

By 2015, the Programme foresees the development of 15 business structures, the rehabilitation of polluted industrial sites in an area up to 500 hectares, the setting up of 1,500 micro-enterprises leading to a 50% increase of the employment rate in business structures two years after the completion of each project, the creation of 4,000

new jobs in business structures and 3,000 more jobs following support to micro-enterprises.

5. To support the sustainable development and promotion of tourism through measures aimed at turning to good account those elements of the cultural heritage and natural resources that have a potential for tourism, and improving the quality of accommodation and leisure infrastructure in order to increase the attractiveness of the regions, to develop local economy (trade, construction, transport, catering, small industries and crafts) and to create new jobs:

- Restoration and promotion of cultural heritage and development or upgrading of related infrastructure.
- Development and upgrading of tourism infrastructure in order to capitalize on natural resources and to improve the quality of tourism services by opening access to natural sites that have a tourism potential (canyons, gorges, caves, glacial lakes), while constantly monitoring the pressures on the environment in compliance with the management plans for NATURA 2000 network; enhancing the commercial value of mountain tourism by improving access ways, camping sites and alpine shelters, signposting hiking paths, setting up mountain rescue posts (Salvamont); development of spa tourism; Promotion of tourist potential and development of the necessary infrastructure in order to increase Romania's attractiveness as a tourist destination by projecting a positive image of Romania, shaping and promoting the national tourism brand, developing domestic tourism through a more diversified offer of services and specific marketing activities, including the establishment of an integrated national tourist information service and statistics system online.

By 2015, it is envisaged to implement 400 projects addressing tourism infrastructure, to render support, directly or indirectly, to 350 tourism and travel companies, to organise at least 10 national and international campaigns for the promotion of Romania's tourist brand. At least 10 national tourism information and promotion centres will become operational. The above measures are expected to create 1,000 new jobs. In addition, to the specific provisions of the Programme for spa tourism, it was suggested to expand and diversify the offer of natural therapy procedures in spas, to develop a network of spa centres offering complex wellness services, to promote the original Romanian medication and treatment procedures for senior citizens. In order to accomplish the objectives of the Regional Operational Programme 2007- 2013, the eligible expenditures may be financed up to 85% (Euro 3.7 bil.) from the E.R.D.F., with national public co-financing of 15% (Euro 657.53 mil.) and an estimated financial contribution from private funds of Euro 153.32 mil.

**Horizons 2020 and 2030.** Existing strategies and programmes regarding the development of the regions do not indicate specific projects beyond the current EU financial programming exercise for 2007-2013, except for some specific targets for the year 2015.

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## **RURAL DEVELOPMENT, AGRICULTURE, FORESTRY AND FISHERIES**

**FLORIN FRANT** \*

**ABSTRACT:** *The objectives set in this Strategy emerged from national and regional debates; they focus on the maintenance, consolidation, enhancement and continued adaptation of the structural configuration and functional capacity of natural capital as a foundation for the preservation and augmentation its support capacity and its ability to operate under the pressure of social development, economic growth and the foreseeable impacts of climate change.*

**KEY WORDS:** *rural, development, sustainable, agriculture*

### **1. INTRODUCTION**

The Strategy proposes an outlook of Romania's sustainable development in the next two decades by setting objectives that go beyond electoral cycles or opportunistic political preferences. For this reason the National Sustainable Development Strategy was submitted for endorsement by the Romanian Parliament, while the implementation, monitoring and reporting mechanisms and those for consultation with the civil society and the citizens are regulated by law.

The concept of sustainable development is built on the premise that human civilization is a sub-system of the Ecosphere and is dependent on its material and energy flows, on its stability and capacity for self-adjustment. Public policies that are being developed on this assumption, such as Romania's National Sustainable Development Strategy, seek to restore and preserve a rational and enduring equilibrium between economic development and the integrity of the natural environment in ways that society can understand and accept.

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## 2. DIRECTION OF AGRICULTURE IN ROMANIA

The legal dispositions, programming documents and executive decisions in these areas are correlated with the EU directives and Community regulations, as well as with Romania's national strategies sectoral programmes.

**Horizon 2013.** National Objective: To enhance the economic vitality of Romania's rural areas while maintaining the social balance by means of the sustainable development of agriculture, forestry and fisheries, including the related processing industries to meet optimally the demand for food and to preserve and improve the natural resource base.

By 2013, Romania is expected to implement the European agricultural model, which is characterized by viable, market-based production structures, while supporting rural development and environmental protection. Measures will be taken to support producers so as to enable them to adapt farming practices to the consequences of climate change inasmuch as these changes will affect the level and variability of crop yields and the numbers of livestock. Production chains will be established, including chains for the sustainable production of biomass and biofuels.

Special attention will be given to the development of food production for niche markets, as well as ecological and traditional products in those areas that offer favourable conditions. Measures shall be taken to protect the brands of specific Romanian products, recipes and preparation procedures on the EU Single Market, while complying with the food safety regulations, and to ensure appropriate promotion.

The main objectives for the following period are:

- Developing a competitive environment in agriculture, forestry and fisheries based on knowledge and private initiative;
- Reducing the proportion of the population employed in agriculture along with strengthening the economic viability of farming units;
- Reducing the fragmentation of farmland property and stimulating the concentration of small farms;
- Maintaining quality and diversity of rural space and forest estates in ways that maintain a proper balance between human activities and the conservation of natural resources.

The provisions of the National Strategic Plan for Rural Development 2007-2013 will be implemented following the following main directions for action:

**1.** To improve competitive strengths of the agricultural, forestry and fisheries sectors:

- To enhance the competence of farmers and other persons involved in agriculture, forestry and fisheries so as to encourage better management;
- To improve the competitive performance of commercial and semi-subsistence farms, to encourage cooperation and association among them in line with sustainable development principles, to support the pooling of producers into integrated production chains; to speed up the structural adjustment of semi-subsistence farms and to encourage them to enter the market; to promote modern farming practices; to facilitate the emergence of young farmers and the replacement of the current generation of managers of agricultural or forestry units by resorting also to early



retirement; to increase the ability of farms to adjust to market conditions and environmental requirements;

- To restructure and upgrade the processing and marketing of agricultural, forestry and fisheries products so as to enhance added value while ensuring sustainability and relative stability of prices; to support integrated development by means of setting up and strengthening food production chains, improving product quality and effective performance of food industries; to improve forest management and wood processing efficiency; to ensure rational and responsible exploitation of the fisheries.

2. To improve environment quality in rural areas, consolidating the application good practice in agriculture, forestry and food industries in order to ensure consumer safety:

- To ensure continued use of suitable farmland in depressed areas and to promote sustainable agriculture in order to maintain the vitality of rural settlements in the mountain areas and in other less propitious locations;
- To preserve and improve the condition of natural resources and of habitats by encouraging the use of farming methods that are compatible with environmental protection, conservation of biodiversity, improved quality of water, soil and natural landscape; to grant compensation payments to farmers for the disadvantages resulting from the implementation of Natura 2000 network in keeping with the EU directives on the impact of greenhouse emissions and climate change, on the protection of birds, and on the conservation of natural habitats and wildlife;
- To promote the sustainable management of forests by enlarging the wooded areas that have an important role in protecting the water and soil resources and biodiversity against destructive natural or man-made impacts; to develop the recreational functions of the forest; to provide compensation to the owners of forest estates for the disadvantages caused by conservation measures in protected areas.

3. To encourage the diversification of rural economy and to improve the quality of life in the countryside:

- To maintain and develop economic activities and to increase the number of jobs by diversifying non-agricultural employment and encouraging small-scale entrepreneurship in the countryside; to set up, improve and diversify economic development facilities and tourist attractions;
- To increase the attractiveness of the rural areas and reduce the migration of young people to urban centres by developing modern physical infrastructure; to improve social, economic and environmental conditions; to protect and preserve natural and cultural heritage in the countryside; to diversify the offer of tourist services;
- To develop the skills and competences of the local actors for good management, local spatial planning and modern development of villages.
- To start the implementation of local development initiatives:
- To introduce the bottom-up concept of action in the administration of rural communities, which should ensure a high degree of spatial economic and social integration, supported by the organisation of local action groups;
- To promote the participation of rural communities in the drafting and implementation of local development strategies and to encourage innovative actions;

to encourage local actors to work together with other local communities in Romania or abroad for the accomplishment of joint projects;

- To improve local administration by means of developing abilities to prepare and manage projects, including projects implemented in partnership, and to mobilize citizens' participation in the decision-making process; to capitalize on the potential of the LEADER programme and on the financial resources allocated in this framework for rural development and for supporting local action groups.

The "Farmer" Programme, which was started in 2005, will be continued for some time to support investments in agriculture and in product processing, storage, preservation and marketing.

The harmonization of national legislation with the relevant Community *acquis* will be completed by 2013; the appropriate national structures corresponding to the EU ones will become fully operational.

Besides the objectives included in the National Rural Development Plan 2007-2013, the following additional measures are recommended:

- To prepare, in collaboration with the academic community, and to implement a National Programme for Sustainable Forest Management with a view to prohibit the reduction of forest areas, to increase the total wooded area with at least 200,000 hectares through reforestation, particularly on degraded or abandoned land. Additional interventions are needed to develop a national system of tree belts especially in drought-prone areas at risk of desertification; to promote intensive treatments based on natural regeneration that are best suited to preserve the valuable native species of trees and to enable the forests to fulfil their multiple economic, social, ecological functions in a sustainable manner. Active intervention is required to enforce the legal dispositions banning razed logging, to expand the area of woods that serve to protect watersheds, soil, climate, landscapes or biodiversity in the system of protected natural areas; to adjust the practice of forestry to the effects of global climate change; to apply optimal age standards for logging and to combat the harvesting of younger trees in order to get an artificial increase of timber production; to preserve biodiversity at all levels: genetic, species, ecosystems and complexes of ecosystems; to integrate virgin and quasi-virgin forests in protected natural areas; to proceed with the reconstruction of damaged and economically or ecologically dysfunctional forests; to tend to young forest growth and to conserve dead wood within prescribed limits according to EU practice; to develop an integrated and participative management of torrent basins in mountain areas; to increase the accessibility of forests; to compensate the owners of forested areas for the disadvantages that may result from the inclusion of forests in the categories having special protection functions or those that are designated as protected natural areas; to provide public support for the sustainable management of privately-owned forest areas of under 30 hectares.
- To speed up the preparation of a medium to long-term programme for the upgrading of irrigation systems through the rehabilitation of the existing ones and building new systems based on the best available technologies; to establish the required investment resources for each stage and to identify funding sources. Such actions have acquired priority status in the context of global climate change, higher

frequency and intensity of drought and expanding desertification, in parallel with increasing scarcity of available water resources. The programme will need to contain provisions to optimize water use in agriculture, which accounts for approximately 70% of the total water consumption.

- To implement the Strategy for the sustainable development of Romanian mountain areas, which are ecologically fragile and face significant natural and social challenges; farming in those areas requires strenuous efforts, imposes restrictions on certain economic activities and land uses and entails higher operational costs due to altitude, steep gradients and harsh climate conditions with shorter vegetation periods. The protection and responsible use of mountain resources, taking into account the effects of climate change, together with the implementation of the objectives established in the relevant Strategy, which was approved by the Romanian Government as early as 2004, are designed to prevent the depopulation of those areas and the degradation of specific traditions, crafts and cultural features. State support will be required in order to provide the means for the balanced development of high mountain zones on a par with other areas in terms of income and living conditions.

The financial resources for meeting the objectives in the National Strategic Plan for Rural Development amount to about Euro 9.97 billion, of which 80.46% come from EU co-financing through the European Agriculture and Rural Development Fund. Additional Community funding includes Euro 5.5 billion for direct payments to farmers, Euro 248 million for market-support measures and Euro 230 million for fisheries. Between 2007 and 2013, about Euro 14 billion will be transferred from the Community budget for agriculture, fisheries and rural development in Romania. Significant amounts will be added to this from the Romanian state budget.

**Horizon 2020.** National Objective: To strengthen production structures in agriculture and forestry while promoting the economic and social development of the rural areas in order further to reduce the existing disparities and to attain the current average performance level of the other EU Member States; to establish Romania as stability factor for food security in South-East Europe.

To this end, a new action programme for 2014-2020 shall be prepared during the preceding period; it will be based on the principles of sustainable development and will set specific targets for the improvement of environmental conditions (measures to combat soil degradation, to protect the areas at risk of flooding, to maintain an adequate and sustainable level of the crops, to support depressed areas, to improve landscape quality), the increased competitiveness of certain sectors that have an impacting on the environment (to make use of renewable energy sources, to improve the management of water resources, wastewater, solid waste, fertilizers, pesticides and herbicides), the improvement of rural life quality (higher incomes resulting from better performance in agriculture, forestry and fisheries, expansion of public services and utilities, diversification of non-agricultural activities and entrepreneurship).

The programmes for sustainable forest management will continue with additional reforestation and ecological reconstruction of damaged forests and forested land affected by degradation phenomena.

Measures shall be further taken to improve farmers' training and their management abilities, to enhance the capitalization of local natural resources, to improved work security standards, to encourage environmental initiatives and to secure better animal hygiene and welfare.

The envisaged actions will take into account the possible changes in the implementing mechanisms of the EU Common Agricultural Policy after 2013.

**Horizon 2030.** National Objective: To achieve full implementation of the Community policies and practices in agriculture, forestry and fisheries; to complete the restructuring and modernization of these sectors and of the rural areas.

### 3. CONCLUSIONS

During that period, a high level of competitiveness will be reached in the agriculture and food sectors; they will become compatible with the Western European farming model following the establishment of viable agricultural structures, the modern development of rural economy, the diversification and improved quality of products. Romania will overcome the productivity gaps in the farming sector and will come close to the European standards in the food processing industries. Food safety rules will be fully observed in accordance with the Community eco-conditionality requirements.

Following the application of a coherent multi-annual forestry programme, the share of wooded areas will grow to 34% of the national territory in 2030, opening the prospect to reach the optimum level of 45% further on.

The measures to be taken and the necessary financial resources will be determined, following the evaluation of the results obtained in the preceding period, on the basis of specific studies that will consider various possible scenarios, including the amount of required investments for each programme and objective.

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## **TRIGGERING THE GLOBALIZED ECONOMIC CRISIS. EFFECTS AND INSTRUMENTS TO FIGHT IT**

**SILVIA GHERGHEL \***

**ABSTRACT:** *The economy of decline, with the type of problems that characterised a big amount of the economic activity of the 1930s, aspects that have not been met until now, has made a forceful comeback, taking into consideration the fact that 15-16 years ago nobody would have thought that the modern nations would be forced to suffer the severe effects of this recession, only for fear of the currency speculators, and that the big advanced nations will find themselves incapable to generate sufficient expenses to maintain the workers and economic agents employed. The world economic system has proven to be much more dangerous. The financial crisis of the United States has spread in the states of Asia, Europe, etc., as a consequence of the economic globalization, and not only.*

**KEY WORDS:** *crisis, recession, decline, stock exchange, bank, market, credit, financial system, employment*

### **1. TRIGGERING THE GLOBALIZED ECONOMIC CRISIS**

As Daniel Dăianu said in 2004, “the decline of the stock exchange in the USA started in the late 2000, it could be anticipated because economy cannot avoid fluctuations, despite certain interventions of governments to willingly stabilize it”[1]. History records similar situations, when periods of stock exchange ascension (euphoria) were followed by massive falls, panic and trust crisis), with considerable loss for a lot of investors. The impact of stock exchange fluctuations on the incomes (wealth) of an important part of the population is big in the present-day context as compared to the one two decades ago, taking into consideration the weight of the ones who own stock exchange shares, which has almost tripled.

The great boom of the real estate market in the United States started to deflate in the autumn of 2005, but only at the end of spring 2006, did the world start to realise the weaknesses of the market, when the prices started to fall, slower at first, than faster and faster. The first moment of truth came in the early 2007, when it became visible

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that the substandard loans were in trouble. This practically meant that anyone who had bought a house in the top years of the speculative balloon, even if they had paid an advance of 20%, would end up with a negative capital - with a debt bigger than the value of the mortgaged house.

“As the severity of the real estate crisis made way in people’s conscience, it became clear that the creditors will lose a lot of money - as will the investors who had bought promissory notes guaranteed with mortgage receivables. But why would we sympathise with these people, and not with the real estate owners?”[2]. The end of the real estate balloon will bring about losses of trillions of dollars borne by the house owners, while the investors’ losses - who triggered the collapse of the banking system from the background - will be a lot smaller.

The event that triggered the crisis seems to be the fall of investment bank Lehman Brothers, on 15<sup>th</sup> September 2008. When Bear Stearns, another of the initial five big investment banks, had got into trouble in March 2008, the Fed (“The Federal Reserve” with the short name “Fed” or “the treasury secretary”; The American equivalent of a finance ministry, is the Treasury Department, run by a secretary) and the Treasury had intervened - not to save the company, which disappeared, but to protect the company’s “counter-parties”, meaning the entities to which Bear Stearns owed money or with which it had closed financial transactions. Almost everybody had hoped that Lehman Brothers would benefit from the same treatment. But the United States Treasury decided that the consequences of Lehman’s bankruptcy wouldn’t be so severe, and allowed the company to sink without offering protection to its counter-parties.

“It became clear within few days that this movement had been a disastrous one: trust fell further, the asset process collapsed from a steep top, and the few crediting channels left working ran dry. The de facto nationalization of insurance giant AIG, a few days later, did not manage to stop the panic” [2].

This is the financial aspect of the crisis, which envisages nothing good for the “real economy” that of the work places, of salaries and production.

The decrease of the home prices has a direct negative effect on employment by diminishing the construction activity, and tends to cause a reduction in the consumption expenses, through the harder and harder access to crediting, based on the guarantee represented by a house; these factors have a multiplying effect while the employment reduction leads to new decreases in the expense volume.

Nevertheless, the economy of the United States held on quite well in the beginning against the collapse of the real estate market, mainly due to the dollar frailty, which led to export increase, thus compensating the construction decline.

Thus, intensifying the credit crisis after the fall of investment bank Lehman Brothers, the sudden crisis from the emergent markets, the collapse of the consumers’ trust, they all indicate the most severe recession in the history of the United States, and of the world as a whole, starting with the 1980s onwards. The recession of 1981-1982, which pushed the unemployment rate over 10%, was, more or less, a deliberate option: the Fed followed a policy of the expensive money to cut the inflation, and then the head governor of the Fed was again the one who decided that the economy had suffered enough, and it had to be resurrected.

Unlike the recession of 1981-1982, the endeavours of the governors to resurrect the economy are forceless, which makes us remember Japan in the 1990s and 1930s. The world economy is surely in a decline economy, but not in an economic depression (for the moment). During the last decades, the stress of the economic thinking deviated constantly from demand to offer, in economy. This deviation was partly the result of the theoretical disputes in the field of economic science, disputes that propagated gradually and blunted in the general interest discourse. Succinctly, the source of the theoretical disputes was the following: “in principle, the aggregated demand deficits would heal themselves if the salaries and prices fell rapidly against unemployment” [2].

## 2. EFFECTS AND INSTRUMENTS TO FIGHT IT

Paradoxically, if the theoretical drawbacks of the demand economy are a reason for which the return of the problems specific to decline was not noticed, the practical successes of theory represent a second reason. During all those decades in which the economists contradicted one another, some saying that the monetary policy can be used to get an economy out of recession, and others that it cannot, the central banks went ahead of them many times and this is exactly what they did, so efficiently that, in fact, the idea of a prolonged economic depression due to insufficient demand became unlikely.

On the short term, the world is stumbling from a crisis into the next, all of them having as the crucial core the problem of generating enough demand. Japan starting with the 1990s, Mexico in 1995, Thailand, Malaysia, Indonesia and Korea in 1997, Argentina in 2002 and almost the whole world in 2008, one country after another, went through a recession which, at least temporarily, cancels whole years of economic progress and discovers that the traditional solutions of public policy seem to have no effect. The question of how it is possible to create enough demand so as to use the economy capacity has become crucial again.

The emergency measures that arise to save the crisis situation are the responsibility of the governing policies representatives in the entire world, and they refer to [2]: Re-starting crediting; Stimulating expenses.

The first task is the hardest, but it has to be fulfilled as soon as possible. Crediting loosening must be done through any means at hand, without thinking that the interference to save the financial system smells of “socialism” (socializing capitalism).

“The spread of the financial crisis to the emergent markets makes the global saving effort for the developing countries to represent part of the crisis solution” [2]. Beside the re-capitalization component given to the banks, other components are put into motion: loans given more easily by the International Monetary Fund (FMI) to certain countries whose economies are in difficulty.

With all these financial system saving operations, capable to revive the credit markets, the global decline that accumulates inertia can be saved through the **tradition Keynesian fiscal stimulus** [2].

The United States tried this stimulus at the beginning of 2008 as a plan of economy “forced start”, but the results were discouraging. First, the stimulus was too

small (a percentage of the PIB - Gross Internal Product), and then the stimulus was in the form of tax reductions, out of which many were rather saved than spent. "The next plan should concentrate on supporting and extending public spending – *support*, by supplying help to the state and local authorities, and *extension*, by financing road, bridge and other infrastructure objectives projects" [2].

Japan did the same thing in 1990, creating a fiscal incentive through expenses on public works, which stopped it from falling into a real depression. Moreover, "we have reasons to believe that the stimulus for public expenses would function better in the United States than it functioned in Japan, if prompt action is taken" [2].

In Romania, the economic crisis is conceived as a tsunami wave started in the United States of America and which sweeps the countries of Europe and the whole world one by one, advancing km by km. A more careful look can notice that the economic troubles started by the crisis in the USA are just a "facet of a much more complex reality which combines external economic factors with other factors that belong exclusively to the Romanian environment" [5].

The present-day crisis can be used as an opportunity, as it was done in 1997-1998, when Romania accelerated the transition to market and the European Union, using instruments of crisis control, such as *the state budget or the anti-crisis program*.

"This has to be clear: it was not the international crisis that induced the economic crisis in Romania. This latter one has deep own causes. But, undoubtedly, the international crisis adds to, increases the internal crisis, which would have manifested anyway, and increases its impact and consequences, and it certainly hardens its overcoming. That is why the crisis in Romania will be more severe than in the countries where the international crisis burst, and it will probably last longer. Anyway, overcoming the crisis will be more difficult and further in time in Romania" [4].

The main factor that affected the business environment in Romania is the demand decrease. This has to be seen as part of a complex assembly interdependent on factors, among which the most important ones are: credit availability, the exchange rate volatility, the appearance of debts and liquidity problems, etc.

All these are the effects of certain public policies adopted and of the voluntary reduction of personal private consumption as a way of protection against the effects of the crisis. In the context of the world present-day crisis with financial – economic character, it is possible "to deepen the structural crisis in which Romania entered by deindustrialization, by reducing the number of employees to almost half, and by the dependence on imports for assuring food of 21.5 million people [3].

The demand decrease reached historical rates, according to the managers' perception. The BNR market position bulletin from January 2009 mentions that 51% of the questioned managers consider the decreased demand the main cause of production limitation. The crisis affects the activity fields selectively. The companies in the metallurgic industry, of metallic constructions, the means of transport industry, construction materials, chemical industry, textile industry, the construction sector (affected especially by the lack of crediting) are affected.

"The financial – banking sector is probably among the most affected by the economic crisis, being influenced negatively by all the crisis factors" [5]. The reference



interest rate increased from 7.5% in January 2008 to 10.25% in September 2008, at present being reduced to 9.5%. Moreover, the compulsory reserves rose both in lei and foreign currency. The credit level has fallen spectacularly starting with November 2008, being maintained until now.

The crisis placed its print on the workforce as well, thus the number of employees started to decrease slightly in November 2008, after a relative stagnation at the half of 2008. In the last years, a continuous increase of this indicator had been recorded, even if it was not a spectacular one. "Referring strictly to Romania's case in 2009, over which 19 years have passed since its change in 1989, the statistics and real life show that the average economic situation of the country and of the great majority of its people has not improved, but on the contrary it has worsened" [3].

Although until now the crisis is not reflected in statistic data, it is estimated that the impact is bigger than the statistic data, the Public Employment Office (ANOFM) announcing major redundancies and an unemployment rate of up to 8% at the end of the year.

It is but the beginning of a difficult period for the unemployment insurance budget, reduced drastically in the last years, fed by less and less people and a decreasing tax rate.

Under these circumstances, a major deficit source appears in the public finances, coming from an area considered quiet, during the economic growth period.

In the context of the world present-day crisis with financial – economic character, it is possible "to deepen the structural crisis in which Romania entered by deindustrialization, by reducing the number of employees to almost half, and by the dependence on imports for assuring food of 21.5 million people" [3].

According to the opinion of the specialists of the Romanian Academic Association, 2009 is marked by searching solutions to the world economic crisis, thus it is useful to know which are the tendencies with significant impact for the dynamics of the economy, but the environment of 2009, characterized by high volatility, creates insecurity regarding the significant estimations of certain economic indicators.

A group of economic experts of the Romanian Academic Association, who took part in the elaboration of *The Annual Report of Analysis and Forecast*, suggested a set of measures meant to reduce the social costs of the crisis and to re-launch economy, such as:

- tightening control on the public expenses, especially the current ones, with a view to maintaining the budgetary deficit under 4% of the Gross Internal Product (PIB);
- the need to conclude an agreement with the International Monetary Fund (FMI), in order to finance the current account and budgetary deficit;
- the priority of the public investments whose destination is: the transport (road) infrastructure; house policy (including the program of thermal rehabilitation of blocks of flats);
- the acceleration of spending of EU funds;
- stimulating the crediting of economic agents, especially the ones in the IMM (Small and Medium size Enterprises) sector, by the recapitalization of certain state banks and supplementing the instruments of credit guarantee.

According to the Report, “SAR (The Romanian Academic Association) warns people not to expect miracles from instruments such as the state budget or the anti-crisis program: the capacity to put them into practice is small, and the fiscal policy, after it was compromised in the last years, is hard to be re-launched and cannot solve all the drawbacks of 2009 economy” [5].

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## THE KAIZEN PHILOSOPHY IN ROMANIA

MIHAELA GHICAJANU \*

**ABSTRACT:** *Kaizen is a philosophy of life that addresses to the best who want to be more and better. It is a process of improvement that never ends and it results in many advantages. The Japanese leadership model has shown that progress in small steps, but fast, conduces to doubtless long-term wins. Kaizen method, implemented in Romania, too, brought people satisfaction and more money in their pocket.*

**KEY WORDS:** *management, innovation, kaizen, performance, steps, strategy, work, quality, company*

### 1. INTRODUCTION

The Japanese prefer to obtain performance progressing with "small steps". This kind of promotion of innovation is called by the Japanese kaizen. In a Kaizen project for improvement everyone involved participates: the workers, the foremen, the engineers and the manager. It doesn't matter the ranking, it counts the value added produced by the intelligence and the force of action of each to increase the power of the group. The Kaizen philosophy's mentality is the opposite of the specific model often practiced by men, according to the minimum effort principle, "it works this way, too".

Kaizen has become known as a new discipline of management in the last two decades of the last century. Although the Kaizen management developed in Japan between 1950-1980, the name was officially recognized and registered as a trademark in the U.S. in 1985, when Masaaki Imai published the book, "Kaizen: The key to competitive success of Japan. Until then the name of kaizen was just a common noun in Japanese, with the meaning of "always better". Professor Imai has given the meaning of managerial principle - Kaizen, continuous improvement management - and has subsumed an entire structure of concepts, techniques and management systems used by Japanese enterprises which proved an outstanding competitive on the Western markets.

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Kaizen is a Japanese concept which, in essence, signifies continuous improvement. It comes from Buddhism, where it means "renew your heart and make it more and better. In martial arts, Kaizen means 'go forward with small and quick steps. The method has been gradually expanded in management, too. Currently, Kaizen is studied abroad Japan, in major institutes in the U.S., Canada, Western Europe, being considered a middle path between two traditional management styles: quality management, oriented towards achieving compliance with a predetermined standard, and oriented management to reengineering business, based on major changes in organization structure or processes.

## 2. KAIZEN INSTITUTE IN ROMANIA

The KAIZEN Institute is a global organization which is operating in Europe, Africa, Asia-Pacific and America and was established in 1986 by Masaaki IMAI. In Romania - KAIZEN Institute Romania - IKAR Management Consult was established in 2004 by the best consultancy firms in Romania, in the quality management domain, the QUASARO and BRACO companies. By putting their skills in common and by their continuous development, we want to offer to the Romanian companies an alternative to the competitiveness by the lower price of hand wrought: competitiveness by addressing practice management, with low costs and intelligent use of international verified experience.

Conferences are held yearly, involving specialists from Japan and worldwide. In Romania are specialized consulting firms, for example, the most popular are QUASARO and BRACO, being also the founders of the Kaizen Institute in Romania. S.C. QUASARO LTD. - established in 1991, is the first company certified for the quality management system, and since 1993 is the first international IRCA certified auditor (UK). Other consulting firms: SC Exegens Management Consultants, SC Kaizen Consulting S.R.L.

Romanian firms which have implemented the Kaizen strategy had to take into account the following aspects:

- In the management oriented to reengineering business is necessary *a intensive consumption of resources required to perform a jump-type change* but, in the end, the success it is not always assured;
- In the Kaizen's approach, the emphasize is on the fluency *of the improvement process and on his efficiency*;
- *An effective management is built day by day, and employee by employee*;
- A second important difference is that in Kaizen, *improving products and processes is the responsibility of the whole personnel of the company, not only of the specialists*;
- In the innovation process, through small and quick steps are *involved workers, foremen, engineers and managers*;
- The need for *specialized consultants and for courses referable to Japanese culture*;
- *Quick response to commands* (JIT technique) Toyota is well known for the quality and reliability of its cars. Recently it won the American Forbes magazine prize for 2002, for the company with the largest management of worldwide processes and

best quality products. Due to this and to Toyota who has developed, for a few decades, JIT (Just In Time) type of production system, which allowed it to reduce response time to customer orders, for three weeks, as it was initially, to two days. This happened due to continuous improvement conditions in terms of reliability and the growth of automobiles warranty period to three years;

- *Fewer defects* (TPM- Total Productive Maintenance). Through the concentrated efforts to implement TPM, realised by the Japanese company Waseda, specialized in manufacturing mechanical components, it has reduced the total time of accidental interruptions of the machines from tens of thousands of minutes to 30 minutes, so the entire company realized a gain of 1.5 million USD in six months.
- *Every opinion counts*. In the U.S. and Europe, are used similar methods, but based on the principle “a good idea against a good bonus!”. A comparative study about the methods, performed in 1999, by the American Association of Suggestion Systems and the Japanese Association for Human Resources, showed that, on a sample of 555 companies in each country, the total number of suggestions registered in the U.S. was 996 thousand, while in Japan, using Kaizen - Teian, it exceeded 60 million. Net profit achieved, on average, by applying 100 suggestions was in the U.S. 22,800 dollars, while in Japan exceeded \$ 365,000.

### **3. EXAMPLE - KAIZEN AT MURFATLAR ROMANIA**

Murfatlar Romania, one of the leading wine producers on the local market, has begun applying the Kaizen management system in February last year, with the ISO and HACCP quality standards. To maintain the company's marketing in the current conditions of the integration effort and post-integration into the EU, Murfatlar has made considerable efforts to maintain the status of world-class wine producer. Quality in the production processes is a necessity. It began by organizing some introductory courses in the Kaizen principles. Most Kaizen techniques have been applied where the product got value - to the bottling section. The process has had difficulty in changing people's conception about the continuity of the attempts to improve the production processes. The main element of implementation was the communication; without it the Kaizen method couldn't work, respective the visual communication. Rather, the operations results are presented to all employees through some panels with pictures and documents showing the situation pre- and post-Kaizen. And they are updated every time a change occurs.

### **4. BENEFITS OF IMPLEMENTATION OF THE KAIZEN STRATEGY**

The principal gains afford to Murfatlar by this the management system are:

- Growth the productivity of the people's work, eliminate the wasted time. Murfatlar Romania mainly invested in much time and hard work;
- In financial terms the investment is covered, even exceeded by the gains achieved through the much more rigorous organization of the production process.

- Since 2001 until now, the investments made by Murfatlar have exceeded 10 million Euros, most of the money being invested in the replacement of a technology part and in the acquiring new areas of plantation;
- In 2007, the company's turnover was 36 million;
- For 2008, the estimates were that the turnover was going to increase by 31% over 2007;
- The wine production in 2008 is approximately 21 million litres; with five million litres more than in 2007 (table no.1);
- Regarding the company's exports for 2008 Murfatlar representative estimated that 20% of total production goes to export.

**Table 1. Murfatlar Romania Indicators**

<b>Murfatlar Romania Indicators</b>	<b>2007</b>	<b>2008</b>
Rate of turnover	36 millions euro	45 millions euro
Annual production	16 millions litres	21 millions litres
% marketing	30%	31%

## 5. CONCLUSIONS

In Romania, until now, many companies have adopted the Kaizen management type philosophy. This includes companies in the auto or banking industry or offers planning, architecture or marketing services and public services, too, in the county councils or in national state agencies. This interest could be explained by the fact that although the Kaizen management type requires daily efforts to improve the production of all company employees, progress are seen in time and last a long time. The spectrum is wide, there are multinational companies that have developed this type of management in the countries where they have work sites and have come to Romania not only to take advantage of being a low cost country, but also to take advantage of the intelligent management of resources of all kinds, hence the human one. They are also fully Romanian companies with integral Romanian management which developed businesses more widely, especially in the production domain, with the Kaizen philosophy's help, and this type of management can adapt any kind of industry and economic activity.

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## **CRITICAL STUDY OF INFORMATIONAL OFFER FOR CONSOLIDATED FINANCIAL SITUATIONS**

**DANIEL GOAGĂRĂ, VALERIU BRABETE \***

**ABSTRACT:** *The accounting treatment for goodwill is far from being accepted, as the constant controversy and contradictions existent between it and the badwill are not yet solved. However, we wonder, in support to all interested groups in Romania, what would be the economic interpretation and perception of this difference? Thereby, if we start our analysis with how the acquisition difference is perceived, we consider appropriate to mention that the difference from the first consolidation can be emphasized if the cost of securities acquisition is compared with the net asset value of the percentage rate at which the securities will entitle.*

**KEY WORDS:** *consolidation, informational offer, consolidated financial statements, fidelity and relevance*

Analysis of the process and the content related to the consolidated financial statements, allows obtaining of relevant findings in terms of information for the groups in Romania. Thereby, if we compare with the individual reporting, we can observe that the consolidated financial statements contain certain private structures, no matter what the group nationality is and the accounting referential used for financial reporting.

From the structures specific to the consolidated accounts, mentioned in the branch literature, we address those relating to:

- acquisition difference (special fund);
- securities that are equivalent;
- minority interests.

*Acquisition difference* (goodwill) has been constituted and continues to provoke a great interest for the accounting departments of many groups. The existence and, even more, the amplitude of this specific structure, is accounted by specialists on the uptrend manifested in the mergers, but also on the growth of rates on certain financial markets. We can notice the impact of this phenomenon on the difference *increasing between purchasing prices and book values*, when

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both, the content of the consolidated sheet and the consolidated profit and loss are significantly influenced, especially in those cases when the groups to whom it is presented have defined an external growth strategy.

Although, apparently, the issue is relatively unambiguous, the accounting treatment of goodwill is far from being completely accepted, and also is it in a constant controversy and contradictory state with the badwill. However, we wonder, speaking on behalf of all interested groups in Romania, what would be the economic interpretation and perception of this difference?

Thereby, if we start our analysis with how the acquisition difference is perceived, we consider appropriate to mention that *the difference from the first consolidation* can be emphasized if the cost of securities acquisition is compared with the net asset value of the percentage rate at which the securities will entitle.

This overestimation, attributed to the difference between fair value and book value associated with the entity included in the scope of consolidation from the operations of the acquisition of securities and the acquisition of control, can have as source:

- The differences generated by a revaluation of elements that are identified as assets, known as *differences of evaluation*, involve bringing these items at fair value.
- The characteristics of the operation of securities acquisition make the *acquisition difference*.

With this difference approach of the first consolidation, we can say that, joining us to the opinion of the specialists in the field, conforming to the separation in evaluation difference and the acquisition difference is purely subjective, in the conditions where the advantages or disadvantages of a goodwill accounting to a higher or lower value are, in the present, more and more marked out, *reason for which we believe that additional elucidation on their correct perception, will be of real help also to the groups from Romania.*

The question may be: How can be economically interpreted this difference?

*The difficulty of the goodwill accounting interpretation* led some authors to associate it to an “over value” generated by the anticipation for acquired entity of a higher profitability generated by the market.

*Trying a review of this opinion, we have to say that we can not join such a mentality, in the condition where, the anticipation nature of entity’s profitability may not provide a firm guarantee which result in an overestimated price.*

An important step in the correct highlight of the concept mentioned was developed by other authors who have taken forward the analysis, considering that “this over profitability is being generated by the existence of specific intangible assets” which are not recognized in the acquired entity accounts (reputation, customers, ford, etc.) and by the internal and external synergies generated by the securities purchasing.



Also this last interpretation is, in our opinion, a big drawback, because it is not appropriate “to assign an over profitability to a certain specific assets, due to the obligatory interactions between all assets, whether tangible or intangible.

*Another assumption* with a substantially different content, looks the goodwill from the point of view of its generation by the opportunities variation determined by the specific elements of the negotiation process and revaluation errors of identifiable assets.

*Back to the sphere of accounting and concluding section, we can say that the specific accounting treatment of the goodwill’s derived from these features and difficulties of economic interpretation.*

Summarizing the concepts and previous interpretations, we can conclude that *goodwill fulfill the characteristics of a asset, which entitles us to suggest as appropriate for the groups from Romania in the balance sheet presentation, to intangible assets and to be amortized during the predictable use period.* If there is an occasional impairment of the goodwill, must be booked an adjustment for depreciation, as a systematic depreciation is not justified, in the conditions that would lead to a double counting, once with the cost of promotion, publicity and research, expenses that contributes to maintain, even increasing the economic benefits acquired.

*Analyzing the possibilities of implementation to the groups from Romania, of this treatment recommended as preferential processing by the SSAP 22 (Statement of Standard Accounting Practice SSAP) in Great British, we consider inappropriate it’s choice disadvantageous from the informational point of view, as this goodwill’s accounting, which does not affect the future result, favors the groups what did not hesitate to propose an higher price than the concurrence, as the goodwill was charged as equity.*

*Besides, another major disadvantage is the difficulty of ensuring the comparability between the consolidated reports of the groups that applies this treatment and those of the competing groups from abroad, from the point of view of profit and loss account, but also of balance sheet.*

Due to these shortcomings mentioned, we can only welcome the adoption of the ASB orientation (Accounting Standard Board), in 1997, by adopting the standard financial communication FRS 10, according to which the goodwill should be subscribed to the balance sheet and amortized over a period that not exceed 20 years.

*Our main objective can not be abandoned, for which we consider useful to try to highlight the impact that the goodwill’s treatments above mentioned have on the consolidated financial statements.*

Thus, the incontestable advantage of non influencing the result that can be observed in the last two treatments, is being called “shaded” by the systematic amortization charged for the first treat, in the condition where the economic consequences of this reduction in income is passed on rate and competitiveness of takeover bids. On the other hand, the goodwill determinates an obvious reduction of their records. The major impact of this treatment that we can highlight regards

the financial majority of the financial rate of return, as the “hiding” of unfavorable investments, which distorts real performance of the groups.

*For the groups from Romania*, we have to mention that the subjectivity of identifiable assets can influence significantly the goodwill value, by increasing the differences from evaluation.

Currently, the practice use of the affecting the biggest part of the first consolidation difference of intangible assents (mostly found in the large food concerns cases), *is contrary to the forecast of international accounting standards IAS 38 “Intangible Assets”*, which suppose that the period use of an intangible fixed asset does not exceed 20 years.

The solution we consider appropriate for the groups from Romania, based on the Anglo-Saxon experience, involves the use of equity method, which allows accounting for groups of entities, not in terms of properly consolidation, but as a simple combination of an addition of accounting values, not being necessary to mark out any eventual value strengths.

We also appreciate as useful the fact that the goodwill should be noted as amortizable asset also in liabilities which affects equity.

What we must mention here, in addition, is the fact that, although the assimilation of international accounting standard implies as well the processing of the method, both OMFP 1.752/2005 and the new OMEF 2.374/2007, doesn't mention specifically how the goodwill is influenced by this method.

The international accounting standards IAS 22 “Entities groups” mention the necessity of the goodwill amortization on its entire period use (period that normally does not exceed 20 years) considering useful to mention various defining factors as follows:

- The effects of products obsolesce, changes in demand and other economical factors
- The expected actions from competitors or potential competitors
- The expected duration of life of the acquired entity or the activity sector from which is a part of.
- The professional life expectancy of the key employees or employees groups.
- The legal disposition, regulations or contracts, affecting the period use.

However, this accounting treatment is being contested, existing lots of counties where is accepted also the possibility of the goodwill equity imposing (Germany, France, The Netherlands, Italy, etc.).

*In Romania, O.M.E.F. 2.374/2007, completing O.M.F.P. 1.752/2005*, mentions that, when the goodwill is treated as an asset, usually, in the consolidated financial statements its value must be amortized systematically, on a period o time that not exceed the goodwill's life, no longer than 20 years. Also, if the purchased goodwill is presented in the balance sheet as an asset, it will be reproduced in the explicative notes the chosen period for amortization and the reasons which let to the determination of this period.

*Although the accounting regulations of our country mention the goodwill amortization, we consider deficient the perception and disposal of this treatment, above mentioned, also the specifying of an alternative potential capable of a*

superior informational relevance, depending of each separate group. The involved expenses deductibility of the goodwill, as mentioned also in other analysis, was not elucidated up to the present, reason why we opt for reviewing of these regulations regarding the goodwill, eventual in the conditions of a deeper analyses of the treatment incidents chosen strictly on a the groups working in the local business environment.

But not only the goodwill can occur and create strong polemics. We must not forget either “medal reverse”, meaning the badwill. It is identified when the “stake acquisition cost is less than the corresponding fraction of net assets, at purchasing”. The existence of a badwill can be explained by:

- Anticipation of future losses;
- The identifiable assets over evaluation of the acquired entity;

The accounting treatment recommended by IAS 22 “Entities groups”, mentions that, “when the badwill does not correspond to the future losses and expenses, identifiable at the acquisition moment, this must me accounted as follows:

- If the badwill increasing, which does not excel the proper values of the identifiable non-monetary assets acquired must be systematically accounted to incomes, on the remaining period use of the acquired identifiable amortized assets; and
- The goodwill dimensions which exceed the correct values of the identifiable non-monetary assets acquired must be immediately accounted to incomes.

We consider that a comparative presentation of a few defining referential issues for badwill, will be particularly suggestive, for which we will present it table 1.

**Table 1. Comparative standards concerning the badwill**

<b>Our country's standards</b>	<b>In USA</b>	<b>In France</b>
When the participation is purchased at a lower value than its fair value, the difference is registered as badwill. It must be recognized as in income on a systematic basis, being resumed in the income and loss statement when: - unfavorable results that have been foreseen at the acquisition moment is achieved; - there is a achieved gain corresponding to badwill	ABS 16 impose that the negative acquisition difference to be charged on fixed assets, proportional to their value. If this charging brings to zero the fixed assets value, the residual difference will be considered a postponed income.	The negative acquisition difference is being constituted by a provision for risks and expenses, with a reintegration period of time that not exceed 5 years. However, on exceptional cases, which are not specified, the negative acquisition difference may be included in reserves.

Being given all this aspects concerning the consolidated financial statements, without claiming an overwrought approach, we consider it worthy of

a pertinent and exigent analysis, generated by the presentation modalities of financial statement, in general and the ones generated in particular.

Thus, the balance sheet, in horizontal or vertical format, is far from being a *financial statement*. The cause must be looked on the legal-economical binominal effects, on the consequences of applying accounting principles, as well as on the options taken by the entity. A balance sheet is one that facilitates both knowledge effects of the (non-) achievement a balance of liquidity, solvency, profitability and risk assumed by the company.

If we move the analysis from balance sheet models drawn up by companies from countries with predominantly heterogeneous accounting system, we can see that the number and importance of reprocessing necessary to a balance sheet are decreasing significantly.

A first category of difficulties in effecting this analysis is being given by the differences relating to the position (statement) of the company.

So, what is active in French accounting, for example, can signify an expense in American accounting. A dept in the British or American accountancy can be considered equity in the French accounting, etc.

*A second category of difficulties* is oriented on valences in terms of balance sheet analysis.

Meeting the requirements in terms of analysis resulted in time to various balance sheet schemes consecration, two of them being considered as source: balance sheet in form of account (bilateral format) which privileges an analysis of financial-functional type and list balance sheet, oriented to an analysis of liquidity-solvency type. The first model is based on ACTIV-PASSIVE balance equation and on patrimonial judgments while the second is developed on equation base  $ASSETS - LIABILITIES = EQUITY$  and on economic and financial judgments.

The preference for one model or another has many justifications. The fourth European Directive retains and recommends this two source models, offering an impressive number of options regarding their configuration. The bilateral balance sheet model was assimilated especially in counties like Continental Europe, where the accent is on long term management, the assets and liabilities are arranges in ascending order of liquidity and chargeability. The second model is agreed in Great British and in the countries where the British accountancy system had a great rate of exportability. This present the assets in ascending order of their liquidities, the liabilities in descending order of their chargeability and finalized with equity.

We can not ignore the fact that, unlike European countries, in USA and Canada, the companies presents its assets and liabilities in decreasing order of liquidity, respective their chargeability. This classification denotes a North-American element of accountancy culture, focusing on short-term elements, meaning that the balance sheet begins with short-term assets and liabilities.

In this way, we appreciate the opinion of specialists according to an especially attention must be given to the meaning which different referential accountancy accord to “long term” and “short term” definition. Most often, the

benchmark is being constituted by the financial year. But things are not always like this. The American and international accountancy referential retain the possibility of including the assets and liabilities within the current or non-current category, using for this purpose the reporting to operating cycle period.

The things are getting complicated when, into the same company, are being organized several operating cycles, some of them superiors and some of them inferiors to the calendar year or when the company changes its activity domain, or it restructures.

*A third category of difficulties* is being given by the rigid of flexible character of balance sheet items. That's why must be given an especially importance to the situations in which a rigid model of balance sheet can hide sustainable elements in the category of short-term and vice versa, and a flexible model can hide some image manipulation tendencies on the company's financial position.

*Romanian balance sheet will be analyzed in the content of the two phases of accounting system reform.*

From the opening moment of the first reform phase of the Romanian accounting system, up to today, in specialties practice, including the consolidation case, we found two *models of balance sheet*.

The first model, the horizontal one, was consecrated by the Accounting Law and its implementation Rules at the beginning of the 90's. Such a balance sheet privileges a horizontal analysis of the company's financial situation, bringing to attention the specific indicators of the financial balance (working capital, working capital necessary, net Treasury)

What may be charged to the horizontal model of balance sheet is the juridical pronounced basis of the assets and liabilities concept. It doesn't automatically reflect the "real" situation of a company, either financial or economical (indifferent of this terms definition),

The second balance sheet model is the one imposed with February, 2001, through "*Accounting Regulations harmonized with the fourth Directive of the European Economical Communities and International Accounting Standards*". The order spread among the large companies of the area of applicable a vertical balance sheet model. Although, far from being a financial balance sheet, we consider that this balance sheet model answers better to the analysis requirements and company's financial management, which is supported by several *arguments*.

The balance sheet in this form comes to help the drawing of the "Cash flow picture". The cash flow variation can be determined by comparing the receipts and payments generated by three cycles of the company's activity (mining, investment financing). The receipts and payments flow determination is facilitated by the debit and dept ventilation, depending on payment terms. Into the center of attention is brought to the operating cycle also its contribution to achieving overall financial balance of the company. Indeed, we find on the balance sheet structure, "mobile assets, respective current net debts", which does not represent other than working capital. A working capital gross determined, if we take into consideration the assumption retained by the normalized, how the

spending and revenues in advance can not be engaged otherwise but on short-term (being therefore, assimilated to the mobile assets and current debts).

The vertical balance sheet model opens the analysis prospect of a financial dynamic balance, on rotation elements base that compose the working capital requirements (stock rotation, client-debit rotation, providers-debt rotation).

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## **METHODOLOGICAL DELIMITATIONS FOR INFORMATION QUALITY PROVIDED BY PATRIMONIAL EVALUATION**

**DANIEL GOAGĂRĂ, LAURA GIURCA VASILESCU \***

**ABSTRACT:** *The evaluation methods for an entity are multiple (patrimonial methods, income based methods, direct comparison methods) and the evaluators have to establish exactly which one of these are the most appropriate for the analyzed entity, as well as for the assets which are going to be evaluated, in a specific economic context. The selection of a certain type of approach or method depends on different aspects, such as: the type of entity, the situation at the evaluation period, the available information, the purpose of evaluation, etc. The evaluation standards recommend that the evaluators should use at least two from the three approaches: asset based approach; income based approach; comparison based approach. Each type of approach has several evaluation methods and techniques and between them there is a continuous inter-conditioning.*

**KEY WORDS:** *evaluation methods, patrimonial evaluation, evaluation standards, relevant information, performance*

### **1. INTRODUCTION**

The evaluation process supposes the credible estimation of the value for an asset or the entity, based on the analysis of all available information.

The economic evaluation, in the meaning of the evaluation doctrine and implicitly, of the national and International Evaluation Standards, is a complex process of estimation for a certain type of value, usually the „market value“.

For the estimation of the entity value, the evaluator can use three approaches, as follows:

- asset based approach;
- income based approach;
- comparison based approach.

Each type of approach include several evaluation methods and techniques and

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in practice, there can be used all three approaches in order to estimate the value of an entity.

The selection of an approach or method depend on the type of entity, of its situation at the time of evaluation, of the available information, the purpose of evaluation etc. But the evaluation standards recommend that the evaluators should use at least two approaches when they evaluate an asset or an entity.

## **2. METHODOLOGICAL ALTERNATIVES OFFERED BY THE PATRIMONIAL EVALUATION, USED IN ROMANIA**

In Romania, for each evaluation of the entities, can be used at least two of the following methods:

- Net Present Value method;
- Discounted Cash Flow method;
- Market Comparison method;
- Income Capitalization method.

Among the evaluation methods used in Romania, the most representative are the followings: patrimonial methods, income based methods, direct comparison methods.

*The patrimonial methods* are the followings:

- Net Accounting asset (ANC);
- Net Corrected Accounting Asset (ANCC);
- Net Liquidation Asset (ANL);
- the substantial value;
- the permanent capital necessary for exploitation.

*The income based methods* are:

- Income capitalization methods;
- Discounted Cash Flow methods;
- Dividend evaluation methods, where are included:
  - Irving Fisher method;
  - Gordon-Shapiro method ;
  - Evaluation methods for developing entities, such as: PER; Bates model; Hoit model.

*The direct comparison methods* are the followings:

- the comparison with the similar quoted entities method;
- the comparison with sales of similar unquoted entities method;
- the comparison with previous transactions or offers of transactions with participations at the capital of evaluated entity.

These evaluation methods are known and promoted at the international level through the International Evaluation Standards (IVS) and European Evaluation Standards (EVS).

In Romania, the professional evaluation registered a qualitative leap after the period 1990-1991, since the elaboration and implementation of the reforms for transition to the market economy. In these circumstances, the evaluator can have, in relation to the beneficiary of the evaluation, several qualities, such as:



- *consultant*, in the conditions he is during a evaluation process or ended it;
- *referee*, in the conditions the evaluator is hired by all the participants in a transaction, mediating the ongoing evaluation process;
- *neutral expert*, when the evaluator is hired by a public institution.

The option for a method or another is the choice of the evaluator, which select the used methods in function of the specific conditions where the evaluation is done and the advantages/ disadvantages of the methods in these circumstances.

### 3. DELIMITATION OF STAGES AND PHASES FOR EVALUATION PROCES

The presentation of the stages and phases of the evaluation process, underline the existence of a continuous interconnection between them, especially if there is taken into consideration the fact that the essential objective is not just to establish a simple value for the entity, but also the identification of the modalities such a value can be got in conditions of maxim efficiency.

Each stage includes more phases. There is an initial stage, which is distinguished by the dominant of a purely cognitive stage, in which the knowing of the specific of the analyzed entity represents the central objective, including as well in the analysis other phases, such as:

- *initial knowledge*, moment when is achieved the initiation on the informational side regarding the specific of the analyzed entity, getting in the same time the necessary documents for the evaluation activity, made available by the decision makers of the entity;
- *organization of the evaluation process*, which suppose the establishing of the planned terms for the evaluation approach, including also the data checking and the useful information for the evaluation activity.

The major role of this stage consist on the fact that it permits to know some aspects that can constitutes the „turning points” during the evaluation activity, such as: access and transportation means (highways, railways); industrial locations, production flows (machinery layout, unused places, possibility to do other activities); working conditions.

Regarding the informational area for the evaluation activity in terms of need for obtained information, this include more categories of information, such as: juridical information, specific information, information regarding owned assets, commercial information, social, technical, organizational, forecasting and accounting information (table 1).

*The second stage* supposes the aspects that are related to the manner the evaluation process will be put into practice, including the followings phases:

**a) General diagnosis** of the entity, when are identified the "strong" points, that maintain the entity in the competitive environment, as well as "weak" points, that can lead to its bankruptcy. For getting this, there are necessary more working proceedings, as follows:

- visit and inspection at the side;
- study of the financial-accounting and juridical documents, as well as the verification of the correctness and the correlations with other documents;

- fill up the diagnosis questionnaire and the working files;
- interview with the decision factors which have the activity in the functional compartments;
- analysis of the organizational structure and the informational circuit in order to know the tasks of each responsible;
- fill up for each diagnostic of a synthetic record where are included the strong and weak points.

**Table 1. Informational area of the evaluation process**

<ul style="list-style-type: none"> <li>• <b>juridical information</b></li> </ul>	✓ concerns the existence or not of the property rights and/or the right of use on the patrimonial elements;
<ul style="list-style-type: none"> <li>• <b>specific information</b></li> </ul>	✓ regard the characteristic elements, the specific and history of the analyzed entity for evaluation;
<ul style="list-style-type: none"> <li>• <b>information regarding owned assets</b></li> </ul>	✓ regard the yield the use right on the patrimonial assets through the commercial leasing or renting, as well as eventual situations that generate rights related to the intellectual property (inventions, trade marks);
<ul style="list-style-type: none"> <li>• <b>commercial information</b></li> </ul>	✓ reflect the commercial aspects, can include in the interest area the products and their weight in the base activity but also the position of the entity on the market, the competition, the distribution network;
<ul style="list-style-type: none"> <li>• <b>social information</b></li> </ul>	✓ offer information related to the human resources, its structure and skills, efficiency of the staff, as well as the possible factors that can influence this efficiency;
<ul style="list-style-type: none"> <li>• <b>technical information</b></li> </ul>	✓ give information regarding the conditions and specific of the activity, including the relevant aspects such as the ones related to the production capacity, research and development or the rhythm of the production and sales;
<ul style="list-style-type: none"> <li>• <b>organizational information</b></li> </ul>	✓ are information related to the organizational structure of the entity resulted from the regulation of organization and functioning, geographical position of the organizational components;
<ul style="list-style-type: none"> <li>• <b>forecasting information</b></li> </ul>	✓ are underlined the technical, economic and commercial perspectives resulted from the forecasting of activity forecasting, investment, financing and profitability;
<ul style="list-style-type: none"> <li>• <b>accounting information</b></li> </ul>	✓ permit to know the results from the balance sheet, the profit and loss account, the annexes of the balance sheet as well as the analytic accounts of exploitation.

**b) Evaluation**, which consist in application of a set of evaluation methods that permit to get a real value of the entity.

*The third stage* appears at the end of the evaluation activity and includes:

- elaboration of the evaluation report, specifying and justifying the evaluation

- methods used and the values resulted, as well as the opinion of the evaluation;
- preparing documentation for presenting the entity, which contains the necessary information for each investor.

The evaluation techniques and procedures recognized worldwide are used by specialists, in the conditions of the international transactions, the transparency of the financial situations, but also the credibility, put their mark on them significantly (fig. 1).

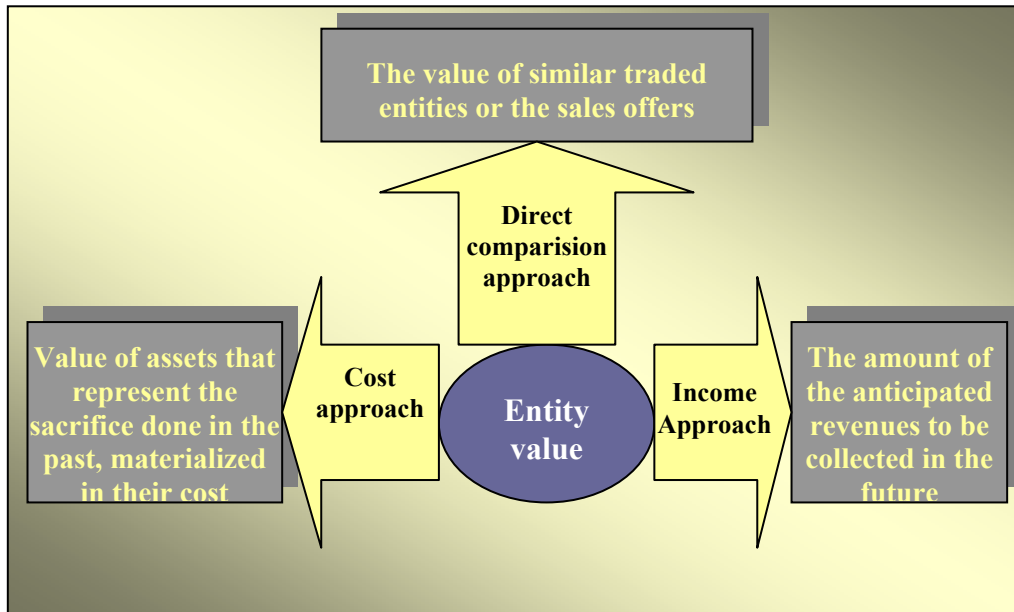


Figure 1. Evaluation approaches - based on market

#### 4. CONCLUSIONS

For estimation of the entity's value, the International Evaluation Standards recommends the using of at least two of three types of approaches: asset based approach; income based approach; comparison based approach. The obligation incumbent on the evaluator is to apply one or more evaluation methods in order to estimate any type of value, from the market or outside the market. Choosing and using the appropriate evaluation method depends also on the experience and competence of the evaluator, on the national standards, on requests of the market or the person who order the evaluation as well the available information and the purpose of evaluation.

In conclusion, determination of the value for an entity presents a high level of difficulty due to the multitude of factors which influence it and the large number of forms that it takes. Also, the value of an entity should not be traced statically because it changes very quickly under the market influence and the economic-financial results they obtain. Ensuring a dynamic character is possible by correlating the value of the entity with the economic-financial performances of this.

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## **RESEARCH NOTES ON INCOME INEQUALITY IN ROMANIA - A REGIONAL PERSPECTIVE**

**CORINA GRIGORE \***

**ABSTRACT:** *The aim of this paper is to provide an overview on the income distribution across the eight regions of development in Romania. Being far from a thorough research, the paper aims to be a first step in analysing the drivers of inequality and provide policy guidance for future directions of action. In the first part of the paper I will provide a short literature overview on inequality and economic growth and pointing some measures of inequality. In the next section I will present some basic patterns of income distribution across the Romanian regions and drivers of change within the country and I will finally conclude.*

**KEY WORDS:** *inequality, convergence, income distribution, growth, GDP, Romania*

### **1. INTRODUCTION**

The world is hyper-complex and every constitutive element has an important role to play and having an impact on the other elements too. It is really important to provide equal opportunities and not necessarily equal outcomes. Having equal opportunities and equal access to resources, everyone is free to manage in their own way the assets in order to meet and satisfy their needs.

However, the capability to manage better or not your assets may lead to different outcomes and inequalities. Inequality, means the quality of being unequal or uneven as a social disparity, a disparity of distribution or opportunity. Economic inequality is of great interest and it measures the disparity between a percentage of the population and the percentage of resources, such as income, received by that population. Inequality increases as the disparity increases. In the following sections I will provide some theoretical thoughts and a brief overview of income inequality across the Romanian regions.

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## 2. THEORETICAL BACKGROUND

Many anti-globalisation actors have claimed that the poor may not benefit from the global growth. It is said that „rich people get richer and poor get poorer”. Others may state that the poor benefit in absolute terms but much less than the others and this may lead to inequalities. How plausible these things are, it is a matter of long debate. Many researchers have tried to prove this empirically and only a few have used broad samples of countries over several decades (for example, Deininger and Squire have compiled a broad data set, in World Bank). Some authors have analysed the overall global distribution of income across people of the world and tried to explore the evolution of income inequality at global level and poverty. However, the global trend is determined by different driving forces related to changes in distribution between countries and within countries. Even if a country may rank well in terms of income inequalities across countries, it may experience very high levels of inequalities within country, among its regions. Some concerns have been raised along the growth process in relation to the evolution of within country inequality and if there is any causality.

In the “Regional inequality and the process of national development”, Williamson draws the attention on the nature of “regional dualism”, “north south problem” referring to poor and rich regions and finds a consistent relation between this one and the national economic development. Moreover, the level of regional inequality seems to be high in Kuznets’ middle income class and that inequality is more extensive in agricultural sector than in industry (Williamson, 1965, p.44). Kuznets (1955) suggested that a primarily agricultural economy has a low income inequality but during industrialisation the level increases over time and after reaching a critical point, inequality will reduce. It is interesting to notice the distribution of income across countries and see where a country is positioned relative to the others or the average of the area but I consider that more relevant would be to observe the variations within country. Even though the income inequality may not be very high across countries, the variation within the country may be significantly high and can also provide explanations for the national performance.

The income inequality analysis at a regional level for Romania is poor and very few studies have been done on this matter (Tatu and Barbulescu (2007) provide very basic analysis on the regional inequality within Romania). The ongoing global economic downturn has no doubt an impact on low income groups. The previous expansion led to an increase in inequalities but affecting largely a certain group of the population. The crisis is ongoing to affect all the groups but the way people perceive the impact may be different. The poor would be mostly affected as their basic needs may be put in danger while the rich might feel it less in the sense that they will have to give up partially to their luxurious life or see some of their businesses going down. According to the World Development Report 2009, between 1990-2005 two thirds of countries had an increase in income inequalities (as changes in Gini coefficient) meaning that the income of the richer households have increased relative to poor ones.

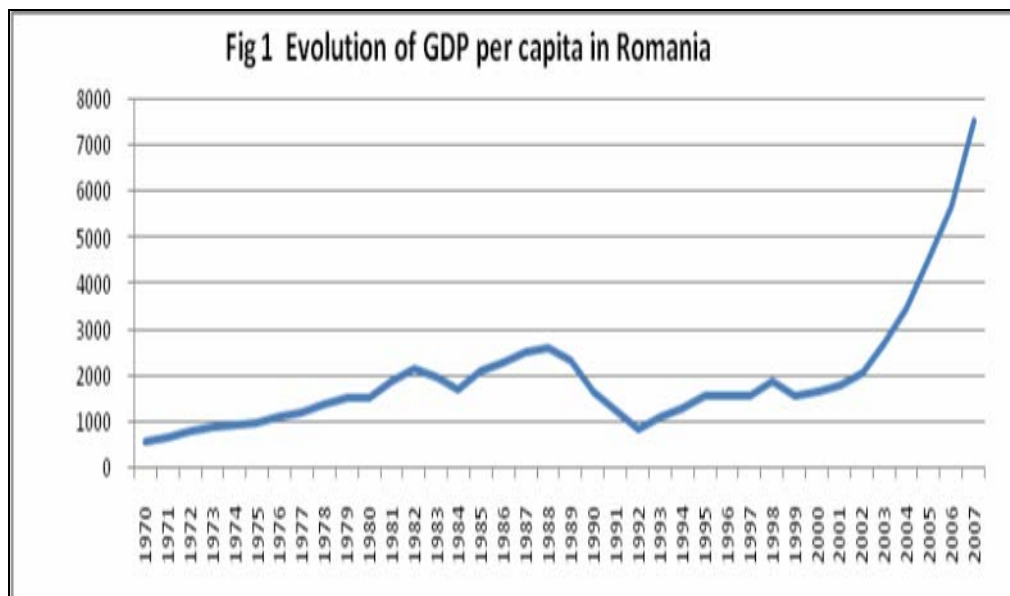
A place with no inequality would be of less interest. People would have no incentive to work harder, the talent wouldn’t be compensated and therefore, no incentive for innovation and development, no progress. The OECD reports point out

very well that what is really important is the equality of opportunities not equality of outcomes (OECD 2009). The way people would benefit from the opportunity is a matter of personal choice, rational choice, competitive advantage and needs. Different reports state higher or lower figures related to inequality. This difference resides in the accuracy and source of data collection, measurement unit and the measure used. The most common instruments used to measure inequality refer to range, range ratio, the McLoone Index, the Coefficient of Variation, the Gini Coefficient and Theil's T Statistic. In terms of spatial inequality measures, the most popular ones are Gini, Atkinson and the general entropy measure. The Coefficient of Variation is a distribution's standard deviation divided by its mean. The McLoone Index divides the summation of all observations below the median, by the median multiplied by the number of observations below median.

In this paper I will refer mostly to simple measures such as the range and range ratio, and the coefficient of variation. Regions are different from others. Even though different regions may be facing similar challenges this does not necessarily imply a similar response or a general pattern. In the following section I am going to refer to the specificities of the Romanian regions by using different indicators and measures related to the income distribution.

## 2. THE CASE OF ROMANIA

Romania is divided in 8 regions which have formed mostly on a voluntarily basis and will of neighbouring counties (territorial units with administrative structures). The GDP of the country has experienced an increase particularly in 2000-07.

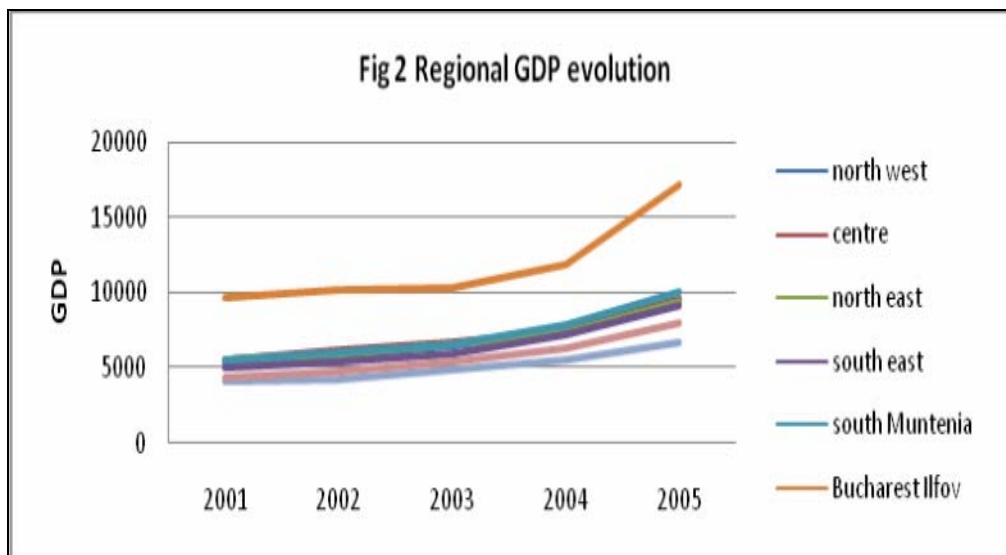


Source: generated using data from the World Bank database

**Figure 1. Evolution of GDP per capita in Romania**

The fall of the communist regime has brought new perspectives for Romania. However, the way to progress was slow due to several reasons. Also, from 1990 on, the market economy and the new economic, social and political conditions made Romania to experience significant increases in inequalities and particularly in income inequality. The period 1990-2000 has been one of tumultuous transition with fluctuating figures. However, starting from 2000, Romania experienced an increasing growth rate and trends could be seen. I will focus in my analysis mostly on the period after 2000 in particular due to the availability of data and consistency reasons. As compared to the EU levels, Romania has a marginal position in terms of GDP at current prices. In 1999, the GDP level was more than 4 times less than EU 15 but it has slightly reduced the handicap - though still a small figure - such that in 2007 it was three times less than the same EU level. However, Romania is seven times poorer than the wealthiest state – Luxembourg.

Very few studies have been conducted related to the income inequality in Romania, across its regions. Among the region of Central and Eastern Europe, Romania has a medium increase in inequality compared to other countries in the area. Related to the GDP evolution within the country, the period after 2000 has brought growth in all the regions. The capital region is the one performing the best due to its power to attract investments, skilled labour and the activity of major corporations. Regions of different sizes achieve different levels of GDP. However, a real comparison can only be made by comparing the regional GDP with the population of the region in question. Out of the eight regions of development, the one registering the highest GDP per capita is the capital region of Bucharest Ilfov.



Source: Own calculations using data from the Eurostat database

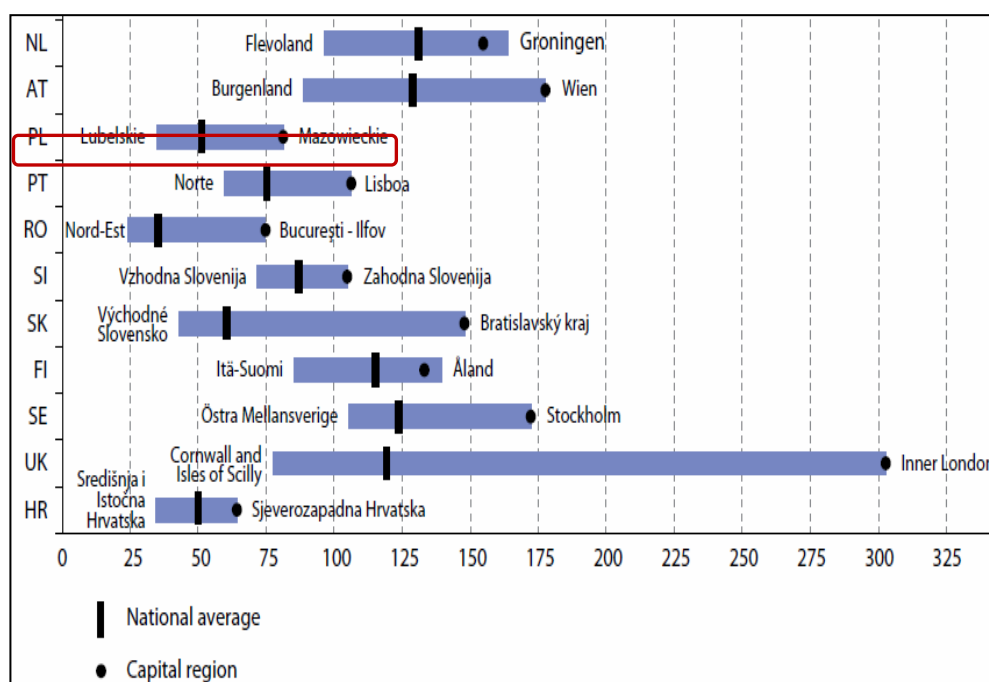
**Figure 2. Regional GDP evolution**



According to the calculations of the Eurostat regarding the regional dispersion, the richest country of the EU experience the highest degree of dispersion by weighting the GDP level to national average. This is to account for the fact that regions with similar GDP may have a different structure and so the comparability would not be relevant. Different sources and institutions may provide different values for the Gini coefficient but they all seem to provide figures over 30 for the more current years.

After a short period of less income inequalities, the dispersion of regional GDP per inhabitant increased and passed over 30. The trend of income inequality is presented in the above graph which resulted from my own computations using data from the Eurostat dataset. In terms of disposable income, the capital region has the highest performance net superior to the other regions which seem to be at almost the same level. However, the lagging region is again the North East one.

**Households' income.** Now it is opportune to refer to the households' income across the regions and in time to see the evolution of these indicators in terms of inequality patters. In the following table I have computed the income disparity of households as a fraction between the top and bottom deciles. In total income, the top deciles is five times higher than the bottom one while in terms of gross salaries and other rights the figure is higher: 19 times.



Source: Eurostat Regional Yearbook 2008

Figure 3. Dispersion of regional GDP per inhabitant in some of the EU 27

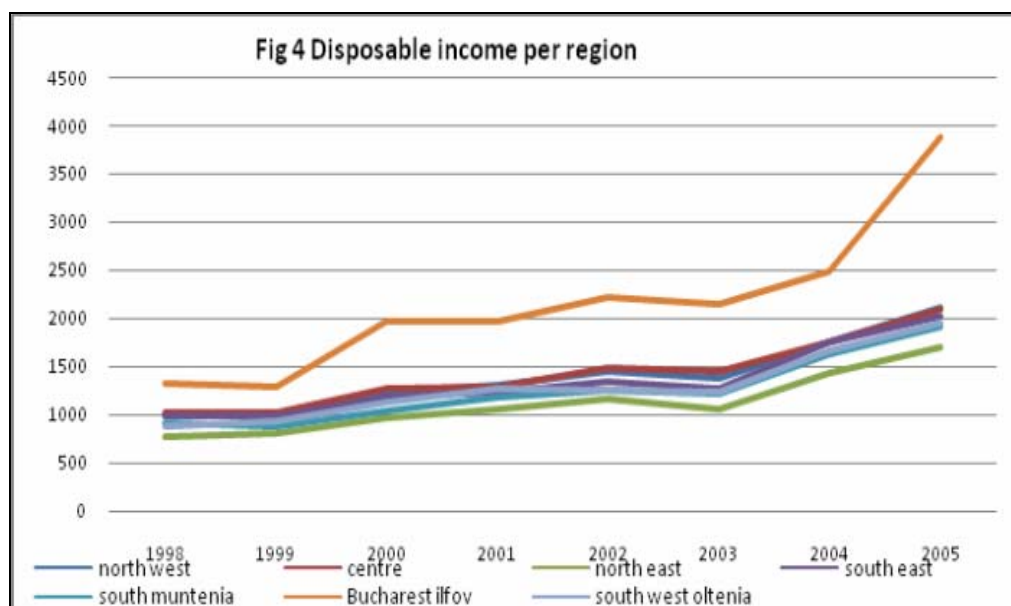
**Table 1. Regional GDP/ inhabitant dispersion**

2001	2002	2003	2004	2005
29.1	30.8	28.1	27.4	31.9

Source: computed using the Eurostat database

In terms of average gross and net earnings across regions in 2006, the capital region experiences the highest levels compared to the least performing North East area of the country. Interesting to notice is that in all regions men are better paid than women both in gross and net terms. The following table presents the differences in payment between women and men across the regions computed as a fraction between the women earnings and men. This means that a lower fraction results in higher disparity between men and women earnings. The poorest region of the country provides the lowest levels of earnings but experiences the lowest gap of inequality between men and women while South Oltenia has the largest gap between men and women earnings.

Five regions are experiencing higher gaps than the average level most of them in the south and western part of the country, particularly those which have high levels of gross and net earnings for 2006. This means that the disparity is higher than in the rest of the regions and the higher the income/earnings the higher the inequality between men and women. The average earning across all the regions has pointed out that the most promising sector is the financial one bringing the highest returns. Surprisingly, his outstanding position is followed by the public administration and defence. The least appealing sector seems to be the hotels and restaurants.

**Figure 4. Disposable income per region**

**Table 2. Income dispersion – households, 2006**

<b>Total income</b>	<b>5.15</b>
<b>Money income</b>	<b>2.07</b>
gross salaries and other rights	18.71
income from agric	0.35
income from non-agric indep activities	0.60
<b>Equivalent value of income in kind obtained by employees and receivers of social provisions</b>	<b>3.17</b>

Source: National Institute of Statistics, Bucharest, Romania

**Table 3. Disparity between men and women on gross and net earnings**

<b>Earnings per region</b>	<b>Gross</b>	<b>Net</b>
average	0.869	0.871
N-E	0.951	0.953
S Muntenia	0.848	0.851
SW Oltenia	0.810	0.813
West	0.839	0.842
Centre	0.899	0.903
Bucharest Ilfov	0.890	0.888

Source: own calculations using data from the National Institute of Statistics, Bucharest

Computing the average net monthly earnings in Romanian lei, the graph shows that the activity bringing the highest average earning is financial intermediaries, surprisingly followed by the public administration and defence. The lowest average earning across economic activities can be found for fishing and hotels and restaurants.

When looking within the activity sector across the regions, the financial intermediaries sector provides the maximum earning across all activities and also the highest minimum across activities. Less performing seems to be the hotels and restaurants sector which experiences a double poor performance - the lowest minimum earning and maximum across all activities.

The figure 6 shows the variation across sectors within the poorest region of Romania North East. Less variation is noticed in the trade and hotels and restaurants sectors. However, the highest variation is in mining and quarrying.

The highest variation is in the mining sector, Bacau being the best performer while Botosani the least one.

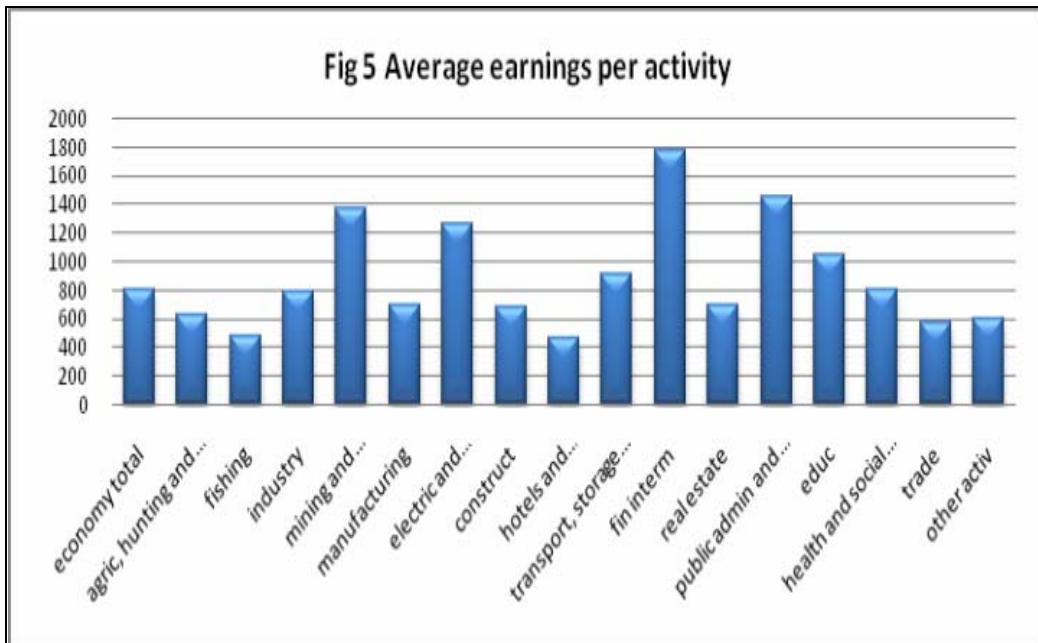
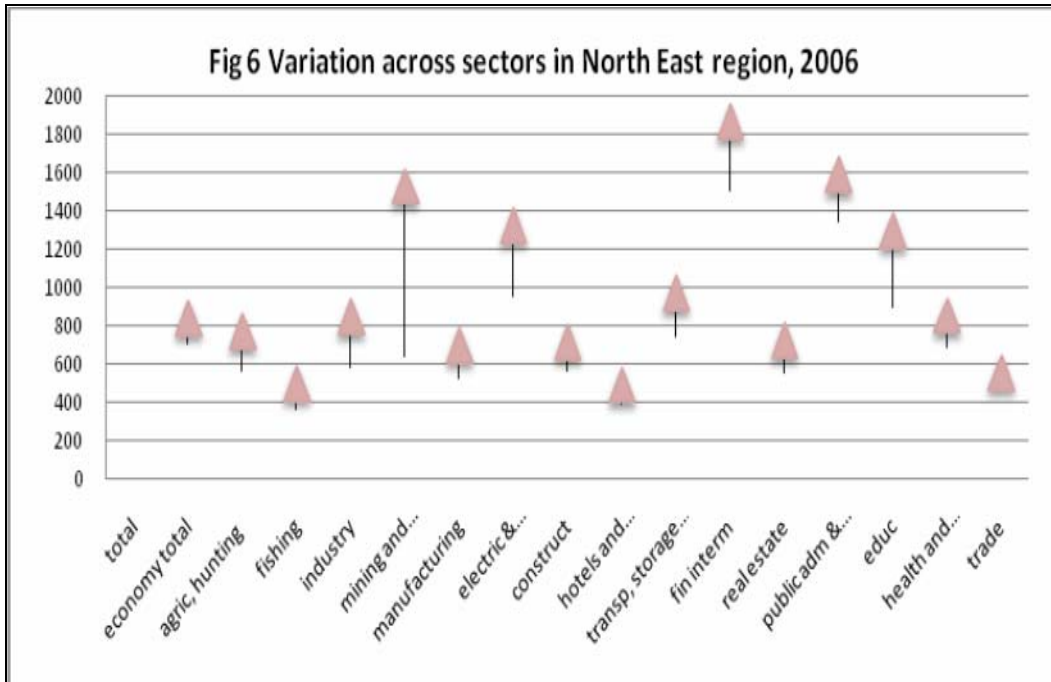


Figure 5. Average earnings per activity



Source: own calculations based on National Institute of Statistics data, Romania

Figure 6. Variation across sectors in North East region, 2006

### 3. CONCLUSION

Very few studies have been conducted related to the income inequality in Romania, across its regions. The availability and shortage of units of analysis may bias the results or the conclusions. Moreover, using different sources of information may result in different outcomes and this is the case of different Gini coefficients provided by different international organisations.

Nevertheless, there is also a matter of measurement method chosen that may have an impact on the results, or the assumptions underlying any study. Income inequality varies within the country ranging from the levels of the North East region to the top performance of the Bucharest region in terms of GDP per capita distribution and disposable income. However, the variation within every region is even higher than across regions. The current financial crisis will affect the income of the Romanian population very soon if it hasn't started to do so. Within the context of rather weak institutions the recovery of the economy would definitely take longer than for other countries affected. Not to mention that the transition period took long and in some aspects I might say that it is still in progress.

The main key issues that really need to be addressed in Romania are strengthening the institutional system and the rule of law which are the core elements when making policies. Transparency, responsibility, efficiency, multi level governance, competitiveness are key words that should be the pillars of every system. In Romania these seem to be still in the work in progress phase. However, every structure has its own gaps failures and deficiencies. The discussion can go further in human capital, innovation, infrastructure, effects of agglomeration, distance to markets and accessibility and can provide the starting point for an extensive research.

The context is hyper-complex and there is no one size fits all solution to address the problem of income inequality. Moreover, whether it is good or bad to have inequality is debatable. I consider that inequality is inevitable given the current democratic system and inequality will always exist in one way or the other. Even if the access to resources, skills and information is equal, people are different and so their behaviour. The way they decide to make use of their assets is a rational choice more or less and it will be based on the needs at a certain moment in time. Preferences change in time and so are the assumptions. Once the assumptions are changed, different directions of action may emerge.

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## SHORT OVERVIEW ON DRIVERS OF INEQUALITY

**CORINA GRIGORE, GEORGETA GRIGORE,  
GHEORGHE GRIGORE \***

**ABSTRACT:** *Income inequality is one of the ongoing concerns for people, organisations, governments, policy makers and the whole world. Understanding this phenomenon is very complex and requires extensive research as it is part of a hyper-complex environment in permanent change. The aim of this paper is to provide a short overview on some drivers of change determining the income inequality among and within regions in Romania.*

**KEY WORDS:** *inequality, income distribution, GDP, Romania*

### 1. INTRODUCTION

Identifying the drivers of inequality is rather challenging due to the multitude of potential factors that may influence the income distribution implicitly or explicitly. The most common elements that are referred to are the distribution of earnings and the impact of technological development and trade. Indeed, the earnings are the biggest portion of a household income and therefore its role in income inequality. However, the relation is rather complex since many other factors need to be considered in the analysis.

### 2. INCOME DISTRIBUTION

The distribution of income across the population is an important indicator for income inequality. In Romania, 39.5% of the income is held by the richest 20% of the population while the poorest 20% of the population hold only 8% of the total income.

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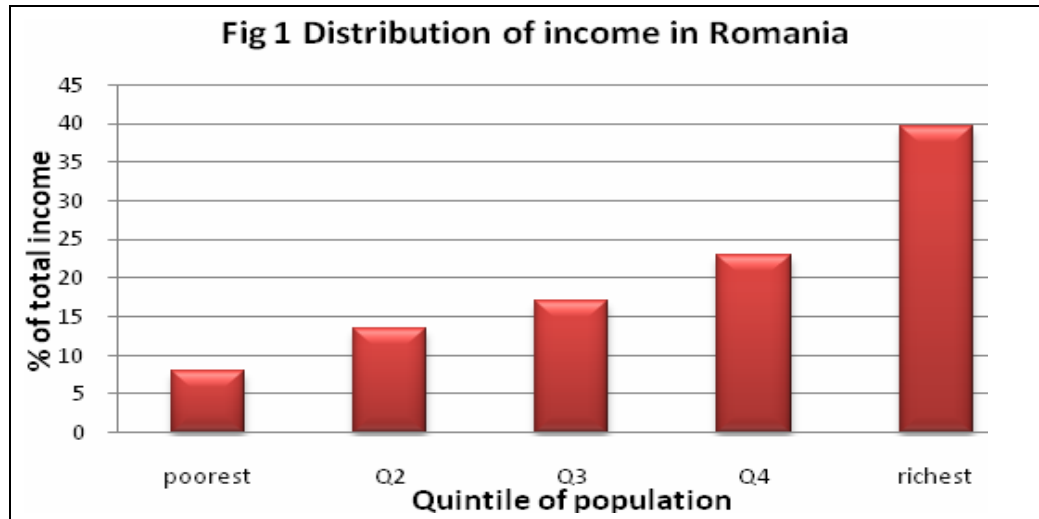
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According to the National Institute of Statistics of Romania, the national poverty rate was 21.5% (2006) and the percent of population living on less than \$1 a day is 2.8%.



Source: Data from the National Institute of Statistics, Romania

**Figure 1. Distribution of income in Romania**

### 3. LABOUR MARKETS

The main earnings indicators across regions and time have been identified in the previous section. The attention turns now towards other elements that can drive changes in income inequality. Definitely, the labour markets have a role to play in the distribution and explaining the distribution of income inequality. The unemployment rate had a sinuous evolution but a general decreasing trend towards 2007. The most significant decrease is in the richest area of the country, the capital region. However, with the current economic crisis the pattern is changing with an increasing rate of unemployment which will lead to higher disparities.

If we consider the poorest region of Romania, North East, we can notice that the unemployment rate is rather low compared to other regions and this means that there are many other factors to be considered when talking about inequality. When analysing the employment rate of the regions, remarkable is again the performance of the richest region with a rocketing trend and registering the highest employment rate in the country - the employment has increased in average in 2002-2006 with 2.59.

The employment varies across regions; some of them experiencing great performance in average over the period, while other seem to be less advantaged. If we turn to the poorest region North East, we can easily notice a rather high rate but falling since 2004. The lowest rates of employment are registered in the centre and the south eastern part of Romania. The difference between the region with the growing employment and the worst performing one is more than 3%.



#### 4. HOUSEHOLDS STRUCTURE

The structure of the households is another element that might be interesting to analyse within the context of income inequality. One of the first striking things is the changing pattern of the structure of households. During 2000-2007 there is a significant increase in the households made of a single person, in average of 5%. This can have several implications and the first thing that comes into mind is that for a single person there is a higher burden to cover all the expenses of the household. In the case of two person household, the burden is shared among the members. However, the situation complicates when children are taken into consideration. But in the case of single households the risk of getting poorer is higher in my opinion. The same trend has experienced the household made of one parent with at least one child. Moreover, the households made of one person over 65 have increased by more than 6% over the period compared to 2000.

To conclude, the categories of households that may have an impact on the income distribution are those with single parents, with or without children and those with people aged over 65. This means that the ageing population phenomenon has a very strong word to say in the process. The households with two adults and 1 child have remained somehow constant over the period, experiencing only small variations.

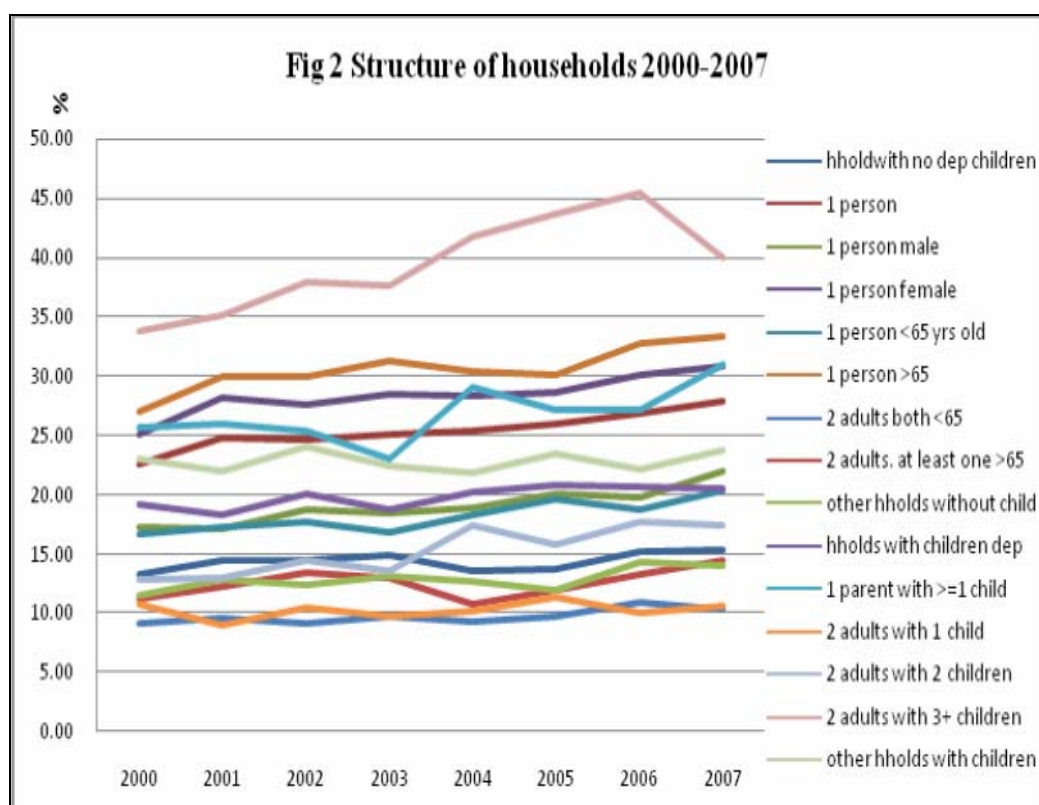


Figure 2. Structure of households 2000-2007

The demographic structure and the decrease in households' size fall in the structure of population of children and youth, population ageing and discrimination are only some of the drivers that have an impact on the distribution of income across the regions and within the country.

So far, I have touched upon the household structure, income distribution. However, the complexity of the issue would require an extensive study on the drivers of income inequality. There are several other elements that need to be considered: education, access to resources and training, policies, institutions, rule of law, the existence of the regulating framework, black market, and corruption. Transparency, responsibility, efficiency, multi level governance, competitiveness are key words that should be the pillars of every system. However, every structure has its own gaps failures and deficiencies. The discussion can go further in human capital, innovation, infrastructure, effects of agglomeration, distance to markets and accessibility and can provide the starting point for an extensive research.

The context is hyper-complex and there is no one size fits all solution to address the problem of income inequality. Moreover, whether it is good or bad to have inequality is debatable. I consider that inequality is inevitable given the current democratic system and inequality will always exist. Even if the access to resources, skills and information is equal, people are different and so their behaviour. The way they decide to make use of their assets is a rational choice more or less and it will be based on the needs at a certain moment in time. Preferences change in time and so are the assumptions. Once the assumptions are changed, different directions of action may emerge.

The pattern of income inequality is determined by the system as a whole as every component has a specific role and a certain degree of influence. Answering to the challenge of reducing income inequality or understanding the drivers behind it is necessary to go back to the theoretical background and to the theory of growth in particular. All the factors considered by the theory are relevant drivers sustained by empirical evidence more or less relevant.

When considering the drivers of inequality, the labour markets would be interesting to analyse extensively. The employment rate across regions, the unemployment rate, the households' structure and evolution over time, ageing population are only some of the elements that provide some ideas for the patterns of income distribution. However, the real causes are deeper and more complex. A main concern is regarding the regulatory system, access to public services, information, skills, resources and way of managing the situation and assets according to the needs and assets requirements and the assumptions made at a specific moment in time. The situation of the natural resources and the management of the assets of the region can have a great influence on people's ability and capacity to develop.

Corruption is another important aspect which is rather difficult to measure and monitor. This failure to measure it cannot provide too much advice as in Romania the problem has a deeper root in the mentality and trust of people. But one thing it is certain: corruption allows for a unfair distribution of income which is deepening the gap at a small scale in a first step but which may add up and have a more significant contribution overall.

## 5. CONCLUSION

When considering the drivers of inequality, the labour markets would be interesting to analyse extensively. The employment rate across regions, the unemployment rate, the households' structure and evolution over time, ageing population are only some of the elements that provide some ideas for the patterns of income distribution. However, the real causes are deeper and more complex. A main concern is regarding the regulatory system, access to public services, information, skills, resources and way of managing the situation and assets according to the needs and assets requirements and the assumptions made at a specific moment in time. The situation of the natural resources and the management of the assets of the region can have a great influence on people's ability and capacity to develop.

The context is hyper-complex and there is no one size fits all solution to address the problem of income inequality. Moreover, whether it is good or bad to have inequality is debatable. We consider that inequality is inevitable given the current democratic system and inequality will always exist in one way or the other. Even if the access to resources, skills and information is equal, people are different and so their behaviour.

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## **UNDERSTANDING THE MARKETING CHAIN: A CASE STUDY OF CERTIFIED AND NON-CERTIFIED GRAPES AND MANGO FARMERS**

**ULRIKE GROTE, ANDRÉA CRISTINA DÖRR \***

**ABSTRACT:** *The fresh fruit marketing system is increasingly focused on adding value and decreasing costs by streamlining distribution and understanding customer demands. This paper aims to understand the grapes and mango marketing chains and to evaluate the contractual arrangements between buyers and farmers. It also proposes an analysis of the type of governance used in this value chain regarding the characteristics of their transactions. A survey of 303 grapes and mango farmers was conducted in 2006 in the Juazeiro and Petrolina regions of the Sao Francisco Valley in Brazil. The results show that coordination in the supply chain of mango and grapes and the degree of vertical coordination is increasing through certification. Certified farmers, regardless of the fruit, have a shift from market-based global value chains governance to more explicit coordination.*

**KEY WORDS:** *mango, grapes, contract, marketing chain*

### **1. INTRODUCTION**

Fruit and vegetable sectors are seen as sectors where small producers are able to participate due to their low demand on land and their high labour requirements. However, the concern is that small producers' participation in the international fruit and vegetable trade could be diminishing as a result of the increasing prevalence of food quality standards in the sector (Ponte & Gibbon, 2005).

Implementing certification and entering certified markets have complex impacts on the economic performance of a farm. Production costs, yields and producer prices may each be affected positively or negatively by certification and have to be analyzed together. Furthermore, initial investment costs are likely to be very farm-specific (FAO, 2004).

USAID (2005) argues that for some producers, standards may open new opportunities as they permit access to particular market segments. At the same time,

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the process of (re)distributing market shares is accompanied by marginalization and exclusion, as standards may impose prohibitively high barriers on certain producers in terms of short-run and long-run efforts needed for production under certification. This is particularly relevant since certification with private standards has become a major requirement for participation in the fruit and vegetable markets worldwide.

Since fruits are perishable, disastrous quality losses can occur at any stage in the marketing chain from grower to consumer and the total value of the product may be lost. Hence, every activity in the production and marketing chain of fruits must be precisely timed (Jensen & Rorabaugh, 2007). The White Paper on Food Safety of the EU (2000) highlights that food safety needs to be organized in a more coordinated and integrated way, i.e. along the chain (farm to table), across all food sectors, within and beyond the frontiers of the EU.

Brazil is the third largest fruit producer in the world after China (161 million tons) and India (58 million tons), growing more than 35 million tons of fresh fruit on an area of 1.8 million ha in 2004. Orange and banana production represents around 70% of both the total volume and of the land planted with fruits in the country. Grapes, mango and melon production makes up around 7% of the whole volume. The main fruits designated to international markets are apples, mangoes, melons and grapes, responsible for nearly 60% of the country's total revenue. However, comparing the total production and exports figures, it is found that the share of fresh exported fruits in 2004 amounted to only 2.4% of the total production in volume terms (IBRAF, 2005).

The European Union is the main importer of almost all kinds of fruits from Brazil. Almost all melons, grapes, apples and oranges were exported to the EU from 2003-2005. Also mango exports to the EU were significant with increasing shares between 2003-2005. Banana and cashew nuts exports are less important. In comparison with the EU, the United States did not import any melons, apples, oranges and bananas, but they imported mangoes [23%] and grapes [11%] with the latter showing increasing rates from 2003 to 2005. Putting the figures of the EU and the US together, it can be found that most of the Brazilian fruits' exports are designated to them (Aliceweb, 2007).

Grapes and mango exports have been the most successful cases, with around 260,000 tons and 550,000 tons each being cultivated. The regions of Petrolina and Juazeiro, which are part of the Sao Francisco river basin, is responsible for this export performance. This region produced 99% and 88% of the country's grapes and mango exports (IBRAF, 2004). VALEXPORT (2006) estimates that the sector generates a total of 240,000 jobs directly and 960,000 jobs indirectly in the region.

The objective of this study is to understand the marketing chains and to evaluate the contractual arrangements between buyers and farmers. The paper proceeds as follows: after this introductory section, recent studies will be reviewed in the second section. Section 3 presents the theoretical background and Section 4 presents the primary data base. Section 5 presents the results which will be followed by a final Section 6 with the main conclusions.

## **2. LITERATURE REVIEW**

The rising competition in the fresh fruit industry and the need to meet norms and standards related to e.g. product characteristics, the production process and its impact on food safety and on the environment has meant a changing relationship between growers and buyers. The alternative strategies of buyers like supermarkets include formal and informal contracts directly with farmers and the establishment of their own distribution centres, which allow them greater leverage in forcing their quality and safety norms and standards (Farina, 2002). The compliance on the producers' side is driven by the demand of supermarkets on: varieties, production methods, post harvesting technologies, packaging and labelling specifications, and acceptable environmental impacts and working conditions. The global value chain analysis emphasizes that local producers learn significantly from global buyers on how to improve their production processes in order to attain consistent high quality and to increase the speed of response (Humphrey & Schmitz, 2002).

The banana market structure is for example very heterogeneous, depending on the producing and importing countries. The presence of diverse economic actors is also different among countries and regions at the several stages of the banana chain. Due to high perishability, bananas require a careful control of the growing, packaging, transport, ripening and distribution process. This leads to a highly vertically integrated banana sector, where large transnational companies tend to control from direct growing of bananas in producing countries, through ownership of specialized refrigerated shipping and ripening facilities to distribution networks in importing countries. An analysis of the banana marketing chain reveals that companies face the challenge of an increasing role that is being played by supermarkets and retail chains in the distribution of bananas in developed countries, mainly in the US and the EU. Supermarkets tend to build long-term relationships with preferred suppliers in order to guarantee a continuous supply at the required level of quality (United Nations Conference on Trade and Development UNCTAD, 2007).

In another study UNCTAD (2007a) develops the international citrus marketing chain. International trade in the fresh citrus fruits sector is characterized by a reduced degree of concentration of supply with a multitude of medium-sized firms providing the fruit. On the contrary, orange juice trade is highly concentrated. A small number of companies that operate in Brazil and Florida dominate the market. The major supplier of orange juice in the world is Brazil, followed by the US. The most significant players in the distribution channels for orange juice and fruit juices are the global retail chains, responsible for more than 80% of the total exports to Europe.

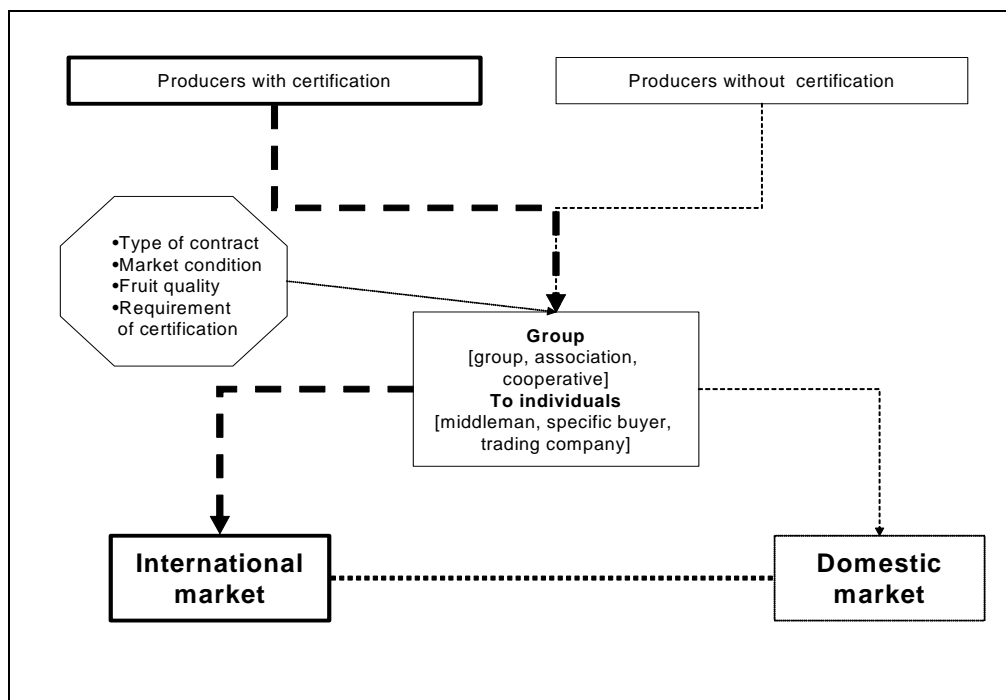
Cueller (2003) aims to identify challenges faced by retailers in different marketing specificities in the US market. The study reveals that the key issues in the marketing of imported fruits and vegetables among retailers are food safety assurance, transportation cost reduction and quality improvement. Further, the key issues in marketing include improving packaging, adding value to products and assuring food safety.

### 3. THEORETICAL BACKGROUND

#### 3.1. Conceptual of the marketing chain

An analysis of marketing channels and upgrading strategies for fresh fruit shows how the development of niche markets for high-value produce creates new opportunities for developing countries' producers and exporters that can meet the required standards. New marketing channels have opened up as a result of a combination of changing consumer tastes and the increasing dominance of large retailers in the markets of industrialized countries. The identification of opportunities for adding value and the development of strategies to take advantage of them are based on an analysis of the changing governance structures of food value chains (UNCTAD, 2000).

The framework presented in Figure 1 aims to facilitate the understanding of the marketing chain process of non-certified and certified producers in the fruit sector. Certified farmers are more likely to have access to international markets and non-certified ones are more likely to sell the fruit production in the domestic market. Farmers can either trade with groups, associations and cooperatives or with individual buyers, who sell the fruit production in the domestic market.



Source: Own illustration

**Figure 1. Conceptual framework on the marketing chain for certified and non-certified producers**



However, farmers who expect to export, may trade their fruit in the domestic market in case of a non-favourable situation; such a situation is given if there is a lack of quality caused by bad-crop formation, disease or climate conditions. Non-certified farmers are also vulnerable to those factors. However, non-certified producers may also export directly or indirectly to international markets. Directly occurs when they export via a trading company and indirectly, when they sell the fruit production to the middleman who repack and export.

Entering new export markets could be considered a major challenge for many firms in developing countries. New skills and knowledge are demanded, mainly related to bureaucratic procedures, national standards and procedures, marketing channels and consumers' tastes. Upgrading could facilitate and promote competitiveness to access those markets.

The value chain literature focuses on the role of global buyers and chain governance in defining upgrading opportunities. Humphrey & Schmitz (2000) use the concept of upgrading to refer to three different shifts that firms might undertake. First, process upgrading: firms can upgrade either through transforming inputs into outputs more efficiently by re-organizing the production system or introducing superior technology; second, product upgrading: firms can upgrade by moving into more sophisticated product lines and third, functional upgrading: firms can upgrade by higher value added. Kaplinsky & Morris (2002) added a fourth case, intersectional upgrading: where firms can upgrade by moving out of a chain into a new one.

### **3.2. Value chain approach**

The concept of governance “[...] is central to the global value chain approach [...] the concept is used to refer to the inter-firm relationships and institutional mechanisms through which non-market co-ordination of activities in the chain takes place. This coordination is achieved through the setting and enforcement of product and process parameters to be met by actors in which developing country producers typically operate” (Humphrey & Schmitz, 2001:3). The authors use the concept of governance “to express that some firms in the chain set and/or enforce the parameters under which others in the chain operate. A chain without governance would be a string of market relations” (2001:4).

The determinants of governance presented by Humphrey & Schmitz (2000:6) are: arm's length market relations [buyer and supplier do not define the product; no long term relationship and the buyers' and producers' risks are low]; networks [the buyer and supplier define the product specifications together; the buyers' risk is minimized because of the suppliers' high level of competence]; quasi-hierarchy [high degree of control from buyers over suppliers; the former define the product] and hierarchy [buyers control the supplier production process]. The authors suggest that quasi-hierarchy is more likely to occur where global value chains frequently link producers in developing countries and retailers in developed countries.

Similarly, Keesing & Lall (1992) argue that producers in developing countries are expected to meet requirements that frequently do not apply to their domestic market. For instance, this creates a gap between the capabilities required for the

domestic market and those required for the international one. This gap is widened when the buyers require consistent quality and supply, creating two reasons for quasi-hierarchical governance. The first refers to monitoring and control which might be required to ensure that products and processes meet the required standards. The second reason, in case the gap needs to be closed quickly, is that buyers will need to invest in a few selected suppliers and help them to upgrade. Mostly buyers have a higher interest in suppliers according to their relationships.

Gereffi, Humphrey & Sturgeon (2005:83) propose a more complete typology of value chain governance, divided into five types: (i) markets: market linkages can persist over time with repeated transactions - the cost of shifting the partner is low for both; (ii) modular value chains: suppliers make the products according to the customers' specifications, detailed more or less by the former; (iii) relational value chains: complex interactions among buyers and sellers, often creating mutual dependence and a high level of asset specificity; (iv) captive value chains: small suppliers are transactional dependent on larger buyers, characterized by a high degree of monitoring and control by lead firms, and finally (v) hierarchy: characterized by vertical integration.

In the same study, the authors develop a theory of value chain governance based on three factors: (i) the complexity of information and knowledge required to sustain a particular transaction with respect to product and process specifications, (ii) the extension in which knowledge and information are codified and transmitted efficiently, and (iii) the capabilities of actual and potential suppliers regarding the requirements of the transaction.

#### 4. DATA AND METHODS

A survey of 303 farmers was conducted between July and October 2006 in the Sao Francisco Valley, on the surroundings of Petrolina (state of Pernambuco) and Juazeiro (state of Bahia) in Brazil. The two-stage stratified sampling technique was applied as outlined by Levy & Lemeshow (1999). The first stratum included small<sup>1</sup> (<12 ha), medium (>13 and <49) and large producers (>50 ha) in both regions. The final step involved the identification of producers with certification, the ones without certification and those in the process of becoming certified. A total of 18 strata were identified (Table 1).

To ensure that this sample population could yield significant results from econometric analysis, a statistical power analysis was made to determine the sample size, whereby expected effect size, i.e. expected differences of means of two populations or the alternative hypothesis, can be detected with a certain power and significant level. This approach requires information on population means ( $\mu$ ) and standard deviation ( $\sigma$ ) based on lists of producers. The sample size of each stratum was calculated using the program Russlenth<sup>2</sup>.

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<sup>1</sup> Definition of land size according to SEBRAE of Petrolina

<sup>2</sup> Available on the website: <http://www.cs.uiowa.edu/~rlenth/Power/> (Accessed on August 2006)

**Table 1. Population and sample sizes of the producers in Juazeiro and Petrolina**

Type of producer		Population			Sample size		
Farm's land size	Certification	Juazeiro Farmers	Petrolina Farmers	Total population	Jua/Petro Farmers	%	Total sample size
Small	Without	587	2799	2212	90	39.0	120
	In process	30	149	119	30	13.0	59
	With	0	91	91	30	13.0	30
Medium	Without	4	58	54	30	13.0	34
	In process	4	67	63	30	13.0	34
	With	0	20	20	20	8.7	20
Large	Without	1	1	0	0	0.0	1
	In process	0	1	1	1	0.4	1
	With	4	24	20	0	0.0	4
Total		630	3210	2580	231	100	303

Source: Own compilation based on the list of producers

## 5. DISCUSSIONS AND RESULTS

A total of 155 mango and grapes surveyed farmers (51%) have no certification, those in process comprise 94 (31%) and those who are already certified comprise 54 (18%). Some descriptive results are presented, followed by discussions on the marketing chains.

### 5.1. Descriptive statistics

**A. Socio-economic factors.** The survey collected data regarding socio-economic characteristics of mango and grapes producers, including age, gender and level of education. With respect to age, it was found that the producers are on average 49 years old. It was expected that the ones who have adopted certification would be younger than the non-certified producers since they might be more open to new technologies or practices (D'Souza et al., 1993). However, there is hardly a difference between the two groups: certified producers were on average 48.8, while non-certified ones were 50.5 years old. Thus, the expected result is not supported by the data. Similarly, it was expected, that producers who are certified would have more years of schooling and long-term experiences in growing fruits than the non-certified ones. However, the results show that on average certified and non-certified producers have both 7.7 years of schooling. The farmers in process have the highest level of education with 10.2 years of schooling. The figures on the years of experiences show that certified producers have on average 7.3 years of experience in grapes and 9.2 years in mango production while the non-certified producers have only 5 years and 7 years, respectively. While the years of schooling do not seem to influence the decision to adopt certification, the years of experience do.

The data show that mango and grapes were the main source of income for 91% of the certified producers, for 80% of the producers in process, and for 75% of the non-certified producers. Apart from producing mangoes and grapes, farmers are also involved in the production of other tropical fruits such as coconuts, guava, melons,

banana and papaya (15% of non-certified producers and 2% of certified ones). This result reflects the high dependence of the producers on fruits in general, but also indicates a stronger trend towards specialization for certified producers.

**B. Characteristics of the farms.** A comparison of the mean values between the groups clearly indicates that certified mango and grapes farmers have much more land (100 ha and 93 ha) and more irrigated area (40 ha and 29 ha) compared to non-certified (Table 2). Indeed, an irrigation system is necessary for fruit production in the surveyed region. There are two types of irrigation systems: the drip and micro sprinkler which are considered very sophisticated while furrow and conventional sprinkler are less sophisticated. The study reveals that most of the certified farmers use very sophisticated irrigation systems (83%). However, also a high percentage of the non-certified farmers have very sophisticated systems (59%).

**Table 2. Farm characteristics of mango and grapes farmers**

Variables	Non-certified N=155		Producers in process N=94		Certified N=54		Ch <sup>2</sup> , t test
	Mean	Std. deviation	Mean	Std. deviation	Mean	Std. deviation	
<b>Mango</b>							
Land size (ha)	20.0	66.8	18.2	27.2	101.0	299.1	0.003***
Irrigated area (ha)	10.3	10.1	11.7	21.8	39.8	86.1	0.000***
Yield (tons per ha)	19.3	8.9	20.4	9.3	25.9	9.6	0.003***
Total income (R\$)	125,263	187,526	141,236	219,134	1,215,991	3,434,017	0.000***
Income (R\$/ha)	17,050	21,095	8,325	5,839	10,076	8,960	0.000***
Production costs (R\$)	58,314	79,995	62,831	98,081	463,108	1,279,293	0.000***
Costs (R\$/ha)	7,965	3,601	7,631	3,897	11,814	4,390	0.000***
Total net income (R\$)	67,048	123,327	78,405	124,005	752,882	2,171,144	0.327
Net income (R\$/ha)	9,085	21,095	8,325	5,839	10,076	8,960	0.887
<b>Grapes</b>							
Land size (ha)	34.7	113.5	8.2	3.1	93.5	304.9	0.194
Irrigated area (ha)	14.4	35.6	6.3	4.1	28.9	77.1	0.198
Yield (tons per ha)	16.3	10.5	17.9	7.9	22.9	8.5	0.014***
Total income (R\$)	188,878	450,182	348,396	269,089	606,227	861,867	0.006***
Income (R\$/ha)	28,947	20,279	31,513	13,917	42,748	21,177	0.016***
Production costs (R\$)	89,279	156,313	160,348	110,438	324,250	485,235	0.083***
Costs (R\$/ha)	16,249	8,779	15,666	7,222	22,612	10,049	0.005***
Total net income (R\$)	99,598	297,713	188,048	161,734	281,977	456,505	0.012***
Net income (R\$/ha)	12,698	14,129	15,847	8,788	20,145	15,288	0.085***

\*\*\* Statistically significant at 1% level; \*\* at 5% level; \* at 10% level

Source: Own compilation

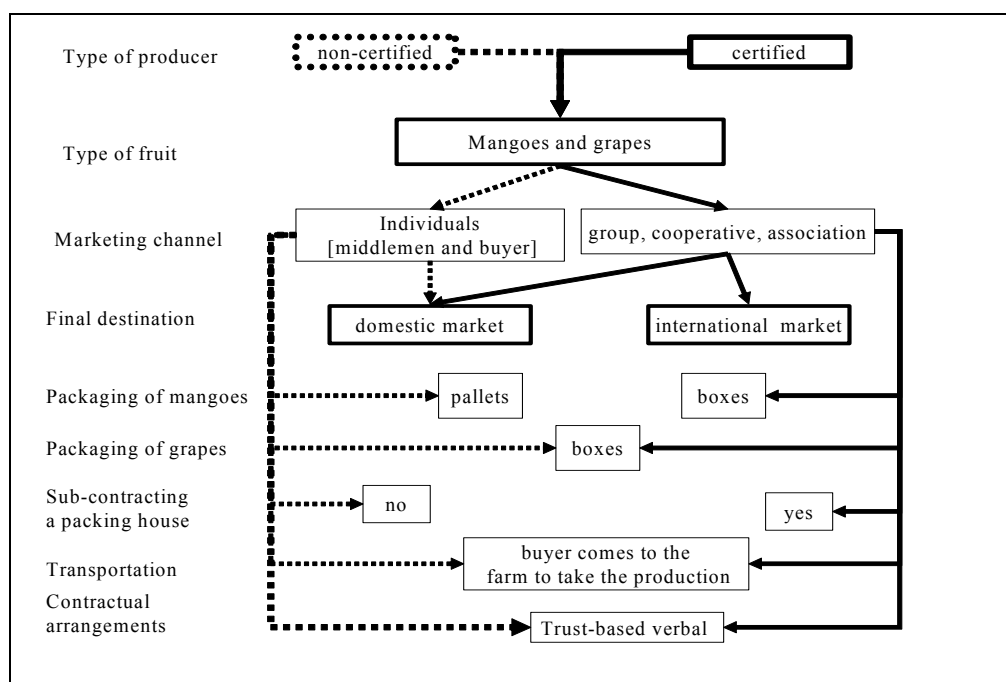
The type of used irrigation system plays an important role with respect to the productivity of the farm. The results show that mango yields on average amount to 19.3 tons per ha for non-certified producers, 20.5 tons per ha for producers in process, and 25.9 tons per ha for certified producers. Concerning grapes, the productivity for non-certified producers is nearly 16.3 tons per ha, while for those in process and for the certified ones, 18 and 23 tons per ha are achieved. Thus, certified farmers achieve in the given sample higher yields than non-certified ones. But they also have relatively

higher net income. Regarding the average net income of grapes farmers, it was found to be around R\$12,700<sup>3</sup> per ha for non-certified farmers, R\$15,850 for those in process and R\$20,150 for the certified ones. Concerning mango farmers, the average net income is approximately R\$9,000 for non-certified farmers, R\$8,300 for those in process and R\$10,100 per ha for the certified ones<sup>4</sup>.

### 5.2. Marketing chain analysis

An analysis of the marketing chain identifies major agents and the transactions between mango and grapes farmers and buyers. In general, an investigation of the functioning of the trading process in both fruit sectors may contribute to a better understanding of the functioning of the whole sector. A differentiation is again being made between farmers who are certified and those who are not.

Figure 2 shows the respective marketing chains relevant in Brazil. Basically producers of grapes and mangoes have two options: either they sell to individuals (specific buyers, middlemen, exporting company) or to a group (group or association of producers, cooperative).



Source: Own compilation

Figure 2. Marketing chains of grapes and mangoes

<sup>3</sup> 1US\$ = R\$2 at the time of data collection

<sup>4</sup> The total income refers to the fruit production only, however other income sources were found to be negligible.

Around 92% of the non-certified and only 4% of the already certified farmers reported selling to individuals. Nearly 96% of the certified producers belong to a group, cooperative or association exporting mainly to the international market (Tab.3).

**Table 3. Description of the variables on marketing chain**

Description of the variables	Producers		Chi <sup>2</sup>
	Cert.	Non-cert.	Sig.
Selling to individual buyers (in %)	3.7	92.4	0.000***
Selling to a group, cooperative or association (in %)	96.3	7.6	0.000***
Years of trading with the buyer/cooperative (mean values)	3.2	6.5	0.000***
Mangoes			
Selling to individual buyers (in %)	6.9	91.8	0.000***
Selling to a group, cooperative or association (in %)	93.1	8.2	0.000***
Years of trading with the buyer/cooperative (mean values)	3.4	6.9	0.000***
Grapes			
Selling to individual buyers (in %)	6.9	89.4	0.000***
Selling to a group, cooperative or association (in %)	93.1	10.6	0.000***
Years of trading with the buyer/cooperative (mean values)	3.9	4.7	0.000***
Certified [n=54] and non-certified producers [n=249]			
*** Statistically significant at 1% level; ** at 5% level; * at 10% level			

Source: Own compilation

The reasons leading non-certified farmers to trade with individuals are explained by the fact that there is no other possible buyer. The certified producers selling to groups perceived this as an advantage because first, they have assurance that their products would be sold (89%) and second, they follow the recommendation of EMBRAPA, SEBRAE or other organizations (41%).

Furthermore, the analysis also considers the number of years that the producers have been trading with buyers. The non-certified producers have been operating with their respective buyers for an average of 6.5 years, while the certified ones have an average of only 3.2 years.

There are differences with respect to packaging, post-harvesting and contractual arrangements between certified and non-certified producers which will be further analysed in the following.

### 5.3. Harvesting process

Maturity is one of the main factors determining the quality of a product. Post harvest technologies deal with separation, sampling, sizing, and sorting as well as with grading. The fruit sector is unique due to its high perishability (Irtwange, 2006). For Newman (2007), one of the constant challenges fruit growers face is to ensure that the production reaching consumers is of a consistently high quality. Therefore, determining when to harvest fruit to sell or long-term storage plays an important role in successful post harvest crop management.

The marketing standards of mangoes (*Mangifera indica* L.) and grapes (*Citrus paradise* Macfad.) are presented by the Europe Fresh Quality Guide (2007) according to the United Nations Economic Commission for Europe (UNECE). The standards

include its definition, minimum requirements, developments and conditions, classification, sizing by weight, presentation, contaminants and hygiene.

Considering the specificities of each type of fruit, the harvesting process can be done using plastic or paper boxes, or pallets. Fruits handled in boxes are supposed to be better preserved while fruits packed in pallets have to be repacked again and this process may damage the product. Nevertheless, sometimes when fruits are sold in pallets to local markets [short distances], they are repacked in boxes for international markets or for transport over long distances in the domestic market.

As Table 4 shows, harvest of grapes is done using paper and plastic boxes by 100% of producers with certification and around 77% of the non-certified ones. Mangoes have been packed in pallets by 94% of the non-certified producers, while 93% of the certified producers use paper and plastic boxes.

**Table 4. Description of the variables on post-harvesting**

Description of the variables	Producers		Chi <sup>2</sup> , t test
	Cert.	Non-cert.	Sig.
<b>Grapes</b>			
Post-harvesting of grapes is done using paper and plastic boxes (in %)	100.0	77.3	0.000***
Use of a subcontracted packing house for post-harvest handling (in %)	75.9	4.5	0.000***
Buyer transports the fruit (in %)	79.3	100.0	0.000***
<b>Mangoes</b>			
Post-harvesting is done in using paper and plastic boxes (in %)	93.1	3.6	0.000***
Use of a subcontracted packing house for post-harvest handling (in %)	96.6	11.8	0.000***
Buyer transports the fruit (in %)	79.3	98.5	0.000***
Certified grapes producers [n=29] and non-certified grapes producers [n=66]; certified mango producers [n=29] and non-certified mango producers [n=195]			
*** Statistically significant at 1% level; ** at 5% level; * at 10% level			

Source: Own compilation

Further, producers have mainly two options with respect to the post-harvest procedure: either they sell the production directly to the buyer after harvest or utilize a packing house. Producers, who do not have their own packing house, may decide to utilize one from the group, cooperative or association. The advantages of using a packing house are technical (keeping the fruit stored in suitable conditions and temperature in order to maintain the fruit quality) and managerial (producers are less vulnerable to climate shocks and market fluctuations and are able to settle better negotiations through market opportunities). The findings highlight that nearly 97% of the certified producers of mangoes utilize a subcontracted packing house for post-harvest handling compared to 76% of certified grapes producers. In contrast, about 88% and 95% of non-certified mangoes and grapes producers reported that they do not subcontract a packing house, i.e. the fruit is sold directly after being harvested. Some producers decide to transport the products to the respective buyer using their own means of transport, while others wait for the buyer to collect the products at the farm gate. The survey shows that regardless of the fruit and of certification, the buyer comes

with a truck to collect the fruit at the farm. This is true for about 80% of the certified and almost 100% of the non-certified producers. It means that farmers are not responsible for the transportation having lower transaction costs but maybe also receiving lower prices. Choosing the most efficient post harvest system is also closely connected with the contractual arrangements, which will be discussed in the following section.

#### 5.4. Final destination of the fruits

Table 5 presents results on the final destination of the grapes and mangoes production. With respect to non-certified producers, they almost all mention that their mangoes and grapes are sold on the domestic market. However, most of the producers are not aware of where the fruit is sold to after the gate. Thus, it is possible that the fruits are repacked and exported without the producers knowing about it. Certified farmers provided information on the destination of their fruits for the periods before certification and after certification. Interestingly, the percentage of farmers saying that their fruits are sold on the domestic market is lower than that of non-certified farmers: 48% of grapes farmers and 68% of the mango farmers indicate that their fruits were sold on the domestic market because they obtain certification. After having obtained certification, the shares decreased: only 22% of the grapes farmers and 20% of the mango farmers say that their fruits are sold on the domestic market.

**Table 5. Details on grapes and mango exports in 2005, percentage of the total volume**

Description of the variables (mean value in percentage)	Certified		Non-certified
	Before certifying	After certifying	Current
<b>Grapes</b>			
Domestic Market	48.0	22.0	92.3
US	31.0	20.7	3.2
Europe	20.6	54.0	3.8
Other	0.4	3.3	0.7
Total	100	100	100
<b>Mangoes</b>			
Domestic Market	67.8	20.0	93.3
US	15.3	28.7	0.7
Europe	16.3	49.5	5.1
Other	0.6	1.8	0.9
Total	100	100	100
Certified grapes producers [n=29] and non-certified grapes producers [n=66]; certified mango producers [n=29] and non-certified mango producers [n=195]			

Source: Own compilation

The data also reveals that the importance of the European market as a final destination increased for both grapes and mango producers after certification. The number of certified farmers mentioning Europe as a final consumer market almost tripled over time. The role of the United States is also important as a final market for Brazilian fruits, however, the share of grapes farmers mentioning the US decreased by 30%, while that for mangoes almost doubled. The importance of the other countries as



final destinations is almost negligible, although they slightly increased for certified farmers when comparing before and after certification. The shift of export flows might be explained by the introduction of GlobalGAP, being an initiative of European retailers. However, also other factors like transport capacities or trade agreements may play a role.

### 5.5. Contractual arrangements

Producers of fruits and vegetables operate in an unusually risky economic environment. While these farmers face the same sort of production risk common to other agricultural products, they also produce a perishable commodity whose price is subject to large fluctuations. Ligon (2001) points out that one important practice which helps to shield fruit and vegetables producers from price and production risk are contracts. The author emphasizes the importance of written contracts between the producer and the first handler, or intermediary who takes hold of the fruit.

In this study, the contractual arrangements between producer and buyer can be divided into three categories: written contracts; trust-based verbal contracts<sup>5</sup>; and verbal contracts only. As Table 6 shows, 87% of the certified farmers reported dealing with the buyer through a trust-based verbal contract. The remaining 13% even have a written contract. With respect to the non-certified producers two third (about 73%) have a trust-based verbal contract. A written contract was given only in 3% of the cases. The remaining 24% indicate to have a verbal contract only.

**Table 6. Description of the variables on contractual arrangements**

Description of the variables	Producers		Chi <sup>2</sup> , t test
	Cert.	Non-cert.	Sig.
<b>Both mango and grapes</b>			
Verbal contract with trust (in %)	87.0	73.5	0.015**
Verbal contract (in %)	0.0	23.3	0.000***
Written contract (in %)	13.0	3.2	0.008***
<b>Only mangoes</b>			
Verbal contract with trust (in %)	95.6	72.8	0.000***
Verbal contract (in %)	0.0	23.6	0.001***
Written contract (in %)	3.4	3.6	0.723
<b>Only grapes</b>			
Verbal contract with trust (in %)	75.9	69.7	0.345
Verbal contract (in %)	0.0	24.2	0.002***
Written contract (in %)	24.1	6.1	0.017**
Certified grapes producers [n=29] and non-certified grapes producers [n=66]; certified mango producers [n=29] and non-certified mango producers [n=195]			
*** Statistically significant at 1% level; ** at 5% level; * at 10% level			

Source: Own compilation

Analyzing the type of contract by fruit, the study shows that written contracts are much more often given to grapes farmers, especially the certified ones. Only 4% of

<sup>5</sup> The verbal contract based on trust relates to settlements between producer and buyer after a certain number of successful negotiations.

the mango farmers receive a written contract, but most certified mango farmers indicate to have a trust-based verbal contract, compared with only 73% of the non-certified producers.

A deeper analysis of the contractual clauses may provide a better understanding of the characteristics of the transactions. The analysis below tries to illustrate the contractual arrangements between mango and grapes growers and their respective buyers (Table 7). The analysis relates to the verbal trust-based agreement. Farmers who deliver their fruits to a middleman or exporter indicate that they had eleven negotiations, while those who sold to a group or cooperative had only four negotiations. Interesting is the result that all groups or cooperatives pay in cash, while 15% of the individual buyers pay in rates and 16% do not pay at all. Thus, the farmers are better off when selling to a group or cooperative. However, a group or cooperative is more likely to set the price while the producers selling to individual middlemen or exporters have a little more flexibility in negotiating the price.

**Table 7. Contractual trust-based arrangements**

Details of the negotiation (mean value)	Verbal trust-based	
	Individuals (N=189)	Group/cooper. (N=47)
Number of trading relations	11.0	4.0
Payment in cash (in %)	74.6	100.0
Payment in rates (in %)	15.3	0.0
Non-payment cases (in %)	16.4	0.0
Price determined by the buyer (in %)	34.4	95.7
Price determined by the producer (in %)	92.6	2.7
Buyer is not flexible in the negotiations (in %)	92.1	97.9

Source: Own compilation

## 6. CONCLUSION

The findings of the grapes and mangoes marketing chains reveal that certified producers generally trade with groups, cooperatives or associations while non-certified farmers trade with individual buyers. Groups, associations or cooperatives are responsible for the collection of the production at the farms, for storage, classification and transportation to the final buyer. In addition, they trade and settle contractual agreements with international buyers. These results show that certified farmers have achieved a higher level of coordination and vertical integration along the chain. On the contrary, the majority of the non-certified farmers trade directly with individual buyers.

The types of governance have been used to illustrate the way power operates in the fruit value chain. On the one hand, non-certified farmers of grapes and mangoes operate in the market-based global value chain. On the other hand, the results reveal that certified farmers, regardless of the fruit, shift from arm's-length market to quasi-hierarchical relationships attributed mainly to a high level of asset specificity, i.e. a shift from market-based global value chain governance to a relational value chain. This is achieved through a close dialogue between more or less equal partners with a more explicit coordination, which shows the importance of the competitive strategies such as certification in driving changes.

The reasons motivating farmers to vertically integrate are the reduction in transaction costs resulting from the economies of scale and the need to ensure consistent quality supply through the adoption of certification. The low number of certified mango and grapes farmers in the Petrolina/Juazeiro region compared to the number of farmers harvesting fruits, indicates that the fruit sector has a huge potential to grow and expand. Targeted support from the government and private sector will likely contribute to an increased competitiveness of the fruit sector.

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## **THE ROLE OF STRATEGY, COORDINATION AND GLOBAL FINANCING IN TOURISM**

**RAMONA GRUESCU, ROXANA NANU,  
GHEORGHE PÎRVU \***

**ABSTRACT:** *This paper focus on developing the essential components of the global tourism product so that the destination can start functioning as a viable tourism attraction as soon as possible. These priorities should be chosen carefully, so that some alternative options and attractions can be left for later. Not only this allows the strategy and product to be finalized in their functioning, but it also offers elements for keeping the destination dynamic and interesting in the subsequent stages of development. Tourism studies are the most suitable method to achieve progress, but they are expensive and must be used in conjunction with other monitoring techniques, such as performance tests or maintaining indicators. These are significant for finding the measurable parameters which help to determine the impact the tourism has on the designated area. They can indicate whether the positive effects could be foreseen or not, or even if there are unexpected indicators of negative impact.*

**KEY WORDS:** *performance, coordination, strategy, tourism product, attraction*

### **1. IMPORTANCES OF THE STRATEGY**

The performance of a tourist organisation or destination depends on its ability to create value, which is the use of a „resource to exploit external circumstances ... to bring in revenue, or ... to neutralise external situations ... likely to keep revenue from flowing in” [1]. Resources need to be combined or processed in a way to get value out of them, and therefore they are the inputs for capabilities, that is, how things get done to deliver a tourism product or service.

Therefore, how and how much value is created by a tourist company or destination will depend on the resource inputs and their processing and sale for end-consumption by tourists. The value chain helps managers to „visualise and analyse value-creating activities” and to pursue strategies which offer „lower prices than

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competitors for equivalent benefits or provide unique or differentiated benefits that more offset a higher price". Therefore, Porter's (1985) value chain model can be used to assess value creation in tourism. The assessment of value added by a tourist organisation's activities cannot be ignored. Piercy [2] goes further to suggest „we are in an era of value driven strategy" through „value innovation" based on three assumptions: *operational excellence* - reliable products/services at competitive prices, delivered with minimal difficulty and inconvenience, e.g. an airline that flies people to destinations at realistic prices and with few or no delays; *customer intimacy* - precisely tailored offerings for niches, e.g. 18-30 holidays which do not interfere with the enjoyment of families or senior citizens; *product leadership* - offering leading-edge products and services that competitors have difficulty catching up with.

There are significant problems with mapping a value chain for tourism. In manufacturing, production and consumption are often in different places; however, in tourism, production and consumption are in the same place, the destination or resort. It is also questionable if tourism is a single, cohesive industry or simply a convenient label for overlapping products and services such as attractions, accommodation, bars/clubs, restaurants, retail outlets, gifts and souvenirs. Therefore, attempts to develop a collective value chain for tourism may be flawed. It is more appropriate to develop value chain analysis for separate components such as airlines, hotels or attractions.

The following example, which examines a ride, demonstrates how value can be achieved through the examination of the structure of and the supply chain for an attraction. Structure of the attraction (ride):

- *line personnel* - maintenance and engineers, marketing and sales staff - all are involved in producing and selling the attraction's services;
- *operators of rides* - ensure rides run smoothly, within health and safety guidelines, to provide a positive experience;
- *support staff* - finance and accountants, personnel, public relations to support the work of the line personnel, so that the attraction runs smoothly.

The combined activities of these workers can ensure the creation of value for the tourist. Supply chain for the attraction (ride):

- *backward linkages* - purchase of land and the rides and the fuel to run them;
- *operations* - transform inputs to a ride to be experienced and enjoyed;
- *ticket sales and booking system* - on site, by phone and internet;
- *marketing* - promotion, advertising and pricing policy to attract customers;
- *service quality* - meeting the expectations of customers/tourists;
- *customer care* - managing relationships with customers to encourage repeat visits and/or sell the attraction to others;
- *support activities* - R&D, HRM, finance, legal and quality management to ensure smooth running and adoption of new innovations.

Value is created when the end customer is able to enjoy the ride in a safe and encouraging environment. Strategy is defined by Johnson, Scholes and Whittington [3] as the direction and scope of an organisation over the long-term, which achieves advantage for the organisation through its configuration of resources within a changing environment and fulfil stakeholder expectations'. This contrasts with an earlier view by

Ansoff [4] as a set of management guidelines which specify the firm's product-market position, the directions in which the firm seeks to grow and change, the competitive tools it will employ, the means by which it will enter new markets, the manner in which it will configure its resources, the strengths it will seek to exploit, and conversely the weaknesses it will seek to avoid. Strategy is a concept of the firm's business which provides a unifying theme for all its activities.

Coulter [1] has a narrower view of strategy as a series of goal directed decisions and actions that match an organisation's skills and resources with the opportunities and threats in its environment. Kotelnikov [5], echoing Ansoff, also suggests that strategy is the way in which a company orients itself towards the market in which it operates and towards the other companies in the marketplace against which it competes. It is a plan that an organisation formulates to gain a sustainable advantage over the competition. Piercy [2] says strategy is really about „being best at doing the things that matter most to our customers; building shareholder value by achieving superior customer value; finding new and better ways of doing things to achieve the above”.

Drawing on these themes, Edgar and Nisbet [6] conclude that hospitality organisations should place greater emphasis on adopting, implementing and facilitating the innovative and creative organization. Shelton [7] suggests that organisations can use:

- *stretch*, the assumption that nothing is impossible; the striving to achieve goals or targets that may appear hard to achieve;
- *speed*, being better through being faster;
- *boundarylessness*, willingness to find a better idea or way by going beyond established boundaries or frameworks;
- *to respond to uncertainty and change*, by developing them as sources of competitive differentiation.

These debates about chaos, uncertainty and complexity are not new. Drucker [8] suggested seven sources of innovative or strategic opportunity in descending order of importance for organizations:

- the unexpected - unexpected success, failure or outside event;
- incongruity - between reality as it actually is and reality as it is assumed to be or „as it ought to be”;
- innovation based on process need;
- changes in industry structure or market structure that catch everyone unawares; demographics;
- changes in perception, mood and meaning;
- new knowledge, both scientific and non-scientific.

There are different ways of developing strategies. Common approaches are the rational choice and decision-making methods. Rational choice assumes that people and organizations are purposive, seeking to achieve a desired state or outcome, and goal-oriented with a hierarchy of preferences, or benefits, as suggested by Coulter [1] above. In making choices, rational calculations are made to assess the: usefulness and benefits of alternative options and choices based on the preferred hierarchy of preferences and benefits; costs of each alternative assessed against alternative benefits foregone; the best way to maximize benefits.

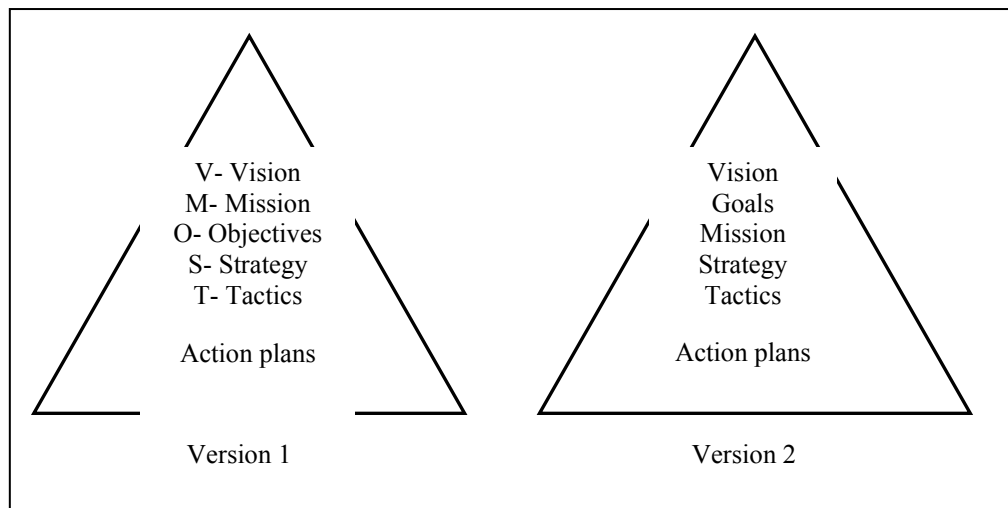
The development of a strategy can be conceptualized in terms of inputs, processing and outputs. This can be done in two distinct ways: visioning and problem solving. The first approach is driven by a desire to achieve a future position or state, i.e. a vision. From this flows the *strategy pyramid* approach shown in Figure 1.

At other times, the two terms get combined; Thomas Cook's annual report (2003) refers to their „vision/mission”.

These approaches to the strategy process have some key components in common:

- a vision or perspective of where the organisation is, could be, or wants to be;
- an assessment of the organisation's competences, resources and sources of competitive advantage;
- an assessment of the external opportunities, threats and competition;
- developing strategic options and evaluating them;
- making final strategy choices;
- developing tactics;
- determining timescales for implementation;
- marshalling resources and winning support for them;
- implementing agreed strategies;
- monitoring, reviewing and evaluating;
- re-assessing strategies in light of experience and modifying as necessary.

This model assumes feedback loops at each stage to allow for changes in thinking. Hence the re-assessment of strategies after implementation might involve a re-examination of the organization's vision; resource base and competences. This backward influence is called feedback.



**Figure 1. The strategy pyramid**

The second approach is to start with problems facing the organization that need to be dealt with or solved, and this requires the development of strategies and



action. Here inductive logic takes over, beginning with: an assessment of the problem/issue; identification of the causes; generating options for dealing with it; deciding on the right way forward, i.e. strategy for dealing with it; implementing/taking action; reviewing progress and evaluating and taking further action to improve performance.

The management organization also has an important role to play in maintaining all participants informed on the progress and latest development in the tourism sector. This information should be provided to all those that are interested in a transparent manner and on a normal basis. This not only will give the individual business a chance of taking into consideration up to date discoveries concerning the administration of one's facilities and services, but will also help maintaining the overall enthusiasm and the continuity of the process.

There are several ways of getting to this, for example by means of newsletters, press promotion or the distribution and publishing of all available studies promptly, so it incites to cooperation and future partnerships among different participants. The management organization should look for strategic funds that are going to be used for attaining various projects regarding the strategy of tourism. Resources will be needed for long term activities, such as providing assistance for the management organization's core, work monitoring, adaptive administration and high initial investments.

The most suitable place for this kind of funding is on a local level, self-financing being one of the most secure and trustworthy ways of setting up a viable final product. Funds can come from a variety of local sources, such as a pool of resources among the tourism entrepreneurs, local sponsorships, or an allowance from the public budget of expenses. External funding can also be called for, but one should keep in mind that these tend to be on a short term and are often uncertain. If we become addicted to this external source, the tourism destination will risk collapsing in the event of some unforeseen negative events. However, the search for external sources of financing often allows the starting of the process and the attainment of payment facilities for the high prices of the initial investments.

There are available funds provided by the European Union for most of the unconventional destinations, hence addressed to a smaller segment of tourists. These can be used to co-finance a variety of planned placements, from major works to real estate investments. Eventually, a programme for developing a tourism strategy is very useful for expanding the tourism product in a logical and controlled manner. It is not desirable, nor possible to attain a tourism strategy at once. It would be preferred to have a long term vision of what needs to be done, and then sketch a detailed list of the priorities for a longer period of time.

This action plan should focus on developing the essential components of the global tourism product so that the destination can start functioning as a viable tourism attraction as soon as possible. These priorities should be chosen carefully, so that some alternative options and attractions can be left for later. Not only this allows the strategy and product to be finalized in their functioning, but it also offers elements for keeping the destination dynamic and interesting in the subsequent stages of development.

## **2. MONITORING AND IMPROVING THE PRODUCT**

Tourism is a dynamic and continuously changing industry, highly dependent on a large number of external elements. Inevitably, tourism will evolve over time. A normal cycle of a touristic destination undergoes five phases (see the diagram). In order to be able to respond to these changes and avoid the last phases of stagnation and decline, the tourism strategy must have a monitoring programme. Keeping in touch with the monitoring and the impressions on it gives the possibility of an early reaction, before the problems occur and the creation of a dynamic destination which is capable of adapting to the market needs and change of preferences. This usually fits to relatively small and specialized markets.

Unfortunately, this element is often forgotten or not assigned enough resources. The monitoring programme and management should be developed based on four major elements. These represent the sustaining bases: the impact on the local economy; the impact on the environment; the impact on the society; the tourists' expectations and needs.

Developing the monitoring programme based on these elements will help to:

- identify the positive effects the strategy has on these elements;
- identify the negative effects;
- establish tendencies over time;
- obtain some useful information to start a proper management.

The program itself should determine which information is needed for answering these questions, how they can be obtained, who is involved, how often they will be collected and at what cost. The cost plays an important role for the accuracy of the monitoring. There is no use in developing a highly complex monitoring system if there aren't enough resources for it to function properly. Tourism studies are the most suitable method to achieve progress, but they are expensive and must be used in conjunction with other monitoring techniques, such as performance tests or maintaining indicators.

These are significant for finding the measurable parameters which help to determine the impact the tourism has on the designated area. They can indicate whether the positive effects could be foreseen or not (performance indicators), or even if there are unexpected indicators of negative impact (stress indicators). Indicators are very hard to find. There are no universal indicators yet, even if the W.T.O. along with some other participants are working on it. Each destination will need developing its own set of indicators, according to particular circumstances and necessary information. The following indicators can offer a few ideas about what needs to be taken into consideration.

## **3. PERFORMANCE INDICATORS**

Firstly, primary statistics are required concerning the tourists and their use of the facilities, in order to create an exact image of the tourism in the area, its impact and its performance.

### **3.1. Statistical elements in tourism**

Among the elements which can be determined using these statistics, we could mention: *the total number of visitors per year*, which will help monitoring the progress over time and will determine whether the number of tourists is growing, if the capacity contained in the tourism strategy is occupied or exceeded or if it has begun to slack off or decrease; *monthly fluctuations* will determine the optimal season for tourism, whether there are significant differences between the high season and the others or what happens between different periods; *vacation profiles* will show what kind of people arrive at the destination, whether they come for short or long periods of time, specific area activities, relaxing or in search of certain particularities of nature and environment; *visitors' profile* will describe an image of the type of tourists that visit the respective area, where they come from, how they travel, accompanied or solo, to what age group and social class they belong to; *the success of various attraction points*, information obtained for each attraction point, that will help identifying which of them are more successful and for what reasons.

### **3.2. Obtaining the information**

The method of obtaining this data depends on the respective destination management. It is possible for the management to have a few key attractions and a tourist information centre, where statistical data can be collected and visitors counted. There could exist a special research group capable of obtaining various statistics on its own. This is an ideal scenario. In most cases, options are limited therefore any effort towards working with all those implicated in this process should be done when possible. This means each business should be encouraged to emphasize its own touristic data.

Not only that this will help obtaining performances and customer satisfaction, but it will also create a data basis for the managerial body, necessary in evaluating the global performances of that destination. In the case that using questionnaires to obtain this information is shameful for some businesses, then letting the visitors have access to a suggestion box or a visitors' book in which they can write their own impressions about the place is an useful alternative or even an advantage [8]. Checking up on these periodically will help identifying the general impression or an increase in the amount of negative comments.

At some point, a more detailed questioning of the visitors should be done. Its importance can not be underestimated. It is the only way to obtain an accurate impression of the effects of tourism and an evaluation of the financial effort. Gathering information from different sources will emphasize the most obvious trends, but it will miss the delicate problems a more thorough research could discover, which are very important in obtaining an adequate managerial response. Ideally, this data should be inspected every two years in order to determine the progress over time. Tourism professionals, with experience in settling the questionnaires and interpreting the results, should be involved.

This kind of research will help find the problems through tourism statistics and obtain opinions concerning:

- *The economic impact* upon the individual tourism performers and the local community, in general. Interviews and research on these activities, along with a general view on the economic analysis and employment tendencies will help establish the power of the economic impact. For example, it will help determine whether the business is profitable and competitive, if the local economics has diversified, the employees' image has improved and the initial investment has been covered.
- *The impact on environment*. Measuring the impact determines the protection and conservation of nature and cultural environment on which tourism is based. It shows whether they are in good shape or have suffered deterioration over time. There is an ascendant tendency to conserve nature – more sensitive politics, additional funds.
- *The social impact* on the local community in terms of higher life standards, better jobs and training, or the negative aspect, caused by the rise in prices. Less materialistic aspects are also of interest, such as reviving the traditional arts, which can be observed while interviewing the locals.
- *The degree of tourists' satisfaction*. The information regarding the visitors' degree of satisfaction will help discover what tourists appreciate most, what they liked during their previous visit and if they intend to spend a future vacation at the same location. It also shows how the quality standards affect the choice of tourism destinations.
- *Marketing success*. Finally, the successes and failures in marketing must be treated carefully. Details about how tourists pick a holiday destination and organize their trip, taking into account the means of transport, accommodation, booking places, will determine whether the marketing strategy has been performed according to expectations. Once the annual statistics and occasional questionnaires are complete, it is important for the ones involved to have access to them. This will help them stay informed on the performance of the destination and take into consideration the possible adjustments for adapting to changes and opportunities.

### **3.3. Stress indicators**

Stress indicators are another element of monitoring programmes and are useful for completing primary tourism statistics and complex evaluations, through introducing an early warning mechanism in the process. Essentially, they need to be selected in accordance with elements that are easy to monitor. If they are activated, they will send a warning signal that it is time for more detailed investigations. The European Commission has recently published a report on early warning systems for tourist destinations, which is often consulted by the participants in this field.

### **3.4. Environmental indicators**

Indicators of environmental stress are essential for the long-term tourism. Even if we are careful with the environment, it is not always possible to foresee the impact the tourism has on it. It is very important to be able to observe the early negative tendencies and prevent them from becoming problems. The type of impact depends on the type of activities, but generally, it includes a large area of factors, from water pollution to altering the animal life. The significance of the effects will depend on the environment vulnerability and the intensity of using it.

The potential indicators of environmental stress will be calculated in accordance with these elements. In case of water pollution, monitoring the water on a steady basis will help discover any changes on pollution levels. Erosions and visible signs of degradation will also be stress indicators. In any case, it is essential to establish a connection between the impact on environment and visitor density, intensity and the type of activity [8]. This will help determine the level of visitors and patterns which can be tolerated by the environment without significant harm. An evaluation of these capacities has already been estimated during the development stage of the tourism strategy. Now it is time to check if these estimations are correct and if it is necessary to revise them.

### **3.5. Indicators of visitor satisfaction**

Psychological stress indicators produce an early warning system for the low level of visitor satisfaction. If the tourists are less satisfied with their visits, they will probably not return or recommend the place to others. Stress indicators must be structured to observe these problems early and determine why the level of satisfaction is so low. There could be common reasons, such as traffic congestions in the area, too crowded, loss of events and places' authenticity, over commercializing destinations and resources. The easiest way to find these stress indicators is to let visitors have access to suggestion boxes, which give the tourists the opportunity to register comments and spontaneous reactions. If the number of negative comments keeps rising, then it is time for a more complex study.

### **3.6. Social indicators**

Finally, the stress indicators can also be applied to the local population, but of course it's harder to identify key factors for this group. Two possible signals are the increase of negative reports from the local press and modifications in the ratio of the local population to tourist population. According to the W.T.O., if this ratio is higher than 1, then problems and conflicts are likely to appear.

The various techniques for monitoring (stress indicators, tourism statistics and special studies) will provide all the necessary information for a satisfying managerial response. Some of the problems could correspond to some individual attractions or services. Others can be more complicated and might need a more complex answer from all groups involved and even a possible change of the politics. For example, this can

happen if the destination has reached its maximum capacity. Because of this, the information cycle is so important. Only by observing and using this circular process, it is possible for these touristic destinations to remain attractive and dynamic.

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## **FORECAST REGIONAL DEVELOPMENT DEPENDING ON TERRITORIAL DISTRIBUTION OF INDUSTRIAL SUB- BRANCHES**

**ANCA JARMILA GUȚĂ, CLAUDIA ADRIANA ISAC \***

**ABSTRACT:** *The paper renders evident the role of the forecasting by elaboration of prognosis studies concerning the territorial distribution of the industrial sub-branches and the modality in which this distribution determines the development degree of a region. Also the principles which must lie at the basis of the territorial distribution of the industrial sub-branches are presented, so that the attenuation of the regional development gaps is tried.*

**KEY WORDS:** *forecasts, industrial sub-branches, development of regions*

The most branches influenced by technical progress are industry and its sub-branches. As a result it appears the necessity a detailed study of market demand for industrial products. Without of such a study, the whole branches may go bankrupt or enter into crisis.

To prevent the occurrence of such phenomena, forecasting studies are directed towards the analysis:

- a. *of evolution technologies trends of certain industrial branches:*
  - any progress involves the reduction of specific consumption of raw materials, energy, fuel and labour, with direct consequences on the cost and products price. Therefore, any delay in introducing of technologies produces the reduction of the competitiveness of such products.
- b. *of changes in the range of machines and equipment used in industrial branches and sub-branches:*
  - in the sense of discovery of high-efficiency machines and with the most reduced specific consumptions for a piece or measure (horse power).
- c. *of development of market demand, which refers to:*
  - internal structure of the market (with the complex character by the diversity of industrial products, of customers or by the market location);

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- dynamic capacity;
- spatial distribution.

The market for industrial products can't be analyzed generally, and investigations must have a permanent and systematic character.

The market structure of industrial products is studied on the basis of segmentation and population typology.

The segmentation refers to all techniques of population separation into groups by income or consumption preferences, while the typology includes all the techniques and methods reuniting the components into larger type, depending on certain characteristics.

Depending on the time horizon the forecasts which refer to industrial activity can be:

- *short term forecasts*: for the knowledge of current developments of market phenomenon these projections facilitate operative management of a business or industrial enterprise branches.
- *medium term forecasts*: guidelines that serve to substantiation of some development decisions of the branch, to researches and new guidelines according to the market demand, to decisions concerning the investments and readjustment of some sub-branches.
- *long range forecasts*: refer to duration tendencies of the market substantiating the strategy of sub-branches development and almost complete change of products list.

While short-term forecasts are based on short term factors the medium and long large forecasts are influenced by tendential and structural factors.

The time horizon in the industrial forecast represents the year or *the proper time*. Starting from the medium average for renewal of industrial products we can determine the optimal period for forecasting.

In the conditions in which the renewal of products is realized at the intervals of time more and shorter, the forecast horizon can be increased if the forecast period is constant. This occurs because the renewal of products leads to change the relation between the forecast horizon and the period of products renewal. Of course that the forecast seeks modelling the future as more as possible to what will happen, though the evolution is given under the form of possible variants, each of them having a maximum and a minimum in the so-called range forecasting. These limits are influenced by the forecast horizon, namely by the distance between the minimum and maximum limits which will increase as this horizon departs from the moment when is worked out the forecast.

Analysis of the industry as a branch of the economy is made not only quantitatively (its size, its rate of rise, productivity) or structurally (industry share of total branches to show the level of industry specialization of a country) but also in terms the location in the territory. In fact, in the territory is formed the structure of the industry representing the requirements of sub-branches confronted by the other sub-branches. Therefore, there are sub-branches which, to be economically efficient, require reciprocally in the same territory as a criterion of producing branches - a consuming branches.



The territorial distribution of industry involves the implantation and development of a certain its sub-branches in its administrative divisions of the country (provinces, counties, cities, villages). This is necessary because the resources aren't uniformly distributed in the territory.

As a result we will start from extra economical decision (political for example), achieving a *rational* distribution, which not to be confused with a uniform distribution. Any policy in this field is valid only for eliminating of economic gaps development between the provinces, counties, who may have social consequences (complaints, the depopulation of the area, etc.).

The main objectives of industrial location are connected with the territorial resources valorisation the ensuring of a consumable production in this territory, using the work force simultaneously whit the natural environment protection. In economic terminology of industrial distribution it is matter, therefore of an industry optimum (though difficult to calculate), determined on the basis of partial indicators such as national income produced in the industry per capita. These partial indicators are compared with average level per country, allowing the classification of provinces or counties. The partial indicators can be calculated on the total industry or each sub-branches in part (in case of products whose existence is absolutely necessary in the analyzed territory).

On the basis of territorial distribution of the industrial sub-branches must be the following *principles*:

a. *Appropriate investment policy*:

It was misunderstood by the state interference before 1989, when they located the industrial objectives according to political criteria and not socio – economic criteria. The idea of harmonious development of all counties was sustained even at the expense of economic efficiency.

In the new framework, created by the transition to market economy, the special committees ONUDI resolve the problem of investment in the territory starting of the question: when and in what stage of development a country can begin a policy of increasing of the less developed regions?

Of course that at the beginning of modern industrial starting-up, the poverty will still preserve in the retarded provinces (regions), because there aren't sufficient resources for its inclusion in the development avalanche. According to the experts opinions in the first stage of starting-up must be created *centres* of industrial development and, as such, the first investment will be concentrated as *pioneer investments*, which ensures high efficiency and achieve of high profits, necessary to the infrastructure development in the territory, as a basis for further development of industry in these regions.

*Development of infrastructure* (railways, roads, airports, ports, etc.) in all regions not only creates employment and income, but also equity of the citizen's access to civilization. The actual economic situation in which Romania is found the *retechnologization* should start in branches producing higher profits and covering major sections of the demand: food industry, light industry, industries producing goods of wide circulation, agricultural machinery, electronic and electro technical apparatus.

The location of industrial projects in less developed provinces or counties should be done in those branches that require little infrastructure investment (leather, clothing, food) and only after the accumulation of capital for infrastructure development we can proceed to develop industries with expensive infrastructure (metallurgical industries, chemical, petrochemical, etc.).

So, in the industrial start-up phase have priority the sub-branches in which the indicator investments for a work place is low. These sub-branches will determine the increase of the number of work places with direct implications on the decrease of population movement, creating additional income for the population in the area and for the administrative units (taxes, fees). On the basis of industry distribution in the territory lays the efficiency principle which combines the social and economical criteria.

*b. Employment available in the territory:*

According to changes due to objective and subjective reasons such as follow we analyze:

- mechanization of agriculture (which occurred in a fast tempo making available certain categories of employment);
- introduction of automation technology in industry;
- high birth rate in some counties (especially in Moldova);
- tradition existing in workforce training;
- age structure of population (in case where the young population dominates the peak will industry will be placed, otherwise the objectives of heavy will be placed);
- the culture level of the population (the purpose of calculating the average number of years schooling indicator / capita);
- weight by sex and age groups (in conjunction with the attitudes and inclinations to employment of female population).

*c. Valorisation of material resources of the territory:*

It is in close correlation with the rate of scientific research in the analyzed territory. This criterion is usually dynamic because the enterprises located lead to the discovery of new raw materials, existing even the witticism that "industries in turn create industries (e.g. electricity industry → power plants, metallurgy → industrial waste processing, etc.).

Another category of resources which can determine the territorial development and implicitly of the industry with small investment at the beginning are those connected with sub-branches of building materials sub: lime production, ceramics, stone, brick, wood, marble etc.

*d. The principle income population:*

The location of industrial objectives is necessary to be realized also in the counties don't dispose of the work factor specially qualified or the abundant raw materials as thus ensure a certain level of income of the population. In these objectives aren't located in such counties, this fact would cause some social effects: tension among the population, the labour movement, the backwardness in terms of education, etc. In the long term, these social effects become so severe that they impose the location of industrial objectives in all the counties.

In case of location of the industry in the backward territories, two *variants of calculation* are used on a horizon of 10 to 15 years:

1. the variant of industry location in traditional counties:
  - in all related efforts to achieve this objective, it will take the necessary expenses of population movement from less developed areas in the developed ones as well as the support to the population of backward districts.
2. the variant of industry location in backward counties:
  - the useful effects will be more reduced than in first variant but they will be obtained with much lower economic efforts.

Choosing those least developed counties, where the industrial objectives will be located is realized on the basis of following *criteria*:

- the location, first, of light and food industries (because it requires a technical level not too high);
- the transferring of skilled personnel from traditional centres to the less developed counties.

The fundamental criterion, on the basis of whom the ordering of backward counties is done, is the indicator of industrial gap, calculated as follows:

$$t = \frac{PG_{i_1}}{PG_{i_0}}(ani) \quad (1)$$

where:

$PG_{i_1}$  - annual industrial global production / capita in developed counties (Bucharest, Timis, Brasov, Sibiu, Hunedoara, Constanta);

$PG_{i_0}$  - annual industrial global production per inhabitant in under developed counties.

Using this gap can be calculated the rate to be imposed on the county development for it reaches the level of developed counties according to:

$$PG_{i_1}^* = PG_{i_0} \cdot (1 + r)^t$$

After determining the rate  $r$ , we will calculate the necessary investment to reach in time  $t$ , the economically developed counties.

The necessary investments are determined by the volume of investment resources to ensure the development of industry at with one per cent according to:

$$\Delta Inv_{K K K 1\%}$$

$$x_{K K K K K 10\%}$$

These investments are determined annually, which means that the total volume during  $t$  years will be:

$$Inv_t = \Delta Inv \cdot t \quad (2)$$

*e. Increase the protection of the natural environment:*

There is a limit beyond which can't be located in a territory certain industry. This limit is given by achieving a certain level of water, air, soil or noise pollution.

*f. Reducing the costs of production and transport:*

It is an important criterion especially for those sub-branches of industry which consumes large quantities of raw materials.

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