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THE INTELLECTUALS' OPINION REGARDING THE INTEGRATION OF ROMANIA INTO THE EUROPEAN UNION

MARIANA ANGHEL, VASILE CIOCODEICĂ *

ABSTRACT: *The sociological study emphasizes the fact that the investigated persons are sceptic as regards the carrying out of the objectives of integration into the European Union. In order to have a more stable economy premises closer to the European ones should be provided; the de-inflation process should be continued and a stricter financial discipline should be observed by companies with a view to maintaining a proper economic policy and attaining economic stability. The major changes that are going to occur in Romania should take into account the increase of labour productivity and the quality of products and services. A collective effort must be done in order to accomplish transition and head towards a modern society.*

KEY WORDS: *integration, community, cooperation, negotiation, economic environment, durable development.*

JEL CLASSIFICATION: *A14*

1. THEORETICAL ASPECTS REGARDING THE INTEGRATION

Romania's need to integrate into the European Economy has been linked to the need of achieving a rapid economic growth in order to catch up with the economically developed countries. Romania has significantly progressed along its path towards the European Union. One of the most important stages along the path Romania has gone through towards the West is NATO integration.

The European Union is today the result of the cooperation efforts started half a century ago in the attempt of founding a safe and prosperous society. Since then, cooperation has extended to various fields; nowadays, the European Union represents a forum for debating and settling matters of interest for the entire European community.

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Romania has become a member state of the European Union on January 1st, 2007. The quality of member state implies both rights and obligations. All these are rooted in the treaties and legislation adopted by the European Union since its foundation up to the present moment which are incumbent on every member state of the European Union. The next stage is the target date of Romania's integration into the Schengen space on March 2011.

The idea of creating a peaceful community has been issued by Robert Schuman, minister of Foreign Affairs, on May 9th, 1950. This is the historical moment considered to have settled the foundation of cooperation among the old enemies and to have surpassed war resentments and past burdens. Accordingly, a new process has been launched in the international relations of mutually exerting sovereignty. The plan was not known by the decisional factors of coal and steel industry and completely unknown by the public opinion in France and Germany.

The vanquished and the conquerors of the last war organized themselves starting from a new principle of international relations: the transfer of sovereign rights in certain economic branches and the administration of these branches by institutions having an over-national character. The new Community – through small but steady steps - intended to initiate the building of Europe starting from the economic field.

The institutional system of the first European Economic Community included the High Authority comprising nine members appointed by the governments of the member states, yet completely independent from them, the Council of ministers representing the member states but having restrained powers, and a Parliament Assembly comprising deputies of the parliaments of the member states.

The first economic community represents the first step of the French and German reconciliation. The interest was according to the importance of the event. After installing the High Authority in Luxembourg, the United States and Great Britain designated their representatives. Certain authors speak about the increased enthusiasm among economic elites; nevertheless, integration policy quickly emphasized certain subordination relations, especially regarding national and financial interests (Bibere, 1999, pp.32-33).

The foundation of the United Europe was an answer to the problems determined by the Second World War due to the tensions among certain European states as well as to the potential economic problems connected with their reconstruction effort.

Schuman declaration differed from the previous unification solutions of Europe due to the assimilation of an idea belonging to Jean Monnet – who, in the French government of that time, was responsible with his country's reconstruction – that stated the equal participation of the two states within a new entity that would first coordinate coal and steel industries of the two countries and settle the foundations of a future European federation.

Starting from this proposal formulated by Robert Schuman as a public declaration, six European countries (Belgium, France, Italy, Germany, Luxembourg, and The Netherlands) signed the treaty in 1951 in Paris. The treaty, in force since 1952, founded the first European Community, namely the European Community of Coal and Steel (E.C.C.S.). The community's institutions are the following: the High Authority

(over-state institution), the Special Council of Ministers, the Court of Justice, and The Common Assembly.

Both the European Economic Community (C.E.E.) and the European Community of Atomic Energy (C.E.E.A.) were settled by "Rome Treaties" in 1957 among the seven member states of the European Community of Coal and Steel. The European Community gradually increased its number of members and it is the most important among the communities including a varied and vast area of activities having an economic character; it also has association relations with a lot of states all over the world.

Maastricht Treaty of the European Union, in force since November 1st 1993, enlarged the area of European construction from the economic union to the political one. The treaty approaches monetary union, the idea of accrediting new mutual policies, the notion of European citizenship, foreign policy, and security policy.

The political process that determines the extension is but a part of integration. The most difficult part of the process starts when the candidate states begin to consider and implement legislative and constitutional changes necessary with a view of integrating.

The preparation of acceding to the statute of a full member of the European Union also implies the subject of adapting the constitution. The only obligation that is imposed to candidate states during the period that precedes integration is to transpose community legislation to the national juridical system. Accordingly, a lot of countries have changed their constitutions. Integration targets the increase of economic development and the carrying out of certain high parameters of future and global security of the member states.

2. METHODOLOGICAL ASPECTS

The research has been done on a sample of 90 subjects. The target population represented three social and professional categories (engineers, teachers, and economists) living in the Jiu Valley. The sample had a non-aleatory character according to the shares depending of specialization: engineers – 30 subjects, teachers – 30 subjects, and economists – 30 subjects. As regards the methodology, we have employed the direct sociological investigation (interview) as a method of getting information. As a research device we have used the interview protocol which included 26 questions. Out of the 26 questions, 4 questions were factual, and the rest of 22 targeted the subjects' opinion on the research topic.

The subjects' distribution according to sexes shows almost equal percents: 53% - female population and 47% - male population.

The structure of population depending on the age variable is graphically displayed by Figure 1.

As the above graph shows, the research included persons belonging to all age categories.

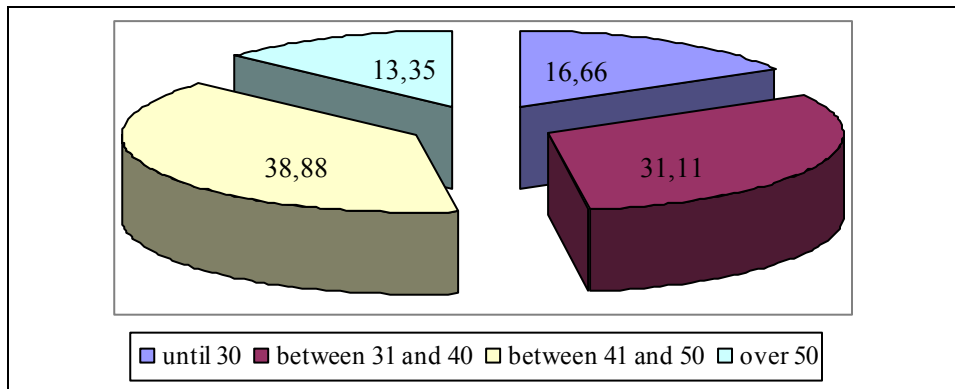


Figure 1. (%) Population Structure by Age

3. RESEARCH DATA ANALYSIS AND INTERPRETATION

Population is satiated of promises and we should also consider the poverty of Romanian society and nowadays economic crisis. Accordingly, most of the investigated population (figure 2) considers that we have but poorly prepared to carry out the criteria of integration (institutional changes, struggle against corruption, proper legislation, efficient public administrations, modern European education, accelerated health reform). The strategy of economic development suffers of lack of coherence and, as a result, the achievements in the field of macro-stabilization and unequal performances in the field of economic growth are fluctuant, inflation and unemployment have attained alarming percents. People consider that the present economic environment is not enough stable so that it can stimulate internal and external savings and investments. The program of making profitable economic and restructuring activities as well as reform and macro-economic instability are going to last several years.

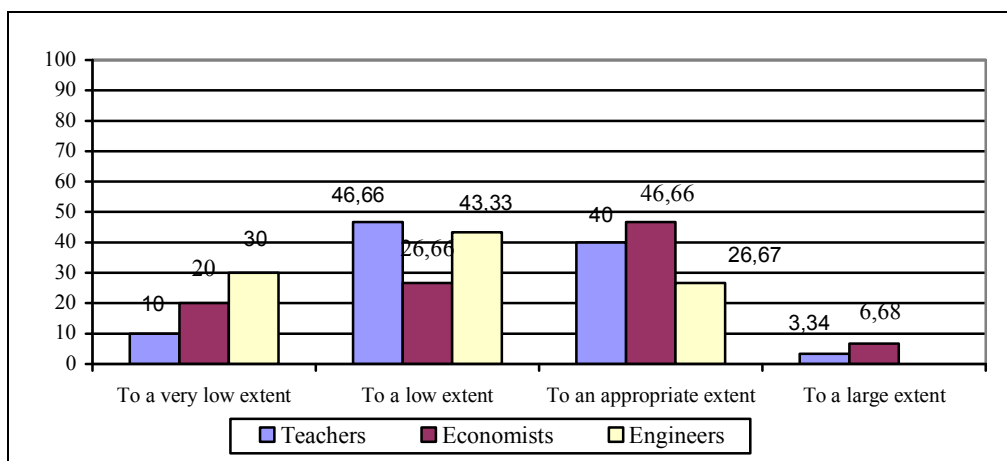


Figure 2. (%) The Population Readiness for Carrying Out the Integration Criteria

Romania has had as a main objective its integration into the European Union since 1989. This objective is not perceived in the same manner by all individuals. Less than two tenths of the subjects consider that the objective of integrating into the European Union has been a priority which is going to govern the unity of the entire Romanian society. Such a unity comprises the cooperation of politicians, of those dealing with the economy; the civil society, the academic community, and local administration that might be able to identify the most viable solutions capable of making Romania overpass the last years crisis. Unfortunately, not all of them believe in this opportunity. The most confident in the unity of Romanian society are the engineers who represent one third as compared with the economists that perceive this option to a smaller extent, namely less than one tenth (Figure 3).

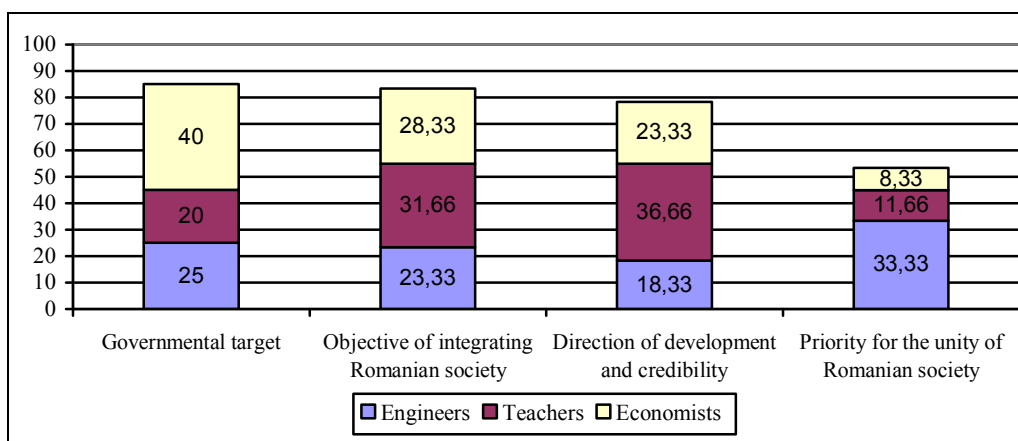


Figure 3. (%) Opinions Regarding the Object of the Integration into the E.U.

Less than one third of the interviewed persons consider that the objective of integration is a new dimension of Romania's development, consistency, and credibility. More than one third considers that integration has been an objective of the Romanian society. Almost one third of the subjects perceive integration as being only a governmental target. Economists support this issue to a larger extent than the other two social and professional categories.

As regards the importance of funds distribution towards certain fields of durable development, one third of those who answered the questions consider that the funds should be directed towards the projects of investment support followed by those regarding the strengthening of public administration and public institutions. Fewer subjects took into consideration the funds meant to promote social cohesion and the projects of developing agriculture and rural environment.

One can notice the fact that the interest in developing the Romanian village (figure 4) is rather small. Out of the three categories of subjects, only the teachers and the engineers showed an increased interest in the development of agriculture and rural environment (three fifths, namely more than two tenths) as compared with the economists who show a decreased interest in developing rural environment. Only 1.66% of them consider this option.

One third of the subjects consider that funds use should focus both on strengthening public administration and institutions and on projects of investment support so that the previous ones might efficiently work within the union.

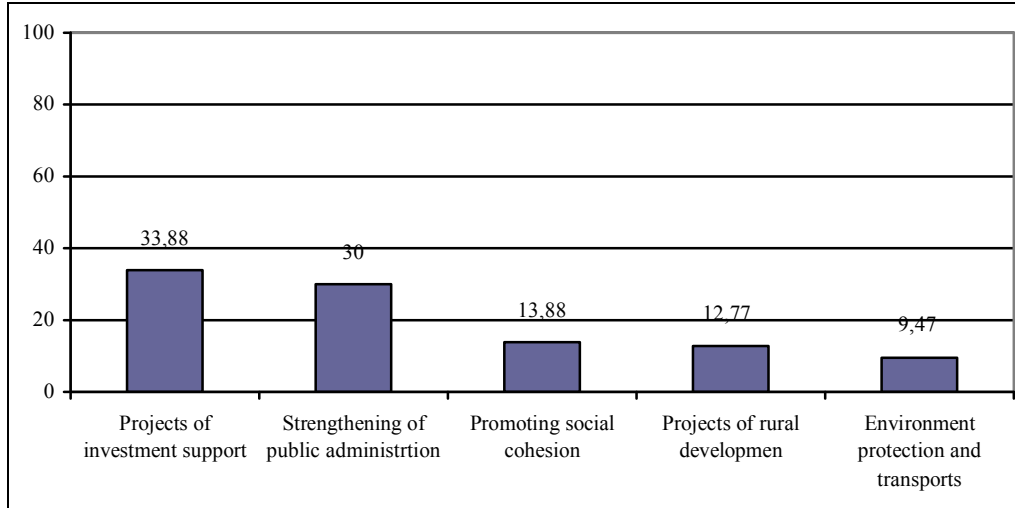


Figure 4. (%) Funds Directing towards Certain Fields of Development

A lot of debates and speculations have been determined by the funds correct and proper use. Accordingly, almost half of the subjects consider that funds are administrated inefficiently and irresponsibly; more than one third consider that they are used for the benefit of those who administrate them; more than three fifths consider as decreased the ability to use those funds, while one tenth consider the funds are distributed to less effective projects (Figure 5).

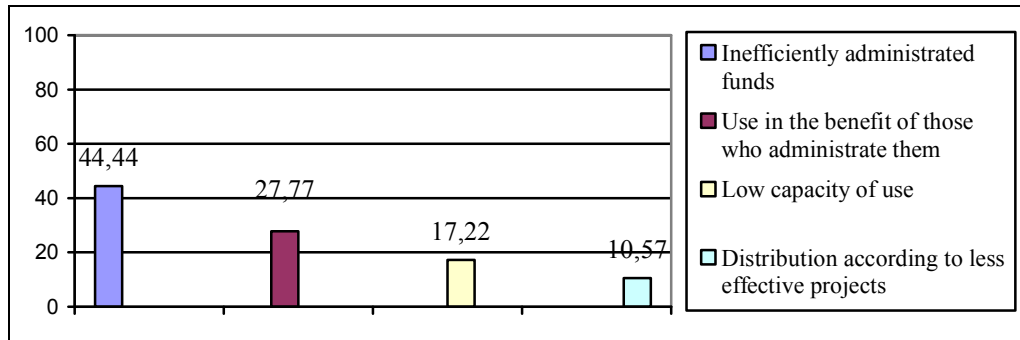


Figure 5. (%) Considerations upon the Manner of Using the Funds

Due to the fact that there are a lot of persons who grew rich overnight, suspicion regards both the manner the funds are administrated and those who administrate them.

All agreements, conventions or treaties stipulate that the unique market is the main element that should be gradually and under various forms founded. One third of the subjects consider that the integration into the European market means the elimination of all impediments in goods, services, and labour circulation.

Labour, services, and goods circulation targets the improvement of the living standard of the employees within the communities, their right to residence as well as their similar treatment with that of the other employees. Cultural cooperation is promoted with a view to increase mutual understanding among member states.

One third of the subjects consider that the integration into the European market represents an opportunity of selling Romanian products. It depends on the extent to which we are capable to turn them to good account and determines the getting of an increased labour productivity and general living standard as the unique market offers a larger field of activity regarding the promotion of those companies manufacturing high quality products at lower prices.

At the same time, the unique market allows a higher mass production that determines the increase of the profits, contributes to the more efficient use of capital investments in modern productive devices capable of making productive capacity grow; labour is also more rationally and efficiently used.

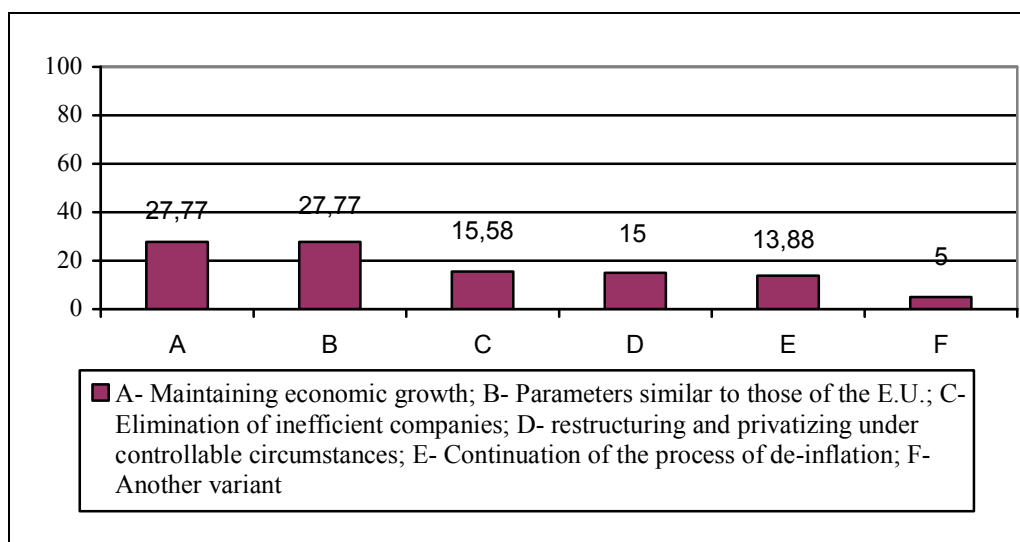


Figure 6. (%) Favourable Opportunities Determining the Development of the Management of Private and State Companies

The perception upon the continuing and maintaining economic growth in order to build a market background favourable to the development of the management of private and State companies is grasped by more than one third of the subjects. More than two tenths consider that the policies directed towards providing parameters closer to the European ones on the internal market are essential. Three fifths consider that the elimination of inefficient companies determines the foundation of a background favourable to developing the management of private and State companies (Figure 6).

4. CONCLUSIONS

The research emphasizes the fact that the investigated persons are skeptical as regards the carrying out of the objectives of integrating into the European Union.

In order to have stable economy parameters closer to the European ones should be provided; the process of de-inflation should be continued and a firm financial discipline should be imposed to companies with a view to maintaining a proper economic policy and to attaining economic stability.

The main changes that are going to occur should take into account the increase of labour productivity and the quality of goods and services. A collective effort should be undertaken in order to conclude transition and to head towards a modern society.

At the same time, through adopting and strictly implementing the laws, Romania is going to make one significant step towards the strengthening of the State, of its institutions with a view to modernize our society as a whole according to European values.

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CAREER PLANNING PROCESS AND ITS ROLE IN HUMAN RESOURCE DEVELOPMENT

ELIZA ANTONIU *

ABSTRACT: *This paper addresses specific questions on career planning, activity which plays an increasingly representative role in the human resources management. People were always concerned about choosing and building careers to meet their needs and aspirations. Career planning process involves both individual and organization responsibility. In the contemporary business environment, highly competitive, we find that career management responsibility rests increasingly on the individuals. Organizations also play an important role; its need to have and maintain a competent staff, considered as the main source for obtaining competitive advantage, most advanced companies develop and apply an integrated management career system, beneficial both for themselves and for their employees.*

KEY WORDS: *planning activities; career management; human resource; system*

JEL CLASSIFICATION: *M12*

1. CAREER PLANNING – AN ESSENTIAL COMPONENT OF HUMAN RESOURCE MANAGEMENT

The current economic context, marked by increased competition, integration in the European Union and especially the need to maintain competitive advantage in an increasingly uncertain business environment, have led to the introduction and the deployment of human resources activities until recently neglected. Thus, more companies in Romania have started to develop and implement organized planning and career development systems of employees.

In human resource management, career planning aims to identify needs, aspirations and opportunities for individuals' career and the implementation of developing human resources programs to support that career. According to Edgar Schein *career planning* (Manolescu, 2003) is a continuous process of discovery in which an individual slowly develops his own occupational concept as a result of skills or

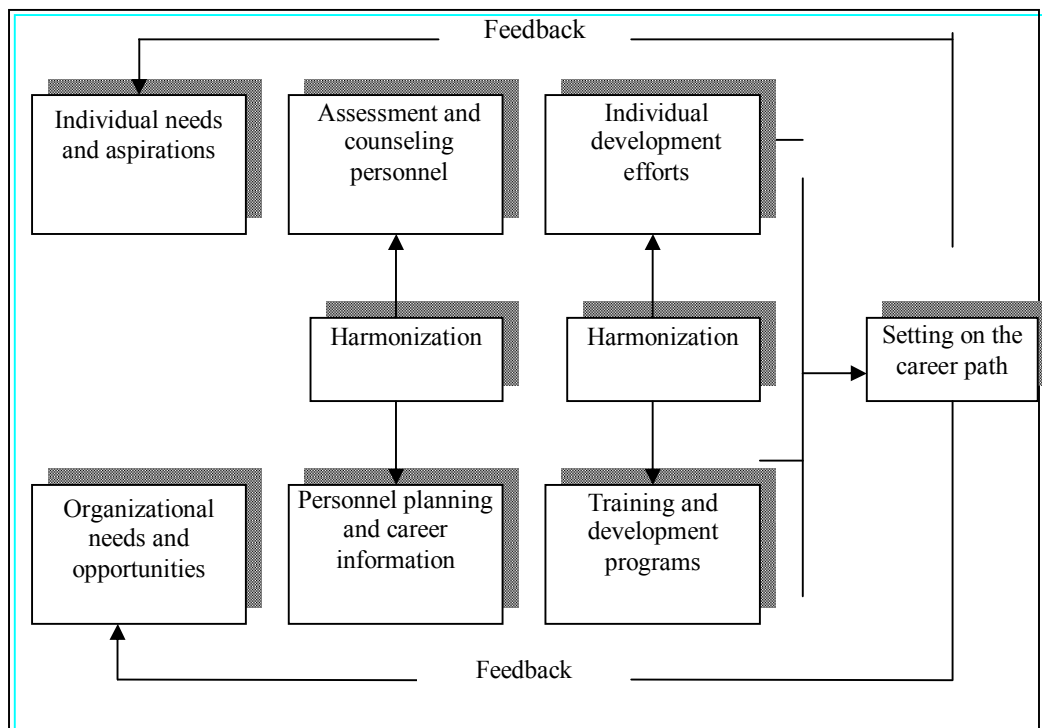
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abilities, needs, motivations and aspirations of his own value system . Career planning is seen as a very systematic and comprehensive process of targeting career development and implementation of strategies, self assessment and analysis of opportunities and evaluate the results.

The career planning process involves both the organization and the individual responsibility. Thus, the individuals must identify their aspirations and abilities, and through assessment and counseling to understand their needs of training and development; the organization needs to identify its needs and opportunities, to plan its employees and to ensure its staff the necessary information and appropriate training for career development.

Therefore, *career planning* (Popescu Neveanu, 2003) must *link individual needs and aspirations with organizational needs and opportunities, evaluating, advising and informing its staff on career planning, individual development efforts with training and development programs*. Most often this match is not done, the organizations paying a differential attention to its employees, planning career of the high performance individuals with greater opportunities for promotion and not taking into account the performance potential employees.

A *career planning model*, taken from the literature is presented in the following figure:



Source: J.M. Ivancevich and W.F. Glueck, in Aurel Manolescu – Human Resource Management

Figure 1. The career planning process

The issues to be considered in the planning of career are:

- organization members should be recognized and treated as individuals with needs, desires and unique skills;
- individuals are more motivated in an organization that meets their aspirations;
- individuals may develop, change and discover new courses of action if they are shown exactly the opportunities or if they are encouraged and guided.

The specialized literature recommends that career counseling activities should be introduced for all the employees, as a formalized activity of the human resources department. Creating a special service for career counseling, consisting of specialists with psychosocial and / or managerial training, who knows both individuals and organizations needs, would lead to a better alignment between the individuals needs of fulfillment and organization objectives.

According to the experts in human resources management (Mathis et al., 1997) are the following models of career planning:

- **„chance and luck” model.** This model is that employee, to get the desired position, is based only on luck. He must be persevering and always be in place at the right time.
- **„organization knows best” model.** The model is based on the fact that the employee is moved from one job to another according to the needs. This model is supported mainly by young employees, who are dependent on adults for all the views, and less than adults employees.
- **„self – oriented” model.** This model provides importance to the individuals; the employees are establishing their own development during their career, while having assistance too.

There are two approaches to career planning (Manolescu, 2003)), depending on the emphasis on the needs of the organization or on the individual objectives:

a) *the organization centered planning system* which aims:

- the development of Human Resource needs;
- to improve the quality of human resources to increase productivity;
- defining career paths;
- individual potential of job evaluation;
- harmonization of organizational and career needs;
- career counseling of work and life quality;
- audit and control of the planning and career development system.

b) *the person centered planning system* which aims:

- to identify the potential, skills and interests of the individual;
- to identify the purposes of his life and his career goals;
- to develop a written plan to achieve individual goals;
- researching or seeking and obtaining the best career start;
- to communicate the career plan directly to individual by his manager;
- request career guidance;
- internal and external opportunities' assessment;
- request mentor or sponsor support;
- promote their self image or recognition of their own qualities.

2. EMPLOYEES' CAREER PLANNING RESPONSIBILITY

An important aspect of career planning is to establish the extent to which the two parties (**individuals** and **organizations**) are responsible in this process. On one hand, the individual is responsible for its development along the stages of his life and, secondly, the organization involved in planning and development of career helps to improve the organizational environment and enhance employee satisfaction at work.

2.1. Individual responsibility on career planning

According to the theory and practice of management, the career planning process focuses particularly on individual skills, abilities, needs or aspirations. Given all this, the individual will create a basic information necessary to ensure preparedness for a possible promotion.

Individual career planning (Zlate, 2004) can be defined as *all actions of self assessment, exploration of opportunities, establishing goals etc., designed to help the individual to make informed choices and changes about career*. It is a complex action that requires systematic and careful thinking in formulating short and long term objectives.

Career planning is based, therefore, on the evaluation of individual skills, interests and motivation, on the analysis of organizational opportunities, setting goals for their careers and develop a strategy to achieve those goals.

Individual career planning ((Zlate, 2004)) can browse through *five* steps:

1. *Self assessment* is the collection of information about yourself (values, interests, skills), continuous assessment and reporting to others;
2. *Exploring opportunities* involves gathering information about existing opportunities within but also outside organizations (training and other development methods);
3. *Making decisions and setting goals* on short and long term for training requirements, change of job / department etc.
4. *Planning* consists of determining ways and means of achieving goals, ordering their actions to achieve them, considering its consequences, setting deadlines and resource requirements
5. *Pursuit of achievement goals*, action by the individual accounts for his successes and failures and make decisions to retain or change career course.

Individual perspective on career (Chartered Institute of Personnel and Development - CIPD, 2005) is determined by the *status of the individual professional and personal life, age, family circumstances, financial expectations, desired lifestyle*, etc. Some individuals are hoping to be promoted to a senior position within an organization, others want to take a new job in another organization, accepting new and different responsibilities by investing in developing new skills and acquiring new abilities, reducing or increasing the number of work hours, or looking for jobs with a flexible working schedule. All these aspects are covered by the following synthetic scheme:

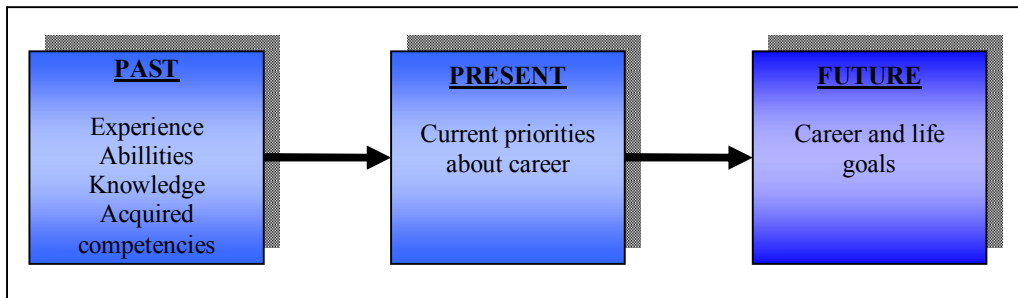


Figure 2. Individual's perspective on career

2.2. Organizational responsibility on career planning

To be viable, on short-term, or to maintain competitive advantage, in the long term, organizations must match employees with appropriate skills in the right positions. The type and skills of the employees are different, depending on the scope of the firm, economic sector, specific technology, consumer characteristics, etc.. Peculiarities of organization affects the jobs structure, the types of recruited employees for each job and the development ways on the job. Many employers offer numerous promote opportunities to certain types of positions (especially those involving unique skills to give value to the organization) and limited opportunities for others.

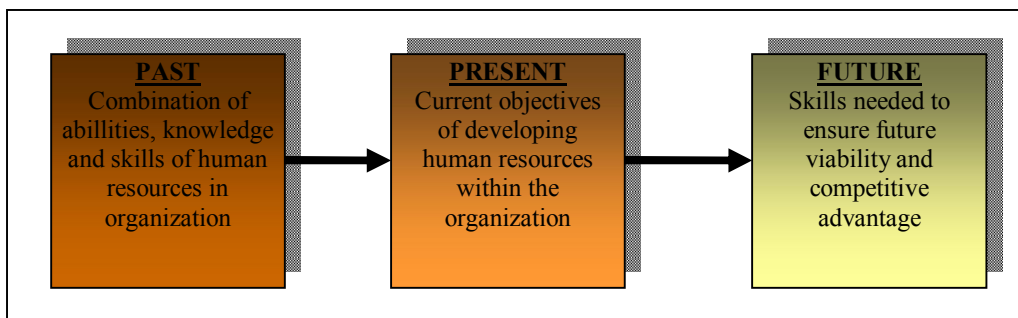


Figure 3. Organization's perspective on career

Organizational career planning has a critical role in attracting, developing and maintaining the staff. Without organization's involvement in establishing, supporting and strengthening the careers of its employees it can not achieve the expected results at both organizational and individual level.

3. THE ORGANIZATIONAL CAREER PLANNING SYSTEM

Due to numerous changes manifested in the lives of individuals and organizations, the idea of developing a fixed career trajectory has become somewhat outdated because fewer are those who plan on long term. Careers are shorter and more unstable, job security is reducing and the short-term employment becomes more

common. Most individuals are expected to change several jobs throughout their working lives and to participate in a variety of projects.

The reduced number of jobs available within organizations and restrict managerial levels have led to changes in the traditional route to an organizational career development. There are fewer promotion opportunities so that employees are keeping the same job on longer periods before being promoted. The traditional career path involved an upward mobility, giving to the employees the certainty of an well-defined promote pathways. Currently, the emphasis is on **job rotation**, **multiple skills development** and **sideways promotion**.

Designing and implementing a career planning system is useful to the organizations for identifying the employees development needs and matching them to the business needs.

The **career planning system** contribute to increased employees professional satisfaction because it helps them to identify and take positions consistent with their objectives and plans. From *the perspective of the company*, career planning system *reduces the needed time to fill the vacancies*, help *succession planning* (preparing employees for filling positions that became vacant following staff turnover or retirement), *identify employees with management potential* and ensure to all employees *the opportunity to identify career goals and develop plans* to achieve them.

2.1. The main components of career management system

Career planning systems differ in terms of complexity and of emphasis on certain components of it. However, all career planning systems include the following components:

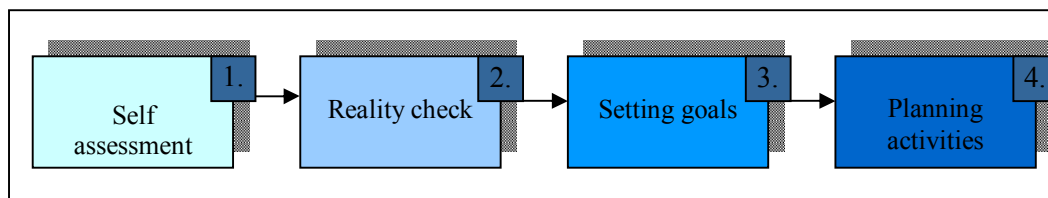


Figure 4. The career planning process

1. **Self assessment** assists employees in setting goals, values, skills and behavioral trends. Psychological tests are used as „Inventory goals Strong – Campbell” (it helps employees to identify occupational and professional goals) and „self quest” (it identify the employee’ preferences for different working environments - sales, consulting, etc.) which contributes to identify the level of emphasis on work and leisure. Career counselors are often used to assist employees in self-evaluation process and in interpreting test results.
2. **Reality check**: the employees are informed on how the company assess their skills and knowledge and what place they took on company plans (eg opportunities for promotion, lateral moves). Usually, this information is

provided by the direct managers in the performance evaluation process; the discussion on career development can take place separately.

3. **Setting goals:** Employees establish the short and long term career objectives that are related to concerned *professional positions, the necessary level of competence, setting steps forward, learning new skills*. These objectives are discussed with the manager and recorded in the individual development plan.
4. **Planning activities:** during this phase, the employees determine how to achieve short and long term career goals. These plans may include attending lectures and seminars, applications to fill vacancies within the company or participating in interviews.

4. THE ROLES OF THE EMPLOYEES, MANAGERS AND ORGANIZATION IN CAREER PLANNING

The employees, managers and organizations (Hollenbeck, et al., 2008) share the responsibility for career planning.

4.1. The Employee's Role

Regardless of the operating organization, the individuals must be actively involved in managing their careers, motivated of its beneficial effects on welfare (the economic and psychological standpoint) (George, et al., 2007).

- **The economic standpoint** – at a basic level, the work provides an income to the individuals to ensure their existence and their families and to satisfy other interests, hobbies and recreation; career opportunities are a source of *extrinsic motivation* (external) for employees.
- **The psychological standpoint** – as a source of spiritual comfort, the work provides a sense of accomplishment and gives a meaning to the individual existence. Psychologically, career opportunities are an important source of *intrinsic motivation* (internal) for employees.

The Psychological Contract consists of *all the expectations that employers and their employees have from each other*. In general, the *psychological contract* emphasizes that *the organization will offer job security and promotion opportunities if the employee remain in the company and maintain a high level of professional performance*. However, due to technological change, competition and structural social, psychological contract between employees and organizations has changed. The organizations can no longer offer job security and promotion opportunities and employees are more interested in a job that offers challenges, diversity and opportunity to be creative. The employees are still interested in job security even if they realize that having a job within the same company throughout working life is an unrealistic goal.

The **new psychological contract** suggests that *employees can become more valuable to employers by taking responsibility for their career planning*.

The organizations which have structured career planning systems expects from their employees to take responsibility for planning their own careers. Some of it

provide to the employees a crash course to familiarize them with the organization's specific career system; the participation is voluntary and employees are doing their self assessment, identify their career goals and prepare their action plans. Follows that, after a discussion with team manager, to work towards reaching the targets. Other organizations develop and make available to employees a planning guide which guides the development stages of self-assessment, target setting, development planning and action plan.

Regardless of the complexity of the career planning system, employees should take the following actions:

- to take the initiative in the sense of requiring feedback from peers and chiefs regarding the strengths and weaknesses of their skills;
- to identify the stage of career development and the development needs;
- to seize as many opportunities to learn (about sales, product design etc.);
- to interact with employees from different work groups within and outside the organization (eg professional associations, project teams).

4.2. The Manager's Role

Regardless of the career planning system type in the organization, managers have a key role in its planning process. Generally, the employees ask for advice on career to their direct managers because they are the ones that determine the level of training and assess their ability to promote. However, the managers are the main source of information on job vacancies, training courses and other development opportunities. Unfortunately, many managers are reluctant to engage in the employees' career planning activities because they do not feel prepared to answer questions related to their career, have a limited time allocated for these activities or they are not able to relate to a full understanding of their needs. To help the employees in this process, managers must demonstrate effectiveness in four parts: a coach, evaluator, counselor and referral agent. The success of manager- employee discussion about career (Otte, et al., 1992) is based on achieving the following aspects:

- The managers need to form a complete picture of the employee's work-related purposes and goals;
- The manager and the employee agree on the next steps for development;
- The employee understands the manager's perception of his performance, development needs and career options;
- The manager and the employee agree on how the employee's needs are satisfied with the current job;
- The manager identify the resources to help the employee to achieve the committed objectives set out in their discussion.

A key role of a manager (Zeus et al., 2008) within an organization is to provide employees with *career development coaching*. The purpose of this type of coaching is to help employees to consider various career options and make decisions for them. In return, the organization will benefit from identifying the employee's career prospects, thereby could plan and provide the opportunities to achieve their goals. Outside the manager, the coaching could be provided by the human resources professionals within

the organization. The coach manager can help the employees to assume different roles within the organization such as: a coach for the new employees, mentoring for potential successors, or leadership teams or committees. Thus, individuals perform their generative task: they share to others what they know, giving themselves what they received, thus showing care for the next generation.

One of the difficulties created by *the flattening of career and lateral transfers* is that *the employee status* is determined rather by *the job, title, number of promotions and salary*, and less by the performance, expertise, entrepreneurial and team spirit. Redefining the prestige and held position will encourage the employees to remain in the organization and not to seek a job elsewhere or preferment.

The specific items of the manager's role in career counseling are:

- To design and to implement systems and standards of performance assessment: the role of helping to clarify the organization's opportunities to develop and discuss options and directions for future development organization that employees can prepare and adapt to new requirements;
- Analyzing current and future career plans;
- Setting Goals: manager occupies a unique position to assess and discuss the employee's dedication to his professional goals. Manager may refer the employee to assess his motivations and choices regarding career, getting actively involved in setting career goals and planning actions;
- Systematic encouragement and support of staff during the implementation of the agreed strategies for career;
- Working with employees who feel stressed or unhappy at work: interpersonal problems of the work place (eg. disputes with colleagues or other team members) may adversely affect one's performance. Coaching to develop communication skills and to find ways of conflict resolution can improve performance and it can keep the employee on his career path.

4.3. The Organization's Role

The organizations are responsible for providing the necessary resources to be successful in the employees' career planning. These resources include:

- **Career workshops**: seminars on various topics (how does the system of career planning, self assessment or setting goals);
- **Career centers** or **information systems** (or databases places where / from where the employees can learn about job openings or training programs);
- **Career planning guides** (printed matter for guidance the staff which contain exercises, discussion and advice on career planning);
- **Career counseling** (advice by a specialized professional counselor in assisting the employees interested in career planning);
- **Career paths (directions)** (planning job stages, identifying the skills needed to advance within the same family of channels such as wireless promoting a technical professional position in a managerial position).

The organization must monitor the career planning system to ensure that both managers and employees use it properly and especially to assess how it is useful in achieving its business objectives (eg. reducing the period of coverage vacant posts).

5. CONCLUSIONS

Restructuring of the organizations in the current crisis (marked by mergers, layoffs and restrictions on activity) and change their strategies make career planning a very important process for both employees and employers.

From *the company perspective*, the failure to motivate the employees by planning their careers can lead to *hinder the process of filling vacant posts*, a decrease of the staff involvement and an inappropriate use of the money allocated to training and development programs. From *the employees' perspective*, the lack of career planning can lead to *frustration, feelings of not being appreciated by the company* and non identifying the right position leads to the need of a job change and / or the company (particularly in the current crisis).

Career planning is effective when the organizations use fully the skills and knowledge of their employees and they are motivated to achieve maximum performance and be satisfied with their work, which helps the organization to achieve its objectives. The frequent manifestation of layoffs, especially in the current crisis, requires that employees demonstrate certain skills and competencies that prove indispensable to the actual or potential employers.

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POIANA BRAȘOV RESORT POSITIONING ON THE ROMANIAN MOUNTAIN TOURISM MARKET

CODRUȚA-ADINA BĂLTESCU *

ABSTRACT: *Within a tourism industry characterized mainly by massive competition and similar offers, choosing a certain product significantly depends on the comfort degree and the existing facilities, on the quality and range of proposed services, on the time and distance to be covered, on safety, cleanliness, quietness and loyalty offers, all these representing principles of product performances assessment. In choosing the differentiation axis one will take into account also the tourists expectations, competence positioning and the potential strengths of the product, elements that compose the "golden triangle" where stands the positioning. This article aims to position Poiana Brașov resort within the Romanian mountain tourism, using in this respect the McKinsey matrix, the statistical information related to the tourist activities carried out within the resort, as well as the related national studies.*

KEY WORDS: *positioning; tourism industry; mountain resort; mountain tourism market; McKinsey matrix*

JEL CLASSIFICATION: *M31*

1. INTRODUCTION

The positioning process represents an efficient and valuable marketing instrument whose use with the expected effects supposes detailed study of the market to be penetrated, of the competitors and their actions, as well as of the target consumer perceptions. The analyses associated with this process contribute to the identification of the existing opportunities and creation of the aimed image basing on differentiation from the competitors and by accomplishing the market's needs at the highest level.

The positioning concept includes the ensemble of characteristics of a product that allows the consumers to place and identify the product within the universe of analogue products. In fact, the market positioning represents a relative concept that expresses not only the way of perception of a brand, but also the relation between the

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image perceived as compared to the one of competitors (Shoemaker, et al., 2007, p.354).

As a marketing strategy, positioning is achieved following a complex process composed of the following steps: identification of positioning level, determination of attributes and their localization on the positioning diagram, assessment of the options of positioning into the attention of target customers (Olteanu, 2003, p.156).

2. CHARACTERISTICS OF POSITIONING PROCESS WITHIN THE TOURISM INDUSTRY

Within the tourist organizations we note certain differences between *tangible positioning* and *intangible positioning* (Shoemaker, et al., 2007, p. 352-354).

Tangible positioning is possible as a significant part of provided products/services are standardized, thus they present a high degree of tangibility (at the same comfort degree, the hotel rooms are very similar).

Intangible positioning is frequently encountered as within this field of activity the tangible elements turn into secondary aspects when they achieve a certain level of acceptability, being also very difficult to differentiate. Due to such reasons, the products intangible aspects are mostly used. The challenge consists in tangibilizing the intangible, respectively increasing the intangible realities throughout the manipulation of tangible characteristics.

Identification of attributes consists in drawing up the “positioning maps”, fact which represents the effective method to graphically express the consumers’ perceptions in relation with the alternative products. There are analyzed two dimensions which highlight the product’s performances, although being possible to apply tridimensional models or even larger, using in such situations software applications. The positioning maps contribute to the visualization of the marketing strategies, by highlighting the discrepancies that appear in a certain time in relation with the competitors’ products, and also the differences between the customers’ image about the company and the managers’ expectations in relation with such image. They also identify the competitors’ ensemble, as well as the free existing spaces on the market.

Positioning makes a statement of what the product is and how it should be evaluated. True positioning is accomplished by using all the of the marketing mix variables. This includes the products and services offered, how they are presented to the customer, the price, and all the methods used to communicate to the customer. Not a single element of the marketing mix can be ignored because it is there for the customer, whether or not the firm makes use of it.

Figure 1. totalizes the directions of analyses effective use in order to position, ensuring the necessary inputs for the decisions related to the strategies upon product development, price, logistics and communication (Lovelock & Wirtz, 2007, p.196).

Positioning affects policies and procedures, employee attitudes, customer relations, complaint handling, and the myriad of other details that combine to make a tourist experience. Positioning plays a vital role in the development of the entire marketing mix (Shoemaker, et al., 2007, p.357).

1. Provide a useful diagnostic tool for defining and understanding the relationships between products and markets:
 - How does the product compare with competitive offerings on specific attributes?
 - How well does product performance meet consumer needs and expectations on specific performance criteria?
 - What is the predicted consumption level for a product with a given set of performance characteristics offered at a given price?
2. Identify market opportunities for:
 - a. Introducing new products
 - What segments to target?
 - What attributes to offer relative to the competition?
 - b. Redesigning (repositioning) existing products
 - Appeal to the same segments or to new ones?
 - What attributes to add, drop, or change?
 - What attributes to emphasize in advertising?
 - c. Eliminating products that
 - Do not satisfy consumer needs
 - Face excessive competition
3. Make other marketing mix decisions to preempt or respond to competitive moves:
 - a. Distribution strategies
 - Where to offer the product (locations, types of outlet)?
 - When to make the product available?
 - b. Pricing strategies
 - How much to charge?
 - What billing and payment procedures to use?
 - c. Communication strategies
 - What target audience(s) are most easily convinced that the product offers a competitive advantage on attributes that are important to them?
 - What message(s)? Which attributes should be emphasized and which competitors, if any, should be mentioned as the basis for comparison on those attributes?
 - Which communication channels: personal selling versus different advertising media? (Selected for their ability not only to convey the chosen message(s) to the target audience(s) but also to reinforce the desired image of the product).

Figure 1. Principal uses of positioning analysis as a diagnostic tool

The concept of *repositioning* consists in modifying a position or image on market and it embeds the same elements as an initial positioning, the difference being made by the appearance of a new one, respectively the old positioning image removal. There may be several reasons for such actions: an unfavorable current position, other competitors with similar positions, the existence of an enormous niche of opportunity, targeting a new market segment, etc.

The repositioning procedure comprises the following components: current positioning determination, target positioning determination, real differentiation security of new product towards the one repositioned, initiation of repositioning campaign and the assessment of the degree in which the reposition was performed in the aimed direction (Shoemaker, et al., 2007, p.358-361).

The risks involved in positioning or repositioning are high. Thus, it is important to position on customers' perceptions, not managements', vis-à-vis the competition. The technique of perceptual mapping can be used to substantially reduce the risks.

A strategy of efficient positioning supposes (Balaure, V., et al., 2005, p.278):

- choosing in advance the position that the tourist product is to held in potential consumers minds, otherwise the product being positioned spontaneously and in an uncontrolled way;
- a correct positioning ensures high coherence to the marketing mix and a proper orientation of product politics, price, logistics and communication; therefore, choosing the positioning represents a decision prior to those related to the marketing mix structure.

Strategies are necessary whether initially positioning or repositioning. The checklist for developing positioning strategies comprises important data about the company (strengths and weaknesses, resources, management capabilities, values, objectives, etc.), the product/service (facilities, location, attributes, etc.), brand position (awareness, loyalty and image), customers (segments, benefits they seek, etc.), competition (their customers, differences, positions they occupy), marketplace (segments, generic demand, market share, etc.), opportunities (unmet needs, innovations needed, new uses, new users, greater usage) and decision (the best overall position).

Marketers can follow several positioning strategies (Kotler, et al., 2006, p. 280-281). They can position their products based on *specific product attributes* or products can be positioned *against another product class*. When two or more firms pursue the same position, each must seek further differentiation and build a unique bundle of competitive advantages that appeal to a substantial group within the segment.

From the multitude of strategic alternatives, the company will have to choose the one that allows considering, at the highest level, the action of exogenous and endogenous factors. Also, the existence of a complete concordance between the elaborated marketing strategy and all the other elements of the marketing policy is mandatory.

3. POIANA BRAȘOV RESORT POSITIONING ON THE BASIS OF MCKINSEY MATRIX

We may assert that currently Poiana Brașov resort does not dispose of the necessary natural conditions (the altitude where it is located, the size of the ski area, etc.) and also of the characteristics related to the proper technical and material equipment (cable transport facilities, facilities and services associated with the mountain tourism, etc.) to make it compete with the mountainous resorts from those countries surrounding the Alps.

The altitude of location and the ski areas, just to highlight the essential elements, represent aspects which individualize the offer specific to the mountain tourism, and these favorable factors can not be competed by any tourist resort from

Romania. As related to the equipment, ensemble of facilities and tourist services quality, the specific analyses reveal the significant deepening of differences.

Thus, the real competitors of Poiana Braşov are the Romanian mountain resorts, mainly those from Valea Prahovei and Predeal, the grounds being associated mostly with the areas of origin of the visiting tourists, from this point of view the country's representative geographical regions being Bucharest, Constanţa and the cities of Transylvania.

An important element within the analysis of mountain resort activities is represented by the indicator of meters of track per place of accommodation, the standing for the competitive mountain resorts being revealed in *table 1*.

Table 1. The value of the indicator of meters of track per accommodation place within the main mountainous tourist resorts of Romania

| Poiana Braşov | Azuga | Vatra Dornei | Sinaia | Predeal | Durău | Buşteni |
|---------------|---------|--------------|--------|---------|--------|---------|
| 4.75 m | 15.25 m | 5.17 m | 2.89 m | 2.47 m | 0.53 m | 0.47 m |

The resort positioning is made on the basis of McKinsey matrix, by combining the following two variables:

- on the Ox axis the company's competitive position ("assessment" of the internal environment), detailed in *table 2*;
- on the Oy axis the sector's attractiveness ("assessment" of external environment), revealed in *table 3*.

Table 2. The score calculation for the competitive position

| Key success factors | Share | Score Poiana Braşov | Score Sinaia | Score Predeal | Score Azuga | Score Buşteni | Score Vatra Dornei | Score Durău |
|--|------------|---------------------|--------------|---------------|-------------|---------------|--------------------|-------------|
| Ski area size | 0.2 | (2) 0.4 | (2) 0.4 | (2) 0.4 | (3) 0.6 | (1) 0.2 | (2) 0.4 | (1) 0.2 |
| Cable transport facilities | 0.2 | (3) 0.6 | (3) 0.6 | (2) 0.4 | (2) 0.4 | (1) 0.2 | (2) 0.4 | (1) 0.2 |
| Service capacity (accommodation units) | 0.3 | (3) 0.9 | (3) 0.9 | (3) 0.9 | (1) 0.3 | (2) 0.6 | (3) 0.9 | (1) 0.3 |
| Popularity | 0.1 | (3) 0.3 | (3) 0.3 | (3) 0.3 | (2) 0.2 | (2) 0.2 | (2) 0.2 | (1) 0.1 |
| Resort's liveliness | 0.2 | (2) 0.4 | (3) 0.6 | (2) 0.4 | (1) 0.2 | (1) 0.2 | (1) 0.2 | (2) 0.4 |
| TOTAL | 1.0 | 2.6 | 2.8 | 2.4 | 1.7 | 1.4 | 2.3 | 1.2 |

The evaluation of competitive position is made throughout the following key success factors: ski area size, cable transport facilities, capacity of accommodation, resort's popularity and the existing liveliness, with different shares, each factor being

assessed with grades from 1 (the lowest level) to 5 (the highest level), values registered in table between brackets, the obtained score representing the product between share and the grade granted.

Table 3. The score calculation for the sector's attractiveness

| Factors of the sector's attractiveness | Share | Score Poiana Braşov | Score Sinaia | Score Predeal | Score Azuga | Score Buşteni | Score Vatra Dornei | Score Durău |
|--|------------|---------------------|--------------|---------------|-------------|---------------|--------------------|-------------|
| Accessibility (airport, national road) | 0.2 | (2) 0.4 | (2) 0.4 | (2) 0.4 | (2) 0.4 | (2) 0.4 | (2) 0.4 | (1) 0.2 |
| Territory's touristic attractiveness | 0.3 | (3) 0.9 | (2) 0.4 | (3) 0.9 | (2) 0.4 | (3) 0.9 | (3) 0.9 | (3) 0.9 |
| Existence of proximity markets | 0.4 | (3) 1.2 | (3) 1.2 | (3) 1.2 | (3) 1.2 | (3) 1.2 | (2) 0.8 | (1) 0.4 |
| Seasonal character of demand | 0.1 | (3) 0.3 | (3) 0.3 | (3) 0.3 | (1) 0.1 | (2) 0.2 | (3) 0.3 | (2) 0.2 |
| TOTAL | 1.0 | 2.8 | 2.3 | 2.8 | 2.1 | 2.7 | 2.4 | 1.7 |

The calculation system used for the evaluation of attractiveness is similar, the factors taken into account in this respect being the accessibility (airport, national road), territory's tourist attractiveness, and existence of proximity markets and seasonal character of demand.

The studied business positioning is made on the basis of the values computed at the level of the two variables. The positioning matrix of Poiana Braşov resort is presented in *figure 2*.

The positioning matrix reveals the favorable position held by Poiana Braşov resort towards its main competitors. Sinaia and Predeal are following, with certain small differences. Sinaia registered a higher score for the competitive position, but a lower score for sector's attractiveness, and Predeal registered the same score for the competitive position and a lower value of the score for the sector's attractiveness. Those resorts are followed by Vatra Dornei, completing thus the list of the most attractive mountainous resorts of Romania.

Moreover, these conclusions are confirmed by national analyses (INSOMAR) according to which the most attractive mountainous touristic resorts are (Research report- Tourism services consumption in Romania, INSOMAR, August 2009):

- Sinaia (7.6 % out of the respondents preferred this resort);
- Poiana Braşov (6.8%);
- Vatra Dornei (4.4%);
- Durău (3.2%);
- Predeal (2.7%);

- Sovata (2.6%);
- Bran-Rucăr (2%);
- followed by Buşteni, Păltiniş, Praid, Borşa, Băile Tuşnad and Bălea (Făgăraş Mountains).

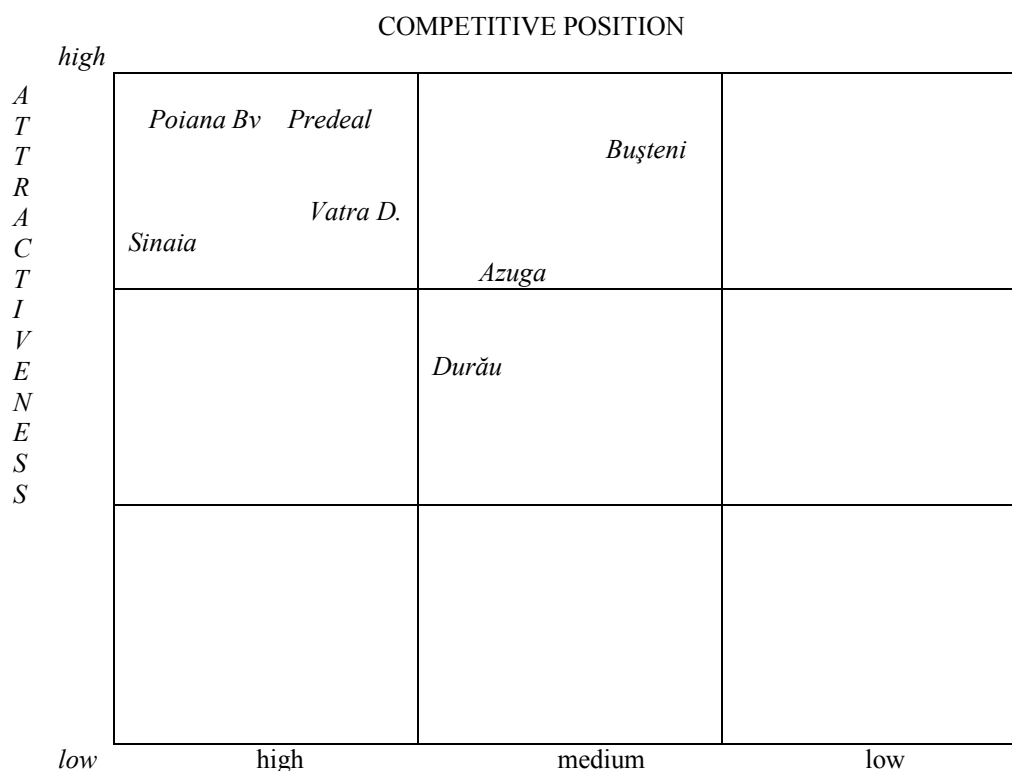


Figure 2. The McKinsey positioning matrix of Poiana Braşov resort

4. CONCLUSIONS

The mountainous tourism from Romania does not have harsh competitors. However, it competes with its own capacity of adaptation to the Romanian tourists' demands, primarily, and with those of the foreign tourists became a tradition in visiting Romania.

This conclusion may be extended over the entire tourist sector from our country, and the hardly desired revival will produce sooner than expected. What misses is the wish to cooperate, a development strategy established with the participation of all those involved and interested and, thus, unanimously accepted, but also the professionalism of an important party represented by those who undertook the task of managing the valuable natural tourist potential of Romania.

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CAPITAL MARKET DEVELOPMENT AND ECONOMIC GROWTH: THE CASE OF ROMANIA

FLAVIA BARNA, PETRU-OVIDIU MURA *

ABSTRACT: *Capital markets play an important role in the economic development of emerging capital markets. Well functioning markets insure that both corporations and investors get or receive fair prices for their securities. In the literature on endogenous growth, the link between capital markets development and economic growth has received much attention. This paper examines the correlation between capital market development and economic growth in Romania using a regression function. The results show that the capital market development is positively correlated with economic growth, with feed-back effect, but the strongest link is from economic growth to capital market, suggesting that financial development follows economic growth, economic growth determining financial institutions to change and develop.*

KEY WORDS: *capital market; economic growth; BET Index; quarterly PIB; time series; correlation*

JEL CLASSIFICATION: *O40, O16, D53, E44*

1. LITERATURE REVIEW

In the recent financial literature on endogenous growth, the relationship between capital markets development and economic growth has received much attention (see King and Levine, 1993; Levine, 1997; Rajan and Zingales, 1998; Filler, Hanousek, and Campos, 1999; Arestis, Demetriades, and Luintel, 2001; Calderon and Liu, 2002, Carlin and Mayer, 2003). In this context, King and Levine (1993) state that the level of financial intermediation is a good predictor for economic growth rate, capital accumulation and productivity. In the same context, Carlin and Mayer (2003) concluded that there is a strong relationship between the structure of countries' financial system and economic growth.

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Garretsen, Lensink and Sterken (2004) found out a causal relationship between economic growth and financial markets development: a 1% improvement of economic growth determines a 0.4% rise of market capitalization/GDP ratio. Yet, according to their results, market capitalization/GDP ratio does not represent a significant determinant of the economic growth.

Beck, Lundberg and Majnoni (2006), also, found a positive correlation between capital market development (measured by a dummy variable computed to reflect if the market capitalization exceeds 13,5% of GDP) and economic growth. Bose (2005) offers a theoretical financial model that explains the positive correlation between stock market development and economic growth; the model is based on the hypothesis that for levels of GDP per capita higher than a certain threshold the information costs become lower than bankruptcy costs, determining the development of capital markets.

Beckaert, Harvey and Lundblad (2005) analyzed financial liberalization as a special case of capital market development and determined that equity market liberalizations, on average, led to a 1% increase in annual real economic growth. Studying the link between domestic stock market development and internationalization, Claessens, Klingebiel and Schmukler (2006) using a panel data technique concluded that domestic stock market development as well as stock market internationalization are positively influenced by the log of GDP per capita, the stock market liberalization, the capital account liberalization and the country growth opportunities and negatively influenced by the government deficit/GDP ratio.

Minier (2003) analyzed the influence of the stock market dimension on economic development by regression tree techniques; he found evidence that the positive influence of stock market development on economic growth held only for developed stock markets in terms of turnover, in the case of underdeveloped stock markets the influence is negative. Ergungor (2006) analyzed the impact of financial structure on the economic growth on the period 1980-1995; he concluded that in countries with inflexible judicial systems the stronger impact on economic growth is generated by the development of the bank-system, whereas in countries with greater flexibility of judicial systems the development of the capital market had a stronger influence.

Studies on the relation between capital market development and economic growth in different countries were performed. Nieuwerburgh, Buelens and Cuyvers (2006) analysed the long-run relationship between stock market development (measured by market capitalization and number of listed shares) and economic growth (measured as a logarithmic difference of GDP per capita) in Belgium. They performed Granger causality tests and emphasized that stock market development determined economic growth in Belgium especially in the period 1873-1935, but also on the entire analyzed period (1800-2000) with variations in time due to institutional changes affecting the stock exchange.

Hondroyannis, Lolos and Papapetrou (2005) studied the case of Greece (1986-1999); they found out that the relationship between economic growth and capital market development is bi-directional. Studying the effect of different components of financial systems on economic growth in Taiwan, Korea and Japan, Liu and Hsu

(2006) emphasized the positive effect of stock market development (measured by market capitalization as percentage of GDP, turnover as percentage in GDP and stock return) on economic growth. Bolbol, Fatheldin, and Omran (2005) analyzed the effect of financial markets (measured by the ratio of market capitalization on GDP and the turnover ratio) on total factor productivity and growth (the per capita GDP growth rate) in Egypt (1974-2002); they demonstrated that capital market development had a positive influence on factor productivity and growth.

Ben Naceur and Ghazouani (2007), studying the influence of stock markets and bank system development on economic growth on a sample of 11 Arab countries, concluded that financial development could negatively influence the economic growth in countries with underdeveloped financial systems; they stressed the role of building a sound financial system.

The literature focuses on the financial system's components, the banking sector or the capital market, that influence economic growth.

Graff (1999) stated that there are four possibilities concerning the causal relationship between financial development and economic growth:

(1) financial development and economic growth are not causally related. An example of this type of relation could be found in the development of modern economy, in Europe, in the 17th Century. In this case, the economic growth was the result of real factors, while the financial development was the result of financial institutions development;

(2) financial development follows economic growth. In this context, economic growth causes financial institutions to change and to develop, so as both the financial and credit market grow;

(3) financial development is a cause of economic growth. In this case, there could be identified two possibilities, respectively: (a) financial development is a precondition for economic growth; (b) financial development actively encourages economic growth (see, e.g. Thornton, 1995). Provided that there are no real impediments to economic growth, mature financial systems can cause high and sustained rates of economic growth (see, Rousseau and Sylla, 2001);

(4) financial development is an impediment to economic growth. Similar to the previous possibility, causality runs from financial development to real development, but the focus lies on potentially destabilizing effects of financial overtrading and crises (see, e.g. Stiglitz, 2002) rather than on the efficient functioning of the financial system. This view considers the financial system as inherently unstable.

There are several empirical studies that analyse the correlation between the economic growth and the financial development. Calderon and Liu (2002), studying the direction of this causality, conclude that, as a general trend, the financial development generates economic growth, the causal relation being stronger in the emergent countries and being explained by two channels: the fast capital accumulation and the growth of productivity. Rajan and Zingales (1998) emphasize that the financial development is a prediction element for the economic growth, because the capital market reflects the present value of the future growth opportunities. The ex-ante development of the financial markets facilitates the ex-post economic growth of the external financing dependent sectors.

Levine (1997) and Levine and Zevros (1998) consider that the capital market's liquidity is a good predictor of the GDP per capita growth and of the physical capital and productivity growth, but other indicators of the capital market development such as volatility, size and international integration are not significant for explaining economic growth. Carlin and Mayer (2003) analyse the link between financial systems and economic growth for developed countries and reveal a link between financial system and type of economic activities which can influence the economic growth. Arestis, Demetriades and Luintel (2001), use the autoregressive vector for an empirical analysis on five developed economies; their study concludes that the capital market has effects on the economic growth, but the impact of the banking sector is stronger. Filer, Hanousek and Campos (1999) notice that capital markets include the future growth rates in current prices, especially in the developed countries, which is a result consistent with the efficient markets hypothesis.

In the context of UE enlargement, an analysis of the relationship between capital markets development and economic growth could explain why different countries reach different economic growth rates, and could find solutions in order to stimulate the process of economic growth through capital market using public policy instruments. Related to this issue, although there are many studies regarding developed countries, approaches on East-European ex-communist countries' economies are very few relatively to developed countries cases.

Romanian capital market had developed slowly starting from 1995. Moreover, several years after 1989 Romania had negative economic growth rates (the real rate of GDP growth). Only since 2000 Romania had positive economic growth rates accompanied by the development of the financial system; these particular aspects could alter the relationship between economic growth and capital market development, and more specifically the conclusion on whether capital market development is a good predictor for economic growth rates. This is the reason why the starting point of our study is the year 2000.

2. DATA AND METHODOLOGY

In this chapter we try to assess how economic growth has sent its influence over the stock market in Romania, during 2000-2009. We use quarterly data on Gross Domestic Product supplied by The National Institute of Statistics, and BET data provided by the website of Bucharest Stock Exchange.

Quarterly Gross Domestic Product at market price (QGDP), the main macro-economic aggregate of national accounting, represents the final result of production activity for resident productive units, for a certain period, a quarter, respectively:

Quarterly Gross Domestic Product at market price is estimated by two approaches:

1. output approach:

$$QGDP = GVA + TP - SP \quad (1)$$

where:

GVA=gross value added at basic prices;

TP=taxes on products;
 SP=subsidies on products.

2. expenditure approach:

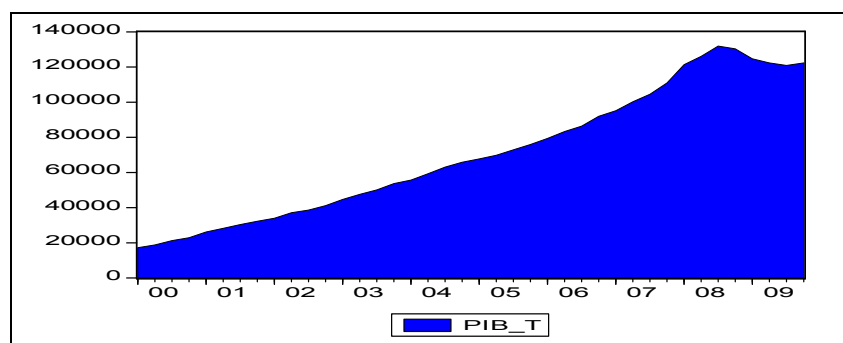
$$QGDP=FC+GCF+E-I \tag{2}$$

where:

FC= actual final consumption;
 GCF=gross capital formation;
 E=exports of goods and services;
 I=imports of goods and services.

The main data sources used for quarterly Gross Domestic Product estimation are: *statistical sources*: short-term surveys regarding industrial production, construction, services, trade; production account for agriculture; short-term surveys regarding earnings and employment; *financial-accounting sources*: accounting statements of financial institutions; *administrative sources*: execution of state budget and local budgets, and of social security budget; balance of payments.

Quarterly Gross Domestic Product is estimated in current prices, in the prices of the corresponding period of the previous year and in the average prices of the year 2000. The estimates in average prices of 2000 are calculated by chain-linking volume indices. Besides the gross estimates of quarterly Gross Domestic Product, seasonally adjusted estimates are also compiled beginning with 2009, based on the regressive method, this method being recommended by the European regulations.



Source: data processed using EViews 5.0 program.

Figure 1. Evolution of QGDP seasonally adjusted during 2000-2009 (mil. RON, current prices)

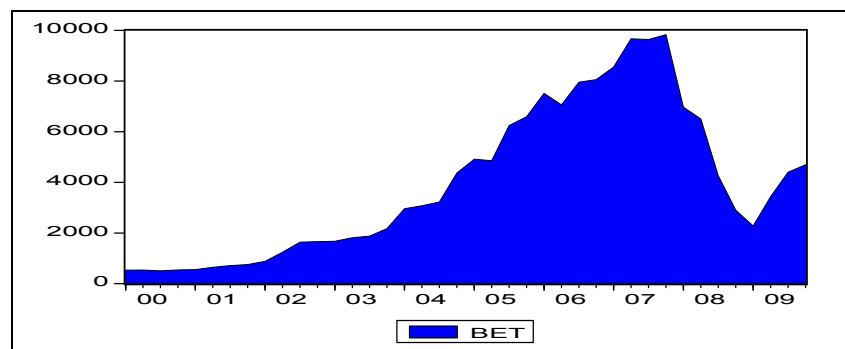
The seasonal adjustment envisages the removal of seasonal effects from the data series in view to highlight the real economic evolution during consecutive periods.

In order to adjust the main aggregates series, based on which the GDP is estimated through the production and expenditure methods, DEMETRA software package is used (TRAMO/SEATS method). This leads to the estimation of seasonal effect (events taking place each year at the same time, with the same amplitude and orientation, such as: seasons, holidays, etc.), of the working days number different

from one month to another and the calendar effect (Orthodox Easter, leap year and other national holidays) as well as to the outliers identification and correction (circumstantial, transitional or permanent changes in level) and to missing data interpolation.

The quarterly national accounts of Romania generally show a strong seasonality, while the effect of working days number and of the calendar is not significant. For this reason no adjustment method is necessary for these two components. The seasonally adjusted series was obtained by removing this effect from the unadjusted series, by means of correction coefficients, selected depending on the regression model used (additive or multiplicative). The additive or multiplicative model used for regression is automatically identified by the DEMETRA software, depending on the nature of series that are subject to adjustments.

BET is an index weighted by market capitalization and is designed to reflect the overall trend in prices of 10 most liquid shares traded on the Bucharest Stock Exchange. To offset any effect due to artificial changes in capital or equity prices because of its division, the index value is adjusted by a correction factor on the day the change occurs affecting the share price. The selection rules of the 10 shares that make up the index portfolio are: shares must be listed on the first category of the Exchange; shares must have the highest market capitalization; shares must be the most liquid (to ensure that the total index portfolio transactions are at least 70% of the total value traded). BET Index allows portfolio managers to calculate the beta coefficient, and thus provide a more accurate measure of the volatility of listed shares. Beta coefficient is an indicator of variability (volatility) course of action (is covariance of a type of action in relation to overall market).



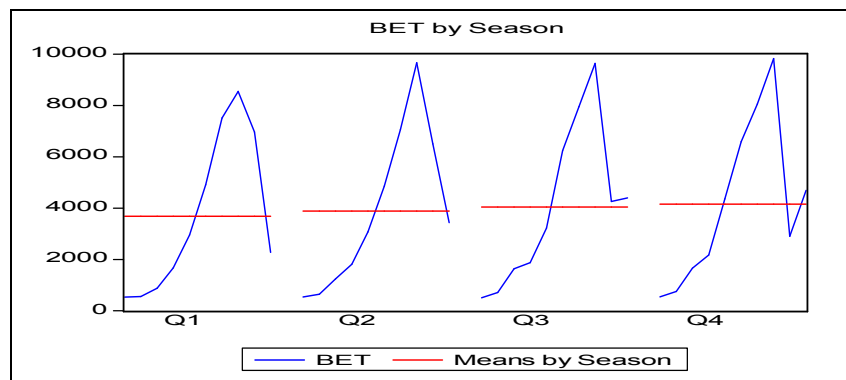
Source: data processed using EViews 5.0 program.

Figure 2. BET developments during 2000-2009

Study period covers the period 2000 - 2009, quarterly series and the method of analysis used is the econometric modelling, using the software package EViews 5.0. Practically, we will test the stationarity of data series, identify the seasonal influences and perform the deseasonalisation of the series (only in terms of BET, because the QGDP series is already seasonally adjusted), and analyze and quantify the link between BET stock index and QGDP development (economic growth).

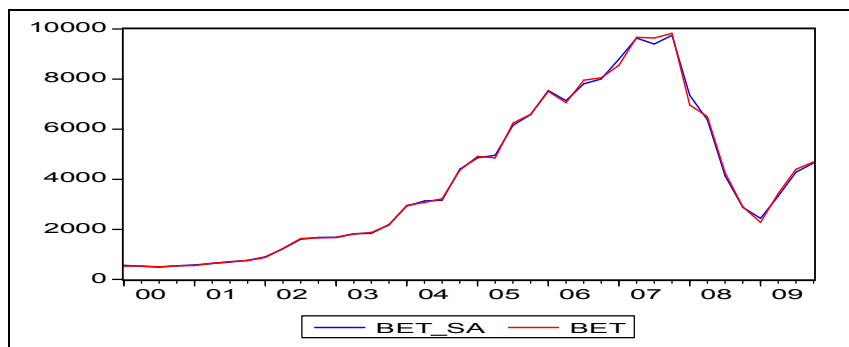
a) Logarithm of the series “bet” and “pib_t” - the series of data were logarithmised (L), order „2”; the resulting coefficients of the model are interpreted in this case as “elasticity”. As a result of this operation, new series were generated, renamed as follows: “l_bet” and “l_pib_t”.

b) Testing the “BET” series’ seasonality - statistical series have been subject to verification of the existence of seasonal ingredients, in which case no significant differences were identified in the monthly averages (the series aren’t “seasonal”). This can be seen with the help of „Seasonal stacked line” graphs, related to the series; to reinforce this claim, we have achieved the deseasonalisation of the series (SA - seasonal adjustment), by using the „Census X12” method (used by the U.S. Statistical Office), the additive alternative, which resulted in the construction of new five statistical series, renamed “bet_sa”. Figure 3 presents the quarterly values of the studied variable. Where significant differences were observed between the averages, it would consider that time series are seasonal. In reality, it is noted that there aren’t important differences between monthly averages; they converge to the same value. Also, figure 4 indicates the same thing, namely that the seasonal adjusted series do not present significant fluctuations from the actual series.



Graphics generated using EViews 5.0

Figure 3. Quarterly BET average



Graphics generated using EViews 5.0

Figure 4. Comparative evolution of BET and seasonal adjusted BET

c. The testing of the series dl_bet and dl_pib_t (dl = first difference operator) Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP). Eligibility conditions for a time series to be stationary are: the average of the time series is constant or, in other words, the observations should fluctuate around the average; the series' variance is constant. In economic terms, a series is stationary if a shock over the series is temporary (is absorbed in time), not permanent. If a series is not stationary, through differentiation is achieved a stationary series. The order of integration of the series is the number of successive differentiations required to obtain a stationary series.

Regarding the studied variables, we first tested the level stationarity of the log-series and the result is that the series aren't stationary. Therefore, we proceeded to the first differentiation of the series and the results contained in the 4 tables indicate that these first order integrated series are stationary (there's no unit root).

The two tests provide information about outcomes, critical values for each level of relevance (1%, 5% or 10%) and the probability „p” associated to the test's result. For both tests, ADF and PP, if the test value is greater than the critical values, the null hypothesis is accepted, then the series has a unit root (is nonstationary). The results of both tests for each of the series are listed in Tables 1, 2, 3 and 4:

Table 1. „Unit root” test ADF for dl_bet

| | | | | |
|--|-----------|--|-------------|--------|
| Null Hypothesis: DL BET has a unit root | | | | |
| Exogenous: Constant | | | | |
| Lag Length: 0 (Automatic based on SIC, MAXLAG=9) | | | | |
| | | | t-Statistic | Prob.* |
| Augmented Dickey-Fuller test statistic | | | -3.898586 | 0.0048 |
| Test critical values: | 1% level | | -3.615588 | |
| | 5% level | | -2.941145 | |
| | 10% level | | -2.609066 | |

Source: data processed using EViews 5.0 program.

Tabel 2. „Unit root” test PP for dl_bet

| | | | | |
|---|-----------|--|-------------|--------|
| Null Hypothesis: DL BET has a unit root | | | | |
| Exogenous: Constant | | | | |
| Bandwidth: 1 (Newey-West using Bartlett kernel) | | | | |
| | | | Adj. t-Stat | Prob.* |
| Phillips-Perron test statistic | | | -3.890381 | 0.0049 |
| Test critical values: | 1% level | | -3.615588 | |
| | 5% level | | -2.941145 | |
| | 10% level | | -2.609066 | |

Source: data processed using EViews 5.0 program.

In the previous tables, it can be seen that the value of tests is lower than the critical one, regardless of the relevance level; by choosing the most restrictive level of relevance, 1%, you can say that at 1% level of relevance, the null hypothesis (the series

is nonstationary) is rejected. This result can be observed also from the associated probability value "p". So, it is smaller than the most restrictive level of relevance, 1%, and, therefore, the null hypothesis - a nonstationary series - is rejected. So, the series' order of integration is 1 or the series is I(1).

Tabel 3. „Unit root” test ADF for dl_pib_t

| | | | | |
|--|-----------|--|-------------|--------|
| Null Hypothesis: D(DL_PIB_T) has a unit root | | | | |
| Exogenous: Constant | | | | |
| Lag Length: 0 (Automatic based on SIC, MAXLAG=9) | | | | |
| | | | t-Statistic | Prob.* |
| Augmented Dickey-Fuller test statistic | | | | |
| Test critical values: | | | -10.39605 | 0.0000 |
| | 1% level | | -3.621023 | |
| | 5% level | | -2.943427 | |
| | 10% level | | -2.610263 | |

Source: data processed using EViews 5.0 program.

Tabel 4. „Unit root” test PP for dl_bet

| | | | | |
|---|-----------|--|-------------|--------|
| Null Hypothesis: D(DL_PIB_T) has a unit root | | | | |
| Exogenous: Constant | | | | |
| Bandwidth: 4 (Newey-West using Bartlett kernel) | | | | |
| | | | Adj. t-Stat | Prob.* |
| Phillips-Perron test statistic | | | | |
| Test critical values: | | | -11.32330 | 0.0000 |
| | 1% level | | -3.621023 | |
| | 5% level | | -2.943427 | |
| | 10% level | | -2.610263 | |

Source: data processed using EViews 5.0 program.

d) In order to demonstrate that there is an influence of the economic growth on the capital market evolution, we opted for the method of econometric analysis, building a regressive model with the following form:

$$Y_{it} = \alpha + \beta * X_{it} + \epsilon_{it}, \tag{3}$$

where:

- Y_{it} - dependent variable - BET Index;
- α - free term's coefficient;
- β - the coefficient of the independent variable;
- X_{it} - the independent variable - QGDP;
- ε_{it} - the random variable;
- i - number of sectors implied by the regression;
- t - time period (years 2000-2009).

The data shown in Table 5, come off the following conclusions: 1) Standard error values of the regression function coefficients are below - in module - the coefficients' value. This means that these coefficients are correctly estimated. 2) The probabilities attached to the t-Statistic test are 0, so they are below the relevance level

of 5%; therefore, coefficients are considered statistically significant. 3) Correlation coefficient with a value of **77,88%**, shows that the statistical link between the dependent variable -BET - and the independent one - QGDP - is a **strong** one, which means that changes in the evolution of BET is being found in a significant proportion in the changes of QGDP development. 4) The Durbin-Watson test, with a value below the critical 2, indicates that the residual variables are not autocorelated.

Table 5. QGDP impact over BET Index during 2000-2009

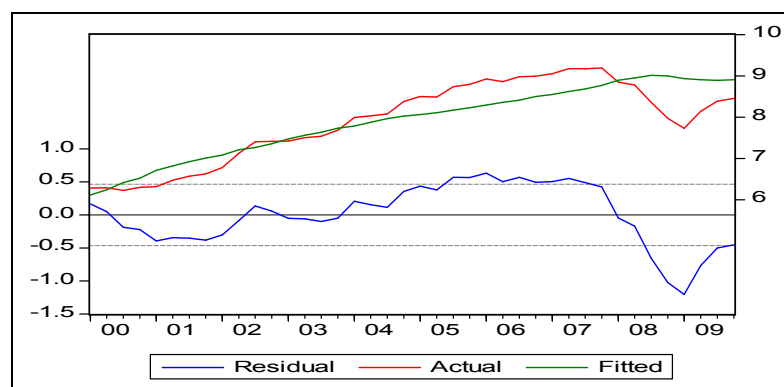
| Dependent Variable: L_BET | | | | |
|---------------------------|-----------------|-----------------------|-------------|----------|
| Method: Least Squares | | | | |
| Sample: 2000Q1 2009Q4 | | | | |
| Included observations: 40 | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | -7.781378 | 1.357391 | -5.732599 | 0.0000 |
| L_PIB_T | 1.424633 | 0.123140 | 11.56918 | 0.0000 |
| R-squared | 0.778872 | Mean dependent var | | 7.899568 |
| Adjusted R-squared | 0.773053 | S.D. dependent var | | 0.974071 |
| S.E. of regression | 0.464038 | Akaike info criterion | | 1.351005 |
| Sum squared resid | 8.182582 | Schwarz criterion | | 1.435449 |
| Log likelihood | -25.02011 | Durbin-Watson stat | | 0.165141 |

Source: data processed using EViews 5.0 program.

Therefore, we can state that the built model can be considered representative to describe the link between BET and the evolution of QGDP during 2000-2009. The regression equation can be rewritten as:

$$L_PIB_T = -7.781378 + 1.424633 * L_BET \quad (4)$$

Next, we graphically represented the actual value of the dependent variable, the estimated value and the regression errors.



Source: data processed using EViews 5.0 program.

Figure 5. Actual, fitted, residual graph

4. CONCLUSIONS

The fact that Romania hasn't benefited from a capital market for almost five decades, made the development process start from scratch. The effects of this situation are reflected even today, when after a transition period of almost two decades, capital markets hasn't reached a level of development that would enable it to fulfil its main function in the economy, the gap with the countries of Europe being still quite high.

It may be mentioned that in terms of market capitalization and development of key indices, Bucharest Stock Exchange since 2002 recorded an upward trend until the end of 2007, corresponding to the overall evolution of the Romanian economy. Although the upward trend recorded, Romanian capital market is still far from achieved performance comparable to the markets of Central Europe.

Regarding the impact of growth on capital market development, we tried to quantify and analyze the relationship between stock index and BET QGDP evolution, so economic growth. Following the econometric testing of the link between economic growth and development of BET revealed a correlation coefficient with a value of 77,88%, which shows that the statistical relationship between the outcome variable (dependent) - BET - and the endogenous (independent) - QGDP - is strongly, growth (positive or negative) having an important impact on the efficiency and performance of the capital market.

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DEVELOPMENT OF ROMANIAN SEASIDE TOURISM IN THE FRAME OF SUSTAINABLE EUROPEAN SOCIETY

GRAȚIELA BRÂNZĂ *

ABSTRACT: *Sustainable development can be achieved only in the frame of a sustainable society. In the context of Romania's integration into the Great Society of the European Union, tourism activity should be developed, respecting sustainable tourism principles promoted by the Union. This paper presents statistical analysis of the Romanian seaside tourism and the results of a statistical survey conducted in the summer of 2007 to find out possible means to increase the quality of tourism services on the Romanian seaside. Also, the paper proposes solutions for sustainable tourism development in the Romanian Black Sea area.*

KEY WORDS: *development; seaside tourism; sustainability; sustainable tourism; tourists; environment*

JEL CLASSIFICATION: *C83, L83, Q01*

1. INTRODUCTION

Black Sea is one of the most important touristic areas in Romania, established itself through very attractive elements of natural and human created tourism potential, such as: beach, sea water, bio-climate, mineralized water, therapeutic mud, nature reserves, archaeological remains, museums, old castles, historical and religious architectural monuments and more. Natural and human created resources in the Black Sea largely satisfy a wide range of tourist motivations leading to the practice of several forms of tourism: rest tourism, leisure tourism, health tourism, ecological tourism, cultural tourism, cruise tourism, tourism touring and others.

Unfortunately, this rich potential of our country that can compete successfully with the seaside offer of any other country has not been harnessed rationally. The privatization process started later and still not over, given that Romania has already

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integrated into European structures. In this context, we can not talk just about tourism development in the Black Sea, we must talk about its sustainable development.

2. TOURISM-SUSTAINABLE DEVELOPMENT RELATION

Generally, achieving sustainable development requires a balance between economic sustainability, social sustainability and environmental sustainability. Sustainable development aims at continuous improvement of life quality on Earth for both present and future generations.

In the light of the contribution to sustainable development, tourism occupies a special place. Tourism development without concern for the sustainability prejudices society and environment. Tourism is sustainable only if it respects the principles of sustainable development.

By the mid-1990s, the sustainable development of tourism has become a priority for the EU institutions, being developed many documents that highlight the important role of tourism in the fulfilment of sustainable development objectives. The moving towards sustainability in all sectors of the economy is promoted in the European Sustainable Development Strategy.

Under the National Development Plan 2007-2013 of Romania, which focuses on reducing the existing gaps as quickly as possible towards the EU, special attention is given to the sustainable dimension of tourism development, through inter-regional cooperation and cross-development investment in tourism adapting to network utility investments to provide general services, namely those related to wastewater management and household garbage, pollution, landscape restoration, the introduction of the protected areas in tourist circuit, the conservation of natural resources and their rehabilitation, the protection of coastal areas, the regulation of rivers and lakes, the protection of beaches, elements that are the foundation of sustainable development of tourism.

2.1. Protecting the environment - the goal of sustainable tourism development

Sustainable tourism involves social responsibility and a strong commitment to environmental protection. The problem of protecting the environment causes both challenges and opportunities.

Since 1970 the European Union began to be concerned with all environmental issues and had established a set of tools and measures to protect the environment. The Sixth Environment Action Program - "Our future, our choice", adopted by the European Commission identified four priorities for action: addressing climate change, protect nature and wildlife, tackling the environment and health problems, natural resource conservation and waste management .

In order to help Member States to implement EU environmental legislation and for the environmental improvements, the Union provides funding. Romania is in the process of adjustment to EU standards in the field of environmental policy, it's integration into sectoral policies and strategies representing an essential condition for this process.

3. REHABILITATION MEANS OF THE ROMANIAN BLACK SEA COAST

Romanian Black Sea coast plays an important role in the environmental policy of Romania, aiming at the rehabilitation and protection of coastal and marine area associated with our country, restoration and conservation of coastal and lakes with therapeutic qualities, protecting the coastline from erosion. There are also a number of legal regulations concerning the conservation of biodiversity, the type of building allowed to be located on the beach, the use of Black Sea beaches, in order to preserve them and to protect tourists.

Romanian seaside rehabilitation must be carried in accordance with the requirements of modern tourist resorts and must include the development of new resorts and new recreational areas, taking into account the fact that entertainment has started to become a priority for holiday organizers.

To rehabilitate the Romanian seaside and to achieve sustainable development of tourism in this region, continued efforts are needed by all policy makers and the population in the area. Certification schemes of environmental quality are the most important indicators of respect for the environment of a destination and for tourists. Tourists want a high quality environment in a destination, preferred accommodation services Ecolabel and would like to see certified products in tour operators catalogs. Quality and environment are interrelated: Ecolabel products provide good quality, only if the environment is respected.

Quality certification is specific to coastal beaches and tourist ports under the "Blue Flag". Distinction "Blue Flag" is awarded annually to tourist beaches and harbors which satisfy a number of essential criteria that address issues related to water quality, environmental education and information, environmental management, security and services on the beach. The programme "Blue Flag" is an important tool for facilitating the implementation of Integrated Coastal Zone Management, whose long term goal is to achieve a balance between environmental objectives, economic, cultural and recreational activities, respecting the limits set by natural dynamics. Romanian seaside has the fewest distinctions "Blue Flag", which oblige us to follow the example of country experiences with the best performance in this area and to realize all the benefits that Romanian seaside can obtain.

Another aspect that can revive tourism in the Black Sea refers to the tourism supply. Romanian seaside has almost all kind of accommodation structures, but hotels have the highest share of all. Even though more than half the hotels on the coast are totally privatized or included in large international hotel chains, remain many old hotels, unmodernised, classified in one or two stars. In recent years, there is the downward trend of seaside accommodation capacity, due to activities that give the accommodation structures the possibility to obtain a high level of comfort. Growth rates for tourist services in relation to their poor quality, reducing living standards of population, lack of programs to promote tourism, loss of traditional markets have decreased the use of accommodation capacity in the period 1994-2007 (see table 1).

Table 1. Indices of net using the capacity in function in Romania and on the Romanian seaside, in period 1994-2007

| Year | Romania | Seaside |
|------|---------|---------|
| 1994 | 43,7 | 52,3 |
| 1995 | 45,0 | 56,9 |
| 1996 | 40,7 | 51,8 |
| 1997 | 37,7 | 47,6 |
| 1998 | 36,1 | 49,0 |
| 1999 | 34,5 | 45,9 |
| 2000 | 35,2 | 51,1 |
| 2001 | 34,9 | 46,8 |
| 2002 | 34,0 | 41,3 |
| 2003 | 34,6 | 39,9 |
| 2004 | 34,3 | 41,8 |
| 2005 | 33,4 | 40,6 |
| 2006 | 33,6 | 39,8 |
| 2007 | 36,0 | 45,7 |

Source: ASR 2008, ASR 2004, ASR 2005, ASR 1990-2003

Another essential element of the coastal tourism offer is labour. As tourism products mean a set of services, they can not exist without human resources. In the Romanian seaside accommodation structures the majority of employees are women (75.78%). Structure of employment according to age groups shows the large share that people aged 35-49 year hold and those aged 15-24 year as well. In terms of level of instruction, is remarkable the predominance of staff with only 10 classes and those with secondary education, having little training in tourism. Also, the seasonal nature of tourism determines fixed-term employment, only 25.76% of total personnel in the accommodation being employed permanently. This fact, the poor preparation and the lack of permanent training of human resources involved in tourism activity on the coast have negative effects on quality of services provided.

To adapt the tourism offer to the demand needs, we have to know the development trends in the future. Regarding the Romanian seaside tourism demand, can be made a series of observations, based on the rigorous statistical methods. Analysis of the evolution over time of the Romanian and foreign tourists flows indicates their number decreases, more pronounced for foreign tourists.

The main motivation of Romanian tourists who choose Romanian seaside is rest, recreation and entertainment. They prefer 4-7 overnight stays or 8-14 overnight stays, but it is observed the increasing orientation for weekend tourism. Most Romanian tourists organize their trip on their own and use as means of transport, especially their car and the train. As a way of accommodation, they choose mainly the hotels and in terms of comfort category, they prefer two stars structures accommodation. Unlike the Romanian tourists, foreigners want lodging in hotels of three and four stars.

Analysis of foreign tourist's flow on the main countries of origin of tourists shows that Germany has the highest share of total foreign tourists accommodated on the coast. It is followed by France, Italy, Spain, Greece, Turkey, Russian Federation,

USA, Ukraine, Finland, Norway, Sweden, Denmark, United Kingdom. In recent years there is a dramatic decrease in the number of tourists from northern countries, but also those of other countries. It is required an aggressive policy to promote the Romanian seaside, modernization of material base from each seaside resort, completing the privatization of coastline, continuous training of the workforce employed in tourism and raising the quality of tourism services for traditional and international tourist markets regaining and in order to attract large flows of foreign tourists.

4. CASE STUDY: STATISTICAL SURVEY ON RAISING THE QUALITY OF TOURIST SERVICES ON THE ROMANIAN SEASIDE

In order to find solutions of raising the quality of tourist services and improving the attractiveness of tourist offer of the Romanian seaside, I have realised a statistical survey in the summer of 2007, by interviewing 267 Romanian tourists in Saturn and Mamaia resorts.

Analysis of survey results emphasized the following issues:

- Most of Romanian tourists have visited the Romanian seaside once in the last three years;
- Duration of stay of Romanian tourists is usually 18 days in Saturn resort (balneomedical resort) and less than 7 days in Mamaia resort (entertainment resort);
- Romanian tourists prefer to travel with family, especially using their own car;
- Depending on the profile of the resort (spa or leisure) tourists choose balneomedical treatment or recreation in parks, aqua-parks, watching entertainment shows, practice sports on the beach;
- Tourists consider necessary the diversification of tourism offer, expressing their desire to practice water sports, horse racing, to conduct tours, to visit nature reserves, protected areas and religious places in the region, trips in the Danube Delta, in Constanta city, programs for children, boating and other recreational activities;
- Regarding the accommodation structures, tourists are dissatisfied with the condition of furniture, the report price/quality, but satisfied with the receptionist kindness, the functioning sanitary facilities and electricity, cleaning of the room or campsite perimeter;
- The tourists are very dissatisfied with the services provided in accommodation structures' restaurants, particularly in terms of quantity, variety and quality of the menu;
- The ratings given by the tourist to beach-related services (cleaning, facilities, quality of bathing water) are weak;
- Romanian tourists are willing to allocate an increased sum of money for a higher quality standard on the Romanian seaside;
- Romanian tourist profile is analyzed by resort, namely in Mamaia prevail tourists aged 21-40 years and higher education. Saturn tourists aged between 31 and 50 years. Monthly incomes of Romanian tourists arrived on the seaside have values between 500 and 2.000 lei.

5. CONCLUSIONS AND PROPOSALS FOR SUSTAINABLE DEVELOPMENT OF TOURISM IN THE ROMANIAN BLACK SEA AREA

Taking into account that tourists are becoming more demanding on coastal tourism offer and having in view the results of statistical research in those two Romanian resorts, we can make a series of proposals in developing romanian seaside tourism:

- It is necessary to inventory all accommodation structures to ascertain their physical condition and to identify actual structures which need modernization in order to move towards a higher degree of comfort;
- Many hotels have to be integrated in internationally recognized hotel chains to attract large flows of foreign tourists;
- Coastline public infrastructure must be better maintained and upgraded;
- Initiation of intensive programs to promote Black Sea to regain lost foreign markets (the Nordic countries, Germany, Britain and others), but also to boost confidence of the Romanian tourists in the Romanian seaside holidays;
- The development of business tourism, congresses, meetings, scientific meetings and exhibits in the Romanian seaside is necessary, as it brings great benefits to the organizers by reducing seasonality. Many people who participate in such actions are holiday travellers, too, who want to know the coast area. An opportunity in this respect would be to establish a big business and conference centre in Constanta, and thus, to develop accommodation structures that can operate the entire year;
- Ensure optimal conditions for accommodation in hotels: cleaning inside and outside the hotels, flawless functioning health facilities, adapting the kitchen to the preferences of customers, offering additional hotel services (booking tickets, car rental, laundry, other services) ;
- Initiation of information and awareness campaigns for tourists, especially Romanian tourists, about the environment of the Black Sea area and the negative impacts they can generate with their inappropriate behaviour;
- Integration of quality management in each accommodation and catering structure to meet the tourists demands which are more experienced and more sophisticated and to obtain bigger benefits;
- Access European Union's Structural Funds to improve the quality of tourism activity and to carry out actions to obtain quality certificates. This depends very much on Romania's capacity to achieve sustainable tourism projects;
- Improve the activity of human resources employed in tourism activity on the coast. Seasonal nature of activity and low level of wages rise employment of a low trained staff, during the summer season. To provide high quality services on the Romanian seaside, it is required trained personnel employed for an indefinite period of time. To this end, it is recommended organizing courses at the end of season both for managers and for employees on the following areas: customer service, communication, information technology, foreign languages, marketing, human resources management, finance, accounting. Support for these courses must be made by specialists in these areas of study;

- Since the complaints of tourists are very high in terms of services offered by catering structures on the coast, it is recommended hiring a well trained staff in these structures' kitchens, but also improve their standing in the culinary arts;
- It should be given special attention to young personnel, which has to be motivated in terms of income, be educated, trained and perfected in tourism, since young people are more receptive and dynamic;
- Mentality worker in tourism should be amended so that he would be able to understand the needs of domestic tourists and especially those of foreign tourists, this way seeking to faithful the customers. Satisfied and motivated employees will respond much better to the needs of tourists. This is extremely important, because usually a guest dissatisfaction will be sent to ten people, and rewards only to three people;
- Develop education and research in tourism, according to labour market needs. It requires setting up a training centre in the Romanian seaside tourism;
- Arranging and equipping the coastal beaches in order to be fulfilled the criteria of "Blue Flag", a symbol of respect for the coastal environment at the highest level;
- It is indicated that beaches are managed by the owners of accommodation structures in which law is to avoid conflicts between beaches concessionaires and places of accommodation providers and to provide full services to tourists of such accommodation structures;
- Involvement of the local and national authorities and of the community in this area in intense action to protect the coastal zone of the Black Sea against the negative impacts (beach erosion, pollution, contamination of bathing water, others) caused by different economic sectors;
- Simultaneous with the conduct of future surveys on the Romanian seacoast, it is appropriate to carry out a campaign to inform and educate tourists on sustainable development and environmental protection - the main component of sustainable development of tourism on the coast. Tour operators, entertainment service providers, transport service providers, with the tourism ministry support have to promote such a campaign for environmental education (through brochures, guides, maps, information provided by guides, videos of interest shown in television and the Internet). This campaign should be targeted especially to young people, who share a dynamic, flexible, open to change;
- Romanian government must be actively engaged in supporting seaside tourism through marketing activities, information services, education and other ways, through public-private partnerships;
- Romanian tour operators have to make dynamic marketing policy, to promote programs of leisure with low environmental impact and eco-labelled products and services. They should actively embrace the principles of sustainability in design stage tours, the stage of selecting suppliers, working with local communities and tourist information. The local tour operators have to include environmental information in catalogs about the Black Sea area and instructions for responsible behaviour of tourists towards it. Also, tour

operators must take care of training and continuous improvement of tourism industry personnel on general and specific environmental problems of coastline;

- It is necessary to promote ways and means of transport to ensure environmental protection. To reduce environmental pollution due to transport, it is required balanced use of all modes of transport to make trips of interest. The negative effects of transport on the environment may be removed by tourists by increasing the duration of stay and the use of public transport to travel along the coast;
- The resident population of Romanian seaside area and tourists should be aware and help to preserve and protect sensitive natural resources (beach, sea, specific flora and fauna). They can help the environment by minimizing the negative effects of recreation, by avoiding the purchase souvenirs which are made from animals and plants. Sustainable behaviour of tourists is the key of sustainable tourism;
- Seaside tourism must increasingly use modern technology in areas such as booking services or marketing services, as the Internet has become an increasingly important means of information and an indispensable tool of marketing.

The development of tourism infrastructure, computerization, raising the quality level of service, respect for the environment, extensive programs to promote the objectives of coastline tourism on domestic and international level are premises for sustainable development of Romanian Black Sea tourism.

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THE RISK IN BUSINESS

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ABSTRACT: *Risk is a normal and inseparable partner of any activity having direct and powerful effects on the results of that activity. Any activity is a degree of risk. The most important risk is judging it in a positive way, either as a necessity to increase the opportunities for gain and / or a number of challenges which enhance the value of that business. Prosperous businesses are focused on earnings quality by accurately assess risk-gain balance using information technology. Understanding, however, it can be concluded that the risk of business account for all methods and means by which risk is managed to meet business objectives with uncertainty as major basic risk factors.*

KEY WORDS: *business; risk; uncertainty; business strategy; costs; benefits; business management*

JEL CLASSIFICATION: *D81*

1. INTRODUCTION

In the last two decades of the twentieth century, we witness a changing economy, the creation of a "non-natural", the complexity is a growing. Entrepreneur depends on chance, every day more, the existence in the business of constant concern for the analysis and management.

Knowledge of the risk, in all that you describe requires availability, while possibly specialists, material resources of the entrepreneur. Correlation of these elements generates insufficient knowledge, poor decision and therefore partial or damage.

Thus, the risk can be viewed as the inability of firms to adapt to time and least cost to environmental changes. Viewed from this perspective, the risk of affecting the activity of a company has as main business climate instability and the inability of traders to counteract the effects of time and without high costs generated by the continuous evolution of the environment in which it operates. It follows therefore that risk is a permanent feature of the business of the company, it must implement adequate

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risk management mechanisms, highlighting the rapid changes occurring and intervention measures.

Novelty XXI century, the understanding of business risk, is precisely this: to handle risk in a positive way, either as a necessity for increased opportunities to win business, or as a series of new challenges. Risk begins with understanding the risk factors involved in strategic business planning.

2. RISK - DELIMITATION CONCEPTUAL RISK IN ECONOMIC AND SOCIAL SCIENCES

In terms of risk, how the approach is extremely important: querying all out objectively, but discovered a number of opportunities and challenges where the reward exceeds the net costs and risks. Irving Fisher said that "the risk varies inversely with knowledge". So the ability to select and use information is essential in the assumption of risk.

Etymology is of French origin. In French, *risque* has two meanings: the first sense means - exposing itself to risk, potential danger, an annoying, nuisance, knowing the negative facets of ownership, in the second sense - to support something, to have a chance, opportunity, occasion, purpose designed to look positive, positive, possibility of success.

Using the concept of risk and developing methods for estimating risk in the economy began to be practiced by Adam Smith (*Wealth of nations* - the average profit rate always involves more or less risk), J. Stuart (*Principles of Political Economy with some of their applications to the social economy* - "the difference between gross profit interest and rewards the efforts and risks entrepreneur"). Later in 1921 Frank Knight says in *Risk, Uncertainty and Profit* that "the doctrine that profit is explained only in terms of risk has been fully confirmed.

a. Antiquity. Theoretical sources of risk are relatively less studied and known. Economic thought in ancient Greece by Plato, Aristotle and Xenophon, note references to danger, uncertainty, caution and risk of several types, which may threaten the state or individual. More common risks of a social or political. Aristotle in *Politics* distinguishes between natural hazards (disasters, disasters, etc.) And political risks arising from the adoption or amendment of laws and regulations that may lead to inappropriate social discontent (plots or even revolution).

He also notifies the link between size and risk level of flexibility of the system of laws. Plato in his dialogues, made reference to special risks in the conduct of war, the influence of state stability and success qualities soldiers in a battle. He has several references to the risk of lending, which found a number of factors: family, legal system failures on the protection of property, erotic needs of individuals (!), Chance, clarity and certainty.

b. Middle Ages. Concerns regarding the risk occur much later, since the XII century, with the development of the church, acting as trainer medieval scholastic education in the spirit of work, improving relations between individuals, of solidarity, helping to alleviate tensions and fights. Subsequently, economic thinkers of the XVI - XVIII, mainly mercantile be issued narrow medieval, and focus on economic concerns

before the moral and philosophical. Development of State as an institution, which prefațează individual desire for gain and wealth is a purpose and adventure and risk, one way. It is during the great geographical discoveries, the establishment and development of colonial empires.

Montchretien capture details of industrial production and trade of the eighteenth-century France reflecting on bringing the risk of that time. He was the promoter of economic nationalism, saying that fair work leads to profit while the opposite, bankruptcy and ruin, internal trade is a priority because of safety and utility, while the outside is considered as more risky. Here are some forms of risk identified Montchretien: the risk of sea transport, the risk of falsification of precious metals, the risk of flooding (for agriculture), the risk of change (which wants Montchretien issued by any chance). Montchretien state is essential to stability, it may impose coercive order associated with safety, on the contrary, social unrest (rebellion of Urbino, for instance), fighting between the Italian states, are considered the danger of adverse repercussions on the economy and the ability defense of the state.

c. Classics. During the great classics of the economy, perception, risk taking and evaluation dimensions were first studied in detail by economists, rather they considered the risk as a product of specific cultural environment of time. Recognition of the economy as a science following the publication of Adam Smith's works, and industrial and scientific progress (especially Newton's equilibrium theory) were the prerequisites for first attempts of defining and understanding the scientific background risk. The balance between supply and demand was a system, set the "invisible hand" of A. Smith, law-abiding general equilibrium (Newtonian). Certainty was given to price stability. The transition from predominantly agrarian economy to the manufacturing was the shift from a developed and stable in activities characterized as "business risk".

The role of entrepreneurs in profitable use of capital is highlighted by A. Smith deriving capital owner, ie the developer of "special servants" (managers today). Smith shows that with the permanent risk throughout the economic process, there are a variety of business risks in general. The most typical example is a lottery in which "winning lozurile not compensate lozurile white, although the size of lozuri tempts many adventurers to throw in such risky assets test. He also links to obtain the three main income (wages, profits and rent) the existence of certain risks.

Among other forms of risk identified by A. Smith and his school of economists are:

- the risk of rent of land (even made a correlation between the nature of different crops and risks of such land);
- risks related to fluctuations "random" values of the exchange market of gold or silver bullion (anticipated problems and the exchange risk on the country);
- the risk of illegal exports of gold bars, with major implications in the stability of the currency;
- risk capital borrowed, which shows a calculation of interest and a potential risk of circumventing the law;
- moral hazard involving the debtor and creditor capital;

- the risk of granting a loan, discussion of interest inherent in representing the price plus the price of insurance risk using money lender to borrow that money.

The lawmakers noted the concern of that period to avoid the negative implications of risk more perspective and less of a substantive humanitarian. School representative classical definition of several types of risk, assess and prioritize them according to severity and costs involved.

d. Neoclassics. Century thinkers (Stanley Jevons, Leon Walras, Carl Menger) develop theories aimed at capital accumulation, growth and overall development of long-term economic system, based mainly on marginal theories of 70 years. Neoclassical theory starts from the premise that the individual is guided by the principle of rationality (considered to be relative), then use its "best" resources available according to the constraints on subject.

Differences in understanding of the concepts of risk, uncertainty, chance, etc. led to the strengthening of three key schools of thought neoclassical: School in Vienna - the theory of marginal utility, School of Lausanne - general equilibrium theory and the Cambridge School - partial equilibrium theory. - Leon Walras (School of Loussanne) separates the natural action ("play of natural forces, which are blind and fatal) and humanitarian ("have their source in the exercise of will of a man who is familiar psychic power and free"), divide which is closest to the current classification of risk theory.

Successor of Walras, Vilfredo Pareto, considered beneficial in the knowledge:

- Intuition or foresight useful "where experience can not occur. In Walras's theory, capital appears as a cash advance (as in classical), but as a tool of production, and land is a natural capital consumed, intractable but at risk of death (earthquakes, floods - risks in pure form). Also, work is still considered a natural capital, but consumable and perishable destructible by using the accident. Walras and Pareto first introduced the concept of insurance as a sum of money necessary to cover cases fortuitous.
- School in Cambridge, represented by Alfred Marshall, based on general equilibrium theory, indicates that the system of interdependencies in the economy involves risks and their effects propagate. That is, there is a risk to a certain level of economy determine the effects propagated in size and intensity to another or other levels that are interconnected. In Marshall's view, "profit is risk remuneration, consisting of what remains after deducting interest and salary manager of gross profits. Thus, risk is seen both as an element of profit and cost. Marginal Fisher noted that "instability is one of the cornerstones of the current trend of industry-oriented trusts and cartels.
- School Germany is a criticism of liberalism, make important contributions to the theory of risk by leading German economic nationalism Friedrich List, an advocate of economic protectionism, which must ensure the security of those who invest capital, skill and labor in new industries. Separate list risks fields (ie the farmer is subject to the risk being insured against the potential risks "without any sacrifice", while in transport entrepreneur risk their entire

capital). List shows that the risk of affecting the macro scales and even mondo - economic.

e. Contemporaries. In 1921 Knight Frank published the first paper on risk, particularly looking at the entrepreneurial risk. Chronologically it follows John Maynard Keynes that is different macroeconomic analysis on cyclical production, unemployment, inflation, monetary problems. Its analysis is influenced by specific transformations and crises period. Keynes talks about a cost of risk are meant to cover "possible deviation of actual earnings for unknown reasons from expected earnings. Friedrich Hayek analyzes risk on the safety of buildings, and Louis Hacker raises issues of risk taking and fiscal policies.

School Keynes identified risks in most areas of economic and social life and has described their integration into the work and achievements of the capitalist entrepreneur. In the decades immediately close, stands Orio Giarini (Director of International Institute of Risk in Geneva) that through its work that covers the risk (particularly certainty limits) makes an alternative design in relation to neoclassical economics, namely that related to the entry in the economy services and "in a world of uncertainty for which we need to prepare and to assume risks, seek to stop a world of certainty, the risks to be eliminated.

The most important theorist of marketing, Philip Kotler, was addressing the risks of creating a new product, the overall risk of marketing, consumer-perceived risk, country risk in its work, bringing together such a comprehensive formula marketing vision to the perception of risk, both in terms of the undertaking and the subject-social being. Paul Samuelson defines the concept of "economy of uncertainty" explaining it by the conduct of firms to uncertainty about: the price of products, policy environment, technology, inputs, intensity of competition. He defines "risk aversion" as a situation where a person "annoyance of losing a sum of money is greater than the pleasure of winning it.

Neumann introduced a theory of utility theorem and developed a mathematical model that bears his name to calculate utility. This model is used to study basic and advanced concepts of risk, particularly in experimental and modeling. Theoretical approach to risk is far from being exhausted due to the complexity and variety of problems, and because to be an interdisciplinary approach. Determined, a definition of risk might be as follows: "Risk is defined as an element of uncertainty but it is always possible that events in the technical, human, social, political, reflecting changes in the distribution of possible outcomes, the likelihood of subjective values and objectives, with possible damaging and irreversible effects.

Analyzing the concept of risk can not formulate a single definition, but instead we can distinguish three main features: causes of risk from instability into all processes taking place in the economic life of a country; the critical point for expressions of risk is determined by the objectives of the developer; risk is the possibility that objectives are not achieved.

3. RISK PERCEPTION

Currently, the basis for decisions no longer operate with absolute certainty, with accurate predictions of the evolution of a particular item, but makers use more and more frequently, to estimate probable, uncertain, the concept of risk and uncertainty. Most decisions are adopted in terms of risk and / or uncertainty, incomplete or incorrect knowledge of one or more variables is a defining feature of economic activity in the current conditions and those which explain increasingly large differences between yields various business activities or projects. A very interesting way of looking at things is the public risk perception, perception influenced by emotions. Social perception is based on observed data and knowledge we have about people belonging to a group.

There are four images that appear in the public perception of risk:

a) *Imminent danger* ("sword of Damocles"). The risk is considered a threat which can strike at any time and cause a disaster risk source is artificial. The danger is unable to provide time of the accident. A relevant example would be the public that nuclear disaster may cause at any time.

b) *Risk invisible* ("Pandora's Box" - Slow Killers). The risk is invisible threat to public health or welfare. The effects appear late and are not likely catastrophic. The public has no direct access to information depends on external sources. The credibility of the source of information is crucial. The risk is minor, but the trend is strong quarrel those involved. An example would be the preservatives, food additives, genetic engineering etc. vegetables subject.

c) *The cost - benefits* ("Balance of Athens"). The public perceives the risk as the difference between what wins and what loses. Perception of risk is limited to financial gains or losses. Probabilistic thinking in these situations work. The classic example would be gambling.

d) *Voluntary risk* (risk for the sake of risk „The Myth of Hercules”). The risk is desirable and actively exploited, risk exposure is voluntary. There is a perception that the subject can control the risk with skill. The consequences are not necessarily catastrophic. This is evident in the case of sports more or less extreme.

3.1. Risk targeting specific activity company

Identifying types of risk that a company can face is an essential step for management unforeseeable, but is only first step in a series of initiatives to be carried out to correct interiorization in developer environment risky behavior. Either choice involves the waiver of one or more alternatives or we have already discussed the fact that election results can not be made known accurately, for various reasons.

The need for risk assessment made its presence felt in the life of the developer in several cases, namely: when you have to compare two or more alternatives with similar results, but with different risk levels; where should compare two or more alternatives that may prove just as risky, but get different results, where no alternatives said, the developer must decide whether to accept or not a given situation risky in terms of judging their own criteria for acceptance of risk.

No hazard identification or determination of losses is not simple problems for an entrepreneur. Description of default risk and loss potential based on the idea of quantifying the probability of occurrence and severity of the event, so our steps we consider appropriate to begin with a brief overview of the concept of "probability distribution" and how it is used in addressing business risk. From the outset we said that this chapter can be presented in an abstract manner or in a simple manner, based on evidence. Information, in most cases is the same but the first approach can be thorny because of language and not least the writing.

The normal course of business by a business requires, in addition to equity, and leveraged. These two are different sources of capital for business, the cost it generates, and, for investors, the risk they assume for the placement of capital available in the respective company. If the investors' point of view things are clear in that it is always the risk assumed by creditors is less, because they are paid before shareholders for the company, calling on equity or borrowed capital may have different consequences on the profitability achieved and the firm value.

Selection and implementation of a certain financial structures are based on conditionality and more restrictions, such as integration into the global strategy firm, taking into account the branch of activity in the operating company, the rules of lending institutions, the general climate capital market and investors' expectations, the cost of each source of capital, etc.

Currently acting in a dynamic competitive environment and encountering a number of uncertainties regarding the evolution of market interest rates and profitability of investment projects already under way, companies should pay particular attention to financial risk because it can materialize cause the limitation or suspension of access to bank credits to finance the capital market, the company decapitalization using operating profits to pay interest costs when financing strategy is not designed properly, decreased market value or business bankruptcy.

3.2. The measures of risk management at an economic

Risk management measures that can be applied by an operator know a particular variety, the choice of such measures depends on both the nature of risk and the resources available to the company at a time and purpose.

Makers can take the following major steps:

- a) avoiding risks;
- b) insurance against risk;
- c) restructuring activity;
- d) diversification;
- e) desinvesting;
- f) short-term profit maximization.

a). Avoiding risks. The easiest and most efficient techniques to protect against risk are to avoid it. This measure is adopted by a large number of companies and requires ongoing monitoring of economic conditions in certain markets, sectors, activities, etc. The company thus avoiding to invest in those areas characterized by a high degree of risk. In this case, particular importance is the quality of information and

personnel engaged in conducting studies and forecasts of the risk affecting various business projects.

Before adopting such techniques, managers need to establish the relationship between the return they want to obtain and the risk they are willing to assume. Adopt a policy of avoidance of activities characterized by high risk, without taking into account business opportunities, is bad for business, since it lost the opportunity to invest in areas with high efficiency. A lot of managers willing to accept high levels of risk, but the hope of obtaining large profits on short time. In the background, business firms resist as long as possible take risks, provided that they identify and manage them effectively in order not to jeopardize the survival of the firm on the market and to get as high profit.

b). Insurance against risk. Another alternative is to provide protection against risk. Insurance companies agree to provide only the risks purely accidentally, incidentally, whose materialization can be provided before, both in intensity and as time. In exchange for full or partial takeover risk to operators, insurance companies require an insurance premium, whose value is as high as the risk is higher. Traders turn to this technique when confronted with risks caused by environmental variables that does not control or the degree of control is very small. In this way, firms can focus on running their business without being concerned about the losses that may arise from the risk materializes. In the contract of insurance, the policyholder will pay an amount the insurer will be compensated for losses. Insurance is the main way of distributing risk, which applies only when the insurer can statistically predict the frequency and intensity of insured events.

c). Restructuring activities. Assume constant concern of the company for continued monitoring of the business climate in order to anticipate events that could damage the environment around them company. Depending on the estimated negative phenomena to occur, managers can determine the restructuring and adjustment of business to new market conditions manifested. One form of implementing this technique is choosing a legal form of organization appropriate and flexible combination with another company and the creation of joint companies for the purpose of sharing risk, or where the risk is very high, licensing other companies, since not require huge investments, but can greatly benefit. Also, risk reduction can be achieved by patenting products and technologies created by business and by maintaining a strict control over them, which assures the firm a significant technological lead over competitors.

Creating high-technology means, but high costs of research and development, which always ends with results that can be implemented in the company? Using a largest possible number of suppliers, customer diversification and product classification can substantially reduce risk. Implementation of these measures determined, usually an increase in operating expenses of the company.

Thus, the suppliers, the company would have to elect those that provide the lowest prices on quality of raw materials and materials which are situated a short distance from his business in order to reduce transport costs. Greater number of suppliers reduces the risk of failure in supply activities (non delivery terms or quantities), but considerably increased supply costs. Diversification allows the

classification of products also reduce the risk sales by entering new market segments and by attracting so, the new categories of customers. The company must, however, is concerned about increasing the number of customers in each market segment in order to reduce dependence on a small number of consumers.

d). Diversification. Often, this technique is applied with restructuring activities and is considering reducing the risk by horizontal or vertical integration of the company or even by completely different development activities. Following such measures can better manage risk by spreading their different sectors, given that they are exposed to different degrees of risk.

e). Desinvesting. Involves reducing the amount of invested capital when there is a considerable increase in risk, by selling all or part of a particular asset to other businesses. Problems can arise when adopting this measure relates to the difficulty of obtaining a fair price, as close to market value for assets sold, and the difficulty finding a buyer for a business whose profitability has declined significantly or is affected by a considerable level of risk.

f). Short-term profit maximization. This technique applies when companies seek desinvestirea total and complete withdrawal of a market driven by high risk. In this way it aims to maximize short-term gains on transactions undertaken by the sale of assets. To achieve this, operators will seek to reduce costs by removing the maintenance and repair operations, reduce distribution costs, promotional activities, increasing the extent possible sales prices, cancellation of training programs for employees, reducing staff.

However resulting in reduced costs and increase short term profit. In this case, the company would have to set the time horizon that would maximize profit and to determine how relationships with suppliers, customers and staff are affected. The company should consider well the implications of such a strategy. Thus, if she wishes to withdraw defined market, only to diminish the activity, such a policy will affect trade relations with business partners and will lead to irretrievable damage to its image in the market. Such aggressive behavior simply reduces the period during which the firm operates on the market in May.

All these strategies are based on continuous monitoring of the level of risk facing the operator. Their use causes a reduction in the company's vulnerability to environmental conditions, and a reduction in losses that could occur if the risk materializes.

4. CONCLUSIONS

Lait - the reason this research is that risks are present in every business and not just in any activity. Risks arise once the decision to start a business and pursue throughout her work. Manage risk is to work systematically on all business plans. And this is the recipe for success of any business: strategic management, ie planning and detailed scheduling of all activities and elements of a business. Most times, failure is the result of lack of vision, planning, organization and evaluation of the leading business. Vision XXI century the risk is a positivist. Risk is seen from a positive perspective. Systematic approach and informed risk decisions in a business can turn

risks into opportunities extraordinary. And lead to business development opportunities. Have you consciously take risks and planned in a business, can result in rewards beyond the initial risks.

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THE DISCLOSURE OF THE CONVERSION OF VOLUME AND UTILIZATION OF FIXED CAPITAL IN THE COMMERCIAL RATE OF RETURN

CONSTANTIN CĂRUNTU, MIHAELA LOREDANA LĂPĂDUȘI *

ABSTRACT: *The efficiency and sustainability in a competitive economy are provided also by the extent to which the company has a material potential whose technical and operational parameters meet the new requirements of market economy. The management of creating value at the enterprise level requires selecting from a range of alternative investments that variant that incubated the most likely probability to increase the value of the firm. The fixed capital of the company is a production factor with a significant role in the performances of economic efficiency of it. The fixed capital incorporates a certain qualitative level of the production technologies and its effectiveness will depend decisively on the degree of physical and moral wear and also by the degree to which production capacity is used. At company level, economic efficiency is called return and, if the ratio between effect and effort is expressed as a percentage, is called rate of return. The key element of a company's profitability is the profit which, in its various forms, is taken into account in determining the different rates of return. The objective of any enterprise is to achieve maximum benefit and profitability of capital invested with the view to ensure its development and compensation of those who made capital investments. The profitability is one of the synthetic forms of expressing the efficiency of the entire financial-economic activities of the enterprise, respectively of all the means of production used and labor force, in all stages of economic circuit: supply, production and sales.*

KEY WORDS: *fixed capital; commercial rate of return; rate of return of resources consumed; efficiency; productivity; economic profitability; financial profitability*

JEL CLASIFICATION: *D24, D61, E22*

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1. INTRODUCTION

Any company, regardless of the profile and size, the socio-economic space in which it operates, must constantly prove the viability, competitive ability and adaptation, economic and financial performance, especially since the classical mechanism of market economy are formed and will work with all the rigors of that are involved. As economy develops, fixed capital items are subject to multiple changes in the processes related to business activity: formation of new capital, renewal and modernization of the existing ones, depreciation or wear of fixed capital, removal from service.

The formation of new fixed capital is the result of investments, these are composed of the total expenses made by the company for the development of the production capacity (capital inputs). Such investments serve as an engine for economic growth, they have as a source a part of the benefit (profit) obtained by the producers and by the depreciation fund.

Economic efficiency of the use of fixed capital is given by the effort made for the purchase and operation, and the results or outcome from its use. The components of fixed capital put their mark on profits, mainly by the depreciation rates which directly affect the production cost and product quality which is reflected in the sale price. The increase of physical production has the role to amplify the difference between the selling price and the production cost, which is just the annual profit obtained from the product concerned. For the formulation of relevant conclusions is recommended the calculus dynamics indicators mentioned above, and the quantification of the influence of direct and indirect factors, within the information available. In terms of its technical, productive and investment content, the capital comprises those reproductive assets which condition the continuous and efficient production of economic goods that have to be maintained to assure the necessary rate of the economic activity.

The management theory and practice demonstrate that the main objective of any organization is to increase efficiency. In this context, the functions of the financial management require building a system of rates of return that, through structure and content, represents a useful and powerful tool for business. To meet its aspirations, the use rates of return implies complying with some basic conditions: the formulation of rates as characteristic for the phenomenon studied, ensuring the comparability of rates and prudent interpretation of the rates.

In case of the study that we conducted we paid special attention to the commercial rate of return and to the rate of return in terms of volume consumed from the perspective of volume and use of fixed capital.

2. THE DISCLOSURE OF THE CONVERSION OF VOLUME AND UTILIZATION OF FIXED CAPITAL (FIXED ASSETS) IN THE COMMERCIAL RATE OF RETURN

The level of this ratio represents the synthetic and obvious measure of the level of profitability given by the company in its production and trade activity. It advantages

the interests of owners and managers showing their contribution in the procurement of the company's performances.

The analysis of the relation between the volume and utilization of fixed capital (fixed assets) with the commercial rate of return can be done by optimizing the following analysis model:

$$\bar{R}_c = \left(1 - \frac{Cv + A + Cf'}{Tu \cdot \bar{r}} \right) \cdot 100 \quad (1)$$

or

$$\bar{R}_c = \left[1 - \left(\frac{Cv}{Tu \cdot \bar{r}} + \frac{A}{Tu \cdot \bar{r}} + \frac{Cf'}{Tu \cdot \bar{r}} \right) \right] \cdot 100 \quad (2)$$

where:

\bar{R}_c - the economic rate of return;

Cv - the amount of the variable expenses afferent to turnover;

A - suma amortizării mijloacelor fixe aferente cifrei de afaceri;

Cf' - the amount of other fixed expenses without depreciation ;

Tu - the work time of industrial equipments ;

$\bar{r} = \frac{CA}{Tu}$ - the average hourly yield based on turnover .

For the practical exemplification of the disclosure of the volume and utilization of fixed capital (fixed assets) in the commercial rate of return, we use the following:

Table 1.

| No | Indicator | 2007 | 2008 | Change |
|-----|---|-----------|-----------|----------|
| 1. | Turnover | 1.648.000 | 2.600.000 | +950.000 |
| 2. | Work time of industrial equipments - hours | 800.000 | 1.000.000 | +200.000 |
| 3. | The average hourly yield | 2,06 | 2,6 | +0,54 |
| 4. | The amount of the profit afferent to turnover | 165.000 | 312.000 | +147.000 |
| 5. | Variable costs afferent to turnover | 1.039.500 | 1.624.480 | +584.980 |
| 6. | Fixed costs afferent to turnover | 445.500 | 663.520 | +218.020 |
| 7. | Total costs afferent to turnover | 1.485.000 | 2.288.000 | +803.000 |
| 8. | The depreciation of fixed assets afferent to turnover | 32.000 | 42.500 | +10.500 |
| 9. | Other fixed expenses without depreciation | 413.500 | 621.020 | +207.520 |
| 10. | Variable costs from 2007 afferent to the turnover of 2008 $\sum qv_i \cdot cv_o$ | X | 1.552.000 | - |
| 11. | Expenses with depreciation on products from 2007 afferent to the turnover from 2008 | X | 208.000 | - |
| 12. | Other fixed expenses of products from 2007 afferent to the turnover of 2008 | X | 560.000 | - |
| 13. | The commercial rate of return | 9,89% | 12% | +2,11% |

The absolute change of the commercial rate of return in 2008 compared to 2007 with 2.11% is obtained as it follows:

$$\begin{aligned}
\Delta \bar{R}_c &= \bar{R}_{c1} - \bar{R}_{c0} = \left[\left(1 - \frac{Cv_1 + A_1 + Cf'_1}{Tu_1 \cdot r_1} \right) - \left(1 - \frac{Cv_0 + A_0 + Cf'_0}{Tu_0 \cdot r_0} \right) \right] \cdot 100 = \\
&= \left[\left(1 - \frac{1.624.480 + 42.500 + 621.020}{1.000.000 \cdot 2,6} \right) - \left(1 - \frac{1.039.500 + 32.000 + 413.500}{800.000 \cdot 2,06} \right) \right] \cdot 100 = \quad (3) \\
&= \left[\left(1 - \frac{2.288.000}{2.600.000} \right) - \left(1 - \frac{1.485.000}{1.648.000} \right) \right] \cdot 100 = 12 - 9,89 = +2,11\%
\end{aligned}$$

The factorial explanation of the volume and utilization of fixed assets through turnover is done by using the following influences

1. The influence of the turnover value:

$$\begin{aligned}
\Delta_{Ca}^{\bar{R}_c} &= \left[\left(1 - \frac{Cv_0 + A_0 + Cf'_0}{Tu_1 \cdot r_1} \right) - \left(1 - \frac{Cv_0 + A_0 + Cf'_0}{Tu_0 \cdot r_0} \right) \right] \cdot 100 = \\
&= \left[\left(1 - \frac{1.039.500 + 32.000 + 413.500}{1.000.000 \cdot 2,6} \right) - \left(1 - \frac{1.039.500 + 32.000 + 413.500}{800.000 \cdot 2,06} \right) \right] \cdot 100 = \quad (4) \\
&= \left[\left(1 - \frac{1.485.000}{2.600.000} \right) - \left(1 - \frac{1.485.000}{1.648.000} \right) \right] \cdot 100 = 42,88 - 9,89 = +32,99\%
\end{aligned}$$

from which:

1.1 The influence of the total work time:

$$\begin{aligned}
\Delta_{Tu}^{\bar{R}_c} &= \left[\left(1 - \frac{Cv_0 + A_0 + Cf'_0}{Tu_1 \cdot r_0} \right) - \left(1 - \frac{Cv_0 + A_0 + Cf'_0}{Tu_0 \cdot r_0} \right) \right] \cdot 100 = \\
&= \left[\left(1 - \frac{1.039.500 + 32.000 + 413.500}{1.000.000 \cdot 2,06} \right) - \left(1 - \frac{1.039.500 + 32.000 + 413.500}{800.000 \cdot 2,06} \right) \right] \cdot 100 = \quad (5) \\
&= \left[\left(1 - \frac{1.485.000}{2.060.000} \right) - \left(1 - \frac{1.485.000}{1.648.000} \right) \right] \cdot 100 = 27,91 - 9,89 = +18,02\%
\end{aligned}$$

1.2 The influence of the average hourly yield:

$$\begin{aligned}
\Delta_r^{\bar{R}_c} &= \left[\left(1 - \frac{Cv_0 + A_0 + Cf'_0}{Tu_1 \cdot r_1} \right) - \left(1 - \frac{Cv_0 + A_0 + Cf'_0}{Tu_1 \cdot r_0} \right) \right] \cdot 100 = \\
&= \left[\left(1 - \frac{1.039.500 + 32.000 + 413.500}{1.000.000 \cdot 2,6} \right) - \left(1 - \frac{1.039.500 + 32.000 + 413.500}{1.000.000 \cdot 2,06} \right) \right] \cdot 100 = \quad (6) \\
&= \left[\left(1 - \frac{1.485.000}{2.600.000} \right) - \left(1 - \frac{1.485.000}{2.060.000} \right) \right] \cdot 100 = 42,88 - 27,91 = +14,97\%
\end{aligned}$$

2. The influence of total costs:

$$\begin{aligned}\Delta_{G'}^{\bar{Rc}} &= \left[\left(1 - \frac{Cv_1 + A_1 + Cf_1'}{Tu_1 \cdot r_1} \right) - \left(1 - \frac{Cv_0 + A_0 + Cf_0'}{Tu_1 \cdot r_1} \right) \right] \cdot 100 = \\ &= \left[\left(1 - \frac{1.624.480 + 42.500 + 621.020}{1.000.000 \cdot 2,6} \right) - \left(1 - \frac{1.039.500 + 32.000 + 413.500}{1.000.000 \cdot 2,6} \right) \right] \cdot 100 = \quad (7) \\ &= \left[\left(1 - \frac{2.288.000}{2.600.000} \right) - \left(1 - \frac{1.485.000}{2.600.000} \right) \right] \cdot 100 = 12 - 42,88 = -30,88\%\end{aligned}$$

from which:

2.1. The influence of the variable costs afferent to turnover:

$$\begin{aligned}\Delta_{Cv}^{\bar{Rc}} &= \left[\left(1 - \frac{Cv_1 + A_0 + Cf_0'}{Tu_1 \cdot r_1} \right) - \left(1 - \frac{Cv_0 + A_0 + Cf_0'}{Tu_1 \cdot r_1} \right) \right] \cdot 100 = \\ &= \left[\left(1 - \frac{1.624.480 + 32.000 + 413.500}{1.000.000 \cdot 2,6} \right) - \left(1 - \frac{1.039.500 + 32.000 + 413.500}{1.000.000 \cdot 2,6} \right) \right] \cdot 100 = \quad (8) \\ &= \left[\left(1 - \frac{2.069.980}{2.600.000} \right) - \left(1 - \frac{1.485.000}{2.600.000} \right) \right] \cdot 100 = 20,39 - 42,88 = -22,49\%\end{aligned}$$

2.2. The influence of the depreciation amount (expression of the volume of the used working capital):

$$\begin{aligned}\Delta_A^{\bar{Rc}} &= \left[\left(1 - \frac{Cv_1 + A_1 + Cf_0'}{Tu_1 \cdot r_1} \right) - \left(1 - \frac{Cv_1 + A_0 + Cf_0'}{Tu_1 \cdot r_1} \right) \right] \cdot 100 = \\ &= \left[\left(1 - \frac{1.624.480 + 42.500 + 413.500}{1.000.000 \cdot 2,6} \right) - \left(1 - \frac{1.624.480 + 32.000 + 413.500}{1.000.000 \cdot 2,6} \right) \right] \cdot 100 = \quad (9) \\ &= \left[\left(1 - \frac{2.080.480}{2.600.000} \right) - \left(1 - \frac{2.069.980}{2.600.000} \right) \right] \cdot 100 = 19,98 - 20,39 = -0,41\%\end{aligned}$$

2.3. The influence of other fixed assets without depreciation:

$$\begin{aligned}\Delta_{G'}^{\bar{Rc}} &= \left[\left(1 - \frac{Cv_1 + A_1 + Cf_1'}{Tu_1 \cdot r_1} \right) - \left(1 - \frac{Cv_1 + A_1 + Cf_0'}{Tu_1 \cdot r_1} \right) \right] \cdot 100 = \\ &= \left[\left(1 - \frac{1.624.480 + 42.500 + 621.020}{1.000.000 \cdot 2,6} \right) - \left(1 - \frac{1.624.480 + 42.500 + 413.500}{1.000.000 \cdot 2,6} \right) \right] \cdot 100 = \quad (10) \\ &= \left[\left(1 - \frac{2.288.000}{2.600.000} \right) - \left(1 - \frac{2.080.480}{2.600.000} \right) \right] \cdot 100 = 12 - 19,98 = -7,98\%\end{aligned}$$

For verification we have the relation:

$$\Delta \bar{R}_c = \Delta \bar{R}_{CA} + \Delta \bar{R}_{Ct} \Rightarrow 2,11\% = 32,99\% - 30,88\% \Rightarrow 2,11\% = 2,11\% \quad (11)$$

By cutting the variables related to fixed assets in accepting the isolated action (so it enters into the combination of all factors that compete to the completion effect) it is noted that the total working time in which is reflected also the volume and the yield in value on time unit have contributed to the increase of the commercial rate of return (with 18.02% and 14.97%).

The components of costs, through which the depreciation, that express the used volume of fixed assets have determined decreases of the commercial rate of return (the increase of the amount of depreciation has an influence of -1.52%).

By separating the influence 2 which refers to the conversion of the amount of depreciation that reflects the volume and structure of fixed capital and its yield, being involved the depreciation expense at 11eu, we notice the reflection of the three issues in increasing business profitability.

3. OTHER RETURN RATES THROUGH WHICH THE THE VOLUME AND UTILIZATION OF FIXED CAPITAL ARE DISCLOSED

3.1. The disclosure of fixed capital through the economic rate of return-synthesizer

The economic profitability represents a ratio between profit and the value of volume of the company's assets. The different sizes of profit, in the case of economic profitability, refer to the profit's size before tax, this being current or operating profit, or gross operating surplus.

For the rate of return, fixed capital is showed by the following analysis model:

$$Re = \frac{Pc}{At} \cdot 100 = \frac{Pe + Pf}{Ai + Ac} \cdot 100 \quad (12)$$

$$Re = \left[\left(\frac{\bar{M}f}{At} \cdot \frac{\bar{M}fa}{\bar{M}f} \cdot \frac{Ve}{\bar{M}fa} \cdot \frac{Pe}{Ve} \right) \cdot \frac{Pf}{At} \right] \cdot 100 \quad (13)$$

$$Re = \left[\left(\frac{\bar{M}f}{At} \cdot \frac{\bar{M}fa}{\bar{M}f} \cdot \frac{Tu}{\bar{M}fa} \cdot \frac{Ve}{Tu} \cdot \frac{Pe}{Ve} \right) \cdot \frac{Pf}{At} \right] \cdot 100 \quad (14)$$

where:

Re the economic rate of return;

At - total assets;

Pe - operating profit;

Pf - financial profit;

Ai - fixed assets;

$\bar{M}f$ - average value of total fixed assets;

$\bar{M}fa$ - average value of active fixed assets;

Ve - operating revenues;

The factorial exemplification of the economic rate of return by reflecting the fixed capital through the model $Re = \left[\left(\frac{\overline{Mf}}{At} \cdot \frac{\overline{Mfa}}{Mf} \cdot \frac{Ve}{\overline{Mfa}} \cdot \frac{Pe}{Ve} \right) \cdot \frac{Pf}{At} \right] \cdot 100$ implies the following

influences:

1. The influence of the share of fixed assets in total assets:

$$\Delta \frac{Re}{At} = \left[\left(\left(\frac{\overline{Mf}_1}{At_1} - \frac{\overline{Mf}_0}{At_0} \right) \cdot \frac{\overline{Mfa}_0}{\overline{Mf}_0} \cdot \frac{Ve_0}{\overline{Mfa}_0} \cdot \frac{Pe_0}{Ve_0} \right) \cdot \frac{Pf_0}{At_0} \right] \cdot 100 \quad (15)$$

2. The influence of the share of active fixed assets in total fixed:

$$\Delta \frac{Re}{Mf} = \left[\left(\frac{\overline{Mf}_1}{At_1} \cdot \left(\frac{\overline{Mfa}_1}{\overline{Mf}_1} - \frac{\overline{Mfa}_0}{\overline{Mf}_0} \right) \cdot \frac{Ve_0}{\overline{Mfa}_0} \cdot \frac{Pe_0}{Ve_0} \right) \cdot \frac{Pf_0}{At_0} \right] \cdot 100 \quad (16)$$

3. The influence of operating revenues at 1000 lei fixed assets:

$$\Delta \frac{Re}{Mfa} = \left[\left(\frac{\overline{Mf}_1}{At_1} \cdot \frac{\overline{Mfa}_1}{\overline{Mf}_1} \cdot \left(\frac{Ve_1}{\overline{Mfa}_1} - \frac{Ve_0}{\overline{Mfa}_0} \right) \cdot \frac{Pe_0}{Ve_0} \right) \cdot \frac{Pf_0}{At_0} \right] \cdot 100 \quad (17)$$

4. The influence of operating profit at 1 leu operating revenues :

$$\Delta \frac{Re}{Pe} = \left[\left(\left(\frac{\overline{Mf}_1}{At_1} \cdot \frac{\overline{Mfa}_1}{\overline{Mf}_1} \cdot \frac{Ve_1}{\overline{Mfa}_1} \cdot \left(\frac{Pe_1}{Ve_1} - \frac{Pe_0}{Ve_0} \right) \right) \right) \cdot \frac{Pf_0}{At_0} \right] \cdot 100 \quad (18)$$

5. The influence of financial profit at 1000 lei total assets :

$$\Delta \frac{Re}{Pf} = \left[\left(\frac{\overline{Mf}_1}{At_1} \cdot \frac{\overline{Mfa}_1}{\overline{Mf}_1} \cdot \frac{Ve_1}{\overline{Mfa}_1} \cdot \frac{Pe_1}{Ve_1} \right) \cdot \left(\frac{Pf_1}{At_1} - \frac{Pf_0}{At_0} \right) \right] \cdot 100 \quad (19)$$

3.2. The disclosure of fixed capital through the financial rate of return-synthesizer

The financial rate of return (ROE - Return on Equity) is one of the major indicators followed by investors and management. With this rate, investors can assess whether their investment is profitable or not. If the financial rate of return exceeds the cost of capital, than, by the activity, the company creates additional value for shareholders.

Similarly we will notice the impact of volume, structure and use of fixed capital (fixed assets) on the financial rate of return, of course, from this model:

$$Rf = \frac{Pn}{Cpr} \cdot 100 \quad (20)$$

where:

Pn-net profit;

Cpr-owners' equity.

According to the correlation methodology, the volume, structure and utilization of fixed capital are showed by the operating profit in the way that:

$$Pn = [(Pe + Pf + Pext) - \alpha] - I \quad (21)$$

where:

Pex - extraordinary profit;

α - deductions from the taxable income;

I - income tax

This rate is a relevant indicator in assessing the company's position on the market. An increase in the remuneration of capital invested provides: easy access to financial resources due to current owners trust to reinvest in the business and of potential investors - holders of financial resources available for investments, the capacity of development.

The analysis of the financial rate of return allows the breakdown of the influence of determinant factors and identify some significant issues to interpret the performance of the company at level of each of them, using several models of factorial analysis, according to the objectives pursued. In our case the objective is to highlight the volume and use of fixed capital, and the above model translated into a multiplicative model to highlight this objective can be detailed in the following variables:

$$Rf = \left[\left(\frac{\overline{Mf}}{Cpr} \cdot \frac{\overline{Mfa}}{Mf} \cdot \frac{Tu}{\overline{Mfa}} \cdot \frac{Ve}{Tu} \cdot \frac{Pe}{Ve} \right) + \frac{Pf}{Cpr} + \frac{Pext}{Cpr} \right] \cdot 100 \quad (22)$$

Because the first group of variable factors is connected to volume, structure (technological composition) and utilization (extensive and intensive) of assets, by using it we can make quantifications of the reflection in the financial rate of return.

So, the factorial exemplification assumes the following influences :

1. The influence of the share of average fixed assets in owners' equity:

$$\Delta \frac{Rf}{\frac{Mf}{Cpr}} = \left[\left(\left(\frac{\overline{Mf}_1}{Cpr_1} - \frac{\overline{Mf}_0}{Cpr_0} \right) \cdot \frac{\overline{Mfa}_0}{Mf_0} \cdot \frac{Tu_0}{\overline{Mfa}_0} \cdot \frac{Ve_0}{Tu_0} \cdot \frac{Pe_0}{Ve_0} \right) \right] \cdot 100 \quad (23)$$

2. The influence of the share of active fixed assets in total fixed assets:

$$\Delta \frac{Rf}{\frac{Mfa}{Mf}} = \left[\left(\frac{\overline{Mf}_1}{Cpr_1} \cdot \left(\frac{\overline{Mfa}_1}{Mf_1} - \frac{\overline{Mfa}_0}{Mf_0} \right) \cdot \frac{Tu_0}{Mfa_0} \cdot \frac{Ve_0}{Tu_0} \cdot \frac{Pe_0}{Ve_0} \right) \right] \cdot 100 \quad (24)$$

3.The influence of the utilization time of fixed assets:

$$\Delta \frac{Rf}{\frac{Tu}{Mfa}} = \left[\left(\frac{\overline{Mf}_1}{Cpr_1} \cdot \frac{\overline{Mfa}_1}{Mf_1} \cdot \left(\frac{Tu_1}{\overline{Mfa}_1} - \frac{Tu_0}{\overline{Mfa}_0} \right) \cdot \frac{Ve_0}{Tu_0} \cdot \frac{Pe_0}{Ve_0} \right) \right] \cdot 100 \quad (25)$$

4.The influence of operating revenues on time unit:

$$\Delta \frac{Rf}{\frac{Ve}{Tu}} = \left[\left(\frac{\overline{Mf}_1}{Cpr_1} \cdot \frac{\overline{Mfa}_1}{Mf_1} \cdot \frac{Tu_1}{Mfa_1} \cdot \left(\frac{Ve_1}{Tu_1} - \frac{Ve_0}{Tu_0} \right) \cdot \frac{Pe_0}{Ve_0} \right) \right] \cdot 100 \quad (26)$$

5.The influence of operating profit at 1 leu operating revenues:

$$\Delta \frac{Rf}{\frac{Pe}{Ve}} = \left[\left(\frac{\overline{Mf}_1}{Cpr_1} \cdot \frac{\overline{Mfa}_1}{Mf_1} \cdot \frac{Tu_1}{Mfa_1} \cdot \frac{Ve_1}{Tu_1} \cdot \left(\frac{Pe_1}{Ve_1} - \frac{Pe_0}{Ve_0} \right) \right) \right] \cdot 100 \quad (27)$$

6.The influence of the financial profit at 1 leu owners' equity:

$$\Delta \frac{Rf}{\frac{Pf}{Cpr}} = \left(\frac{Pf_1}{Cpr_1} - \frac{Pf_0}{Cpr_0} \right) \cdot 100 \quad (28)$$

7. the influence of the extraordinary profit at 1 ley owners' equity:

$$\Delta \frac{Rf}{\frac{Pext}{Cpr}} = \left(\frac{Pext_1}{Cpr_1} - \frac{Pext_0}{Cpr_0} \right) \cdot 100 \quad (29)$$

3.3. The disclosure of fixed capital through the rate of return of resources consumed- synthesizer

The rate of return of resources consumed is expressed as a ratio between a particular economic result and the costs incurred in obtaining it. It is called the rate of return of costs and in the literature there are views that the optimal level of the rates of return of costs are in the range of 9% -15%.

It shows interest to business managers, who must ensure efficient use of available resources. So c we we consider the following rates:

a) the rate of return of operating costs:

$$\overline{Rce} = \frac{EBE}{Ce - A - Cpe} \cdot 100 \quad (30)$$

or

$$\bar{R}_{ce} = \frac{Pe}{Ce} \cdot 100 \quad (31)$$

where:

Ce - operating costs ;

A - depreciation costs;

Cpe - costs with operating provisions.

b) the rate of return of costs afferent to turnover

$$\bar{R}_{ce} = \frac{Pr}{\sum q \cdot c} \cdot 100 \quad (32)$$

where:

Pr - profit afferent to turnover and the cost of production sold .

c) the rate of return of resources consumed :

$$\bar{R}_c = \left(\frac{Tu \cdot \bar{r}}{Cv + A + Cf'} - 1 \right) \cdot 100 \quad (33)$$

or

$$\bar{R}_c = \left[\left(\frac{Tu \cdot \bar{r}}{Cv} + \frac{Tu \cdot \bar{r}}{A} + \frac{Tu \cdot \bar{r}}{Cf'} \right) - 1 \right] \cdot 100 \quad (34)$$

Over this rate of return the costs have a double action, influencing differently the size of the numerator and of the denominator. In the case of exceeding the unitary costs, the numerator(representing turnover) is reduced and the denominator (representing total costs) increases, what shows the negative influence of this factor over the rate of return of the resources consumed to be more stronger than in the case of other rate.

The factorial explanation assumes the following influences:

1. The influence of total costs:

$$\Delta_{Cr}^{\bar{R}_c} = \left[\left(\frac{Tu_0 \cdot \bar{r}_0}{Cv_1 + A_1 + Cf'_1} - 1 \right) - \left(\frac{Tu_0 \cdot \bar{r}_0}{Cv_0 + A_0 + Cf'_0} - 1 \right) \right] \cdot 100 \quad (35)$$

From which:

1.1 The influence of variable costs :

$$\Delta_{Cv}^{\bar{R}_c} = \left[\left(\frac{Tu_0 \cdot \bar{r}_0}{Cv_1 + A_0 + Cf'_0} - 1 \right) - \left(\frac{Tu_0 \cdot \bar{r}_0}{Cv_0 + A_0 + Cf'_0} - 1 \right) \right] \cdot 100 \quad (36)$$

1.2. The influence of the amount of depreciation :

$$\Delta_A^{\bar{R}_c} = \left[\left(\frac{Tu_0 \cdot \bar{r}_0}{Cv_1 + A_1 + Cf'_0} - 1 \right) - \left(\frac{Tu_0 \cdot \bar{r}_0}{Cv_1 + A_0 + Cf'_0} - 1 \right) \right] \cdot 100 \quad (37)$$

1.3. The influence of other fixed costs:

$$\Delta_{Cf'}^{\bar{Rc}} = \left[\left(\frac{Tu_0 \cdot \bar{r}_0}{Cv_1 + A_1 + Cf'_1} - 1 \right) - \left(\frac{Tu_0 \cdot \bar{r}_0}{Cv_1 + A_1 + Cf'_0} - 1 \right) \right] \cdot 100 \quad (38)$$

2. The influence of turnover :

$$\Delta_{CA}^{\bar{Rc}} = \left[\left(\frac{Tu_1 \cdot \bar{r}_1}{Cv_1 + A_1 + Cf'_1} - 1 \right) - \left(\frac{Tu_0 \cdot \bar{r}_0}{Cv_1 + A_1 + Cf'_1} - 1 \right) \right] \cdot 100 \quad (39)$$

From which:

2.1. The influence of total work time:

$$\Delta_{Tu}^{\bar{Rc}} = \left[\left(\frac{Tu_1 \cdot \bar{r}_0}{Cv_1 + A_1 + Cf'_1} - 1 \right) - \left(\frac{Tu_0 \cdot \bar{r}_0}{Cv_1 + A_1 + Cf'_1} - 1 \right) \right] \cdot 100 \quad (40)$$

2.2. The influence of the average hourly yield:

$$\Delta_r^{\bar{Rc}} = \left[\left(\frac{Tu_1 \cdot \bar{r}_1}{Cv_1 + A_1 + Cf'_1} - 1 \right) - \left(\frac{Tu_1 \cdot \bar{r}_0}{Cv_1 + A_1 + Cf'_1} - 1 \right) \right] \cdot 100 \quad (41)$$

4. THE DISCLOSURE OF FIXED CAPITAL THROUGH THE RATE OF RETURN OF USED CAPITAL (FIXED AND WORKING) - SYNTHESIZER

The model of calculus and analysis of used capital is recommended to be the following one:

$$\bar{Rcro} = \left(\frac{CA}{Cr} \cdot \overline{pr} \right) \cdot 100 = \left[\left(\frac{\sum_{i=1}^n qvi \cdot \bar{pi}}{Mf + Ac} \right) \cdot \left(1 - \frac{\sum_{i=1}^n qvi \cdot ci}{\sum_{i=1}^n qvi \cdot \bar{pi}} \right) \right] \cdot 100 \quad (42)$$

where:

\bar{Rcro} - the rate of return of the used capital;

Cr - real-fixed- working capital;

$\frac{CA}{Cr}$ - the efficiency of real capital.

$\frac{Cr}{pr}$ - average profit at 1 leu turnover ;

qvi - the structure of the production sold;

\bar{pi} - average sale price ;

α - inflation;

$pi - \alpha$ - price less inflation effect;

csj - the physical consumption of resources on products;

pj - the aquisition price-on the resource unit .

The influences that are at the base of the model are:

1. The influence of the efficiency of the real- fixed and working capital

$$\Delta_{\frac{CA}{Cr}}^{\bar{Rcro}} = \left[\left(\frac{CA_1}{Cr_1} - \frac{CA_0}{Cr_0} \right) \cdot \bar{pr}_0 \right] \cdot 100 \quad (43)$$

2. The influence of the average profit at 1 leu turnover :

$$\Delta_{\frac{CA}{pr}}^{\bar{Rcro}} = \left[\frac{CA_1}{Cr_1} \cdot (\bar{pr}_1 - \bar{pr}_0) \right] \cdot 100 \quad (44)$$

From which :

2.1 The influence of the structure of the production sold :

$$\Delta_{\frac{CA}{qvi}}^{\bar{Rcro}} = \left[\frac{CA_1}{Cr_1} \cdot (\bar{pr}' - \bar{pr}_0) \right] \cdot 100 \quad (45)$$

where:

$$\bar{pr}' = 1 - \frac{\sum_{i=1}^n qvi_1 \cdot ci_0}{\sum_{i=1}^n qvi_1 \cdot \bar{pi}_0} \quad (46)$$

2.2. The influence of sale prices on products:

$$\Delta_{\frac{CA}{pi}}^{\bar{Rcro}} = \left[\frac{CA_1}{Cr_1} \cdot (\bar{pr}'' - \bar{pr}') \right] \cdot 100 \quad (47)$$

where:

$$\bar{pr}'' = 1 - \frac{\sum_{i=1}^n qvi_1 \cdot ci_0}{\sum_{i=1}^n qvi_1 \cdot \bar{pi}_1} \quad (48)$$

From which:

2.2.1. The influence of the sale prices on products less the inflation effect:

$$\Delta_{\alpha}^{\bar{Rcro}} = \left[\frac{CA_1}{Cr_1} \cdot (\bar{pr}^{(i)} - \bar{pr}') \right] \cdot 100 \quad (49)$$

where:

$$\bar{pr}^{(i)} = 1 - \frac{\sum_{i=1}^n qvi_1 \cdot ci_0}{\sum_{i=1}^n qvi_1 \cdot \bar{pi}_0 \cdot IP} \quad (50)$$

2.2.2. The influence of the sale prices on products less the inflation effect :

$$\Delta_{pi-\alpha}^{\bar{Rcro}} = \left[\frac{CA_1}{Cr_1} \cdot \left(\overline{pr}^{//} - \overline{pr}^{(i)} \right) \right] \cdot 100 \quad (51)$$

2.3. The influence of costs on products:

$$\Delta_{ci}^{\bar{Rcro}} = \left[\frac{CA_1}{Cr_1} \cdot \left(\overline{pr}_1 - \overline{pr}^{//} \right) \right] \cdot 100 \quad (52)$$

From which:

2.3.1. The influence of the physical consumption of resources on products:

$$\Delta_{csj}^{\bar{Rcro}} = \left[\frac{CA_1}{Cr_1} \cdot \left(\overline{pr}^{(csj)} - \overline{pr}^{//} \right) \right] \cdot 100 \quad (53)$$

where:

$$\overline{pr}^{(csj)} = \frac{\sum_{i=1}^n qvi_1 \cdot \sum_{j=1}^m (csj_1 \cdot pj_0)}{\sum_{i=1}^n qvi_1 \cdot \overline{pi}_1} \quad (54)$$

2.3.2. The influence of acquisition prices on the resource unit:

$$\Delta_{pj}^{\bar{Rcro}} = \left[\frac{CA_1}{Cr_1} \cdot \left(\overline{pr}_1 - \overline{pr}^{(csj)} \right) \right] \cdot 100 \quad (55)$$

5. CONCLUSIONS

The influencing factors of the efficiency of fixed assets represent growth reserves of profitability. In assessing the overall efficiency of production factors is necessary to highlight the correlations of efficiency at the enterprise level, which allow the establishment of factorial interdependencies and their intensity, identifying the measures needed for improving the performances of the company. From this point of view we have to take into consideration the following correlations:

• Dependent variable:

$\frac{P}{Mf}$ - profit at 1 leu fixed assets;

$\frac{CA}{Mf}$ - turnover at 1 leu fixed assets;

$\frac{Qf}{Mf}$ - manufactured production at 1 leu fixed assets.

• Independent variables:

$\frac{Q_f}{Q_{\max}}$ - the degree of utilization of the production capacity;

$\frac{M_{fa}}{M_f}$ - the technological composition of fixed assets;

$\frac{Q_f}{N_s}$ - labour productivity.

The character of the economic efficiency of the utilization of fixed capital is completed by the analysis of some correlation indicators as:

- the correlation between fixed capital and production- for having a better efficiency of the utilization of fixed capital is necessary that the volume of the annual production to increase in a faster rate (value) than the annual average value of fixed capital ;
- the correlation between labour productivity and technical endowment- an efficient use of fixed capital is done when we have a faster rate of increase of the index of labour productivity comparatively with the index of technical endowment with fixed capital.

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INTERNATIONAL TOURIST ARRIVALS IN THAILAND: FORECASTING WITH ARFIMA-FIGARCH APPROACH

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ABSTRACT: *Forecasting is an essential analytical tool for tourism policy and planning. This paper focuses on forecasting methods based on ARFIMA(p,d,q)-FIGARCH(p,d,q). Secondary data was used to produce forecasts of the number of international tourist arrivals to Thailand for the period of 2009-2010. Research results during this period confirm that the best forecasting method based on the ARFIMA(p,d,q)-FIGARCH(p,d,q) model is ARFIMA(1,-0.45,1)-FIGARCH(1,-0.07,1). Furthermore, this model predicts that the number of international tourist arrivals in Thailand for the period of 2009-2010 will not go up or be constant. If these results can be generalized for future years, then it suggests that both the Thai government sector and also the private tourism industry sector of Thailand need to develop the tourism market of Thailand immediately and also develop tourism products in Thailand urgently.*

KEY WORDS: *Thailand; ARFIMA-FIGARCH method; International Tourists*

JEL CLASSIFICATION: *C53, L83*

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1. INTRODUCTION

Tourism is a very important industry to Thailand's economy. It contributes significantly to Thailand's gross domestic product (GDP), affecting employment, investment, and foreign exchange earnings (TAT, 2006). In 2003, Thailand ranked 15th in international tourism receipts (US\$7.9 billion), accounting for 1.7% of the world total, or 4.4% of the country's national product (WTO, 2005). International tourism is the fastest growing industry in Thailand. The country has continuously experienced growth in the number of tourists and revenues from the industry. The number of international tourists in Thailand increased from 7.22 million in 1997 to 11.52 million in 2005. The revenues also increased, from 299 billion baht in 1997 to 450 billion baht in 2005. Moreover, the number of international tourists in Thailand increased from 11.52 million in 2005 to 13.8 million in 2006. The revenues increased from 367 billion baht in 2005 to 482 billion baht in 2006. During the period of 1997-2005, Thailand faced many challenges. For example, the Asian Economic Crisis in 1997, the effects of September 11, 2001, the outbreak of severe acute respiratory syndrome (SARS), the beginning of the US-Iraqi War in 2003, the outbreak of avian influenza (bird flu), the tsunami in 2004, and escalating oil prices in 2005. Furthermore, Thailand's tourism industry likely will suffer throughout 2009 with significant a loss of revenue and loss of jobs, as in the middle of 2008 a severe worldwide recession dampened the desire to travel.

Thailand has also suffered from political instability, including the closure of Suvarnabhumi Airport (beginning 26 November 2008, by the "Yellow Shirt" 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, swine 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 public by Health Minister Witthaya Kaewparadai that two Thais who returned from Mexico had been infected with swine flu and subsequently recovered. Whether a real pandemic lies ahead is still unclear. However, it seems this new flu strain is less lethal than initially suspected. Those involved with the international tourism industry of Thailand are interested in both the Thai government and the private tourism sector of Thailand because the number of international tourists and their expenditures are going up every year. In 2006, the number of international tourists increased from 13.8 million to 14.4 million in 2007. Moreover, the international tourists' expenditure in Thailand also increased from 482,319 million baht in 2006 to 502,497 million baht in 2007.

Forecasting is an essential analytical tool for tourism policy and planning. The new forecasting models are also interesting. Recently, Fong-Lin Chu (2008) used the ARFIMA(p,d,q) model to forecast the number of international tourists arrival in Singapore. From many articles it was found that the ARFIMA-FIGARCH model had not previously been used for forecasting the number of international tourist arrivals to

destination countries. Consequently this paper would like to forecast the number of international tourist arrivals to Thailand during period of 2009-2010.

2. RESEARCH AIM AND OBJECTIVE

This research paper aims to predict the number of international tourist arrivals to Thailand during the period of 2009-2010 and also to seek the best forecasting model for forecasting the number of international tourist arrivals to Thailand during the same period.

3. SCOPE OF THIS RESEARCH

The scope of this research focuses on the period of 1998-2010 and most of the data used for analysis is secondary data. The countries used for forecasting are those of importance to Thailand's international tourism industry (Source of Data: Immigration Bureau, Police Department.). The variable used in this research is the number of international tourist arrivals to Thailand during the period of 1998-2008 to forecast for the period of 2009-2010.

4. THE RESEARCH FRAMEWORK FOR 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. Five patterns are highlighted 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 (N. Rangaswamy, Prasert and Chukiat, 2006, 2009). In this paper, focus on forecasting a single variable approach as well as this variable was used to forecast the number of international tourists arrival to Thailand during the period of 1998-2008. Also, the ARFIMA-FIGARCH model was used to forecast the number of international tourists arrival to Thailand during the period of 2009-2010. However, this model has not previously been used for forecasting the number of international tourist arrivals to Thailand.

4.1. The general model of ARFIMA

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

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

where:

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

S = the seasonal period

$\Phi(B) = (1 - \Phi_1 B - \dots - \Phi_p B^p)$ 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

ARFIMA models were proposed by Granger and Joyeux (1980). Following 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 given by: (see equation 14E).

$$\Phi(\beta) \Delta^d y_t = \delta + \theta(\beta) \varepsilon_t \tag{14E}$$

with $\Phi(\beta) = 1 - \Phi_1 \beta - \Phi_2 \beta^2 - \dots - \Phi_p \beta^p$
 $\theta(\beta) = 1 - \theta_1(\beta) - \theta_2(\beta)^2 - \dots - \theta_q(\beta)^q$

where

δ = constant term

$\theta(\beta)$ = moving-average operator at order q

ε_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 the future values of the process
- The process is short memory for $d=0$ corresponding to a standard ARMA process

4.2. The general model of FIGARCH

The simplest GARCH model is the GARCH(1,1) model: (see equation 4H)

$$\sigma_t^2 = \alpha_0 + \alpha_1 \mu_{t-1}^2 + \lambda_1 \sigma_{t-1}^2 \tag{4H}$$

Now the variance of the error term has three components: a constant, the last period's volatility (the ARCH term), and the last period's variance (the GARCH term). In general, it could have any number of ARCH terms and any number of GARCH terms, and the GARCH (p,q) model refers to the following equation for σ_t^2 (see 5G).

$$\sigma_t^2 = \alpha_0 + \alpha_1 \mu_{t-1}^2 + \dots + \alpha_p \mu_{t-p}^2 + \lambda_1 \sigma_{t-1}^2 + \dots + \lambda_q \sigma_{t-q}^2 \tag{5H}$$

Baillie, et al. (1996) proposed a fractional integrated GARCH (FIGARCH) model to determine long memory in return volatility. The FIGARCH(p,d,q) process is defined as follows: $(1-L)^d \Phi(L)\varepsilon_t^2 = \omega + [1 - \beta(L)]v_t$, where $v_t = \varepsilon_t^2 - \sigma_t^2$ and also the FIGARCH model derived from standard GARCH model with fractional difference operator, $(1-L)^d$. The FIGARCH(p,d,q) model is transformed standard GARCH when $d = 0$ and IGARCH model when $d = 1$.

4.3. Data Description

Table (1a) and figure (b) present the data of Thailand's international tourism industry. For example, the number of international tourists, their average length of stay, the average of tourists' expenditures both per person and per day, and the revenue of international tourists arrivals to Thailand during the period of 1997-2006. In 1997 the number of international tourists arriving to Thailand was 7.22 million people and most of them had an average length of stay in Thailand of 8.33 days. Also, they had an average expenditure per day of 3,671.85 baht. Moreover, in the same year, Thailand received revenue from them of 220,754 million baht. In 2000 the number of international tourists arrival to Thailand was 9.51 million people and most of them had an average length of stay in Thailand of 7.77 days. In addition, they had an average expenditure per day of 3,861.19 baht. Moreover, in the same year Thailand received revenue from them of 285,272 million baht. In 2006 the number of international tourists arrival to Thailand was 13.82 million people, and they had an average length of stay in Thailand of 8.62 days. They had an average expenditure per day of 4,048.22 baht. Moreover, in the same year Thailand received revenue from them of 482,319 million baht (see more details of data in table (1a)).

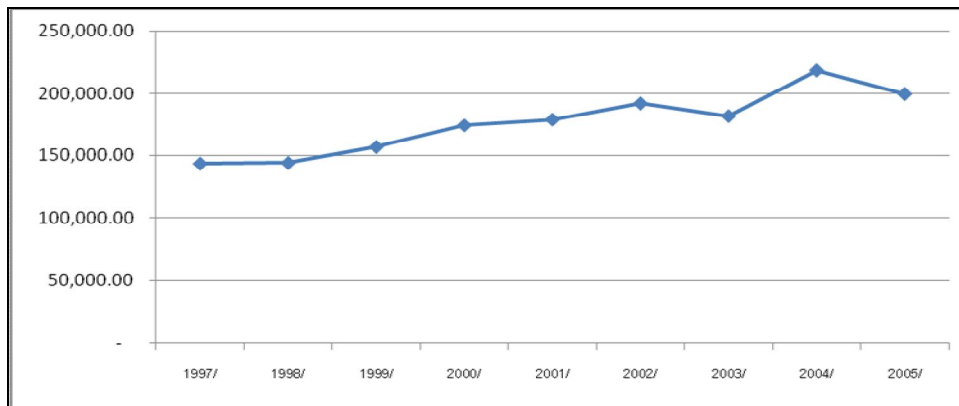
Table 1a. Presenting the important data of international tourist arrivals to Thailand during the period of 1997-2006

| Year | Tourists | | Average Length of Stay (Days) | Average Expenditure | | Revenue | |
|------|------------------|------------|-------------------------------|---------------------|------------|----------------|------------|
| | Number (Million) | Change (%) | | person/day (Baht) | Change (%) | Million (Baht) | Change (%) |
| 1997 | 7.22 | 0.41 | 8.33 | 3,671.87 | -0.92 | 220,754 | 0.63 |
| 1998 | 7.76 | 7.53 | 8.4 | 3,712.93 | 1.12 | 242,177 | 9.7 |
| 1999 | 8.58 | 10.5 | 7.96 | 3,704.54 | -0.23 | 253,018 | 4.48 |
| 2000 | 9.51 | 10.82 | 7.77 | 3,861.19 | 4.23 | 285,272 | 12.75 |
| 2001 | 10.06 | 5.82 | 7.93 | 3,748.00 | -2.93 | 299,047 | 4.83 |
| 2002 | 10.8 | 7.33 | 7.98 | 3,753.74 | 0.15 | 323,484 | 8.17 |
| 2003 | 10.00 | -7.36 | 8.19 | 3,774.50 | 0.55 | 309,269 | -4.39 |
| 2004 | 11.65 | 16.46 | 8.13 | 4,057.85 | 7.51 | 384,360 | 24.28 |
| 2005 | 11.52 | -1.15 | 8.2 | 3,890.13 | -4.13 | 367,380 | -4.42 |
| 2006 | 13.82 | 20.01 | 8.62 | 4,048.22 | 4.06 | 482,319 | 31.29 |

From: Office of Tourism Development

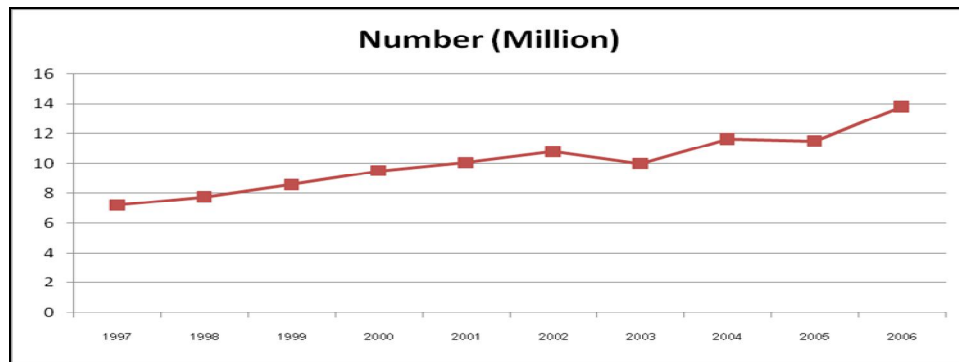
In figure (a) shown that the graphical of international tourists' expenditure in Thailand for during period of 1997-2005 by real terms. In 1997 the value of international tourists' expenditure in Thailand was 143,346.75 million baht and also in

2000 the value of international tourists' expenditure in Thailand was 174,371.64 million baht. In 2002 the value of international tourists' expenditure in Thailand was 192,092.64 million baht. In 2003 the value of international tourists' expenditure in Thailand was 181,922.94 million baht. Moreover, in 2004 the value of international tourists' expenditure in Thailand was 218,262.35 million baht. From this graphical presented that the value of international tourists' expenditure in Thailand grew up more than 100% from period of 1997-2005.



From: Office of Tourism Development (Unit: Million Bath)

Figure (a). Graphical present the value of international tourists' expenditure in Thailand for during period of 1997-2005 (Real terms)



From: Office of Tourism Development

Figure (b). Graphical present the number of international tourists arrival in Thailand for during period of 1997-2006

5. FORECASTING MODELS' ACCURACY BASED ON CONCEPT OF BOTH THE AIC (AKAIKE, 1973) AND BIC (BAYESIAN INFORMATION CRITERION)

Table 1 shows the forecasting method based on ARFIMA-FIGARCH models for forecasting the number of international tourist arrivals in Thailand during the

period of 2009 to 2010. The value of both AIC and BIC in each of ARFIMA-FIGARCH models was used for selecting the best ARFIMA-FIGARCH model for forecasting the number of international tourist arrivals in Thailand for this period.

Table 1. Accuracy comparison in samples for different forecasting models based on concepts of both AIC criterion and BIC criterion

| Number | Models of forecasting | AIC | BIC |
|--------|--|--------|--------|
| 1 | ARFIMA(1,d,1)-FIGARCH(1,d,1) d of ARFIMA = -0.458 , d of FIGARCH = -0.078 | 4.664 | 25.053 |
| 2 | ARFIMA(1,d,2)-FIGARCH(1,d,1) d of ARFIMA = 0.271 , d of FIGARCH = -0.133 | 6.598 | 29.899 |
| 3 | ARFIMA(1,d,3)-FIGARCH(1,d,1) d of ARFIMA = 0.164, d of FIGARCH = -0.143 | 8.587 | 34.801 |
| 4 | ARFIMA(3,d,3)-FIGARCH(1,d,1) d of ARFIMA = 0.271, d of FIGARCH = -0.072 | 12.533 | 39.659 |

Form: computed

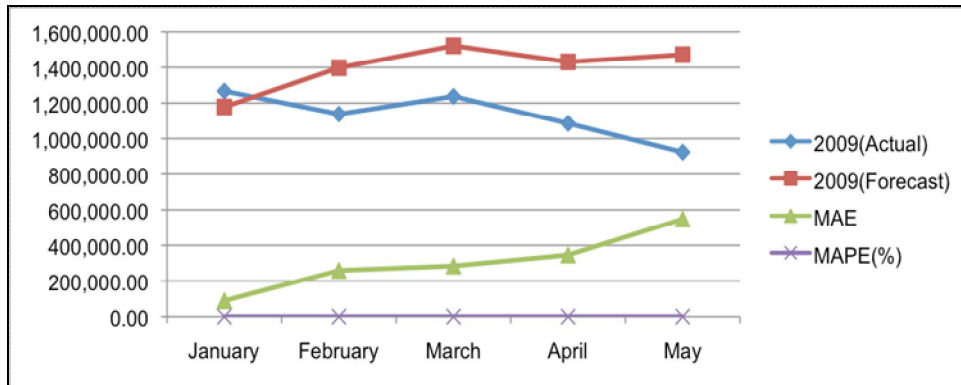
From table 1, the best model to forecast the number of international tourist arrivals in Thailand during the specified period is ARFIMA(1,-0.458,1)-FIGARCH(1,-0.078,1) and the value of Akaike Criteria(AIC) from this model is 4.66. Also the value of BIC from this model is 25.05.

Table 2. Forecast of the number of international tourist arrivals to Thailand during the period of 2009 to 2010 based on ARFIMA(1,-0.458,1)-FIGARCH(1,-0.078,1) (MAE: Mean Absolute Error, MAPE(%): Mean Absolute Percentage Error)

| Month/Year | 2009(Actual) | 2009(Forecast) | MAE | MAPE(%) |
|--------------|---------------------|----------------------|-------------------|--------------|
| January | 1,267,029.00 | 1,178,170.00 | 88,859.00 | 7.01 |
| February | 1,138,092.00 | 1,397,645.65 | 259,553.65 | 22.81 |
| March | 1,237,507.00 | 1,521,877.47 | 284,370.47 | 22.98 |
| April | 1,085,351.00 | 1,431,083.54 | 345,732.54 | 31.85 |
| May | 923,918.00 | 1,472,160.04 | 548,242.04 | 59.34 |
| June | | 1,397,874.60 | | |
| July | | 1,213,473.46 | | |
| August | | 1,163,847.31 | | |
| September | | 1,146,743.07 | | |
| October | | 1,266,587.85 | | |
| November | | 1,158,808.41 | | |
| December | | 884,082.71 | | |
| Total | 5,651,897.00 | 15,232,354.09 | 305,351.54 | 28.80 |
| Month/Year | 2010(Actual) | 2010(Forecast) | MAE | MAPE(%) |
| January | | 1,087,277.41 | | |
| February | | 1,069,279.90 | | |
| March | | 1,149,748.35 | | |
| April | | 1,259,342.54 | | |
| May | | 1,131,364.22 | | |
| June | | 1,230,374.84 | | |
| July | | 1,079,251.17 | | |

From: computed

This model is the best model of all of these models because the value of both AIC and BIC is less than other models (Torre, Didier and Lemoine, 2007). Consequently, the ARFIMA(1,d,1)-FIGARCH(1,d,1) model was used for forecasting the number of international tourist arrivals in Thailand for this period (see more details in Table 2 and Figure 1).



From: compute

Figure 1. Graphical presentation of forecast for the number of international tourist arrivals in Thailand for the period of 2009 based on ARFIMA-FIGARCH

6. THE CONCLUSIONS OF RESEARCH AND POLICY RECOMMENDATIONS

This paper provides forecasting analysis of the numbers of international tourist arrivals to Thailand for the period of 2009 to 2010 based on the ARFIMA-FIGARCH model. The best ARFIMA-FIGARCH model is the ARFIMA(1,-0.458,1)-FIGARCH(1,-0.078,1) model because this model has a value of Akaike Criteria(AIC) = 4.664 and the value of BIC = 25.053. The value of both AIC and BIC from this model is much lower than that of other models. Hence, this model has been selected to be the best model to forecast the number of international tourist arrivals to Thailand for a specific period (see more details in Torre, Didier and Lemoine, 2007). The ARFIMA(1,-0.458,1)-FIGARCH(1,-0.078,1) model predicts that in 2009 the number of international tourist arrivals to Thailand will be 15.2 million people (see more information in table 2 and figure 1). Moreover, the value of Mean Absolute Error (MAE) is 0.3 million people in the period of January-May, 2009. Also, the value of Mean Absolute Percentage Error (MAPE(%)) is 28.80% for the same period (see more information in table 2 and figure 1).

Therefore, the conclusion of this research is that in the next one and half years (2009-2010), the number of international tourist arrivals to Thailand will not go up. This result was similar to the information provide by the Tourism Council of Thailand (TCT), which told that in 2009 the number of international tourists will be constant or decrease because of negative impact factors affecting the international tourism industry of Thailand, such as the world economy slowdown, the world's price of fuel going up, and the 2009 H1N1 flu virus. 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 develop the tourism market of Thailand more, and also develop tourism products in Thailand. In terms 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 keeping high quality accommodations, restaurants, and services in the tourism market of Thailand as well. In terms of tourism product development, there is a need to keep on improving both the quality and management of tourist products in Thailand. For example, to develop tourist destinations in Thailand, provide education about tourism to people in the tourism industry of Thailand, and decrease the negative image of tourist destinations in Thailand (Chaitip & Chaiboonsri, 2009).

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INTERNATIONAL TOURISTS' EXPENDITURES IN THAILAND: A MODELLING OF THE ARFIMA-FIGARCH APPROACH

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ABSTRACT: *Forecasting is an essential analytical tool for tourism policy and planning. This paper focuses on forecasting methods based on ARFIMA(p,d,q)-FIGARCH(p,d,q). Secondary data was used to produce forecasts of international tourists' expenditures in Thailand for the period 2009-2010. The results of this research for this period confirms that the best forecasting method based on ARFIMA(p,d,q)-FIGARCH(p,d,q) method is the ARFIMA(1,-0.672,1)-FIGARCH(1,-0.180,1) method. Furthermore, this method predicts the expenditures of tourists in Thailand for the period of 2009-2010 will be constant or decline. If these results can be generalized for future years, then it suggests that both the Thailand government sector and also the private tourism industry sector of Thailand need to develop the tourism market of Thailand immediately and also develop tourism products in Thailand.*

KEY WORDS: *Thailand; ARFIMA-FIGARCH method; International Tourists' Expenditure*

JEL CLASSIFICATION: *C53, L83*

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1. INTRODUCTION

International tourist arrivals and international tourist receipts have traditionally been used as a benchmark to assess the overall importance of tourism worldwide and in specific countries. High international tourist arrivals may be 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 tourism plays in an economy in terms of both gross domestic product and foreign exchange generation. Policymakers may subsequently be convinced to assist tourism development and further increase profitability from tourism activities.

Hence, it is not surprising that the majority of World Tourism Organization (WTO) statistics focus on these annual changes and market shares (Papatheodorou & 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 consistently experienced positive surpluses in their trade account, increasing from US\$6 billion in 1980 to US\$62.2 billion in 1996 (UNCTAD, 1998).

International tourist arrivals increased from 25 million in 1950 to 808 million in 2005, represented 6.5% annual growth rate, despite wars, terrorism, tsunamis and other crises. The revenue generated from these arrivals has increased 11.2% annually during the same period and outgrown the world economy. Tourism accounts for 40% of all exports of services and revenues from the industry, and its revenues have grown stronger than international trade. In 2005, tourism receipts were US\$682 billion, which exceeded those from oil exports, food products, and automobiles (WTO, 2006).

Tourism is a very important industry to Thailand's economy. It contributes to Thailand's gross domestic product (GDP), affecting employment, investment, and foreign exchange earnings (TAT, 2006). In 2003, Thailand ranked 15th in international tourism receipts (US\$7.9 billion), accounting for 1.7% of the world total, or 4.4% of the country's national product (WTO, 2005). International tourism is the fastest growing industry in Thailand. The country has continuously experienced growth in the number of tourists and revenue from the industry. The number of international tourists in Thailand increased from 7.22 million in 1997 to 13 million in 2005. The revenues increased from 299 billion baht in 1997 to 450 billion baht in 2005. During 1997-2005, Thailand faced many challenges.

For example, the Asian Economic Crisis in 1997, the effects of September 11, 2001, the outbreak of Severe Acute Respiratory Syndrome (SARS), the beginning of the US-Iraqi War and the outbreak of Avian Influenza (Bird Flu), both in 2003, the tsunami in 2004, and high oil prices in 2005. However, the international tourism industry of Thailand continues to demand interest from both Thailand's government sector, as well as the private sector of Thailand because the number of international tourists and their expenditures are going up every year. In 2006, the number of international tourists increased from 13.8 million to 14.4 million in 2007. Moreover, international tourists' expenditures in Thailand also increased from 482,319 million baht in 2006 to 502,497 million baht in 2007.

Forecasting is an essential analytical tool for tourism policy and planning. The new forecasting models are also interesting. Recently, Fong-Lin Chu (2008) used the ARFIMA(p,d,q) model to forecast the number of international tourists arrival in Singapore. From searching many articles, it has been found that the ARFIMA-FIGARCH model has not previously been used for forecasting the international tourists' expenditure or arrivals to destination countries. Consequently this paper will forecast international tourists' expenditures in Thailand for the period of 2009-2010.

2. RESEARCH AIM AND OBJECTIVE

This research aims to predict the expenditure of international tourists arriving in Thailand in the period of 2009-2010, and also to seek the best forecasting model for forecasting the international tourists' expenditures in Thailand during the same period.

3. SCOPE OF THIS RESEARCH

The scope of this research focuses on the period of 2000-2010, and most of the data was secondary data. The countries were used for forecasting the expenditure of international tourist arrivals to Thailand were all the countries that have impact on the international tourism industry of Thailand (Source of Data: Immigration Bureau, Police Department.). The variables used in this research were both the numbers of international tourist arrivals to Thailand from 2000-2008 and the expenditures by them from the same period to forecast for the period of 2009-2010.

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.

Five highlighted patterns in a tourism time series are: (a) seasonality, (b) stationarity, (c) linear trends, (d) non-linear trends, 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 is best used for short-term to medium-term forecasting (N. Rangaswamy, Prasert and Chukiat, 2006, 2009).

In this paper, focus on forecasting a single variable approach as well as these variables as both the number of international tourists arrival to Thailand for the period of 2000-2008 and the expenditure by them for the period of 2000-2008. Also, the ARFIMA-FIGARCH model was used to forecast the international tourists' expenditure arrival to Thailand during the period of 2009-2010. However, this model has not previously been used for forecasting the international tourists' expenditures in Thailand.

4.1. The general model of ARFIMA

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

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

where:

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

S = the seasonal period

$\Phi(B) = (1 - \phi_1 B - \dots - \phi_p B^p)$ 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

ARFIMA models were 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 by: (see equation 14E).

$$\Phi(\beta)\Delta^d y_t = \delta + \theta(\beta)\varepsilon_t \quad (14E)$$

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

δ = constant term

$\theta(\beta)$ = moving-average operator at order q

ε_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

4.2. The general model of FIGARCH

The simplest GARCH model is the GARCH(1,1) model: (see equation 4H)

$$\sigma_t^2 = \alpha_0 + \alpha_1 \mu^2_{t-1} + \lambda_1 \sigma^2_{t-1} \tag{4H}$$

Now the variance of the error term has three components: a constant, the last period's volatility (the ARCH term), and the last period's variance (the GARCH term). In general, it could have any number of ARCH terms and any number of GARCH terms, and the GARCH (p,q) model refers to the following equation for σ_t^2 (see 5G).

$$\sigma_t^2 = \alpha_0 + \alpha_1 \mu^2_{t-1} + \dots + \alpha_p \mu^2_{t-p} + \lambda_1 \sigma^2_{t-1} + \dots + \lambda_q \sigma^2_{t-q} \tag{5H}$$

Baillie, et al. (1996) proposed a fractional integrated GARCH (FIGARCH) model to determine long memory in return volatility. The FIGARCH(p,d,q) process is defined as follows:

$$(1-L)^d \Phi(L) \varepsilon_t^2 = \omega + [1 - \beta(L)] v_t \tag{1y}$$

where $v_t = \varepsilon_t^2 - \sigma_t^2$ and also the FIGARCH model derived from standard GARCH model with fractional difference operator, $(1-L)^d$. The FIGARCH(p,d,q) model is transformed standard GARCH when $d = 0$ and IGARCH model when $d = 1$.

4.3. The Mean Absolute Error (MAE)

In statistics, the Mean Absolute Error (MAE) is a quantity used to measure how close forecasts or predictions are to the eventual outcomes. The mean absolute error (MAE) is presented by equation (1X).

$$MAE = \frac{1}{n} \sum_{i=1}^n |f_i - y_i| = \frac{1}{n} \sum_{i=1}^n |e_i| \tag{1X}$$

As the name suggests, the mean absolute error is an average of the absolute errors $e_i = f_i - y_i$, where f_i is the prediction and y_i is the true value. Note that alternative formulations may include relative frequencies as weight factors.

The mean absolute error is a common measure of forecast error in time series analysis and also this paper use Mean Absolute Error (MAE) measure the error of the international tourists' expenditure in Thailand for during period of 2009-2010 based on concept of ARFIMA forecasting method.

4.4. The Mean Absolute Percentage Error (MAPE)

In statistics, the Mean Absolute Error (MAE) is measure of accuracy in a fitted time series value in statistics, specifically trending. It usually has been expressed accuracy by a percentage and the formula of MAPE be able to present in equation (2X)

$$\text{MAPE} = \frac{1}{n} \sum_{t=1}^n \left| \frac{A_t - F_t}{A_t} \right| \quad (2X)$$

where

A_t is the actual value

F_t is the forecast value.

The difference between A_t and F_t is divided by the actual value A_t again. The absolute value of this calculation is summed for every fitted or forecasted point in time and divided again by the number of fitted points n . This makes it a percentage error so one can compare the error of fitted time series that differ in level. And also this paper use MAPE measure of accuracy in international tourists' expenditure based on concept of ARFIMA forecasting method.

The guidelines for MAPE's interpretation are as follows: If the MAPE value is less than 10%, it is "highly accurate" forecasting. If the MAPE value is between 10%-20%, it is "good" forecasting. If the MAPE value is between 20-50%, it is "reasonable" forecasting. If the MAPE value is greater than 50%, it is "inaccurate" forecasting (Lewis, 1982).

4.5. Akaike Information Criterion (AIC)

Akaike's Information Criterion (AIC) was developed by Hirotugu Akaike (1974) and is a measure of the goodness of fit of an estimated statistical model. In the general case, it can be written in equation 3X and this equation is able to show that:

$$AIC = 2k - 2 \ln(L) \quad (3X)$$

where k is the number of parameters in the statistical model, and L is the maximize value of the likelihood function for the estimated model. The AIC is not a test of the model in the sense of hypothesis testing, rather it is a test between models - a tool for model selection. And the lowest AIC being the best model was selected.

4.6. Bayesian Information Criterion (BIC)

The Bayesian Information Criterion (BIC) or Schwarz Criterion (SBC) is a criterion for model selection among a class of parametric models with different numbers of parameters. In the general case, it can be written in equation 4X and this equation also be able to show below that:-

$$-2 \cdot \ln p(x|k) \approx \text{BIC} = -2 \cdot \ln L + k \ln(n). \quad (4X)$$

where

n = the number of observations, or the sample size;

k = the number of free parameters to be estimated if the estimated model is a linear regression, k is the number of regressors, including the constant;

L = the maximized value of the likelihood function for the estimated model.

The BIC is not a test of the model in the sense of hypothesis testing, rather it is a test a models to determine which is the best modelas selected by the lowest BIC, or the model with the lower value of BIC is the one to be preferred.

4.7. Data Description

Table (1a) presents the data of Thailand's international tourism industry. For example, the number of international tourists, their average length of stay, the average of tourists' expenditures both per person and per day, and the revenue generated from international tourists' arrivals to Thailand during the period of 1997-2006. In 1997 the number of international tourists arrival to Thailand was 7.22 million people and most of them had an average length of stay of 8.33 days. Also, most of them had an average expenditure per day of 3,671.85 baht.

Moreover, in the same year Thailand received revenue from them of 220,754 million baht. In 2000 the number of international tourists arrival to Thailand was 9.51 million people and most of them had an average length of stay in Thailand of 7.77 days. Also, most of them had an average expenditure per day of 3,861.19 baht. Moreover, in the same year Thailand received revenue from them of 285,272 million baht. In 2006 the number of international tourists arrival to Thailand was 13.82 million people and most of them had an average length of stay of 8.62 days. Also, most of them had average expenditures per day of 4,048.22 baht. Moreover, in the same year Thailand received revenue from them of 482,319 million baht (see more details of data in table (1a)).

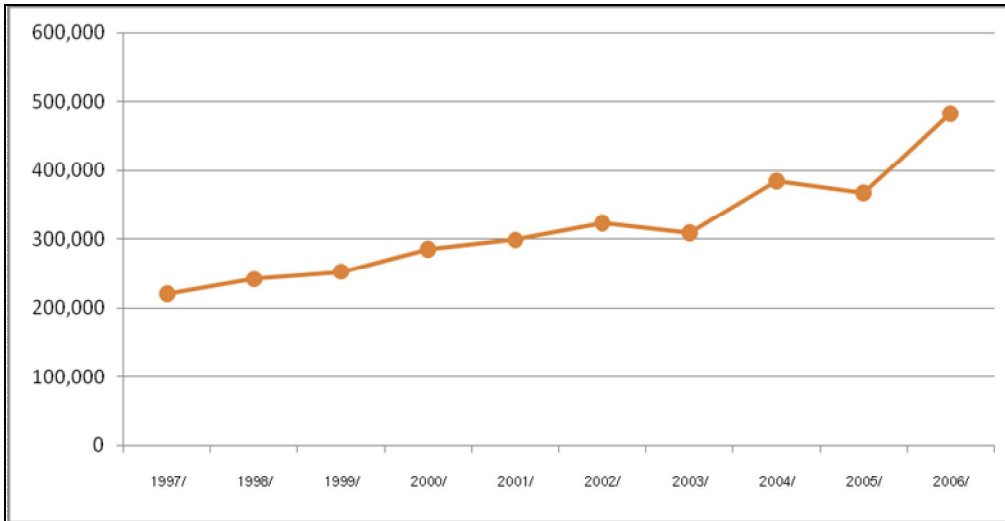
Table 1a. The important data of international tourist arrivals to Thailand during the period of 1997-2006

| Year | Tourists | | Average | Average Expenditure | | Revenue | |
|------|-----------|--------|----------------|---------------------|--------|---------|--------|
| | Number | Change | Length of Stay | /person/day | Change | Million | Change |
| | (Million) | (%) | (Days) | (Baht) | (%) | (Baht) | (%) |
| 1997 | 7.22 | 0.41 | 8.33 | 3,671.87 | -0.92 | 220,754 | 0.63 |
| 1998 | 7.76 | 7.53 | 8.4 | 3,712.93 | 1.12 | 242,177 | 9.7 |
| 1999 | 8.58 | 10.5 | 7.96 | 3,704.54 | -0.23 | 253,018 | 4.48 |
| 2000 | 9.51 | 10.82 | 7.77 | 3,861.19 | 4.23 | 285,272 | 12.75 |
| 2001 | 10.06 | 5.82 | 7.93 | 3,748.00 | -2.93 | 299,047 | 4.83 |
| 2002 | 10.8 | 7.33 | 7.98 | 3,753.74 | 0.15 | 323,484 | 8.17 |
| 2003 | 10.00 | -7.36 | 8.19 | 3,774.50 | 0.55 | 309,269 | -4.39 |
| 2004 | 11.65 | 16.46 | 8.13 | 4,057.85 | 7.51 | 384,360 | 24.28 |
| 2005 | 11.52 | -1.15 | 8.2 | 3,890.13 | -4.13 | 367,380 | -4.42 |
| 2006 | 13.82 | 20.01 | 8.62 | 4,048.22 | 4.06 | 482,319 | 31.29 |

From: Office of Tourism Development

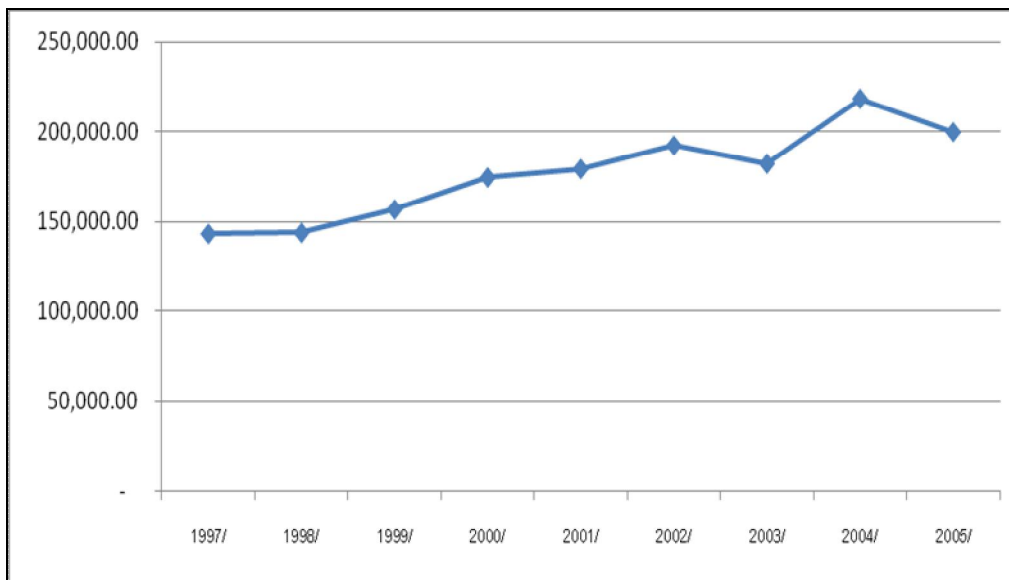
Figure (a) shows the graphical representation of international tourists' expenditures in Thailand during the period of 1997-2006 by nominal tourists' expenditure. In 1997 the value of international tourists' expenditures in Thailand was 220,754 million baht, and in 2000 the value of international tourists' expenditures in

Thailand was 285,272 million baht. Moreover, in 2006 the value of international tourists' expenditures in Thailand was 482,319 million baht. From this graphic, it is presented that the value of international tourists' expenditures in Thailand grew up more than 100% during the period of 1997-2006.



From: Office of Tourism Development (Unit: Million Baht)

Figure (a). Graphical presentation of the value of international tourists' expenditure in Thailand for the period of 1997-2006 (Nominal terms)



From: Office of Tourism Development (Unit: Million Baht)

Figure (b). Graphical presentation of the value of international tourists' expenditures in Thailand during the period of 1997-2005 (Real terms)

Figure (b) shows the graphical representation of international tourists' expenditures in Thailand for the period of 1997-2005 by real terms. In 1997 the value of international tourists' expenditures in Thailand was 143,346.75 million baht. In 2000 the value of international tourists' expenditures in Thailand was 174,371.64 million baht. In 2002 the value of international tourists' expenditures in Thailand was 192,092.64 million baht. In 2003 the value of international tourists' expenditures in Thailand was 181,922.94 million baht. Moreover, in 2004 the value of international tourists' expenditures in Thailand was 218,262.35 million baht. This graphics presents that the value of international tourists' expenditure in Thailand grew up more than 100% during the period of 1997-2005.

5. FORECASTING MODELS ACCURACY BASED ON CONCEPTS OF BOTH THE AIC (AKAIKE, 1973) AND BIC (BAYESIAN INFORMATION CRITERION)

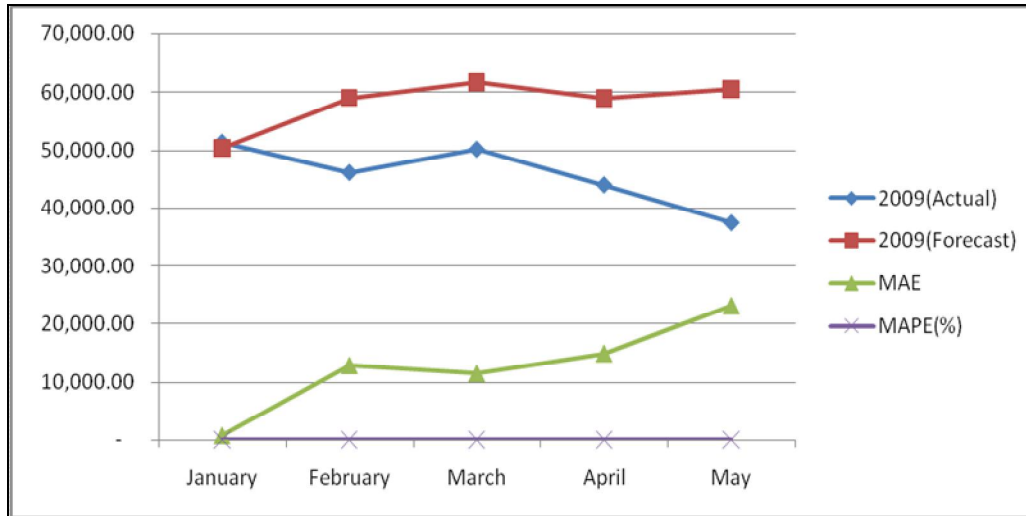
Table 1 shows forecasting methods based on ARFIMA-FIGARCH models for forecasting international tourists' expenditures in Thailand period the of 2009 to 2010. The value of both AIC and BIC in each of ARFIMA-FIGARCH model was used for selection the best ARFIMA-FIGARCH model for forecasting international tourists' expenditures in Thailand for this period.

Table 1. Accuracy comparison in sample for different forecasting models based on concepts of both AIC criterion and BIC criterion

| Number | Models of forecasting | AIC | BIC |
|--------|---|--------|--------|
| 1 | ARFIMA(1,d,1)-FIGARCH(1,d,1) d of ARFIMA = -0.672, d of FIGARCH = -0.180 | 7.100 | 28.848 |
| 2 | ARFIMA(1,d,1)-FIGARCH(1,d,2) d of ARFIMA = -0.114, d of FIGARCH = -0.076 | 9.102 | 33.568 |
| 3 | ARFIMA(1,d,2)-FIGARCH(1,d,1) d of ARFIMA = -0.680, d of FIGARCH = -0.140 | 9.066 | 33.532 |
| 4 | ARFIMA(2,d,2)-FIGARCH(1,d,1) d of ARFIMA = -0.366, d of FIGARCH = -0.163 | 11.026 | 38.211 |

From: computed

From table 1, the best model to forecast international tourists' expenditures in Thailand during the specified period is ARFIMA(1,-0.672,1)-FIGARCH(1,-0.180,1) and the value of Akaike Criteria(AIC) from this model is 7.10. Also the value of BIC from this model is 28.848. This model is the best model among these models because the values of both AIC and BIC are less than other models (Torre, Didier and Lemoine, 2007). Consequently, the ARFIMA(1,d,1)-FIGARCH(1,d,1) model was chosen for selection as the best model for forecasting international tourists' expenditures in Thailand for this period (see more details in Table 2 and Figure 1).



From: compute (Unit: Million Baht)

Figure 1. Graphical presentation of forecasting international tourists' expenditures in Thailand during 2009 based on ARFIMA-FIGARCH

Table 2. Forecast the expenditures of international tourist arrivals to Thailand during the period of 2009 to 2010 based on ARFIMA(1,-0.67,1)-FIGARCH(1,-0.18,1) (MAE: Mean Absolute Error, MAPE(%): Mean Absolute Percentage Error)

(Unit: Million Bath)

| Month/Year | 2009 (Actual) | 2009 (Forecast) | MAE | MAPE (%) |
|--------------|-------------------|-------------------|------------------|--------------|
| January | 51,289.33 | 50,396.32 | 893.01 | 1.74 |
| February | 46,069.96 | 59,045.36 | 12,975.40 | 28.16 |
| March | 50,094.28 | 61,707.85 | 11,613.57 | 23.18 |
| April | 43,935.01 | 58,964.93 | 15,029.92 | 34.21 |
| May | 37,400.20 | 60,547.96 | 23,147.76 | 61.89 |
| June | | 57,433.63 | | |
| July | | 49,819.87 | | |
| August | | 47,754.59 | | |
| September | | 47,030.48 | | |
| October | | 51,924.80 | | |
| November | | 47,489.96 | | |
| December | | 36,220.29 | | |
| Total | 228,788.79 | 628,336.03 | 12,731.93 | 29.84 |
| Month/Year | 2010 (Actual) | 2010 (Forecast) | MAE | MAPE (%) |
| January | | 44,533.06 | | |
| February | | 43,785.36 | | |
| March | | 47,070.06 | | |
| April | | 51,546.47 | | |
| May | | 46,299.59 | | |
| June | | 50,342.92 | | |
| July | | 44,152.45 | | |

From: compute

6. THE CONCLUSIONS OF RESEARCH AND POLICY RECOMMENDATIONS

This paper provides forecasting analysis of international tourists' expenditures in Thailand for the period of 2009 to 2010 based on the ARFIMA-FIGARCH model. The best ARFIMA-FIGARCH model is the ARFIMA(1,-0.672,1)-FIGARCH(1,-0.180,1) model because this model has a value of Akaike Criteria(AIC) = 7.100 and the value of BIC = 28.848. The values of both AIC and BIC from this model are much lower than other models.

Hence, this model has been selected to be the best model to forecast the international tourists' expenditures in Thailand for this period (see more details at Torre, Didier and Lemoine, 2007). The ARFIMA(1,-0.67,1)-FIGARCH(1,-0.18,1) model predicts that in 2009 the expenditures of international tourists in Thailand will be 628,336.03 Million baht (see more information in table 2 and figure 1). Moreover, the value of Mean Absolute Error (MAE) is 12,731.93 million baht in the period of January-May, 2009. Also the value of Mean Absolute Percentage Error (MAPE(%)) is 29.84 % in the same period (see more information in table 2 and figure 1).

Therefore, the conclusion of this research shows that in the next one and a half years (2009-2010) the expenditure of international tourists in Thailand will be constant. This result was similar with the information from Tourism Council of Thailand (TCT), which told that in 2009 the number of international tourists will be constant or decrease because of negative impact factors affecting the international tourism industry of Thailand, such as the world economic slowdown, the world's price of fuel going up, and the H1N1 fever of 2009.

If these results can be generalized for future years, then it suggests that both the Thai government sector and the private tourism industry sector need to develop the tourism market of Thailand more, and also develop tourism-related products in Thailand as well. In terms of the tourism market development needed to launch an active marketing campaign, promoting Thailand's exclusive culture and natural beauty through every channel especially the internet, and maintaining the high quality of accommodation, restaurants, and services in tourism market of Thailand will be important.

In terms of tourism product development, there is a need to keep on improving both the quality and management of tourist products in Thailand. For example, to develop tourist destinations in Thailand, provide education about tourism to people in the tourism 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, protecting the environment of tourist destinations are all necessary measures. 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 tourism products, keeping good accessibility to the tourism products, keeping a good image of tourism products, keeping a reasonable price for tourism products, and keeping the competitiveness of tourism products (Chaitip & Chaiboonsri, 2009).

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CURRENT TRENDS OF THE REGIONAL DEVELOPMENT POLICY IN THE EUROPEAN UNION. THE DEVELOPMENT OF COMPETITIVE ECONOMIC AGGLOMERATIONS OF CLUSTER TYPE

LAURA CISMAȘ, ANDRA MICULESCU, MARIA OȚIL *

ABSTRACT: *The study of economic agents' behaviour, whose nowadays tendency is to group themselves in space as clusters, has an important place in the field of localizing industrial activities. This is due to domestic scale economies, known as agglomerations economies. According to Edgar M. Hoover (Hoover, 1948), domestic scale economies are specific to companies; the economies of localizing - to a certain branch, whose companies form clusters in certain geographical areas, and the urbanization economies are specific to cities, where there are clusters of companies from different branches. The specialty literature regarding local economic development, based on the idea of cluster starts from well-known economic theories, such as: agglomeration theory (Alfred Marshall), the theory of spatial localizing of industrial units (Alfred Weber), the theory of interdependence of locations (Harold Hotelling), the diamond theory (Michael Porter), the theory of entrepreneurship (Joseph Schumpeter), the theory of geographical concentration. Basically, the common point which links them are the concepts which occur in these theories, such as: industrial district, industrial agglomeration, spatial interdependence, concepts which lie at the basis of the cluster idea. Clusters represent an important instrument for promoting industrial development, innovation, competitiveness and economic growth. If, at the beginning, the effort to develop clusters belonged to private persons and companies, nowadays, the actors involved in their development are the governments and public institutions of national or regional level.*

The objective established within the Lisbon Strategy (2000), to make the European Union "the most competitive and dynamic knowledge-based economy", is tightly linked to the new approaches of the European economic policy, to competitiveness. One of the policies is focused on developing at the European Union level clusters in the high competitiveness fields. The efforts are concentrated at microeconomic level, by partnerships between universities, the private sector and other institutions, aiming to achieve macroeconomic results through the real growth of companies' productivity. This is also the objective of our paper, to demonstrate the fact that for the European Union, clusters represent the economic model of development, which is suitable for organizing these efforts and, in the same time, for effectively launching initiatives

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with an innovative character. Using statistical data relatively recently by the European Cluster Observatory (2007), our paper aims at revealing the fact that clusters are linked to prosperity and that it exists a necessity to consider them as a central part of each economic strategy for the European Union member states. We shall also present the initiatives of cluster type between the European states, successful clusters, with a possible multiplication effect. The paper will also present Romania's trials to achieve an industrial policy based on competitive economic agglomeration.

KEY WORDS: *clusters; competitive economic agglomeration; regional development policies; innovation; competitiveness*

JEL CLASSIFICATION: *O1, O3, R1, R5*

1. COMPETITIVE AGGLOMERATIONS. NEW DEVELOPMENTS IN LOCATION THEORY

A special place is occupied by the study of behaviour in the area of locating industrial activities, which demonstrated their tendency to form clusters such as industrial parks, small or large cities, etc.

Explanations are based on recording specific economies of scale, known as agglomeration economies. They are rooted in the existence of specialized suppliers for certain goods, services (which are shared by many other companies in that area), in the existence of a local market labour (which facilitates the transfer of workers from one firm to another as some of them to increase production), of the diffusion of information and innovation.

Agglomeration economies are manifested as internal economies of scale, localization economies and urbanization economies. The main author of the typology is Hoover (Location Theory and the Shoe and Leather Industry - 1937 and The Location of Economic Activity -1948), who believes that internal economies of scale are specific for companies, localization economies for certain branches, sub-branches, whose companies form clusters in certain geographical areas (E.g. whilst using the same provider for an intermediate good for which transport costs are high or because of significant vertical integration (based on subcontracting), while urbanization economies are specific to cities, where clusters of firms appear in various branches (e.g., sharing of business service providers (banking, security, storage, etc.) or utilities (water, electricity, sanitation, etc.).

Other descriptions of industrial clusters are based on: the growth poles model (Perroux, 1950, Boudeville, 1966), product life cycle inspired model (Vernon, 1960), competitive localized advantages' model (Porter, 1980). Alfred Marshall (1842-1924) showed that geographical concentration of a particular industry determines specialty suppliers, attracts the workforce as a set of common skills, ensures economic security for the employees, and creates good market for the suppliers and conditions of improving and specializing the offer.

Weber's field of interest was the choice of industrial location, being concerned with general factors of location analysis. Assumptions underlying Weber's model are constant scale technological efficiency, unlimited offer of inputs, factor's fixed prices regardless of location, it is considered that location depends on the placement of stocks and markets, the transportation costs for each merchandise being directly proportional to its weight and transportation distance.

The solution of the problem is the one that minimizes total transportation costs, in a graphical approach being determined by circles (curves) centred on the sources (supply costs) and markets (shipping), which are composed of points representing the same level of costs. Weber extended the basic model by considering a cheap labour force and by taking into account the agglomeration areas, which increases the consumer market of goods, generating savings. Industrial location problem is becoming more relevant for today's global markets and international corporations. Focusing on mechanisms of Weber's model could justify larger transport distances compared with cheaper labour, and untapped raw material. Once resources are exhausted and the work force revolts, industries relocate themselves.

The essential contribution of Hotelling's theory consists in the fact that relaxes Weber's assumption that any given producer believes that competitor's locations are already taken or that producer has a monopoly on the market, taking into account the theory of oligopolies' space implications without understanding among participants.

This theory was subsequently extended by Smithies, Lerner and Singer, Greenham. Based on the analysis of a duopoly, Hotelling (Hotelling, 1929) considers that problems of localization in this case tend to result in a concentrated location in the center of the market, provided that the market demand is completely inelastic. Perroux Francois¹ has developed the concept of growth poles (growth pole strategy) that economic increase manifests itself in growth poles which are located in urban areas, affecting both regional development and the wider economy. He said that "growth is not everywhere, it manifest itself in points or poles of growth, with variable intensity; economic increase runs through various channels to different terminals for the entire economy" (Jula, et al., 1999). According to Perroux, growth pole is a set of businesses capable of generating economic growth of an industry (sector) and / or economic development of areas or regions.

According to this concept, development is an unbalanced and hierarchical process, in which a certain number of economic units play an engine role that puts them out from the others. These separate units are called growth poles and they can be large companies, industrial sites, important elements of infrastructure (port, airport, motorway) that by their mere presence attract a lot of other activities or even an urban pole with its own activity. These poles are highly entrepreneurship and have a profitable business environment. In developed economies, they communicate, creating genuine network development. A region develops around such a pole of growth, because of its spread effects.

¹ *the growth pole theory explains the emergence of regional inequalities by growth effects, which does not spread equally in all economic sectors, but first to those sectors give the initial impulse (locomotive development)*

After developing the theory of polarized development, most of the concepts supporting the spontaneous reduction of disparities in regional economic development as the generalization of the process, find theoretical support in various formulations of this theory. It is assumed that after the initial phase in which the predominant forces are centralized, centralization poles will lead behind them, the rest of the region or even the entire economy. J. Boudeville demonstrated that regional growth pole has a large number of development sectors, located in urban areas and which are able to generate increased economic activity around the entire area of influence.

Product life cycle theory is developed by Raymond Vernon (1966), which started its work on links between the expenses incurred by the firm for long-term research and development and its possibilities of winning according to phases or steps that can browse a product from its launch on the market, until the end of its production. This theory is based on a simple observation: a product is born, grows, lives, fall into decline and dies like a living system.

Porter shows the influence of competitive relations between national industries and economic development, by the model of national industries' competitive advantages. He argues the need for stronger industrial ties between the competitive sectors, so that the participation in international competition to lead to growth effects for the national prosperity. Cluster theory, launched by Michael E. Porter, referring to ways and contributing factors „to a more developed competitiveness on a local, national, regional and global level” and it is a way in which a country can cope with the fierce competition of the capitalist economy.

Location theory justifies its importance: its very basic factors of development, referring to the climate and natural conditions, to the fertile soil at the proximity of geographic location, to the basic inputs in the technological process, to the health and environmental conditions or to the employment classification and structure.

2. CLUSTER - DEFINITION

Throughout history the concept of „clusters” has been assigned different names: the pole of competitiveness, industrial district, industrial agglomeration, the terms that were imposed being pole of competitiveness clusters in France and Belgium (as the term widely used). The English cluster means bunch, bouquet, group. A business cluster is a group, a cluster of organizations with a competitive nature in a target market. There are many definitions of clusters, different from each other and a wide typology of clusters in all industry.

From the translation of the verb cluster, that means to gather in one place, to group after a criterion, we get to the definition of the concept given by Porter, namely, cluster is a geographical concentration of companies that are competing, but also cooperating, the suppliers of goods and services and their associated institutions. He offered a definition of competitive agglomeration (clusters), taken as a standard option by most of the literature on this topic: “Clusters are geographic concentrations of interconnected companies and institutions, in a given field. Clusters comprise a group of closely related industries and other entities important in terms of competition. These include, for example, suppliers of specialized inputs such as components, machinery and

services or providers of specialized infrastructure. Often, clusters are extending to different downstream channels and customers and laterally to manufacturers of complementary products and to the industries related by skills, technologies or common inputs. Finally, some clusters include governmental and other institutions - such as universities, standards agencies, think tanks, vocational training providers and employers - to provide specialized training, education, information, research and technical support (Porter, 1998a) (Porter, 1998b).

Looking in particular the sustainable development of industrial structures, Porter demonstrated the influence of competitive relations between national industries and economic development, by the model of competitive advantages of national industries. He argues the need for stronger industrial ties between the competitive sectors, so that participation in international competition to lead to growth effects of national prosperity”.

The level of economic development research and the systematic study of business in 10 countries with a significant competitive position, and in over 100 industries, Professor Michael Porter brought the debate on how companies manage to compete and contribute in raising living standards in the countries where they are located.

According to the Official Journal of the European Union cluster is “a geographical concentration of specialized firms in a sector, in connection with specific suppliers and other companies in related sectors, which are in competition, while collaborating” (Official Journal of the European Union, 2008). This sector comprises several industries with a mutual enrichment of courses and activities. Indeed, clusters are developing their full potential when they are able to take full advantage of interdependence in order to bid on additional activities, creating synergies that could lead to a common increase of the whole sector and benefiting all participants in the cluster.

Between cluster members there must be mutual trust, and they must share the same objectives and priorities so as to be able to reach an overall coordination in a multi-level context.

3. THE BENEFITS OF CLUSTERS

The competition generated by the companies included in a cluster forces firms to innovate and develop, stimulates research and introduce new forms of economic development.

Clusters affect competitive advantage on three major directions:

- constituent companies improving productivity;
- promoting innovative capacity;
- stimulating new business boost inside the cluster.

The main elements that determine these effects are access to specialized factors (access to them - highly skilled labour force, professional specific services, machinery components - is often more effective than when we're talking about vertical integration), access to information (within the cluster much useful information is accumulated-marketing, technical specifications - which run relatively quickly by consultants, staff

migration, etc.) complementarities (the performance of a sector positively influences the performance of other related sectors), access to institutions and public goods (as the importance of the cluster, public investments are significant and produce beneficial effects on its component companies, such as subsidized training programs).

However, innovation is stimulated by facilitating market testing or by new products marketing. Government policies should be oriented towards supporting the development of existing clusters or in training, rather than towards the creation of new clusters. Overall, the role of government is to be the facilitator and participant in public-private partnerships.

The specific actions that can be undertaken by the government:

- Factors of production: support for research efforts of local universities in areas relevant to the cluster, improving local infrastructure necessary to the cluster; collecting statistics for the analysis of cluster activity, creating and supporting specialized training programs and education.
- Domestic demand: reducing uncertainty related to the market regulator that operates the cluster, supporting the development of independent testing and certification entities, implementation of a procurement program that stimulates sophistication in the production process of the cluster.
- Related or complementary industries: organizing events that bring together members of the cluster, creating free zones, industrial parks based on the adjusted rules of the cluster's development needs.
- Context for firm strategy and competition: attracting foreign direct investment, promoting competition, promoting exports through methods adapted to the cluster in question.

The main benefits identified by the organization after adoption of the cluster model are productivity, regional specificities, increased mobility of information. Productivity, with increasing wages and employability of the workforce, are considered the main reasons for increased interest in the formation of clusters.

Creating and developing a regional specific, through the formation of clusters, helps regions in creating a productive business environment, leading to attract as many specialized companies on their territory.

Increased mobility of information that occurred due to interactive system of the clusters is the third main benefit of clusterization. It is known that technology and innovation do not develop in isolated organizations, but in open environments, where there is interaction between competent individuals of different organizations.

Competent individuals of different organizations constructively interact by assimilating existing knowledge and generating ideas, products and new production processes. Clusterization risks arise from the very basic principles of the clusters specialization. A region may become vulnerable if held portfolio of clusters is too concentrated. Moreover, the cluster can often not be the answer to increasing the competitiveness of a region, source may come from elsewhere.

In France, The European Cluster Observatory has so far mentioned the existence of 125 poles of competitiveness, over 70% of enterprises being involved are SMEs. These poles of competitiveness working in 16 economical sectors.

Each pole of competitiveness has its own legal personality, often form an association. Association has a team (permanent staff) which has a role in:

- facilitating “actors” collaboration in the pole of competitiveness for developing and implementing joint projects;
- developing and implementing the general strategy of pole of competitiveness;
- coordination and selection of research offers that require specific public funding for the competitiveness poles;
- providing international communication;
- ensuring communication with other clusters in France or abroad.

In Germany, The European Cluster Observatory mentioned 217 clusters in the following areas of activity: Biotechnologies, transport and mobility, health and medicine, new materials, manufacturing and engineering, aviation and space, energy and environment, ICT, micro-nano-opto.

In Sweden, The European Cluster Observatory has noted the existence of 102 Swedish clusters, already highlighting one of their weaknesses, namely excessive fragmentation. Established priority areas and their quotes are: ICT (30%), biotechnology (20%), production systems and materials (20%), automotive (20%) and science “work” (10%).

In the three countries there are two types of cluster support schemes:

- there are nationwide clusters, with potential to reach the level of international excellence (“top-level“). They have an impact on the competitiveness of the country;
- there are regional clusters, whose importance cannot exceed region borders, which have an impact on economic development and have the potential to be up-graded to the rank of top-level clusters.

4. ROMANIAN EXPERIENCES IN CLUSTERS

In Romania, after 1990, they tried to promote the agglomeration of firms by public policy, by creating industrial parks, science parks and technology. Therefore, it is difficult to identify natural clusters, except traditional industries, where business agglomerations have emerged - such as the textile / clothing, woodworking industry, automotive component industry. Competitive industrial clusters, so-called clusters, are a real alternative for Romania’s economic development. In various studies and research projects there were identified several potential clusters in Romania:

- The first study on industrial agglomeration cluster was conducted in 1998 by the Centre for International Entrepreneurial Studies in Bucharest. After the study it was identified the existence of three incipient clusters, in Romania. The survey² was based on Porter’s competitive diamond theory, focused on competitiveness and business sector in Romania.

² The study was done on a large number of enterprises of all sizes (small, but large companies) and focused on data from the eight development regions of Romania (NUTS level II). The study identified the existence of three forms of “early” cluster in software production, the shipping industry and the timber industry.

- In 1999 Marco Ricardo Ferrari (Assistant - Researcher at the Department of Economics of Bocconi University in Milan) conducted a study on the clusters, a study that emphasized the SMEs.
- The third search was conducted by Valentin Ionescu. The author has agreed that in Romania there are no functional clusters, but he argues the existence of “proto-clusters” or “emerging” clusters. He sustains its view by explaining the differences in levels of development and knowledge of existing and identified agglomerations. Thus, a possible cluster was located in the ceramics industry (in Alba County) and another one in the software production in Bucharest. The study points out that in software industry “there is an enormous potential for a cluster to horizontally appear, based on inter-company cooperation and a sense of social inclusion and citizenship. The existence of an early horizontal cluster is motivated by the companies perception in terms of characteristics of local production system: a network of business based on personal relationships, potential suppliers and customers, local sources of skilled labour force” (Ionescu, 1999).
- Another research project was conducted by the VICLI project, developed within the European project INTERREG II C - CADSES in 1999-2001, which sought to identify and support development of regional clusters in an exchange of know - how. Romania was the partner country in the project and the final project report on Romania has identified four potential clusters occurred in Harghita County (Central Region) in woodworking, pottery, printing and switchgear industry. The emergence of these sectors is clearly linked to the area’s natural resources. Also, Harghita is one of the few counties in which the analysis of input / output revealed major industrial inter-connections (between woodworking, pulp and printing).
- The fifth research reference for studying clusters is the project INCLUDE, funded under the INTERREG III CADSES. During 2003-2004 the project aimed to conduct an analysis of existing potential of clusters in the partner countries in Central and Eastern Europe and then to assist these countries in developing the cluster, using the experience and know - how from Italy and Austria. The potential clusters were identified in the textile industry from Timis and Bacau counties, software sector from Timisoara, Cluj and Bucharest, woodworking in Mures, in the chemical industry, metal products, general purpose machinery and engines from Brasov, and the local clusters in different areas such as - leather and footwear, electrical components, telecommunications equipment and radio and TV.
- A national reference for the analysis of clusters potential development is the program CURAS, from the Cooperation Agreement between the Romanian and Belgium - Flemish governments. The program was implemented in 2003-2004 by NASMEC (National Agency for Small and Medium Enterprises and Cooperatives) and CKZ Limburg (training centers set up by the Quality Management Centre Limburg). The result is to produce clusters of local suppliers from a domestic supply chain and from internal and / or international subcontractors.

- Through the Phare 2005 CBS Romania borders Ukraine Program it was elaborated the UK- ECON Clus - ROMANIA UKRAINE JOINT ECONOMIC DATA BASE AND CLUSTERS IDENTIFICATION program. The project was approved with the specific objective “a study for the identification of cluster agglomerations in border region of Romania (Maramures) and Ukraine (Transcarpathia County), by analyzing the profile of at least 6,000 companies in the region, through direct interviews of at least 200 of these companies, using specialized tools and methodologies in a common academic teams, specially created for this project and developing a database of member companies considered potential clusters.
- Another reference for the research project in Romania is the WEID (West-East Industrial Districts) project (The relocation of industrial districts, financed by the European Commission by the 5th Framework Programme (FP5). The project’s duration was three years, from September 2001 until late 2004. Partners in the project seven countries, three from Western Europe (Germany, Italy and United Kingdom) and four from Central and Eastern Europe (Czech Republic, Poland, Slovenia and Romania) case studies investigating the relationship between clusters. Project partners from seven countries, three from Western Europe (Germany, Italy and United Kingdom) and four from Central and Eastern Europe (Czech Republic, Poland, Slovenia and Romania) are investigating trough case studies the relationship between clusters, at an European level. Of the 15 case studies, two are in Romania, researching the potential existence of clusters in two areas - Banat-Crișana and Arad-Timișoara, in the sports equipment industry and in the shoe industry.

Industrial clusters are not simply agglomerations of companies (studied over time by A. Marshall, Hoover, Perroux, Chimitz and Mills). Industrial or commercial specialization, diversification, innovation and improving quality and interrelationship between companies operating in a region, or their complementary characteristics, are traits that distinguish a pure agglomeration from an industrial cluster. After their way of structuring, industrial clusters are vertically integrated, horizontal and emerging clusters (clusters in training and development), and after the nature of their work, we distinguish between industrial clusters and innovative clusters; the last ones play a key role in obtaining a sustainable competitive advantage at regional or local level through the relationships they have with R&D sector.

Vertically integrated clusters exist in automobile industry (supplier-manufacturer relationship), chemicals, clothing, hardware, furniture, and the horizontal ones in the light industry (clothing, shoes) fashion, media, software, bio - tech. In Romania, The European Cluster Observatory has noted the existence of 10 clusters (table 1).

Emerging clusters were identified in our country in the textile industry in the counties of Bacau, Timisoara, in the wood processing industry and the automotive component industry in the country’s central counties, or in software, in Bucharest, Cluj and Timisoara. Creating clusters and cooperation between them can be supported and

enhanced through regional policies, industrial policies, supporting the SMEs, and by attracting direct investment and supporting research, development and innovation.

Table 1. Existing and potential clusters in Romania

| Region | Clusters | | |
|--------------------|----------|---|--|
| | Number | Existence | Potentials |
| Nord - East | 1 | Textile | Wood Petrochemical Metal work |
| South- East | - | - | Agriculture Renewable Energy |
| South Muntenia | - | - | Agriculture Automotive Construction Nuclear |
| South West Oltenia | - | - | Chemical and Petrochemical Agriculture Construction Energy Food Industry |
| West | 3 | Automotive Construction Software | Printing/Publishing |
| Nord West | 1 | software | Agriculture Water supply Food Industry Environment technologies |
| Centre | 1 | Wood and furniture Tourism | Agriculture Food Industry Research and Education |
| Bucharest Ilfov | 4 | Software Research Marketing by agricultural machinery Grain marketing | Construction Mechanical engineering Environment |

Source: European Cluster Observatory, the European Cluster Organization Directory Q1 2010; *** (2009), Ghid pentru implementarea în România a conceptului de cluster inovativ, Bucureşti

Industrial clusters have emerged in Bucharest, covering the media industry (print, audio-visual) and software. Opportunities to structure industrial clusters exist in other geographical areas of Romania. For example, in Alba County (porcelain industry), Vaslui (clothing), Bucharest-Pipera (furniture), Cluj, Timisoara, Iasi (software), Galati, Constanta (shipping industry) and Bucharest, Brasov (aviation industry).

Proto-cluster or *clusters in training on horizontal structures* exist in the software industry Romania (Bucharest, Timisoara, Cluj and Iasi) and porcelain industry

(Alba). There are also incipient clusters vertically integrated in the clothing industry (Focsani). Potential clusters are also training in media (Bucharest), publishing, printing (Bucharest) furniture (Bucharest), vineyards and wine processing (Vrancea, Valley county, Constanta), textile (Mureș, Vaslui, Vrancea), aviation (București, Brașov, Bacău).

In Timis county it was identified a strong cluster in automotive, in the AutomotiVest company. Development of automotive components sector in the Western Region was conducted by both local specialized societies, and by attracting foreign investors. In this economic sector there are operating 156 companies that operate exclusively or with a part of production.

5. CONCLUSIONS

The research referred in this study show that there is an intensely crowded space for companies in western and north-western region of the country. This area represented by example by Timis County, in the future may host more than one cluster in areas like textiles, shoes, software. It is worth noting that once the specificity is Timis County is also given by the high level of Italian investment in the area; they brought the principle of the industrial district, the Italian model of cluster. Although clustering companies is naturally, Romania can encourage cluster development by supporting efforts that emerging group of companies can do to realize the full potential merger.

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STATISTICAL LANDMARKS AND PRACTICAL ISSUES REGARDING THE USE OF SIMPLE RANDOM SAMPLING IN MARKET RESEARCHES

CODRUȚA DURA, IMOLA DRIGĂ, DORINA NIȚĂ *

ABSTRACT: *The sample represents a particular segment of the statistical population chosen to represent it as a whole. The representativeness of the sample determines the accuracy for estimations made on the basis of calculating the research indicators and the inferential statistics. The method of random sampling is part of probabilistic methods which can be used within marketing research and it is characterized by the fact that it imposes the requirement that each unit belonging to the statistical population should have an equal chance of being selected for the sampling process. When the simple random sampling is meant to be rigorously put into practice, it is recommended to use the technique of random number tables in order to configure the sample which will provide information that the marketer needs. The paper also details the practical procedure implemented in order to create a sample for a marketing research by generating random numbers using the facilities offered by Microsoft Excel.*

KEY WORDS: *sampling; random number table technique; repeated survey; unrepeated survey; the average value; the dispersion; the square average deviation; the confidence interval; estimation limit error*

JEL CLASSIFICATION: *M 31*

1. INTRODUCTION

Sampling is the process of extracting a number of subsets from a general frame, in order to find out its characteristics. Through logical inference, one can establish general rules for the whole frame, rules which have not been verified directly, but they derived from the information obtained from the sampling. There are two major types of sampling which can be applied in marketing researches: *probability and nonprobability sampling*. In the case of probability sampling, the elements are selected randomly and the probability of including them in the sample is well known (this probability does not have to be equal for all the elements of the frame). Because the

selection of elements in the case of nonprobability sampling is nonrandom, the chance that an element should enter the sample can then be estimated.

The sample size is the number of items from which information will be collected. *The statistical methods for sizing a sample* establish a set of calculations for each type of sample (with replacement or without replacement, stratified etc.). Therefore, in order to determine the sample size one should take into account a number of *quantitative restrictions*, such as: the maximum allowable error, the confidence level of the results, the dispersion of the analyzed characteristic of the frame. The higher the degree of accuracy required is (and hence the maximum allowable error is lower), the greater the sample size is, as the targeted confidence level is better and the dispersion is greater. At the same time, the analysis of large samples falsely increases - most of the times - research costs, or it is well-known that in almost all cases the recipients of information have limited budgets. That is why proper sample sizing in marketing research is a critical operation, knowing that a significant increase of the sample is not reflected in a commensurate improvement in the accuracy of the information obtained (an increase, for example, by four times, of the sample size will result in only halving the sampling error).

Specialized literature also presents cases where sample sizing is based on using *non-statistical methods* (Gherasim and Gherasim, 2003; Cătoiu and Bălan, 2002). They are based on empirical reasoning such as: *sizing in accordance with past practices*, *sizing based on typical sizes** or *magic numbers* (such as, for example 20, 50 or 100), *sizing based on a priori stratification of the frame* (in which case the aim is to represent each segment of the total population with a minimum of observation units, thus the sample size results from their sum); *sizing by meeting budgetary restrictions* (the sample size is given by the ratio of the volume of available funds and the amount required to investigate a subject); *sizing according to expert advice*, etc.. Nonstatistical methods for sample sizing have a high degree of subjectivity, which is why the only area where their application can be useful is that of qualitative marketing research.

As a result, the quantitative restrictions explained above are not the only elements involved in the decision regarding the sample size. To these we must add a set of *qualitative factors*, which, together with the adopted sizing method, interfere more or less in the sampling process, namely: the nature and the objectives of the research, the number of variables investigated, the analytical methods used, the volume of samples used in similar marketing studies, the level of aggregation of the analysis, the rate of completing the interviews, available resources, etc..

2. BRIEF THEORETICAL CONSIDERATIONS OF THE PROCESSES OF APPLYING SIMPLE RANDOM SAMPLING

The main feature of **simple random sampling** is that *it requires that each subunit belonging to the general frame have equal chances of being selected in the sample*. For this purpose, one can use the "lottery" selection process and the random number table process as means of selection. *The "lottery" selection process or the "drawing of lots"* method implies numbering the general frame elements from 1 to N, and then making a note, card, ball, etc. which gives the opportunity to register each

number. These objects are then inserted in an urn from which, after careful mixing, one must pick as many subsets as necessary to constitute the sample size. The elements which correspond to the numbers indicated by the selected articles will enter the sample.

Making a parallel with gambling such as Lotto games, the rules of which are well known, we must draw attention to the conditions that ensure that the balls have equal chances of getting out: they must be perfectly spherical, similar in terms of mass, volume, density, etc. In the case of large collectivities which are involved, most often, in the marketing field investigations, to implement such a procedure while maintaining equal probabilities for all elements is practically impossible. However, the method is frequently mentioned in both marketing and statistics textbooks because they represent in fact the type of simple sampling, providing a theoretical selection scheme according to which the probability theory is issued; under the circumstances one should determine the relations for calculating sample size, selection error, confidence interval.

When we want to rigorously implement the simple random sampling, it is more appropriate to use a second method of reproducing the quasi-perfect conditions, the mathematical requirements namely, the use of **random number tables**. This technique is based on long series of random numbers which are usually found as appendices in the books of statistics and marketing research or they are printed separately as brochures or books for those directly interested. Fortuity refers to each number separately (because the component figures are selected in a random manner) as well as to the sequence of the numbers contained in such a table. Of course, lately, since the computer has become an indispensable tool for planning, organizing and conducting marketing research, the search for tables with random numbers is not a problem anymore as the researcher himself masters the process of generating random numbers using a computer program.

The use of random number tables is relatively simple and it involves going through the following steps: first establish the survey which should include all units of observation that form the general frame. Each unit will be assigned a code number from 1 to N (where N is the size of the survey base); next, use the computer to select, at random, a number of codes equal to the size of the default sample; then, configure the sample by identifying the unit of observation (individual, family, business) corresponding to each code selected in the previous step.

When the researcher uses the computer to generate random numbers, the implementation of this procedure is simple as it is able to establish since the beginning the limits of the random numbers, taking into consideration the objectives of the research. For example, if a study is undertaken to find out the consumers' attitude toward a new product and the sample consists of 30 subjects from the first group of 200 buyers, the operator should simply program a random selection of 30 numbers between 1 and 200.

The classical method of random number tables is more laborious because it means adapting the strings of numbers from statistical tables to the requirements of the research. Thus, if the size of the sample base is expressed by a number composed of "k" digits and the table columns contain less digits than "k", the number of digits necessary will be completed from the next column: similarly, if the numbers in the

table contain too many digits, then the first or last numbers in each column can be eliminated. Moreover, in the case of large samples *composed reading* may be used (it is usually obtained from two readings of the numbers in the table); the final number is formed of combinations of individual readings - two digits from the first reading, three from the second reading or other combination methods that match that certain research.

3. POSSIBLE SAMPLING SCHEMES AND STATISTICAL DETERMINATIONS

Whatever the actual procedure used, simple random selection can be performed as a repeated survey or as an unrepeated survey. The two sampling methods find a theoretical correspondence in the scheme known as the Bernoulli's ball. Thus, if the observation units selected during the sampling process are returned to the collectivity (the principle of the returned ball) the survey is a *repeated* one (*returned*). As opposed to this, in case the selected units are removed from the sample (the unreturned ball principle), we are dealing with an *unrepeated* random sampling scheme (*without return*). The actual method of determining the sample size, as well as the relations for calculating relevant statistical indicators - average, dispersion, sampling error, etc. - will be detailed by reference to earlier typology. We must also add that there are two categories of characteristics (variables) which may be the subject of investigations in marketing researches: *quantitative characteristics* - measurable or numeric (such as the average time between two consecutive purchases, the frequency of visiting an exhibition stand and others) and *qualitative or alternative characteristics* which evaluate the attributes of some elements of the frame by making grouping them into a relatively small number of classes (consumer / non-consumers, people who prefer / reject a product, etc.). In the case of alternative characteristics there are several features related to the calculation of the sample size, of the dispersion and of the selection error; they are to be highlighted further on in the paper where there are made concrete references to the calculation of the indicators mentioned above.

1.) The repeated survey. In this case, the analyzed unit reenters the general collectivity, thus ensuring the stability of distribution of the analyzed characteristic. In addition, the calculated statistical indicators may vary from one sample to another and therefore they can be treated as random variables and they can be analyzed using the methods available, for this purpose, from mathematical statistics. The general frame of size N (made up of consumers, users, distributors, voters, etc.) must be analyzed in terms of characteristic X which can take individual values $\{x_1, x_2, \dots, x_N\}$. A sample research involves getting the information from a number n subjects, which is often much smaller than the total population. The typicality of the sample n will depend on its size, which in turn is influenced by the dispersion of the characteristic studied.

Table 1 details the calculation of average and of the dispersion of the analyzed characteristic, both in the general frame and in the sample. The difference between the average of each sample and the real average (determined for the whole population) is called *estimation limit error* (E) and it actually represents the maximum allowable error for a feature or an estimator, its size depending on both the size of the average error of typicality and on the confidence level of the estimation. *The average error of*

typicality is no more than an error committed by a researcher when he chooses to examine only a fraction of the general frame - n instead of considering all the N units of the general collectivity. Most of the times, the general collectivity parameters (average, dispersion, etc.) are unknown to the researcher. Therefore previous reasoning should be transposed into probabilistic terms starting from the imaginary experience of a subsequent extraction of a series of samples of volume n out of the total population N . In this case, we can determine *a selection scattering* given by the dispersion of the average of all volume samples n around the real average:

$$\sigma_{m^2} = \frac{\sigma^2}{n} \quad \text{or} \quad \sigma_m = \frac{\sigma}{\sqrt{n}} \quad (1)$$

where:

σ_{m^2} - the selection dispersion

σ^2 - the dispersion of the average volume samples n

σ - the square average deviation recorded in the general collectivity

$$\sigma = \sqrt{\sigma^2} = \sqrt{\frac{\sum_{i=1}^n (x_i - \bar{M})^2}{N}}$$

It is worth mentioning that σ_m - the square average deviation of the selection is frequently used as a measure unit of the average error of typicality.

In order to approximate σ^2 the dispersion corresponding to the general frame, the researcher has several options (Prutianu, et al., 2002):

- to use the results of a similar study conducted in a prior period of time (if available),
- if there are no such recent studies, a preliminary investigation will be conducted on a pilot sample established by a random method,
- if the maximum (x_{\max}) and the minimum value (x_{\min}) of the analyzed characteristic are known, then the relation $s \cong \frac{x_{\max} - x_{\min}}{6}$ leads to a rather good approximation of the square deviation.

Using one or another of the three processes, we obtain an estimator \hat{s}^2 of the dispersion of the characteristic which enables the approximation of *the selection dispersion* σ_m^2 with the help of the following relations:

$$\sigma_m^2 \cong \frac{\hat{s}^2}{n} \quad \text{or} \quad \sigma_m = \frac{\hat{s}}{\sqrt{n}} \quad (2)$$

where:

$$\hat{s} = \sqrt{\hat{s}^2} = \sqrt{\frac{\sum_{i=1}^n (x_i - m)^2}{n-1}}$$

\hat{s} - the constant square average deviation of the volume sample x .

Table 1. The calculation of the average and of the dispersion of the analyzed characteristic in the general frame and in the sample

| NUMERICAL CHARACTERISTIC | |
|---|---|
| The general collectivity (N) | The sample (n) |
| Average: $M = \frac{\sum_{i=1}^N x_i}{N}$ | Average: $m = \frac{\sum_{i=1}^n x_i}{n}$ |
| Dispersion: $\sigma^2 = \frac{\sum_{i=1}^N (x_i - M)^2}{N}$ | Dispersion: $s^2 = \frac{\sum_{i=1}^n (x_i - m)^2}{n}$ |
| Square average deviation: | Square average deviation : |
| $\sigma = \sqrt{\frac{\sum_{i=1}^N (x_i - \bar{M})^2}{N}}$ | $s = \sqrt{\frac{\sum_{i=1}^n (x_i - m)^2}{n}}$ |
| ALTERNATIVE CHARACTERISTIC | |
| Average: π (the occurrence of state „i” within the total frame) | Average: p (the occurrence of state „i” within the sample) |
| Dispersion: $\sigma^2 = (1 - \pi)$ | Dispersion: $s^2 = p \cdot (1 - p)$ |
| Square average deviation : $\sigma = \sqrt{\pi(1 - \pi)}$ | Square average deviation : $s = \sqrt{p(1 - p)}$ |

If the dispersion in the general collectivity is known (a situation rarely encountered in practice), the calculation of the average error of typicality will be based on this.

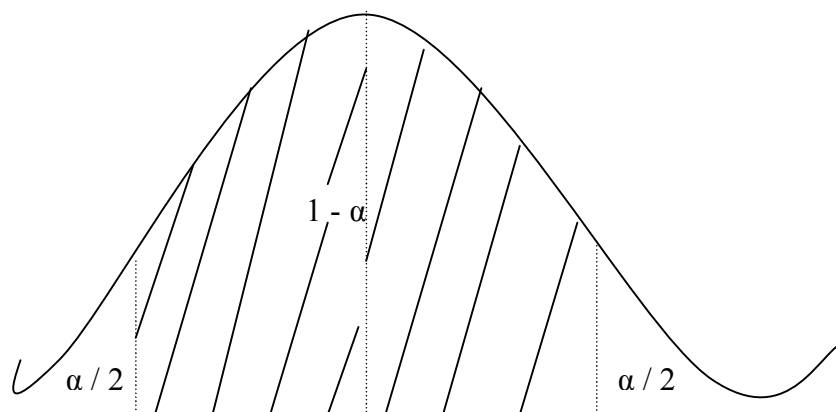
For alternative characteristics, the average error of typicality noted σ_p^2 is

calculated using the same formula: $\sigma_p^2 = \frac{\hat{s}^2}{\sqrt{n}} = \frac{p \cdot (1 - p)}{\sqrt{n}}$, that is to say

$$\sigma_p = \sqrt{\frac{p \cdot (1 - p)}{n}}$$

For a given estimation error E we can determine a range of selection averages from the overall average with the help of which we can measure accuracy of the estimation: $I = (M - E, M + E)$, where I represents *the confidence interval*. If we represent graphically the distribution of the average volume samples n as a normal

curve (Gauss-Laplace) - Figure 1, the confidence interval will be highlighted by the shaded surface area.



Source: Prutianu, Ștefan, Anastasiei, Bogdan și Jijie, Tudor (2005) Cercetarea de marketing. Studiul pieței pur și simplu. Iași: Editura Polirom

Figure 1. Distribution of the average volume samples n as a normal curve

The probability $P(M - E < m < M + E) = 1 - \alpha$ is called *confidence level* and it reflects the *safety* with which it can be said that the average is inside the confidence interval. Its complement, α is called *the significance level or threshold* and it corresponds to the probability that m is outside the confidence interval. Graphically, α results immediately from the sum of the areas of the two surfaces below the Gaussian curve, within its ends.

The confidence level $1 - \alpha$ (and accordingly, the level of significance α) are chosen taking into account the specific problem to solve. The levels of confidence most frequently used in practice are the following values 90%, 95%, 98%, 99%, 99.9% which correspond to the significance levels 10%, 5% 2% 1% and 0, 1%. For example, ensuring the results with a probability of 95% (-5% significance level) means that in only 5 cases out of 100 surveys, the sample average will be placed outside the confidence interval.

The estimate error ($M - m$) can be assessed using standardized normal variable values - z corresponding to the level of significance α . For this purpose the following relationship is used:

$$E = z_{\alpha} \cdot \sigma_m = z_{\alpha} \cdot \frac{\hat{s}}{\sqrt{n}} \quad (3)$$

where:

z - is the coefficient corresponding to the confidence level predetermined by the researcher.

The value of z is taken from the relevant statistical tables. In some cases (the case of samples of small volume) z - the argument of Gauss-Laplace function is

replaced by t – the argument of the Student function. The value of t corresponding to the desired probability of guaranteeing the results of the research will be sought in this case, in the statistical tables of the Student distribution.

For an alternative feature, the formula for determining the estimation error is written, taking into account the actual way of expressing the square average deviation - s , as follows:

$$I = (\pi \pm E) = (0,4 \pm 0,05) = (0,35; 0,45) \quad (4)$$

If it is considered a level of the limit error (E) set at the beginning of the research, one can obtain the required sample size by using the relationship:

- $n = \left(\frac{Z_\alpha s}{E} \right)^2$ - for the normal characteristic;
- $n = \frac{z_\alpha^2 \cdot p \cdot (1-p)}{E^2}$ - for the alternative characteristic.

2). Unrepeated survey. This sampling scheme is designed to eliminate the distortions induced by the inclusion, for several times, of the same unit of observation in the selection frame. Therefore, the elements of the general frame *are not re-included in the sample* and the main consequence is that the selections of observation units within the sample are no longer equi-probable events. Indeed, the probability that the selection variable x_1 should take the actual value x_1 is $P(x_1 = x_1) = \frac{1}{N}$, but the probability of the next event ($x_2 = x_2$) will be conditioned by the fact that after the event $x_1 = x_1$, the observation unit x_1 was excluded from the frame. Thus, $P(x_2 = x_2 / x_1 = x_1) = \frac{1}{N-1}$, that is to say that the probability of the second event depends on the previous one. In this case, it is shown that the dispersion of the selection average/criterion is given by (Baron et al., 1996):

$$\sigma_m^2 = \frac{\sigma^2}{n} \cdot \frac{N-n}{N-1} \quad (5)$$

and the square average deviation as a measurement for the average selection error is:

$$\sigma_m = \frac{\sigma}{\sqrt{n}} \cdot \sqrt{\frac{N-n}{N-1}} \cong \frac{\hat{s}}{\sqrt{n}} \cdot \sqrt{\frac{N-n}{N-1}} \quad (6)$$

When the volume of the frame is large as compared to the sample size, (N-1) is approximated with N and the previous relationship becomes:

$$\sigma = \frac{\hat{s}}{\sqrt{n}} \left(\sqrt{1 - \frac{N}{n}} \right) \quad (7)$$

where: $k = \left(\sqrt{1 - \frac{N}{n}} \right)$ - is called the correction factor.

Therefore there is a relation between the appropriate selection dispersions of the repeated survey and that of the unrepeated survey:

$$\frac{\sigma_m^2 \text{rep}}{\sigma_m^2 \text{nerep}} = \frac{N-1}{N-n} \cong 1 - \frac{N}{n} \quad (8)$$

where:

$\sigma_m^2 \text{rep}$ - the dispersion of the average volume sample n around the real average, in the case of the repeated survey

$\sigma_m^2 \text{nerep}$ - the dispersion of the average volume sample n around the real average, in the case of the unrepeated survey.

Knowing that the ratio $\sqrt{\frac{N-1}{N-n}}$ is always a proper fraction it is clear that the estimation error of the unrepeated survey will always be smaller than the error associated with repeated survey.

Since $E = z_\alpha \cdot \sigma_m$, in the case of the unrepeated sampling one can write:

$$E = z_\alpha \cdot \frac{\sigma_m}{\sqrt{n}} \cdot \sqrt{\frac{N-n}{N-1}} \quad (9)$$

If we consider that s^2 is a good estimator of σ_m^2 , the previous relationship becomes:

$$E = z_\alpha \cdot \sqrt{\frac{s^2}{n} \cdot \frac{N-n}{N-1}} \quad (10)$$

In order to determine the volume of the sample n , one uses consecutive deductions:

$$E^2 \cdot n \cdot (N-1) = z_\alpha^2 \cdot s^2 \cdot N - z_\alpha^2 \cdot s^2 \cdot n \quad (11)$$

where:

$$n \left[(N-1) \cdot E^2 + z_\alpha^2 \cdot s^2 \right] = z_\alpha^2 \cdot s^2 \cdot N$$

$$n = \frac{z_\alpha^2 \cdot s^2 \cdot N}{(N-1) \cdot E^2 + z_\alpha^2 \cdot s^2} = \frac{z_\alpha^2 \cdot s^2}{E^2 \cdot \left(\frac{N}{N-1} \right) + \frac{z_\alpha^2 \cdot s^2}{N}}$$

Generally, the $\frac{N}{N-1} \rightarrow 1$ ratio is used when operating with large collectivities and the relationship to calculate the sample size becomes:

$$n = \frac{z_{\alpha}^2 \cdot \hat{s}^2}{E^2 + \frac{z_{\alpha}^2 \cdot \hat{s}^2}{N}} \quad (12)$$

Of course, the previous formula is valid only for numeric characteristics. For alternative characteristics, we must take into account $s^2 = p \cdot (1-p)$ and the sample size will be given by:

$$n = \frac{z_{\alpha}^2 \cdot p \cdot (1-p)}{E^2 + \frac{z_{\alpha}^2 \cdot p \cdot (1-p)}{N}} \quad (13)$$

In the case of small samples (with less than 30 units of observation), in all previous calculations the value z_{α} is replaced with t corresponding to the Student distribution.

A further observation is also required in this case: if the volume of the general collectivity N is large and the size of the sample n is comparatively small, then the ratio $\frac{N-n}{N-1} \rightarrow 1$ and the results estimating the average dispersion of the selection for the unrepeated survey are practically identical with those of the repeated survey. Similarly, when calculating the sample size for the unrepeated

survey $\left(n = \frac{z_{\alpha}^2 \cdot s^2}{E^2 + \frac{z_{\alpha}^2 \cdot s^2}{N}} \right)$, the ratio $\frac{z_{\alpha}^2 \cdot s^2}{N} \rightarrow 0$ for higher values of N and again, get to $n = \frac{z_{\alpha}^2 \cdot s^2}{E^2}$, the formula for calculating sample size for repeated survey.

Therefore, the differences between the results obtained in situations when there was applied a repeated sampling procedure and an unrepeated sampling procedure, become noticeable in case the ratio of the sample volume and of the general frame volume is high enough (generally, it is considered that a value of the ratio $\frac{n}{N}$ greater than 0.2 enables to highlight that certain distinction).

For example, we consider that a business manager, with 150 directly productive workers involved in the production of electric motors, wishes to estimate the unused productive time by its employees in order to adopt efficiency measures. A study conducted earlier showed an average daily unused productive time of 50 minutes

per employee, with a mean square deviation of 10 minutes. The maximum accepted error is 3.5 minutes and the desired confidence level is 95% ($z = 1.96$).

In case of a repeated survey, the sample is determined using the following statistical formula: $n = \left(\frac{z \cdot s}{E}\right)^2 = \left(\frac{1,96 \cdot 10}{3,5}\right)^2 \cong 31$ (individuals).

In case of an unrepeated survey, the sample is determined based on the following formula: $n = \frac{z^2 \cdot s^2}{E^2 + \frac{z^2 \cdot s^2}{N}} = \frac{1,96^2 \cdot 10^2}{3,5^2 + \frac{1,96^2 \cdot 10^2}{150}} = 25,93 \cong 26$ (individuals).

Since it has been shown that a survey without re-sampling leads to forecasts with higher accuracy, it is sufficient to make observations on a smaller sample, consisting of 26 people.

The confidence interval of the estimation is:

$$I = (50 \pm E) = (50 \pm 3,5) = (46,5; 53,5)$$

Therefore, we can state with a probability of 95% that the average daily unused productive time per worker is between 46.5 and 53.5 minutes.

The following stages must be covered in order to create the sampling for marketing research:

1. drawing up a list of directly productive 150 workers (their names are arranged in alphabetical order), assigning a code between 1 and 150 for each name on the list – the first worker will receive the code 001, the second will get 002 and so forth;
2. drawing up a random number table using the **RAND** function in Microsoft Excel program. The function has the following syntax = RAND () and it generates a real random number between 0 and 1. To build a random integer number table between 1 and 150 (suitable for marketing research undertaken for the problem to be solved), a combination of functions can be used: = Roundup (150 * RAND (), 0). The Roundup Function is used to round a number through addition and it has two arguments: the real number to be rounded (in our case 150 * RAND ()), and the number of decimal places up to which the random number is to be rounded. Since we determined that the second argument of the Roundup function equals 0, the result of each cell of the random number table created in Excel will be an integer number;
3. further on, we shall use the **INDEX** function to perform a random selection of 26 codes in the table with random numbers, which was drawn up in the previous step. The INDEX function returns the value of an item from a table or from a matrix selected by a number indicating the row and column. More precisely, the syntax is: = INDEX (array, row number, column number), where the *matrix* argument represents a cell zone in Excel (in our case the area is bounded by the table of random numbers from figure 2). We used the compound function: INDEX (\$A\$1:\$T\$30;ROUNDUP(30*RAND();0);ROUNDUP(20*RAND();0)); the Excel program was ordered to choose at random a line number and a column number out of the table (matrix) with 30 rows and 30 columns in order to indicate the position in the table of the number that is to be selected in the sample. If by any chance, the

computer would draw a number that would repeat itself among the 26 that are to form the sample of employees, that certain number would have been skipped, thus, continuing the selection procedure of random numbers until the desired sample would be obtained. By implementing the compound function mentioned above, we can obtain the following code numbers associated with persons who will form the sample under research: 146, 82, 127, 90, 33, 21, 98, 142, 41, 109, 55, 128, 10, 49, 50, 28, 96, 4, 75, 134, 64, 68, 88, 125, 2 and 80;

4. the sample is completed after each code is assigned the name and surname of the employee who fills out the marketing research enquiry.

The screenshot shows a Microsoft Excel spreadsheet with the following data in the visible grid (rows 1-30, columns A-S):

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | AA | AB | AC | AD | |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 1 | 149 | 111 | 46 | 83 | 6 | 132 | 139 | 147 | 5 | 113 | 136 | 112 | 86 | 60 | 86 | 130 | 96 | 89 | 10 | 71 | 116 | 111 | 30 | 77 | 77 | 77 | 4 | 20 | 95 | 96 | |
| 2 | 70 | 107 | 2 | 54 | 19 | 68 | 40 | 25 | 150 | 71 | 4 | 90 | 26 | 138 | 112 | 39 | 135 | 108 | 135 | 117 | 46 | 149 | 65 | 94 | 93 | 7 | 34 | 98 | 134 | 1 | |
| 3 | 97 | 80 | 149 | 78 | 95 | 137 | 48 | 139 | 98 | 3 | 102 | 105 | 83 | 57 | 66 | 98 | 139 | 127 | 131 | 129 | 145 | 91 | 91 | 3 | 96 | 130 | 55 | 147 | 38 | 128 | |
| 4 | 71 | 10 | 26 | 30 | 142 | 5 | 90 | 124 | 94 | 54 | 99 | 113 | 129 | 45 | 21 | 67 | 64 | 138 | 75 | 61 | 68 | 34 | 56 | 114 | 6 | 122 | 101 | 113 | 132 | 9 | |
| 5 | 136 | 74 | 59 | 72 | 92 | 103 | 46 | 74 | 138 | 48 | 83 | 43 | 21 | 42 | 111 | 102 | 95 | 61 | 32 | 137 | 123 | 119 | 19 | 33 | 25 | 21 | 139 | 110 | 2 | 23 | |
| 6 | 13 | 55 | 100 | 123 | 128 | 135 | 132 | 74 | 126 | 49 | 41 | 101 | 75 | 82 | 147 | 127 | 2 | 51 | 129 | 63 | 98 | 108 | 20 | 36 | 27 | 23 | 132 | 16 | 66 | 144 | |
| 7 | 68 | 28 | 69 | 102 | 141 | 96 | 35 | 131 | 7 | 150 | 129 | 42 | 91 | 106 | 8 | 85 | 6 | 45 | 87 | 109 | 104 | 125 | 137 | 52 | 58 | 122 | 25 | 89 | 130 | 127 | |
| 8 | 6 | 134 | 29 | 37 | 12 | 145 | 3 | 64 | 61 | 68 | 48 | 75 | 127 | 20 | 115 | 49 | 91 | 96 | 14 | 51 | 4 | 149 | 79 | 29 | 112 | 120 | 95 | 138 | 42 | 30 | |
| 9 | 7 | 1 | 125 | 40 | 71 | 65 | 97 | 56 | 91 | 10 | 84 | 11 | 81 | 61 | 33 | 88 | 27 | 55 | 72 | 88 | 49 | 141 | 9 | 60 | 9 | 143 | 32 | 143 | 29 | 80 | |
| 10 | 87 | 83 | 100 | 24 | 139 | 31 | 24 | 31 | 137 | 110 | 115 | 86 | 71 | 109 | 82 | 130 | 73 | 5 | 100 | 121 | 112 | 90 | 25 | 16 | 3 | 72 | 82 | 101 | 127 | 30 | |
| 11 | 144 | 78 | 111 | 18 | 29 | 32 | 136 | 125 | 5 | 61 | 61 | 146 | 148 | 15 | 98 | 17 | 66 | 76 | 103 | 115 | 114 | 9 | 73 | 30 | 26 | 84 | 83 | 70 | 62 | 100 | |
| 12 | 86 | 55 | 37 | 128 | 116 | 50 | 10 | 17 | 40 | 137 | 114 | 134 | 90 | 72 | 12 | 53 | 102 | 136 | 74 | 94 | 110 | 14 | 11 | 120 | 75 | 12 | 126 | 106 | 138 | 39 | |
| 13 | 42 | 89 | 85 | 49 | 13 | 114 | 68 | 60 | 90 | 18 | 119 | 109 | 97 | 134 | 86 | 66 | 12 | 33 | 7 | 129 | 125 | 25 | 97 | 106 | 90 | 128 | 18 | 119 | 89 | 118 | |
| 14 | 26 | 95 | 67 | 131 | 99 | 83 | 5 | 69 | 54 | 122 | 61 | 19 | 41 | 115 | 119 | 88 | 146 | 74 | 78 | 93 | 149 | 113 | 77 | 63 | 47 | 137 | 90 | 63 | 150 | 96 | |
| 15 | 142 | 100 | 5 | 49 | 122 | 125 | 142 | 143 | 33 | 41 | 45 | 3 | 150 | 4 | 114 | 44 | 87 | 95 | 111 | 90 | 52 | 11 | 91 | 34 | 5 | 141 | 107 | 104 | 38 | 137 | |
| 16 | 35 | 61 | 114 | 2 | 111 | 128 | 136 | 123 | 12 | 35 | 93 | 57 | 125 | 104 | 7 | 99 | 121 | 67 | 71 | 136 | 47 | 81 | 109 | 133 | 1 | 71 | 38 | 93 | 111 | 91 | |
| 17 | 64 | 94 | 117 | 49 | 144 | 83 | 19 | 102 | 140 | 105 | 30 | 43 | 71 | 44 | 119 | 146 | 32 | 5 | 73 | 25 | 24 | 24 | 31 | 95 | 74 | 15 | 119 | 76 | 135 | 3 | |
| 18 | 101 | 29 | 35 | 54 | 118 | 91 | 83 | 127 | 81 | 40 | 52 | 128 | 145 | 99 | 55 | 40 | 43 | 17 | 117 | 133 | 40 | 102 | 83 | 36 | 64 | 122 | 48 | 64 | 51 | 68 | |
| 19 | 4 | 60 | 8 | 73 | 50 | 140 | 1 | 28 | 46 | 2 | 30 | 149 | 99 | 18 | 23 | 39 | 55 | 52 | 89 | 64 | 64 | 85 | 37 | 47 | 59 | 16 | 99 | 102 | 46 | 15 | |
| 20 | 138 | 39 | 55 | 6 | 72 | 138 | 127 | 86 | 146 | 118 | 100 | 124 | 24 | 92 | 2 | 143 | 39 | 31 | 94 | 76 | 12 | 94 | 95 | 102 | 23 | 55 | 54 | 124 | 88 | 147 | |
| 21 | 147 | 56 | 74 | 23 | 148 | 99 | 143 | 52 | 6 | 55 | 43 | 37 | 33 | 23 | 51 | 112 | 39 | 110 | 102 | 65 | 59 | 147 | 150 | 109 | 7 | 124 | 7 | 142 | 43 | 65 | |
| 22 | 47 | 90 | 41 | 135 | 116 | 98 | 84 | 82 | 128 | 54 | 16 | 5 | 88 | 80 | 124 | 64 | 22 | 137 | 83 | 42 | 26 | 119 | 106 | 145 | 71 | 45 | 46 | 88 | 123 | 20 | |
| 23 | 108 | 78 | 45 | 135 | 6 | 7 | 116 | 23 | 115 | 116 | 130 | 30 | 59 | 94 | 100 | 66 | 102 | 82 | 42 | 50 | 9 | 150 | 78 | 4 | 121 | 146 | 72 | 94 | 109 | 143 | |
| 24 | 100 | 150 | 150 | 66 | 75 | 53 | 118 | 33 | 72 | 30 | 75 | 32 | 45 | 51 | 35 | 45 | 4 | 119 | 4 | 4 | 35 | 114 | 60 | 69 | 40 | 23 | 98 | 112 | 95 | 10 | |
| 25 | 132 | 58 | 96 | 69 | 9 | 9 | 51 | 119 | 16 | 13 | 137 | 25 | 62 | 149 | 40 | 83 | 35 | 124 | 135 | 63 | 49 | 69 | 14 | 116 | 114 | 137 | 130 | 102 | 30 | 106 | |
| 26 | 82 | 78 | 142 | 53 | 12 | 133 | 112 | 74 | 141 | 148 | 50 | 48 | 110 | 117 | 129 | 147 | 41 | 14 | 11 | 87 | 123 | 66 | 38 | 29 | 117 | 75 | 64 | 126 | 105 | 57 | |
| 27 | 42 | 46 | 35 | 141 | 125 | 90 | 143 | 117 | 147 | 115 | 8 | 67 | 55 | 125 | 36 | 12 | 23 | 3 | 131 | 133 | 72 | 120 | 11 | 98 | 78 | 104 | 100 | 5 | 9 | 70 | |
| 28 | 25 | 57 | 10 | 64 | 73 | 56 | 23 | 67 | 109 | 7 | 66 | 18 | 31 | 23 | 80 | 115 | 10 | 117 | 79 | 41 | 44 | 140 | 61 | 20 | 109 | 134 | 126 | 49 | 28 | 51 | |
| 29 | 45 | 37 | 73 | 19 | 149 | 98 | 42 | 33 | 11 | 110 | 37 | 85 | 17 | 81 | 150 | 128 | 34 | 125 | 29 | 75 | 93 | 22 | 97 | 33 | 62 | 58 | 88 | 76 | 109 | 93 | |
| 30 | 99 | 95 | 44 | 35 | 19 | 51 | 23 | 37 | 121 | 55 | 125 | 98 | 22 | 16 | 45 | 88 | 56 | 80 | 51 | 49 | 133 | 92 | 129 | 122 | 7 | 137 | 95 | 48 | 98 | 143 | |
| 31 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | 146 | 82 | 127 | 90 | 33 | 21 | 98 | 142 | 41 | 109 | 55 | 128 | 10 | 49 | 50 | 28 | 96 | 4 | 75 | 134 | 64 | 68 | 88 | 125 | 2 | 80 | | | | | |

Figure 2. Using Microsoft Excel functions to create samples for research

4. CONCLUSIONS

The need for information and the efficiency with which it has to be obtained and analyzed have established that the selective approach is a quasi-general approach used in marketing researches. Selection gives the opportunity to obtain information on a general community by investigating only some of the components within. Among the arguments which recommend the selective research instead of the total research (such as the population census) we should include substantial cost savings, time, human resources, as well as the advantages of knowing and applying the information obtained in order to intervene in the economic life. Therefore, the choice and the application of an appropriate sampling method for the objectives of each research project are the key elements that make a success out of a selective survey.

Using statistical survey for market analysis, as well as for other research domains, is due to the fact that sampling theory is based on the law of large numbers. This statistical rule asserts, with a sizeable probability (which is closer to one), that statistical indicators which characterize the sample are very few different from statistical indicators belonging to the statistical population, provided that the sample is large enough. Marketing and statistical literature available to practitioners provides a wide range of sampling methods that can be implemented in the context of marketing research. If in case of probabilistic methods the calculation of sampling error is possible, in case of non-probabilistic methods they remain unknown. In order to choose between a probabilistic or non-probabilistic sampling technique it should be taken into consideration if a random procedure provides higher value information than a non-probabilistic one, at a certain level of cost. This decision is taken according to: costs, nature of information to be obtained (in case of generalizing the results to the entire population), desired accuracy of estimation, estimated effect of sampling error on results, homogeneity of population. Despite of relatively high costs involved, the probabilistic model remains one of the most rigorous designed research models for both macroeconomic phenomena and for microeconomic level: attitudes, opinions and behaviours of consumers, operators or managers.

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POSSIBILITIES OF INCREASING EFFICIENCY WITHIN SERIAL PRODUCTION MANAGEMENT

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ABSTRACT: *Under the impact of transition to the new post-industrial society, mass production recently faced the most numerous difficulties. They are caused by turbulences in the external environment in which companies operate, manifested in particular by enhancing the dynamism of markets and by deep changes in the structure of consumers' demands. In this context, specialized literature records the concerns for increasing the efficiency and flexibility of products, elements involving radical changes of management and manufacturing technologies methods. Given these issues, the paper approaches two separate ways to improve the management of serial production: increasing economic efficiency by optimizing the size of batches and flexible production systems by implementing techniques to reduce the change-over time.*

KEY WORDS: *information society; serial production; batch production; the optimal batch size; SMED method; the change-over time; input exchange die; output exchange die*

JEL CLASSIFICATION: *M11, L60*

1. INTRODUCTION

The last decades have been marked by an unprecedented development of information and communication technology (ICT), a rather complex phenomenon that has been felt by all sections of economic and social life. Reported some time ago, *the information age* seems to gradually replace the *industrial era* while the traditional society is replaced by the new *information society*. In the early '90s, the concept of information society was formulated; it means a series of profound and complex economic, social, political and cultural changes affecting the lives of individuals and which were the result of an explosive development of information and communication technologies. Among the positive effects of these changes the most visible are worth

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mentioning: reducing spatial and temporal constraints on communication accelerate the speed of processing, storing and transmitting of information, lower prices of services related to transferring information etc. In such an environment, economic activities take new forms of expression, with potentially benefic effects on performance.

Economic developments from the beginning of the millennium highlight *the transition phase* of the human society and mark the change from industrial society to information society. Materialized as a product of the "industrial revolution", the industrial society was based, among others, on the widespread introduction of machinery and manufacturing equipment in the economic activity, on the social division of labour, on creating technological assembly lines. The resources that have become the basis for this traditional society are tangible resources - capital, labour and natural factors. The Information Society (also called post-industrial society), is based on intangible resources, which have become a priority in recent years - information and knowledge. We cannot state that the industrial society lacked information, but we must acknowledge that the technological explosion during recent years made the information *a strategic resource*. Exponential amplification of knowledge and the rapid pace of renewal have made us reconsider the role of knowledge within the social development and its integration as one of the pillars in the formation and consolidation of the information society.

Such transformations occurring even "before our eyes" could not remain without an echo in the area of economic theory. Thus, there were a number of specialists (Alvin Toffler, Daniel Bell and others), who expected a severe decline of industrial activities, alongside with reducing the role of productive employment while consolidating the new information society. Nowadays we are witnessing a review of these theories, while generalizing the concept according to which current economic systems can not be entirely informational or post-industrial. Therefore, we can assert that material goods production activity will be continued, but there will be deep changes in production management, so that new concepts and production methods will become incompatible with current ones. In this context, we may identify the concerns for efficiency and flexibility of current production systems.

2. SERIAL PRODUCTION MANAGEMENT - GENERAL CHARACTERISTICS AND TRENDS OF EFFECTIVE MANAGEMENT

The principles and the methods applied in industrial production management differ according to the nature and quantity of the manufactured products, to the technological specialization of industrial subunits and also to other elements that characterize the typology of industrial production. For this reason, defining and characterizing the types of production has a particular importance for choosing the most appropriate models of industrial production management, in relation to the particularities of production processes taking place there.

By type of production we can understand an *organizational and functional status of the company due to the nomenclature of manufactured products, to the production volume executed on each heading of the schedule, to the degree of specialization of the company and to the movement of various raw materials, semi-*

finished products from one workstation to another (Bărbulescu, et al., 1995, p.150), (Deaconu, 1998, p.144), (Cârstea & Pârvu, 1999, p.87). In practice, we can identify three types of production, namely: mass production, serial production and small scale production.

Serial production is used in some enterprises which manufacture a relatively limited range of products; each product is manufactured in larger or smaller amounts (class of fabricated products). This production involves manufacturing the same products on assembly lines, so that it can be characterized using the following basic formula:

$$Q_i \cdot t_j < F_{ij} \quad (1)$$

where:

Q_i - represents the amount of "i" products manufactured in a certain period of time (usually one year);

t_j - time needed to carry out the task "j" for a unit of product "i";

F_{ij} - the period of time allotted for a workstation in order to carry out the task "j" on products such as "i" (covering the period in which the quantity Q_i is being manufactured).

In other words, the quantity of "i" products manufactured is not sufficient to ensure full workload of the workstation with one single operation - "j". Therefore, in order to make the most of the time, the workstation will be allotted several operations for different products. The greater the inequality $Q_i < F_{ij}$ is, the greater the number of different operations to be performed on the same workstation is. As a result, it reduces the degree of specialization of labour and passing raw materials from one workstation to another will be done in amounts equal to the size of the consignment.

According to the size of the batch of different products and to the manufacturing frequency, there are three possible types of serial production: *large series production*, *medium series production*, *small series production*. In order to pass the goods from one workstation to another, continuous means of transport are used (in the case of large series) or discontinuous ones (in the case of small series production). In companies with serial production, the layout of various machinery and equipment is homogeneous (for small batches) or there are assembly lines (for medium and large series production).

The main features of serial production could be summarized as follows (Jaba, 2002, p.273):

- production schedule is limited (the factory produces few types of product);
- production volume for each product type is great;
- the production process implies regular repeatability of certain type of products;
- batch production: certain estimated amounts of goods included in the schedule are launched into production simultaneously in the form of batches or series which alternately take turns at the workstation and at the production equipment.

Other features derive from these elements, features which are detailed in management and production economics textbooks.

In the context of this paper, the steps to efficient serial production management have set **batch production** as a starting point. Thus, the batch represents the quantity of identical products (parts, components, subassemblies, etc.) launched simultaneously into manufacturing; they are processed on the same workstations during the same period of preparation-finishing time (Moldoveanu, 1996). The preparation-finishing time includes: the time for filling out the papers necessary to launch products into manufacturing, the time to supply workstations with raw materials and with materials required for carrying out operations, the time to train workers or to study the technical documentation, the time to adjust the equipment and install new devices, the time to manufacture one or more sample products, the time necessary to deliver the products and bringing the workstation to its original condition.

If in the past batches represented, alongside with typification and standardization, one of the virtues of mass production, nowadays it can turn into a disadvantage against the expected changes in production systems, changes that marked the transition to the postindustrial society. Thus, it appears that in recent years, large series production has been facing significant difficulties arising especially from the strong outlet market dynamism and from the refinement of consumers' demands; this trend has been outlined both quantitatively and qualitatively. Widening the diversity production carries a direct impact on the production process, both from technological and organizational perspective, taking into account the fact that it requires more frequent changing from manufacturing one product type to another. These issues are particularly evident for small and medium series production, which weigh the strongest within the automobile industry (over 80% of total production).

It turns out that the concerns for *increasing the efficiency and flexibility* of production are greater; these attributes involve radical changes, both in management methods and in manufacturing technology. We shall dwell upon the two directions for improving serial production management: increasing economic efficiency by optimizing the size of batches and making production systems more flexible by implementing innovative methods to reduce the exchange of die.

3. INCREASING THE EFFICIENCY OF SERIAL PRODUCTION BY OPTIMIZING THE SIZE OF THE BATCH

The development of production processes within small and medium series production requires batches, considering the fact that a relatively large number of products types are manufactured and their beneficiaries may not require the entire annual amount of a particular type of product, instead they need smaller quantities that are to be available through consecutive deliveries in the long run. Batch production is dictated by the business conditions and by the need to carry out a more efficient activity. It is obvious that launching into production, at a single moment in time, of all the products of some class, would coincide with very long manufacturing cycles and with an immobilization - in large volume and over a long period of time - of the company funds in the form of unfinished production. Although medium series

production represents the typical branch of batch production, it can also be found in large series production and in mass production organized in flow assembly lines. Determining the optimal size of the batch is a necessary step which has as a starting point the minimization of production costs as a key lever for increasing economic efficiency. Moreover, the production batch, due to its size, influences a series of efficiency indicators of the industrial activity such as: the usage of production capacities, the speed of working capital rotation, labour productivity, production costs and, ultimately, the profit (Constantinescu, et al., 1994, p.42).

Starting batch production brings about different types of production costs. First, the manufacturing of a new class of products requires some expenditure to carry out on the job preparatory-finishing operations. This category includes expenditure related to: elaborating the documentation needed for starting the production, supplying the workstations with the necessary materials and equipment, training workers and studying the technological documentation, adjusting the equipment, manufacturing one or more sample products, delivering the products and bringing the workstations to their original state, etc. If the unit cost is noted c_l , it verifies the equation:

$$c_l(n) = c_{pi}(n) = \frac{C_{pi}}{n} \quad (2)$$

where:

C_{pi} is the total cost for preparing and completing the batch manufacturing process (they bear the characteristic and the influence of conventional-constant expenditure);

n – the number of products within the batch;

$c_{pi}(n)$ – the unit costs for the preparation-finishing operations.

Drawing the graph corresponding to the equation (2), we obtain an equilateral hyperbola. The development of such a function shows that as the batch size increases, the costs per unit are reduced; the two figures are in inverse ratio.

In the case of two different batch sizes n_1 and n_2 (where $n_1 < n_2$), the launch unit costs are $\frac{C_{pi}}{n_1}$ and $\frac{C_{pi}}{n_2}$, respectively. The external economies of scale per unit resulting from the batch production of size n_2 is:

$$e = \frac{C_{pi}}{n_1} - \frac{C_{pi}}{n_2} = C_{pi} \cdot \left(\frac{1}{n_1} - \frac{1}{n_2} \right) \quad (3)$$

while the total external economies of scale are:

$$E = Q \cdot C_{pi} \cdot \left(\frac{1}{n_1} - \frac{1}{n_2} \right) \quad (4)$$

where:

Q represents the total quantity of a certain type of products estimated by the annual production programme of the company.

The external economies of scale identified by relations (3) and (4) could lead to the conclusion that in terms of launch costs, it is advantageous to work with batches of bigger size. Thus, the production process would require a substantial amount of current assets available over a long period of time, resulting in significant losses. The equation of losses has a linear form:

$$c_2(n) = I \cdot n \quad (5)$$

where:

I represents the losses per product (lei).

The graph of the losses per product shows a line starting at the origins and rising as the production batch increases.

The unit cost of the working capital in the form of unfinished production is calculated using the following formula:

$$c_2(n) = c_i(n) = \frac{V \cdot T \cdot \delta}{n} \quad (6)$$

where:

V represents the value of net current assets in the form of unfinished production (lei);

T - duration of blockage (days)

δ - the losses registered by the company as a result of blocking the working capital (percentage of 1 lei/day).

In its turn, the value of blocked current assets (V) for a batch of size "n" will be:

$$V = n \cdot \left(C_a + \frac{C_p}{2} \right) \quad (7)$$

where:

C_a - the cost of the operation prior to starting the batch production (lei/piece)

C_p - the cost of processing one product from the batch (lei/piece).

Processing costs are taken into consideration at half their value because the amounts are not paid right on the spot; they increase linearly for each object from zero to the maximum value which equals C_p in a period of time t. The average size of the processing cost results from the relationship:

$$C_p = \frac{\int_0^t \frac{C_p x}{t} dx}{\int_0^t t dx} = \frac{C_p \cdot \frac{t^2}{2 \cdot t}}{t} = \frac{C_p}{2} \quad (8)$$

The period of time for which the current assets (T) were blocked in order to manufacture the batch (n) during period t is determined by the formula:

$$T = \frac{t}{n_l} \quad (9)$$

where:

n_l - the number of lots released during period T

t – the deadline of the production programme (days).

Starting from $n_l = \frac{Q}{n}$, it is immediately apparent that:

$$T = \frac{t \cdot n}{Q} \quad (10)$$

Replacing the analytical relations of parameters V and T in the equation of the expenditure regarding the blockage of circulating capital (6), we obtain:

$$c_i(n) = n \cdot (C_a + \frac{C_p}{2}) \cdot \frac{t \cdot n}{Q} \cdot \delta \quad (11)$$

The total losses caused by blockage will be:

$$C_i(n) = n \cdot (C_a + \frac{C_p}{2}) \cdot \frac{t \cdot n}{Q} \cdot \delta \cdot n_l \quad (12)$$

Substituting $n_l = \frac{Q}{n}$ in equation (12), we obtain the final expression of the total losses caused by blocking the working capital:

$$C_i(n) = n \cdot (C_a + \frac{C_p}{2}) \cdot t \cdot \delta \quad (13)$$

As a consequence, losses caused by blockage are directly proportional to the size of the batch, while the loss caused by increasing the lot from n_1 to n_2 will be:

$$Pi = C_i(n_2) - C_i(n_1) = (n_2 - n_1)(C_a + \frac{C_p}{2}) \cdot t \cdot \delta \quad (14)$$

In order that the transition to large batches production be more effective, it is necessary for the loss calculated using the relation (14) to be compensated by the savings made with preparation-finishing operations and to be evaluated using the relation (4).

The equation of the total production costs of one product from the batch $C_i(n)$ results from summing up the launch costs and the costs corresponding to blocking the working capital:

$$C_i(n) = \frac{C_{pi}}{n} + \frac{n \cdot (C_a + \frac{C_p}{2}) \cdot t \cdot \delta}{Q} \quad (15)$$

Let us note $a = \frac{(C_a + \frac{C_p}{2}) \cdot t \cdot \delta}{Q}$ and $C_{pi} = b$.

Hence it follows:

$$C_i(n) = a \cdot n + \frac{b}{n} \quad (16)$$

The determination of the optimal batch size requires the minimization of the expression $C_i(n)$. The solution can be presented both graphically and based on an analytical calculation. The graphical method implies drawing two curves representing the evolution of the two factors of the sum (16). Hence, we have figure 3.

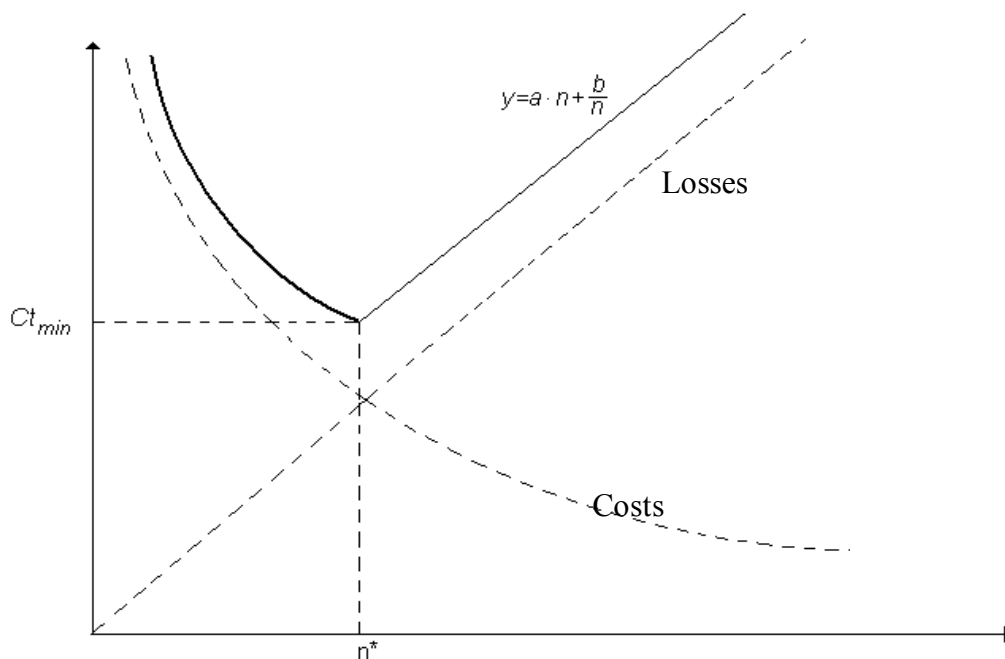


Figure 1. Total cost per product unit and the optimum production batch

Analytically, we can calculate the first derivative in relation to n of the total cost function and then the result is set to zero:

$$\frac{dC_t(n)}{dn} = -\frac{b}{n^2} + a = -\frac{C_{pi}}{n^2} + \frac{(C_a + \frac{C_p}{2}) \cdot t \cdot \delta}{Q} \quad (17)$$

For the total cost function $C_t(n)$ to reach its minimum, the following condition must be met:

$$\frac{dC_t(n)}{dn} = 0 \quad (18)$$

Solving the equation above, we obtain the equation for determining the optimal batch size (n^*):

$$n^* = \sqrt{\frac{C_{pi} \cdot Q}{(C_a + \frac{C_p}{2}) \cdot t \cdot \delta}} \quad (19)$$

The problems of determining the optimum batch often lead to simple calculations that can be applied immediately. However, there are situations when necessary calculations are already performed and organized in tables or monograms. But the practice does not always use the sizes of batches resulted from optimal mathematical calculations because in the case of a large number of items there are difficulties related to the operational planning of production and to ensuring its rhythmicity.

In addition, the organizational framework of each company puts forward additional restrictions that should be taken into account when determining the manufacturing batch size. Therefore, the calculated batch size needs to undergo a process of correction or adjustment, taking into account the peculiarities of the production process organization within each company. Corrected lots are called *economic lots*. Practical experience has shown that the economic lot may differ from the optimal one by a margin of $\pm 10-15\%$, and the deviations reported in the batch management costs are not significant (Cârstea & Pârvu, 1999)*.

Analyzing the final relation for calculating the optimal batch - relation (19) – we conclude that the only real and economic option to reduce the batch to a size which is considered to be effective is *reducing preparation-finishing costs* and hence the time spent. In this respect, modern science of production management provides practitioners

* The abridgement SMED was not originally included in Shingo's paper (called "Shingo System – the Key to Improve Production"), but it was used in 1985 when the book was translated into English. SMED means "Single Minute Exchange of Die", a word-for-word translation being "converting a manufacturing process from running the current product to running the next product in a single-digit minute".

with different tools to meet the need of solving specific problems. SMED method suggests that by using specific techniques, one can minimize change-over time.

4. FLEXIBLE SERIAL PRODUCTION USING SMED METHOD

SMED method* (SINGLE MINUTE EXCHANGE OF DIE) is part of the Just-in-time production management methods and was elaborated by the Japanese specialist Schigeo Schingo. The aim of this method was to reduce change-over time for the series of fabricated products, or to automatically convert a manufacturing process within Mazda factories. The implementation of SMED method improves production flexibility through a rapid changeover, taking into consideration the fact that in the case of traditional production processes such changes take a rather long period of time, they are complex and are performed by highly qualified workers.

The essential premise for applying this method is to make the distinction between the two types of operations involved in the change-over, namely:

- *input exchange die*, performed only when the equipment is idle and therefore production is stopped. This category of time, directly related to the physical changeover can be reduced by standardizing the tool clamping systems, by avoiding the use of threaded adjustment devices with long-haul and by synchronizing operations etc.;
- *output exchange die*, which can be performed while the production process is still running. The time allotted for external operations represents 70% of the total change-over time and it can be converted to "masked time", that is to say it also covers the time when technological operations are performed on the previous batch.

The steps imposed by the practical implementation of Schingo's method involve carrying out the following tasks:

- detailed analysis of each operation and the determination of the time required for its execution;
- separate internal from external setup operations and performing the latter outside the changeover time;
- converting internal to external setup by improving labour organization;
- standardizing functions to be changed and minimizing changeover time;
- eliminate adjustments and mechanization.

Due to immediate potential impact on productivity growth and on changeover time and costs, the implementation of SMED method is applied in production processes characterized by large changeover times that affect the technological flow. Effective implementation of Schingo's method in companies such as Mitsubishi, Toyota and Fichet-Bauche, has resulted in dramatic reduction of changeover times (by about 100-200 times). For example, Toyota has replaced the press machine which required a few hours to change dies with a punching machine equipped with multiple dies which allowed converting the process of turning out Celica automobiles to turning out Corola automobiles (or any other car from Toyota brand) within only two minutes; this had a very positive impact on improving profitability and production flexibility.

5. CONCLUSION

In recent years, we have witnessed a slow transition of traditional manufacturing systems to a higher form of operation management, based on advanced production systems. New strategic orientation of the production responds to market signals; under the circumstances, the role of batch production should not be limited to repetitive delivery of identical, standardized parts, but must extend to providing goods and services closely adapted to customers' orders. Therefore, the optimal size of batches and the reduction of changeover time are the main prerequisites for serial production flexibility.

The optimization calculations presented in the paper can be applied with good results in the case of those enterprises in which the production process includes a series of processing stages for converting raw materials into finished products. This category includes machine-building factories, furniture factories, textiles companies and factories specialized in producing household appliances, etc. There are other situations when the general model for minimizing production costs can be customized: it is the case of companies that turn small items the consumption period of which exceeds the period of production; industrial enterprises where the production period should not be neglected as compared with the duration of consumption and production rates and consumption rates are not equal; companies that have certain features as regards the relation between the average production rate and the average sales rate (Jaba, 2002).

Regardless of the situation, determining the optimal manufacturing batch size must be correlated with the issue of reducing the changeover time. This is all because the studies made by specialized literature (Bărbulescu, 2000) revealed that the size of a batch is proportional to the launch cost which is influenced, in its turn, by the time needed to stop the machinery for adjustments. In order to reduce changeover time by 50%, the batch size should be reduced by 70% as compared to the initial economic batch quantity; for a reduction by 75% of the changeover time, the batch launched into to manufacturing represents 50 % of the estimated optimal lot. It is thus obvious that in order to reduce changeover times it is necessary to reduce manufacturing batch sizes, a trend that meets at the same time the requirements imposed by increasing production flexibility.

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TAX AND ACCOUNTING IMPLICATIONS OF THE USE OF SPECIAL CHARGE SCHEME FOR SECOND-HAND GOODS TO THE PAWN SHOPS IN ROMANIA

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ABSTRACT: *In the same time with the crisis deepening in Romania, pawn businesses are also growing. In this paper we discussed several issues concerning the choice of the scheme of registration and determination of value added tax at Pawn Shops, together with the tax and accounting implications of this choice. Therefore, we presented the theoretical aspects regarding the likelihood of Pawn Shops to choose the special scheme for second-hand goods, as they are covered by the Fiscal Code. At the end of this paper we presented based on an example the tax and accounting implications of such special scheme as compared with the “normal” scheme regarding VAT at the Pawn Shops in Romania.*

KEY WORDS: *Pawn Shops; special charge scheme; normal charge scheme; second-hand goods; VAT; tax implications; accounting records*

JEL CLASSIFICATION: *M41, E62, H3*

1. INTRODUCTION

It is interesting to note that the first financial institutions appeared in the world were the Pawn Shops and for three thousand years, because of their usefulness, they have not ceased to exist.

In Romania, pawn businesses were profitable even before the beginning of global crisis, but while the crisis deepened in our country, these businesses have experienced an increased development; the ever more acute lack of liquidity forced many Romanian to turn to Pawn Shops very often. Thus, if before 2008 Pawn Shops offered loans for short and very short periods with guarantees especially in gold, today

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such guarantees may also be mobile phones, laptops, video cameras, property, works of art and even cars. The risks arising from the loans granted by Pawn Shops are minimal given the fact that, generally, the amount lent is around 50-60% of the market value of the goods pledged/pawn, especially goods that are characterized by small and clear values. However, the fee charged by the Pawn Shop which is actually the interest related to the loan is retained from the loan itself.

You might say that with the development of pawn in Romania a new market for second-hand goods has been created, because many of the goods deposited as pledge or pawn are no longer repurchased by their owners at the end of the pawn agreement (the crisis plays here a leading role). We believe that pawning has replaced consignment, although this is not necessarily a positive aspect but rather a market-driven one.

Our concern about Pawn Shops is reflected in this paper in two directions, namely:

1. which are the prerequisites to apply the special scheme for second-hand goods regulated by the Fiscal Code to Pawn Shops?
2. which are the tax and accounting implications arising from the use of the special scheme?

2. CONDITIONS ON THE APPLICATION OF THE SPECIAL SCHEME FOR SECOND-HAND GOODS TO THE PAWN SHOPS IN ROMANIA

In compliance with the Fiscal Code [1], Article 152², Pawn Shops (reselling taxable persons for the purposes of paragraph 1 point s) are able to apply the special VAT scheme for second-hand goods, works of art, collectors' pieces and antiques, namely they may charge the supply of such goods only at the rate of profit margin, with the basic condition that such goods are purchased within the Community from: non-taxable persons (natural persons and persons registered for VAT purposes), taxable persons (registered for VAT purposes) if those goods have been exempted from VAT or charged under special scheme (profit margin) and from small enterprises, if the goods fall within the category of capital goods.

The special VAT scheme may also apply to imported works of art, collectors' items or antiques (from outside the Community), and also to works of art purchased from their authors or their successors in law, for which tax collection is required, the purchase price for calculating the profit margin consisting of the import tax base plus the tax due or paid on the import.

As noted above, we will focus throughout this paper on the scheme for second-hand goods¹ at the Pawn Shops, noting that the same scheme may also apply to works

¹ *Second-hand goods are movable tangible property that can be reused in the state in which they are or after making repairs, other than works of art, collectors' items or antiques, precious stones [1] and: ancient objects that are made of precious metals and precious or semi-precious stones, such as jewellery (classic and fantasy, goldsmiths and silversmiths and all the other ancient objects, including tools, wholly or partly made of gold, silver, platinum, precious stones and/or beads, whatever the degree of purity of metals and precious stones) [2 point 64, para. 1 and 2].*

of art², collectors' items³ and antiques⁴, in compliance with the conditions described above.

In conclusion, Pawn Shops⁵ registered for VAT purposes may opt to apply VAT only on the profit margin, namely only on the difference between the selling price and the purchase price, only if for the goods purchased the VAT has already been charged by the supplier (the supplier did not deduct/collect VAT on goods and was not reimbursed VAT and the goods were not exempted from VAT). In the first phase, the purchase price is given by the sum obtained by those who pawn the goods from the Pawn Shop. Subsequently, the purchase price is given by the sum obtained by the supplier from the Pawn Shop [1, para. 1, point g, points 1 and 2].

It is also interesting to mention that for the supply of second-hand goods made under the special scheme, the Pawn Shop is not entitled to deduction of the tax due or paid for those goods, a condition that although distinctly laid down by law [1 and 2] we consider it implicitly satisfied since one of the conditions for applying the special charge scheme is precisely the payment by the supplier of the value added tax related to pawned goods (the supplier should not have deducted/collected VAT on goods that can not be exempt from VAT or VAT was not refunded to him/her). Of course, when applying the normal tax scheme, the Pawn Shop is legally entitled to deduct the tax due or paid for the second-hand goods purchased (to the extent in which the supplier has deducted/collected VAT).

Accordingly, the Pawn Shop is not entitled to include separately the tax related to the deliveries of goods subject to the special scheme in the invoices to customers,

² *The Fiscal Code defines as works of art [1]: 1. paintings, collages and similar decorative plaques, paintings and drawings, executed entirely by hand, other than architectural, engineering plans and drawings and other industrial, commercial, topographical or similar plans and drawings, original, handmade, handwritten texts, photographic reproductions on sensitized paper and carbon copies obtained by the plans, drawings or texts listed above and the industrial items decorated by hand (CN tariff code 9701); 2. engravings, stamps and lithographs, ancient or modern originals, which were shot directly in black and white or colour, of one or more sheets/plates executed entirely by hand by the artist, regardless of the process or the material used for this, without including mechanical or photomechanical process (CN tariff code 9702 0:00); 3. original productions of statuary art or sculptures in any material, only if they are executed entirely by the artist, copies made by an artist other than the original author (CN tariff code 9703 00 00); 4. tapestries (CN tariff code 5805 00 00) and wall mats (CN tariff code 6304 00 00), handmade by original designs provided by the artist, on condition that there are no more than eight copies of each; 5. individual pieces of ceramics executed entirely by the artist and signed by the latter; 6. enamels on copper, executed entirely by hand in no more than eight numbered copies bearing the signature of the artist or the studio name, except gold or silver jewellery; 7. photos taken by the artist, out on paper only by him/her or under his/her supervision, signed, numbered and limited to 30 copies, including all sizes and mountings.*

³ *Collectors' items are defined by the Fiscal Code [1] as follows: 1. postage stamps, revenue stamps, postage marks, first-day envelopes, full and similar postal series, cancelled or not, but without a rate, nor intended to have a rate (CN tariff code 9704 00 00); 2. zoological, botanical, mineralogical, anatomical collections and collectors' pieces or which have a historical, archaeological, palaeontological, ethnographic or numismatic interest (CN tariff code 9705 00 00).*

⁴ *Antiques are in compliance with the Fiscal Code [1]: objects other than works of art and collectors' items, more than 100 years old (CN tariff code 9706 00 00).*

⁵ *This paper concerns mainly pawn shops, however, if the legal conditions (presented throughout this chapter) are observed, any taxable person may choose to apply the special tax scheme for the second-hand goods, works of art, collectors' items and antiques.*

which means failure to deduce VAT related to the purchase by that customer, regardless of the scheme further applied by the customer (the customer can still opt to apply the special VAT scheme, or conversely, to apply the normal charge scheme⁶).

For the second-hand goods not repurchased on the due date by the persons who have previously pawned them, Pawn Shops must issue an invoice through self invoice to each supplier from whom it purchases the goods subject to the special scheme and who is not obliged to issue an invoice, namely from individuals. The invoice should enclose the supplier's statement confirming that he/she has not received any tax exemption or refund for the purchase, import or intra-Community acquisition of goods delivered by the Pawn Shop.

In practice, this requirement is solved right from the conclusion of the pawn contract by attaching to the pawn contract the statement of the person pawning (if it is a non-taxable person) has he/she was not granted the exemption or refund of VAT related to the goods pawned. This is necessary because in case of failure to repurchase the goods pawned at the due date, the Pawn Shop will put those goods out for sale (second-hand goods), will issue the self-invoice which it will send to each supplier (the individual who has pawned the goods in question) but will not be able to take their statement (most times, people who do not repurchase at the due date the goods pawned no longer physically move to let the Pawn Shop know about their intention not to repurchase).

Before determining the tax implications of applying the special VAT scheme for second-hand goods at Pawn Shops, we will also present the additional legal requirements [1 and 2] that they must meet (accounting implications are implicit):

- to keep a special journal for purchases and a special journal for sales where to enter all the goods subject to the special scheme;
- to keep a comparison register allowing the establishment of the total tax base for supplies made in the fiscal year and, where appropriate, the output tax;
- to keep separate records for the stocks of goods subject to the special scheme;
- to apply the special scheme to all classes of second-hand goods;
- to establish the output tax; under the special scheme for each fiscal year where the tax statement must be submitted;
- to keep records of transactions for which the special scheme applies;
- to keep separate records for the transactions subject to each scheme where both transactions subject to the normal and special tax scheme are carried out;
- to notify the competent fiscal body about the application of the special scheme for imported works of art, collectors' items and antiques, scheme which automatically remains in force until December 31 of the second calendar year following the exercise of the option;

⁶ We will also comment in subchapter 3 the tax implications of the customer's decision to keep the special charge scheme, or to switch to the normal charge scheme.

3. TAX AND ACCOUNTING IMPLICATIONS OF THE APPLICATION OF THE SPECIAL VAT SCHEME FOR SECOND-HAND GOODS TO THE PAWN SHOPS

In the attempt to recall the tax and accounting implications arising from the optional application by the Pawn Shops in Romania of the special charge scheme, we will continue with this example:

- a non-taxable person “A” is pawning at the Pawn Shop “B” gold rings and chains for a period of seven days, the amount obtained is RON 1,000⁷. Please note that with the conclusion of the pawn contract, “A” also gives a statement confirming that he/she was not granted an exemption or refund of VAT for the goods pawned (on the date of their purchase);
- the Pawn Shop “B” puts out for sale the goods pawned by “A” because he/she did not repurchase them at due date, the purchase price is RON 1,000 (the amount obtained by “A” from “B”), and the selling price is RON 2000, including VAT;
- a jewellery trade firm “C” purchases from “B” the gold rings and chains which it sells with RON 2,800 including VAT.

The accounting and tax implications are reflected by the following entries in accounting:

I. In the accounting of Pawn Shop “B”:

a) the loan granting is reflected, in compliance with the pawn contract and the cash book:

| Normal charge scheme | | | Special charge scheme | | | | |
|-----------------------------|---|--------------------------|-----------------------|-----------------------------|---|--------------------------|------|
| 267 “Long term receivables” | = | 5311 “Petty cash in lei” | 1000 | 267 “Long term receivables” | = | 5311 “Petty cash in lei” | 1000 |

b) concurrently, the pawn fee is reflected in the amount of RON 42 (0.6%/day) collected from “A” with the loan payment, according to the receipt of the fiscal cash register and cash book:

| Normal charge scheme/Special charge scheme | | | |
|--|---|-------------------------|-------|
| 5311 “Petty cash in lei” | = | % | 49,98 |
| | | 704 “Services rendered” | 42,00 |
| | | 4427 “Output VAT” | 7,98 |

c) there are recorded the second-hand goods (gold rings and chains) not repurchased on the due date by “A” which are put out for sale by the Pawn Shop “B” according to the acceptance and difference inspection report⁸:

⁷ From the accounting point of view, the fee (interest) charged by the pawn shop at the conclusion of the pawn contract is reflected using the account 704 “Services rendered” (which is credited with the account 4427 “Output VAT - for VAT on the fee) in correspondence with the debit of the account 5311 “Petty cash in lei”. From the tax point of view, regardless of the tax scheme chosen by the pawn shop, the fee charged falls in the tax base of the value added and the rate applied is 19%.

⁸ When using the normal tax scheme, the pawn shop “B” will apply 19% VAT on both the purchase price and the trade mark-up (2000 * 19 / 119 = RON 319.33) even if it can not deduct VAT relating to the

| Normal charge scheme | | | | Special charge scheme | | | |
|---|---|--|-------------|---|---|--|----------------|
| 371 "Goods purchased for resale" | = | % | <u>2000</u> | 371 "Goods purchased for resale" | = | % | <u>2000,00</u> |
| | | 267 "Long term receivables" | 1000 | | | 267 "Long term receivables" | 1000,00 |
| | | 378 "Price differences on goods purchased for resale" | 680,67 | | | 378 "Price differences on goods purchased for resale" | 840,34 |
| | | 4428 "VAT under settlement" | 319,33 | | | 4428 "VAT under settlement" | 159,66 |

d) the sale of second-hand goods with subsequent collection is reflected (in the category of goods) by "B" to the jewellery trade firm "C", according to the invoice⁹:

| Normal charge scheme | | | | Special charge scheme | | | |
|------------------------|---|---|-------------|------------------------|---|---|----------------|
| 411 "Customers" | = | % | <u>2000</u> | 411 "Customers" | = | % | <u>2000,00</u> |
| | | 707 "Sale of goods purchased for resale" | 1680,67 | | | 707 "Sale of goods purchased for resale" | 1840,34 |
| | | 4427 "Output VAT" | 319,33 | | | 4427 "Output VAT" | 159,66 |

e) concurrently, the goods sold are discharged from administration¹⁰:

| Normal charge scheme | | | | Special charge scheme | | | |
|--|---|---|-------------|--|---|---|----------------|
| % | = | 371 "Goods purchased for resale" | <u>2000</u> | % | = | 371 "Goods purchased for resale" | <u>2000,00</u> |
| 607 "Goods for resale" | | | 1000 | 607 "Goods for resale" | | | 1000,00 |
| 378 "Price differences on goods purchased for resale" | | | 680,67 | 378 "Price differences on goods purchased for resale" | | | 840,34 |
| 4428 "VAT under settlement" | | | 319,33 | 4428 "VAT under settlement" | | | 159,66 |

f) the income and expense accounts are closed:

purchase price, as "A" is a non-taxable person. For the special tax scheme, pawn shop "B" will collect VAT only on profit margin, namely: $(2.000 - 1.000) * 19/119 = \text{RON } 159,66$.

⁹ The invoice will specify only that the special tax scheme is applied to second-hand goods, without including output VAT [1 Art. 152² para. 12].

¹⁰ To simplify the calculations we will ignore the existence of other goods and margins, and therefore we have the same amounts as in operation b).

| Normal charge scheme | | | Special charge scheme | | |
|---|---|------------------------------------|---|---|------------------------------------|
| 121 "Profit (loss) for the period" | = | 607 "Goods for resale" 1000 | 121 "Profit (loss) for the period" | = | 607 "Goods for resale" 1000 |

and:

| Normal charge scheme | | | Special charge scheme | | |
|---|---|--|---|---|--|
| % | = | 121 "Profit (loss) for the period" <u>1722,67</u> | % | = | 121 "Profit (loss) for the period" <u>1882,34</u> |
| 704 "Services rendered" | | 42,00 | 704 "Services rendered" | | 42,00 |
| 707 "Sale of goods purchased for resale" | | 1680,67 | 707 "Sale of goods purchased for resale" | | 1840,34 |

g) VAT adjustment¹¹ (we will ignore as well the other taxable operations for the firm "B" and the reporting period):

| Normal charge scheme | | | Special charge scheme | | |
|--------------------------|---|------------------------------------|-------------------------------|---|-------------------------------|
| 4427 "Output VAT" | = | 473 "Suspense account" 0,35 | 473 "Suspense account" | = | 4427 "Output VAT" 0,36 |

and:

| Normal charge scheme | | | Special charge scheme | | |
|--------------------------|---|-------------------------------|--------------------------|---|-------------------------------|
| 4427 "Output VAT" | = | 4423 "VAT payable" 327 | 4427 "Output VAT" | = | 4423 "VAT payable" 168 |

h) the corporation tax is recorded (the same abstraction as in op. I.g):

| Normal charge scheme | | | Special charge scheme | | |
|-------------------------|---|--------------------------------------|-------------------------|---|--------------------------------------|
| 691 "Income tax" | = | 4411 "Current income tax" 116 | 691 "Income tax" | = | 4411 "Current income tax" 141 |

i) the expense account closure is reflected on the income tax:

| Normal charge scheme | | | Special charge scheme | | |
|---|---|-----------------------------|---|---|-----------------------------|
| 121 "Profit (loss) for the period" | = | 691 "Income tax" 116 | 121 "Profit (loss) for the period" | = | 691 "Income tax" 141 |

Note that the firm "B" (Pawn Shop) is favourably influenced when applying the special tax scheme, namely it will have to pay only RON 168 compared to RON 327 if it

¹¹ Rounding up the amounts representing taxes from the state budget and local budgets is legally accountable using the account 473 "Suspense account".

had used the normal charge scheme, i.e. only 51% and the gross profit achieved is higher by RON 159.67 than when using the normal tax scheme (RON 882.34 compared to RON 722.67).

However, the corporation tax due is higher by RON 25 in the special tax scheme. Finally, the normal charge scheme would result in obtaining an adjacent payment sum of RON 134 (327-168+116-141) and a net profit reduced by RON 134.67 compared to the special charge scheme (RON 606.67 compared to RON 741.34 - after closing the account 691 "Income tax").

II. In the accounting of the jewellery retail firm "C":

a) there is reflected the purchase of jewellery (gold rings and chains) from the Pawn Shop "B", according to the invoice (if it applies the special tax scheme the firm "B" will not include in the invoice the VAT related to the sale of RON 159.66, but will only make reference to Article 152²"special scheme for second-hand goods" and therefore the firm "C" will never be able to deduct this amount; this document is actually the first copy of the invoice issued by "B" in the operation I.d):

| Normal charge scheme | | | Special charge scheme | | |
|----------------------------------|---|-----------------|-----------------------|----------------------------------|------------------------|
| % | = | 401 "Suppliers" | 2000 | 371 "Goods purchased for resale" | = 401 "Suppliers" 2000 |
| 371 "Goods purchased for resale" | | | 1680,67 | | |
| 4426 "Input VAT" | | | 319,33 | | |

b) the retail price of RON 2800 is reflected, according to the acceptance and difference inspection report:

| Normal charge scheme ¹² | | | Special charge scheme ¹³ | | |
|------------------------------------|---|-----------|-------------------------------------|---|----------|
| 371 "Goods purchased for resale" | = | % 1119,33 | 371 "Goods purchased for resale" | = | % 800,00 |
| | 378 "Price differences on goods purchased for resale" | 672,27 | | 378 "Price differences on goods purchased for resale" | 672,27 |
| | 4428 "VAT under settlement" | 447,06 | | 4428 "VAT under settlement" | 127,73 |

c) the retail sale of the jewellery previously purchased from "B" is reflected, according to the receipt of the fiscal cash register¹⁴ and cash book:

¹² $VAT = 2800 * 19 / 119 = 447,06$ lei (trade markup = $2.800 - 1.680,67 - 447,06 = 2.800$ lei).

¹³ VAT applies only to the profit margin: $VAT = 800 * 19 / 119 = 127,73$ lei (namely: $672,27 * 19\% = 127,73$ lei).

¹⁴ If the special tax scheme is applied, do not separately specify the value added tax on the receipt, but mention the price of the goods sold [2 point 64 para. 11].

| Normal charge scheme | | | Special charge scheme | | |
|---------------------------------|-------------|--------------------------------------|---------------------------------|-------------|--------------------------------------|
| 5311 "Petty cash in lei" | = | % <u>280000</u> | 5311 "Petty cash in lei" | = | % <u>2800,00</u> |
| | 707 | "Sale of goods purchased for resale" | | 707 | "Sale of goods purchased for resale" |
| | 4427 | "Output VAT" | | 4427 | "Output VAT" |
| | | 447,06 | | | 127,73 |

d) concurrently, the goods sold are discharged from administration:

| Normal charge scheme | | | Special charge scheme | | |
|--|---|---|--|---|---|
| % 607 "Goods for resale" | = | 371 "Goods purchased for resale" | % 607 "Goods for resale" | = | 371 "Goods purchased for resale" |
| | | <u>280000</u> | | | <u>2800,00</u> |
| | | 1680,67 | | | 2000,00 |
| 378 "Price differences on goods purchased for resale" | | 672,27 | 378 "Price differences on goods purchased for resale" | | 672,27 |
| 4428 "VAT under settlement" | | 447,06 | 4428 "VAT under settlement" | | 127,73 |

f) the income and expense accounts are closed:

| Normal charge scheme | | | Special charge scheme | | |
|---|---|-------------------------------|---|---|-------------------------------|
| 121 "Profit (loss) for the period" | = | 607 "Goods for resale" | 121 "Profit (loss) for the period" | = | 607 "Goods for resale" |
| | | 1680,67 | | | 2000 |

and:

| Normal charge scheme | | | Special charge scheme | | |
|---|---|---|---|---|---|
| 707 "Sale of goods purchased for resale" | = | 121 "Profit (loss) for the period" | 707 "Sale of goods purchased for resale" | = | 121 "Profit (loss) for the period" |
| | | 2352,94 | | | 2672,27 |

f) VAT adjustment:

| Normal charge scheme | | | Special charge scheme | | |
|--------------------------|---|-------------------------------|-------------------------------|---|--------------------------|
| 4427 "Output VAT" | = | 473 "Suspense account" | 473 "Suspense account" | = | 4427 "Output VAT" |
| | | 0,06 | | | 0,27 |

and:

| Normal charge scheme | | |
|----------------------|--------------------------|------|
| 4426 "Input VAT" | = 473 "Suspense account" | 0,33 |

and:

| Normal charge scheme | | | Special charge scheme | | | |
|----------------------|---|--------------------|-----------------------|-------------------|----------------------|-----|
| 4427 "Output VAT" | = | % | 447 | 4427 "Output VAT" | = 4423 "VAT payable" | 128 |
| | | 4426 "Input VAT" | 319 | | | |
| | | 4423 "VAT payable" | 128 | | | |

g) the corporation tax is recorded:

| Normal charge scheme ¹⁵ | | | Special charge scheme ¹⁶ | | | |
|------------------------------------|---|---------------------------|-------------------------------------|------------------|-----------------------------|-----|
| 691 "Income tax" | = | 4411 "Current income tax" | 108 | 691 "Income tax" | = 4411 "Current income tax" | 108 |

h) the expense account closure is reflected on the income tax:

| Normal charge scheme | | | Special charge scheme | | | |
|------------------------------------|---|------------------|-----------------------|------------------------------------|--------------------|-----|
| 121 "Profit (loss) for the period" | = | 691 "Income tax" | 108 | 121 "Profit (loss) for the period" | = 691 "Income tax" | 108 |

Surprisingly, in both cases, firm "C" records the same income tax due of 108 RON and the same VAT payable of 128 RON. Finally, the gross profit and the net accounting one is the same (RON 672.27, respectively RON 564.27).

4. CONCLUSIONS

Considering the example from subchapter 3 we can draw at least the following conclusions:

- the application of the special charge scheme to Pawn Shops implies that the conditions set out at length in subchapter 2 are met. 2. Essentially these are: 1. existence of the Statement confirming that for the goods sold the supplier (non-taxable natural person or taxable person applying the special scheme) has not received any exemption or repayment of VAT; 2. maintenance of special journals for sales and purchases and of separate accounts for the stocks of goods subject to the special scheme;
- the application of the special charge scheme to the Pawn Shops has beneficial tax implications in terms of value added tax (even of half-life in our example), and even if it involves a higher income tax due than the one resulted from applying the

¹⁵ $(2352,94 - 1680,67) * 16\% = 108 \text{ lei.}$

¹⁶ $(2.672,27 - 2.000) * 16\% = 108 \text{ lei.}$

normal charge scheme, the gross and net profit have much higher values when using the special charge scheme. We therefore recommend the application of the special charge scheme for optimizing (reducing) the tax debts;

- further analyzing subsequent circuits, we can see that the companies reselling the second-hand goods purchased from Pawn Shops do not record tax implications, the taxes and profit are identical to those recorded in the case of normal charge scheme. This applies only if the scheme of the Pawn Shop is also continued by its customers (mostly these customers are actually companies that deal with trade of jewellery). In our example “C” must apply the same scheme as that applied by “B” (namely: normal scheme “B” – normal scheme “C”, or special scheme “B” – special scheme “C”). If “C” (jewellery trade firm) would apply the normal charge scheme for the goods purchased from the Pawn Shop “B” which applied the special charge scheme (special scheme “B” - normal scheme “C”) it should record the following tax liabilities: VAT payable of 447 RON, income tax due of 56 RON and the net profit would be RON 296.94 (compared with VAT payable of 128 RON, income tax due of 108 RON and net profit of RON 564.27). We believe the tax implications in this case are unequivocal (“C” would have almost four times more VAT payable, almost twice less income tax due and the net profit would be almost twice more reduced);
- the same negative tax implications can be seen in the taxable companies purchasing wholesale second-hand goods from Pawn Shops which they do not sell as such, but use them as raw material (there are plenty of situations where jewellers melt the gold rings and pieces purchased from Pawn Shops). In these situations, these companies can not continue to apply the special charge scheme, and therefore will be negatively affected in that they will record higher taxes and much lower net profits;
- the accounting implications of using the special charge scheme translates into increased workload generated by keeping special journals and separate accounts; as regards the preparation of the other supporting documents and accounting records, we believe that the special charge scheme has no accounting implications (it does not complicate at all the accountant's work);
- the special scheme may also apply to sales by public auction conducted by organizers of sales by public auction of works of art, collectors' items and antiques, in compliance with the same conditions listed throughout the paper;
- we therefore recommend the application of the special charge scheme in Pawn Shops after a sound customer analysis. Thus, if a Pawn Shop does not have a high proportion of deliveries of second-hand goods (usually gold objects not repurchased on the due date) to companies which would first process those goods (as classified in the category of raw materials), or when its customers are mainly non-taxable persons, then the special charge scheme is the best variant. Otherwise, namely when the customers of Pawn Shops purchase goods to use them as raw materials (customers being adversely influenced by the fact that they can not apply the special scheme), the Pawn Shop must take into account the possible loss of those customers, and in this situation it would be advisable to use the normal charge scheme.

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TRADITIONAL AND ALTERNATIVE APPROACHES TO QUANTIFY THE RISK FOR BUSINESS

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ABSTRACT: *The paper proposes to present the approaches modalities of the risk to which an investor is subjected in various situations during the development of its business. The risk description is based on the idea of quantifying the probability of occurrence and severity of the event the reason for which in the approach of business risk is necessary to treat the probability distributions in the occurrence of risk and their construction methods. Paper also highlights how the work of measuring risk can be realized during the development of a business.*

KEY WORDS: *risk for business; probability distributions; occurrence of risk; development of a business; types of risk; main types of loss; types of probability distributions; methods of measuring risk*

JEL CLASSIFICATION: *D81*

1. INTRODUCTION

The business is an enterprise, a commercial entity or public or private sector company centered on the production of goods or services that satisfy customer needs. Or the business means a contractor, subcontractor, tenderer of services, consultant, and technical service, administrative or physical services, organized as a sole owner, in partnership, association, corporation or other entity that exists to gain from development of the activity.

A good knowledge of internal and external business environment, an awareness of phenomena, actions and events that may generate losses, the adoption of prudent behavior is the premises to a successful business. Identifying the risk is thus the first step in the development of a business on the basis of conscious, responsible activities, meaning by this that the process of continuously and systematically identified as exposures to the potential harmful factors. Is very good if an entrepreneur

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is able to identify the potential damages on the basis of the experiences of others or even on proper history. To establish damage after the moment of its occurrence is more unpleasant and certainly more expensive than to prevent its occurrence. The lack of identification of potential hazards causes the fact that the damages which can be registered may represent a surprise to the firm and the unconscious retention of some risks is not the happiest initiative for the entrepreneur. But the process of identifying of potential losses should be based on its preceding "mapping". The identification of the types of risk that a firm may face is an essential step in prospects of management of contingencies but it is only the first step in a series of initiatives to be carried out to correct interiorization of entrepreneur behavior in the risky environment. Any choice involves giving up one or more alternatives and we have already discussed the fact that the election results can not be made known accurately, for various reasons. Why it is very important before deciding on a particular option, the company should know not only the expected surprises, but also the chances of their occurrence, their impact, impact severity, the potential frequency of events and other elements. The need of risk assessment makes its presence in life of entrepreneur in several situations, namely:

- When he has to compare two or more alternatives with similar results, but with different risk levels;
- Where he must compare two or more alternatives that may prove just as risky, but bring different results;
- When there is no proper alternative, the entrepreneur must decide if he accepts or not a particular risky situation, in terms of judging their own risk acceptance criteria.

Neither the risks identification nor the losses determination is not simple problems for an entrepreneur. The description of risk and implicitly of potential damage are based on the idea of quantifying the probability of occurrence and severity of the event, so we consider opportune to begin our efforts with a brief overview of the concept of "probability distribution" and how it is used in the approach to risk in business.

2. PROBABILITY DISTRIBUTIONS

In terms of probability theory, any aleatory phenomenon is called "experience". The firm can make only two things: to create the premises of best activity, making every effort that the events take place favourably to achieve the proposed objects and then waiting for results, but sometimes it has to be limited to observing the evolution of phenomena.

For now, we will limit to note the fact that the objectives which the firm establishes at a time can be achieved or not, or can only be a part of the expected result, without discussing the perturbation factors whose action can generate the variability of results. For now, we will consider only the existence of this variability and we will see that it can take a formal description, which is called the "probability distribution".

When we build a probability distribution we must have fixed a number of elements: 1) the aleatory experience to which it corresponds; 2) the purpose of the study or purpose; 3) the time period to which the objective is valid.

For the smooth running of the business firm should be able to estimate: a) the loss generated by the occurrence of a failure; b) the number of occurrences of failures during the period of time; c) total loss, expressed monetary, as a result of failures occurred in the operation of computers, for a certain period of time well established.

It is not hard to guess that these sizes can't be specified exactly, but they represent the aleatory variables whose knowledge involves construction of distributions of afferent probabilities. One can say that when we know the number of failures occurring during a period of time and the loss they cause each failure, total loss calculation is done immediately, as a product of the two specified sizes.

There are different types of potential losses, different categories of the exposed objects and the causes generating the damages are most diverse. When we decide to build a probability distribution for total loss of business during a period established of time we have mean the numerous combinations of categories: 1) type of waste; 2) objects (units) exhibited; 3) cause of loss.

The determination of a complete distribution for total loss should consider all types of potential losses, all units exhibited and all possible causes, which are related to development of a business. So, the total loss distribution should be constructed in a manner most detailed possible. In fact, this is not only difficult to realize but can be big resources consumer (time, money, energy), as we want to highlight in following example. Referring to the risk of exploitation, Irene Cişmaşu says it is evident because of the lack of correlation and perfect prediction of the results of mining activity with the components of this activity. Irene Cişmaşu defines operational risk as the probability that the incomes don't cover the expenses. The risk isn't just a probability, but beginning from the perception of the author we will keep the idea of the possibility of a gap between revenue and expenditures to be felt at the firm level as a loss.

Given the complexity of problem, the need for classification was evident both concerning the types of potential losses to be investigated and as the ratio of causes and exposed units. The teachers C. Arthur Williams Jr. and Richard M. Heins have proposed the combinations that we'll continue to pretend that are not only possible approach. Like any classification of complex phenomena, also that proposed by them can be perfectible. The main types of loss that the two American professors propose it to be considered are: 1) Losses in property of company; 2) Losses relating to the personnel; 3) Loss of net income.

We can say that the net revenue losses can handle either separately or in correlation with the other two types of loss because they may occur: a) directly due to some causes which affect the property of business or engaged personnel. For example, the term failure to deliver goods because of transportation bottlenecks caused by a strike. Company must pay certain penalties which will affect, obviously, the net income; b) indirectly, involving the loss of property prior and / or staff. For example, very significant damage to equipment may slow down production or it may break, so that both costs and future revenues will be affected.

The major causes that the two authors propose are mostly accidental causes, which are mentioned as examples fires, explosions, neglect, illness, death, etc. Of these, only some causes may be present in connection with a number of insured risks: negligence, for example, isn't just insurable, even if damages were caused

intentionally. By limiting the types of losses at only three units set and by classification of the exposed units and of major causes some clear categories, the professors Williams and Heins have greatly simplified the problem in the construction of the probability distribution for the total potential losses. The losses may occur during the same period of time (one month, one quarter etc.), for multiple reasons and that when they appear, the cumulative effect can be more serious than the effect generated by the same losses, appeared however in different periods (or moments). It is not to ignore the fact that, in the same period, the same exposed unit can suffer repeated losses and also the fact that an affected unit can represent a way of transmission of danger to exposed neighboring units, achieving increase damage, realizing the increase of damage with a certain speed of propagation.

2. METHODS OF CONSTRUCTION OF PROBABILITY DISTRIBUTIONS

There are two methods that experts recommend to build a probability distribution which have a general character without elimination of each entrepreneur effort to adapt to the particularity of own business.

a). Method based on historical data. The method supposes observing the previous data when the study is done, assuming that they exist and are accessible. Interested being in a certain type of loss, of some cause and for an established period, the entrepreneur should consult the company documents and to find so the number of occurrences of losses during a long period of time. In this way, he would be able to obtain information about the frequency of different levels of losses already incurred and to estimate the probability that they occur again. Moreover it is widely agreed that tremendous speed of technological evolution and the constant modification of internal and external business environment make the time for which the data remain relevant to decrease drastically. It is true that the relevant periods are too short to provide sufficient data, especially if the developer considers the calculation of the annual results.

We can give as an example a company that three years ago has made improvements and upgrades in the most important weak points of activity, where there were usually problems generating losses. Many causes of troubles were eliminated and also a number of negative effects that could exacerbate because of existing irregularities may be supposed having less severe impact. In other words, the elimination of some risk factors is obtained and therefore of the losses due to them and, in addition, the severity of remained disturbance was reduced. It is expected therefore that the potential losses which are expected after upgrading the company to be different to the negative results registered before. It is also naturally that the prognosis following be realized concerning the potential losses would be made on the basis of the recent data, which correspond to the period after the improvement work. In our example we have assumed that it is three years; if it is relevant period, the company will be based on three observations concerning the total annual losses and these data are completely insufficient in the most of situations, to draw a fair distribution of probability. Each period is characterized by a certain level of costs, either that these refer to reparations or total replacement of damaged items. It is important, therefore, to be made an

adjustment to the values derived from historical data, that amounts considered as potential losses to be real. The probability theory comes again to support the business and provides to the disposition a range of theoretical probability distributions which, together with private data which are held by the entrepreneur, can help in estimating loss distributions.

b). Method based on theoretical distributions. Each distribution in part models the aleatory experiences with certain characteristics, well established, so that one and the same phenomenon is not attributable to several theoretical distributions to describe its behaviour. For example, if the firm a number “n” of units independently exposed to events generating the loss and if the probability of each occurrence of loss is the same for all units - namely p - then every connoisseur of classical probability distributions will say that the number of the occurrence of losses follows a binomial distribution or distribution Bernoulli. If the number of units n is greater than 50, the theorists of probabilities say that above assumptions lead us to thought of Poisson distribution and the examples can continue. Agreeable or not, the theoretical distributions of probability can be extremely useful when you need to evaluate the total potential losses.

The reason is following: if for the determination of aleatory variable "total loss" by the method of historical data it is necessary a big volume of information, often difficult to obtain, when it exists already sketched a behavior through a theoretical distribution of probability are also necessary relatively few of the data for estimating its exact characteristics. Depending on the possibility of their use in the assessment of the risk at enterprise level, the probability distributions can be classified as:

A. Binomial distribution with two states. Known as the Bernoulli distribution, it models the following aleatory experience: from n urns with identical structures, containing white balls and black balls in a certain proportion, is one draw. The number of white balls obtained is followed as a result of these n draws, the number which certainly can not be known before the end of the experience.

If in each urn there are a white balls and b black balls is easy to see that the total a + b of balls in urn the probability that on an extraction occurs a white ball

is $p = \frac{a}{a+b}$. The binomial distribution is helpful in assessing the number of occurrences of loss which makes it possible to determine the total potential losses, providing we know the loss caused by each occurrence.

B. Poisson's scheme and the number of occurrences of loss. Mathematical model assumptions differ from those of the binomial scheme in only one place, namely in terms of structure in n urns. Poisson's scheme is applied to determine the number of occurrences of potential losses and corresponding probabilities, if: 1. in the company there are n units exposed independently at a certain type of loss, for some reason and a fixed time interval; 2. each unit is exposed to loss once; 3. the probability of occurrence of loss for the unit and is $p_i, i = 1, n$. Let's illustrate, considering that an entrepreneur has concluded a number of identical contracts with the customers so that the entire production of which he disposes at a moment may be sold. There is possibility that just before delivering goods to customers they denounce the contract and, for now, the entrepreneur marks losses of incomings.

C. Poisson Distribution. Poisson distribution is often used to determine the number of occurrences of an event within a specified time, or within a certain area. For example, the number of failures occurring in one hour on a production line, the number of repairs to be made for a car 50.000 kilometers of distance covered, or number that doesn't correspond to weight standards of 200 bags resulted from a packaging line. To use the Poisson distribution it requires that two conditions are met: 1. the occurrence probability of the event is the same for any two intervals (of time, space, etc.) of the same length; 2. the occurrence or non-occurrence of event in any period are independent of the occurrence or non- occurrence in any event period. Not always we meet in practice all the conditions necessary for the fact that a theoretical tool could be applied, in this way lightening the studies undertaken at the firm level. For a micro-enterprise, it is possible that the existence of at least 20 units exposed to the same type of loss, of the same cause and in a specified time couldn't be realized.

D. Normal distribution. Identically as the Poisson distribution, the normal distribution can be used to describe the evolution of a aleatory phenomenon as such, or to approximate a binomial distribution.

3. METHODS OF MEASURING RISK

In all professional work may be met the assertion that once it was determined the probability distribution, we can begin to measure the risk based on several known numerical values named average, dispersion, standard deviation, percentage, coefficient of variation. When the company aims to quantify the risk, it considers that in the future to be sheltered from some shortcomings. Nobody can guarantee to an entrepreneur who registered the previous year a total loss of 300 m.u. that in the coming period will register as much, or double, or third. There in the assessment of losses an aleatory component enough uncomfortable, without having to consider possible errors arising from approximations to the data. Once considered data summaries, it is possible that the accuracy to estimate the average value and other measures referred of risk fall, more or less.

Putting the problem in a general context, we believe that the existence of dispersion is an important asset when a decision-maker has to choose between two or more possibilities with an aleatory result and which leads to similar average values. The unpleasant aspect of this size takes the fact that it is difficult to assign to him a specific meaning. Unfortunately, we can not always get detailed information concerning the aleatory phenomenon studied, only using the average value and standard deviation taken as such. The dispersion and implicitly the standard deviation aren't useful whenever two probability distributions have the same average value and we face with choosing between them.

Average and dispersion that we presented above are helpful when you need to compare two probability distributions which have the same expected value or the same data variability. The reality is, however, more complex than the theorists would like and nobody can guarantee that the entrepreneur will have to decide between variants that have approximately identical averages about or similar dispersions (risks). In a firm can be raised the problem of choosing between two actions of following type: 1.

promoting a new product on the market; 2. improving an existing product. For such a choice, the entrepreneur has no weapon at this time.

The average values are significantly different, as well as dispersions, so another measure is needed to compare the risks of the two initiatives. It's coefficient of variation, defined as the ratio between standard deviation (σ) and average (w),

expressed in percentages: The coefficient of variation = $\frac{\sigma}{m} \cdot 100\%$

The information that we provide that coefficient is the percentage which represents the standard deviation of the average of aleatory variable. Although, in essence, both coefficients of variation have small values, we can say comparatively that the first variant is less risky. Unlike to dispersion and standard deviation, the utilization of coefficient of variation as measure of risk imposes certain restrictions on the aleatory variable describing the phenomenon studied.

In its definition, the average value appears at the denominator of the fraction and as such, to be meaningful, must be that $m \neq 0$. Even where m is not zero but it has very small values, no matter how small would be the value of σ can reach extremely high values of the coefficient of variation and, as such, its use isn't necessarily relevant. To avoid such situations, professionals have chosen to use this measure only for distributions whose results are positive.

The study of potential losses brings to the attention of the analysts positive sizes, expressed mostly monetary. The problems can appear when the study directs towards the area of rentability of financial assets, where some titles can have evolutions with results both positive and negative.

4. MEASURES OF RISK FOR PARTICULAR SITUATIONS

For considering applicable this distribution, we need n independent units exposed to loss in a period of established time, each unit being exposed exactly once with probability equal to: $m = np$. The dispersion will be noted with σ^2 and, for this case is: $\sigma^2 = np(1 - p)$. The standard deviation calculated as radical of dispersion is: $\sigma = \sqrt{np(1 - p)}$. Finally, the coefficient of variation has the form:

$$\text{Coefficient of variation} = \frac{\sqrt{np(1 - p)}}{np} = \sqrt{\frac{1 - p}{np}}$$

Given that the probability value is between 0 and 1, should be considered the extreme values:

- If $p = 0$, then certainly no exposure unit will not mark a loss and so it makes no sense to ask any question of some potential losses. In this situation, otherwise almost impossible in practical terms, the binomial nature hasn't any importance or other kind of probability distribution, simply because there is no distribution. The zero probability denotes an impossible event as how the one probability shows a sure event, both cases being completely outside of aleatory notion. Thus, for $p = 0$ we get an average of zero losses, which is reason enough to not calculate any coefficient of variation. The standard deviation is also zero, meaning that an event which will not happen doesn't require risks.

- Therefore, for $p = 1$ we obtain the maximum loss of all exposed units. Let's see what each of other measures of risk becomes. Apparently surprising, dispersion, standard deviation and the coefficient of variation are zero. Namely, without risk. And in fact, the things are like this because in this case the entrepreneur doesn't have to fear that the loss could be less than the maximum possible. From this perspective, the risk is zero: the maximum exposure is certain.

The formulas of calculation that we have presented are helpful in estimating the average number of occurrences of loss, the risk that this number is other than that anticipated of value m and for binomial distribution we can judge things more deeply. Looking the coefficient of variation, we will see that at the denominator of the fraction which defines it appears n . In assumption that the value of p remains unchanged, we see that the size of coefficient of variation depends on the change of n , meaning that an increase of the number of units exposed generates a decrease of risk quantified in this

$$\text{way: } n_1 > n_2 \Rightarrow \frac{1}{n_1} < \frac{1}{n_2} \Rightarrow \frac{1-p}{n_1 p} < \frac{1-p}{n_2 p} \Rightarrow \sqrt{\frac{1-p}{n_1 p}} < \sqrt{\frac{1-p}{n_2 p}}.$$

From the dispersion formula or standard deviation we can observe that these increase with increasing of n . It is perfectly true, but equally true is the increase average value with increasing of number of units exposed, making impossible a comparison of the situation only on basis of analysis of average and dispersion. Consequently, the only relevant measure, which can explain the modifications that appear together with the increase of n , remains the coefficient of variation that

$$\text{indicates that relative risk decreases: } risc1 = \sqrt{\frac{1-p}{n_1 p}}, \quad risc2 = \sqrt{\frac{1-p}{n_2 p}}, \quad \frac{risc1}{risc2} = \sqrt{\frac{n_2}{n_1}}.$$

The ratio $\frac{risc1}{risc2}$ shows us that together with this increase of the risk decrease in inverse relationship to square root of this growth. To be more precise, if the number of units exposed has increased 100 times, then the relative risk decreases by only 10 times, that the previous one. This method of increasing the unit exposed is particularly important and widely applied by insurance institutions and this is a very good reason for an entrepreneur to try to apply it. In business practice however problems may occur problems. Any increase of the units exposed to risk presumes the most times the costs of their acquisition.

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INFLATION AND UNEMPLOYMENT IN THE ROMANIAN ECONOMY

EMILIA HERMAN *

ABSTRACT: *The current economic theory and practice highlights the fact that between inflation and unemployment, two macroeconomic issues which affect the lives of millions of individuals, directly and indirectly, there is no simple correlation. Taking into consideration these aspects, we aim to present a theoretical and empirical view on the relationship between inflation and unemployment in this study. Also, our intention is to analyze if in Romania, during 1990 and 2009, there is a Phillips type relation between the inflation rate and the unemployment rate. The results of this research show that, in Romania, in the long run (20 years) one cannot identify a stable, statistically significant relationship between inflation and unemployment.*

KEY WORDS: *inflation; unemployment; misery index; Phillips curve*

JEL CLASSIFICATION: *E24, E31, J64*

1. INTRODUCTION

Among the multitude of economic problems, two are considered as the closest to people's soul: inflation and unemployment, influencing directly or indirectly their lives and economy in general. Inflation is deleterious because it affects the reproduction spheres, especially due to the uncontrolled increase of prices; it disorganizes the banking system and implies a progressive decline of the national economic competitiveness. On the other hand, unemployment is undesirable because it disturbs the lives of many people (willing to work), and it is associated with an irrecoverable loss of real production.

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The objective of our paper is to present a theoretical and empirical view on the trade-off between inflation and unemployment.

In order to pinpoint the relationship between inflation and unemployment in Romania, we use the inflation rate and the unemployment rate (registered unemployment) in our study, for the period between 1990 and 2008. In order to study the intensity of the relation between the two macroeconomic variables, we have applied *the Pearson correlation coefficient*. The coefficient result is situated in the interval (-1;+1). The plus sign shows a direct relation (as the independent variable increases also the dependent variable increases or inversely) and the minus sign indicates an inverse relationship between the macroeconomic variables.

2. THEORETIC CONSIDERATIONS ON THE RELATIONSHIP BETWEEN INFLATION AND UNEMPLOYMENT

The importance of knowing inflation and unemployment, as far as level, evolution, factors of influence, implications on the real economy are concerned, has been for a long time of great interest for the economists, and not only, thus many specialist papers aim to show the interdependence between the two macroeconomic phenomena: inflation and unemployment.

Since 1958, when A.W. Phillips (in the paper "*The Relationship between Unemployment and the Rate of Change of Money Wages in the United Kingdom 1861-1957*"), based on the data registered in Great Britain for almost a century showed for the first time that there is an inverse relationship between the rate of change in nominal wages and the rate of unemployment, a vast economic literature has been dedicated to the analysis of this relationship. The author noticed that nominal wages tended to increase in the periods with a low unemployment and vice versa. This relationship was depicted through a convex curve, called today the "Phillips Curve".

Due to the fact that a positive correlation emerges between the increase rate of nominal wages and the one of prices, subsequently, at most of the specialists this curve was the basis of a reflection on the existence of an arbitration between inflation and unemployment and thus on the consequences of the economic policy.

In 1960, based on the data regarding inflation and unemployment in the USA economy, Samuelson and R. Solow (in the paper "*Analytical Aspects of Anti-inflation Policy*") made an interpretation of the Phillips curve, in order for this to be used in the choice of the economic policy. Phillips curve, according to these economists, represents a relationship between the inflation rate and the unemployment rate and not between the variation rate of nominal wages and the unemployment rate, as Phillips stated. Furthermore, P. Samuelson reaches the conclusion that society is, in reality, either in the situation of opting for a reasonable level of using the labour force and a moderate but continuous increase of prices (A-C, fig.1), either able of offering a relative stability of prices, but associated with a high degree of unemployment (A-B, fig.1).

For many years the Phillips curve has been recommended as a tool that allows the formulation of political programmes with alternative combinations of the inflation and unemployment rate. Each point on the Phillips curve can be interpreted as a possible variant for the economic policy. All over the Phillips curve there is an inverse

relationship between the unemployment rate and the inflation rate, thing which reflects that a nation can “buy” a lower unemployment level if it is willing to pay the price of a superior inflation rate, the conditions of the trade-off being given by the slope of the Phillips curve (Samuelson & Nordhaus, 2000, pp. 698).

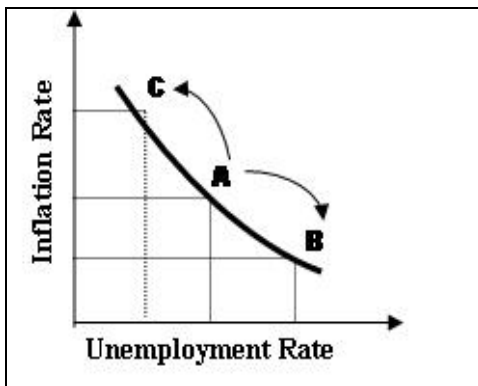


Figure 1. Phillips Curve

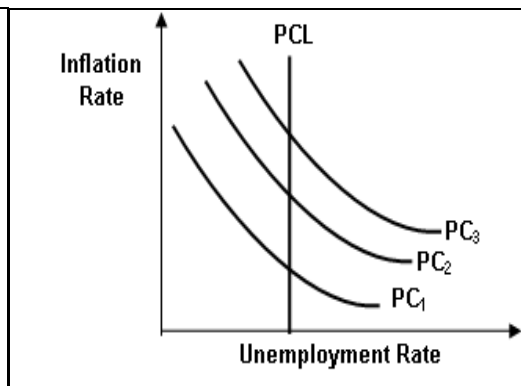


Figure 2. Inflation Expectations and the Phillips curve

Because Phillips' argument proved to be obsolete due to the economic reality, monetary experts Milton Friedman (*The Role of Monetary Policy*, 1968) and E. Phelps (*Phillips Curve, Expectations of Inflation and Optimal Employment Over Time*, 1967), starting from the existence of a natural unemployment rate, determined mainly by structural factors, accept the inverse correlation between inflation and unemployment, but only in the short run and only to the extent to which the change of the inflation rate is unanticipated (PC1 - PC3, from fig.2). In the long run (Phillips Curve becomes a vertical line -PCL), this correlation does not exist because unemployment cannot be reduced as a result of a re-launching monetary policy, this having as effect only the increase of the inflation rate.

Therefore, in the economic theory emerges another alternative of explaining the Phillips curve, known as the *Phillips curve of the natural rate*. According to this theory the Phillips curve with a descending slope is characteristic only in the short run, and in the long run there is only one unemployment rate compatible with stable inflation (the natural unemployment rate), the Phillips curve being vertical.

From the point of view of the relationship between unemployment and inflation the NAIRU concept (“*Non Accelerating Inflation Rate of Unemployment*”) is used in the economic theory, representing that unemployment rate according to which effective and anticipated inflation are equal, and inflation is stable (Stiglitz & Walsh, 2005, pp.770). The existence of a NAIRU implies the absence of any long-run trade-off between inflation and unemployment.

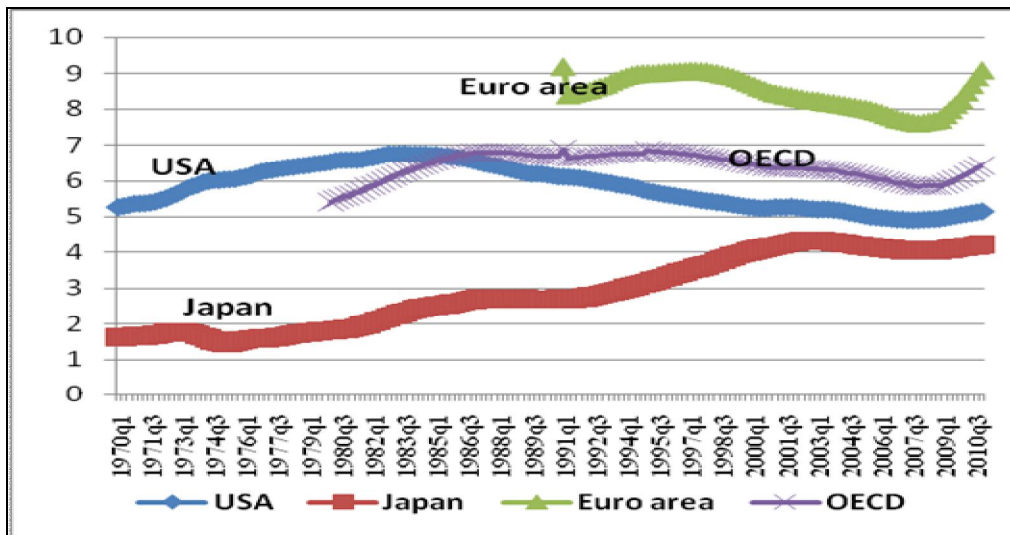
In the '70, when the phenomenon of "stagflation" (simultaneous increase in inflation and unemployment) appeared, it became obvious that policymakers did not have the option of settling for a higher rate of inflation in order to reach a lower rate of unemployment. Despite the widespread public and press perceptions that stagflation

was unexplainable and unexpected, it had in fact been predicted by the natural rate hypothesis several years before it occurred.

The natural rate hypothesis has serious implications for the economic policy, first of all because it implies the existence of a minimum unemployment rate level, which it can sustain in the long run and secondly, it states that a nation cannot sustain unemployment below the natural unemployment rate for a long period of time without setting in motion the ascending spiral of prices and salaries (Samuelson & Nordhaus, 2000, pp. 698).

Knowing the true natural unemployment rate is extremely important for the founding of the macroeconomic policy under the circumstances in which *the full employment rate is the positive aspect of the process, and unemployment is the negative one*. It is certain that the level of this rate is not static because it is permanently influenced by a series of factors, which are in a permanent dynamics. Concerning this, Phelps (2000) estimates that the natural unemployment rate is not an “*intertemporal constant, something such as the speed of light independent of anything existing under the sun*” depending on numerous factors, which give it a dynamic character.

The idea that the natural rate of unemployment (NAIRU) is not a unique number has been seen in recent empirical research. One of the most well known and quoted estimations is that of Robert Gordon, who appreciated for the American economy in 1955 a 5.1% rate; in the '60-70 (20th century) the rate increased as a result of the high influx of young people in the labour force; in the '80 it reached a value between 5-7%. In the '90 other American researchers (Staiger, et al., 1997) estimated a rate between 5.1-7.7%.



Source: OECD Economic Outlook 85 database; OECD calculations (2009).

Figure 3. NAIRU, 1970-2010, in Euro area, OECD, Japan and USA

The estimations made in OECD (2001, p.192), for the 1980-1995 period, showed that NAIRU increased in the OECD countries from 5% to 6.5% as well as in

the Euro area from 5.5% to 9.2%. In the second half of the '90 a NAIRU fall can be noticed, in the Euro area as well as in the OECD countries. In contrast with NAIRU registered in the Euro area, in the USA it is the most reduced and having a descending tendency for the period between 1980 and 1999 (6.1 % in 1980 and 5.2% in 1999).

According to the OECD study (2009, p.213), in the wake of past recessions structural unemployment has tended to rise in many countries, which may be partly a reflection of rising long-term unemployment and hysteresis-type effects. Moreover past experience suggests that European countries may be more vulnerable than other countries (USA, Japan, OECD countries), fact reflected in current projections, which show a more pronounced increase in NAIRU in the Euro area (fig.3).

From the studies carried out by numerous specialists, after the oil shock in the '70, based on the data on unemployment and inflation for the last three decades, the existence of a more complicated relationship than the one which results from the simple shape of Philips curve emerges, testing in this way the natural rate of the Philips curve hypothesis.

It is stated in (Turner, D. et al., 2001, p.173) that the dominant view among economic analysts is that there is not a long-term trade-off between inflation and unemployment: in the long run, unemployment depends on essentially structural variables, whereas inflation is a monetary phenomenon. In the short term, however, a trade-off exists, so if unemployment falls below the NAIRU, inflation will rise until unemployment returns to the NAIRU, at which time inflation will stabilise at a permanently higher level.

There is a current opinion (Gordon, 2000) that inflation can be either negatively or positively correlated with unemployment, depending on whether shocks to aggregate demand or to aggregate supply are more important.

3. STATISTIC-ECONOMIC ANALYSIS OF THE RELATIONSHIP BETWEEN INFLATION AND UNEMPLOYMENT IN ROMANIA

3.1. Unemployment and inflation - costs of the transition to the market economy

The events in December 1989 were the releaser factor of some reforming and restructuring processes which severely affected the entire resources and needs system in the Romanian economy. The transition from the command economy to the market economy became a necessity for Romania, imposed by the deepening of the socio-economic crisis between 1980 and 1989.

In Romania, the evolution of the transition process led to severe disequilibrium with matching socio-economic costs and the erosion of the standard of living. The following are considered elements of the *transition costs*: increase in the inflation rate; the pronounced balance of trade deficit; budget deficit; increase in the external debt, inefficient restructuring of the enterprises; financial bottleneck; the increase in the share of the consumer credits out of the total contracted credits; decrease of the employment rate of work resources, increase in the unemployment rate; increase in the poverty rate, etc.

In the present paper we focus our attention on two major problems of the Romanian economy after 1990: inflation and unemployment.

Achieving a market economy implied a series of actions, among which liberalization of the economic agents' activity, including price liberalization. In Romania, starting off price liberalization took place based on a universal penury of consumption goods, fact which created the emergence premises of the *inflationist process*. Between 1990 and 2008 an extremely powerful price rise of the consumer goods happened, on the main categories as well as overall. Thus, in 2008 the price of the consumer goods was 3120.96 times higher than in 1990. This fact is the result of the 2465.37 times rise of prices for alimentary goods, 3204.79 times for non-alimentary goods and 5569.57 times for services (NIS, 2009).

The analysis of the statistical data on the inflation rate in Romania, presented in table no.1 shows that inflation started off strongly even at the end of 1990 (being repressed and hidden through the price system and the one of income redistribution until now), when the first measure of price liberalization was taken.

Table 1. Inflation, unemployment and misery index, in Romania, 1990-2009

| Years | Inflation Rate (%) | Un-employment Rate (%) | Misery Index (%) | Annual Change in inflation Rate (%) | Annual Change in Unemployment Rate (%) |
|-------------------|--------------------|------------------------|------------------|-------------------------------------|--|
| 1990 | 5.1 | 0 | 5.1 | - | - |
| 1991 | 170.2 | 3 | 173.2 | 3237.25 | - |
| 1992 | 210.4 | 8.2 | 218.6 | 23.62 | 173.33 |
| 1993 | 256.1 | 10.4 | 266.5 | 21.72 | 26.83 |
| 1994 | 136.7 | 10.9 | 147.6 | -46.62 | 4.81 |
| 1995 | 32.3 | 9.5 | 41.8 | -76.37 | -12.84 |
| 1996 | 38.8 | 6.6 | 45.4 | 20.12 | -30.53 |
| 1997 | 154.8 | 8.9 | 163.7 | 298.97 | 34.85 |
| 1998 | 59.1 | 10.4 | 69.5 | -61.82 | 16.85 |
| 1999 | 45.8 | 11.8 | 57.6 | -22.50 | 13.46 |
| 2000 | 45.7 | 10.5 | 56.2 | -0.22 | -11.02 |
| 2001 | 34.5 | 8.8 | 43.3 | -24.51 | -16.19 |
| 2002 | 22.5 | 8.4 | 30.9 | -34.78 | -4.55 |
| 2003 | 15.3 | 7.4 | 22.7 | -32.00 | -11.90 |
| 2004 | 11.9 | 6.3 | 18.2 | -22.22 | -14.86 |
| 2005 | 9 | 5.9 | 14.9 | -24.37 | -6.35 |
| 2006 | 6.56 | 5.2 | 11.76 | -27.11 | -11.86 |
| 2007 | 4.84 | 4.1 | 8.94 | -26.22 | -21.15 |
| 2008 | 7.85 | 4.4 | 12.25 | 62.19 | 7.32 |
| 2009 ¹ | 5.59 | 7.8 | 13.39 | -28.79 | 77.27 |

Source: NIS (2009) Romanian Statistical Yearbook, time series 1990-2008; ¹ NIS (2010)

The socio-economic evolution of Romania in the European context, in 2009, <http://www.insse.ro>

The high inflation rate (expressed by 3 digits) between 1991 and 1993 is the result of correcting the administrated price distortions and the GDP fall (as a result of confronting the production structures in the centralized economy with the market mechanisms). Between 1994 and 1998 the evolution of the inflation rate was fluctuant,

and since 1999 it recorded decreases from year to year, reaching in 2005 an annual inflation rate expressed by a single digit (9%). The disinflation process continued until 2007, but in 2008 a rise in the inflation rate was noticed as compared to the previous year, by 3.01 percentage points, based on the international price rise for raw materials and fuels, currency depreciation, as well as on the persistence of the pressures on behalf of the aggregated demand and pay rises. Although there was a decrease in the inflation rate, in Romania, in 2009, the highest inflation rate in EU-27 was recorded, 5.6% respectively.

It is known, from both the economic theory and practice, that inflation is an extremely complex phenomenon, having multiple causes. In Romania, some authors state (Postelnicu, 1999, p.122) that the main cause of starting off and maintaining the inflationist process is the increase in costs and the dramatic fall in work productivity. Also, the currency devaluation, especially compared to the dollar, created a source for keeping inflation in the transition period.

A factor of increasing the transition cost in Romania, of lavishing human capital, is represented by the decline of the employed population, but mostly by its structural changes, through its dimensions and effects. We mention that civil employed population fell in Romania, between 1990 and 2008, by 2093 thousand people. (NIS, 2009). Since 1990 and until today the Romanian economy has been confronted with a consolidated process of outsourcing the benefits that result from employment and using the labour force and internalizing the economic and social costs of a reform.

We consider that the main contribution to the decline of the employment in Romania was given by the restructuring of the Romanian economy, the disassembling of economic and social reform elements, the errors of employment policies which were mainly passive and concerned more with recovering the effects than with removing the causes; all these, and many others, raised the risk of firing a large number of employees and created the conditions for increasing unemployment (Herman, 2008).

Traditionally, it is considered that between inflation and unemployment there is an inverse correlation, more precisely that anti-inflationist measures generate unemployment, while an increase in employment may generate a relative demand rise - a more elastic one in comparison with the goods supply - and, thus, inflation. In Romania, the structure of the labour force market had inflationist characteristics.

On the one hand, the relation between the employed population and dependent labour force, disadvantageous for the employed labour force, created a solvable demand deprived of a correspondent within supply. On the other hand, maintaining an excessive labour force in non-performing structures, without stimulating the competitive, private sector, which can absorb the labour force surplus, under the circumstances in which direct taxes were reduced and thus the net wage increased without the increase in production (consuming more than producing), this represents the clearest example of a gap between real economy and monetary supply.

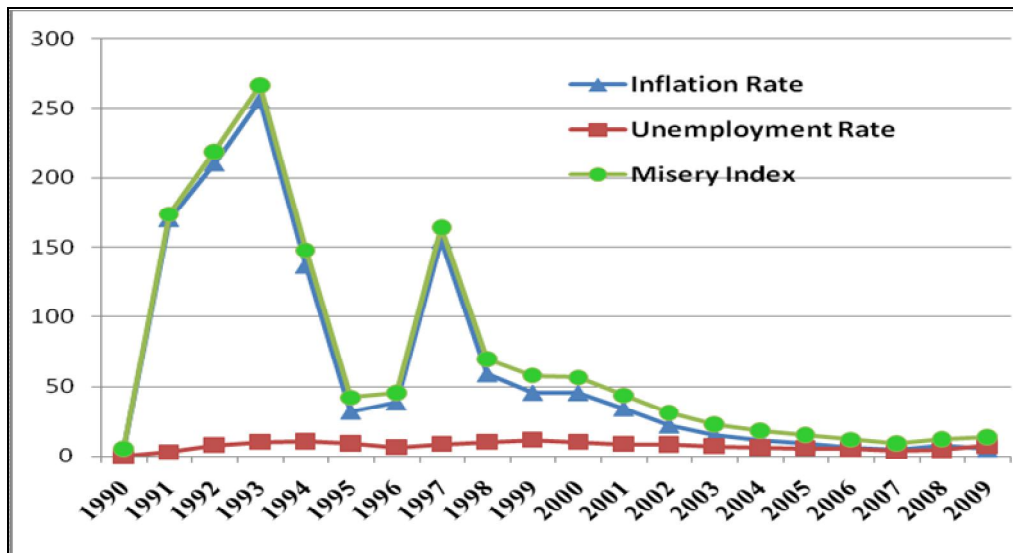
The transition to the market economy and the massive re-structuring of certain branches of the economy considered as non-viable imply raised social costs, one of these being the increase of the number of unemployed people (Dobre-Baron & Fleşer, 2009, pp.199). Together with the decline of the employed population, during the

transition process, the dimensions, dynamics, shapes and characteristics of unemployment, in our country, have evolved differently from one year to another.

The lack of employment represents a dimension of social exclusion, because it means exclusion from one of the most important components of human activity, from the social relationships that it implies and facilitates their participation in work. Moreover, the lack of employment also means the impossibility of valuing your own potential.

The unemployment phenomenon emerged in Romania, once with the first measures for liberalization and restructuring of the economy, not having a normal, predictable evolution. The shift to the market economy determined the visible manifestation and official acknowledgement of unemployment in our country. Thus unemployment was legislatively institutionalized even since the first years of transition, based on Law no.1/1991 on the social protection of the unemployed and their professional reintegration. After this moment, a series of other legislative acts brought changes to the initial criteria so as to adapt to the changes which subsequently appeared on the labour market. Starting with the 1st March 2002, Law no.1/1991 was abrogated, and the issue of unemployment and employment is regulated in Law. no. 76/2002 on the unemployment insurances system and labour force employment stimulation, subsequently modified and completed.

According to the data in table no.1 and figure 4 the unemployment evolution, after 1991, is often marked by leaps, both in the increase and decrease of the phenomenon. Seen from the laws of the economic market perspective, strong fluctuations of unemployment are appreciated by some specialists as unusual; but they are unusual in relation to a stable, established market economy. However, in our country, these fluctuations are specific to the changes in the national economy, determined by the transition process.



Source: Table 1

Figure 4. Inflation, unemployment and misery index in Romania, 1990-2009

Thus, the unemployment rate recorded a sinuous evolution, between 1991 and 2009, reaching minimum values in 1991 (3%) and maximum values in 1999 (of 11.8%), according to table 1 and figure 4. We have to mention the fact that low rates, mainly in the first years of transition (for example the rate of 6.6% recorded in 1996) do not actually reflect the Romanian economic state, because this percentage may index also a hidden unemployment, due to the over dimensioned staff in many state-owned enterprises which have not gone through the privatization and restructuring process.

On the other hand, the fact that in Romania a lower unemployment rate was recorded in the first years of transition as compared to the other East-European countries, also in transition, is not necessarily a positive aspect, taking into consideration the fact that only the East-European countries having a high unemployment rate recovered more rapidly what they had lost at the beginning of transition (between 1990 and 1993 all East-European economies faced recoils of GDP). For example, Poland, having the most unemployed people in the region, equalled even since 1996 the GDP from 1989, the following countries in the sequence of unemployment rates being: Slovakia (1999) and Hungary (2000). Therefore, those countries which accepted bankruptcies and unemployment, which gave up raw work where its substitution with high technology proved profitable, got increases in productivity, with positive effects on the national economy. As opposed to Poland which opted for a higher unemployment but a lower inflation, Romania opted for the highest inflation rate in Central and Eastern Europe, being able to reach the GDP level it had in 1989 only in 2004.

Furthermore, statistical data on unemployment evolution do not mention anything about the underemployment as part of the employed population, about the precarious structure of the labour force employment in Romania (in Romania in 2008 27.7% out of the total employed population is employed in agriculture as compared to the EU-27 average of 5.7%), about the high number of early retirements, as a consequence of the massive layoffs made at the level of big state-owned enterprises (so we take into consideration the fact that many of the people made redundant opted for early retirements out of fear of being unemployed) and about the dimensions of potential unemployment.

In order to measure the performance and the economic well-being of Romania we take into consideration the *misery index* (calculated as the sum between the unemployment rate and inflation rate) because it is assumed that both a higher rate of unemployment and a worsening of inflation create higher economic and social costs for a country. In Romania, in the first part of transition (1990-1993) a significant increase of inflation as well as of people out of work was recorded, thing which determined a deterioration in economic performance and a rise in the misery index.

The evolution of the misery index in Romania, between 1994 and 2007, can be appreciated as positive because it fell from a maximum value of 266.5% to 8.94%. In the last two years (2008-2009) the rise in inflation and unemployment in Romania, based on the international economic crisis, determined a rise of the misery index, fact that leads to lower consumer expenditures and contributes to an economic slow-down, and even to economic recession.

Although inflation and unemployment directly or indirectly affect the lives of the Romanians, they do not know the size of these indicators. Thus, the results of *Special Eurobarometer-Europeans Knowledge on Economical Indicators* (2008) indicate that 82% of the interviewed Romanians do not know their country's inflation rate (as compared to the 53% of the Europeans from EU-27) and 85% do not know the unemployment rate in their Country (as compared to the 48% of the Europeans).

3.2. The correlation between the inflation rate and unemployment rate: empirical approach

Over the past decades, empirical evidences from various studies seem to suggest that the shape of the long-run Phillips curve varies widely across different countries. For example, using data on the inflation rate and unemployment rate from USA, from 1970 through 1999, Beyer and Farmer (2007) identified a long term positive correlation between these variables. The same long term positive correlation was identified by Berentsen, Menzio and Wright (2009) for the period between 1955 and 2005. On the other hand, the result of a study made by Karanassou, Sala and Snower (2003) using data from 22 European countries suggest that, in the long run, there is a trade-off between inflation and unemployment. The same negative relationship is demonstrated in Schreiber and Wolters (2007), focusing on the experience of Germany.

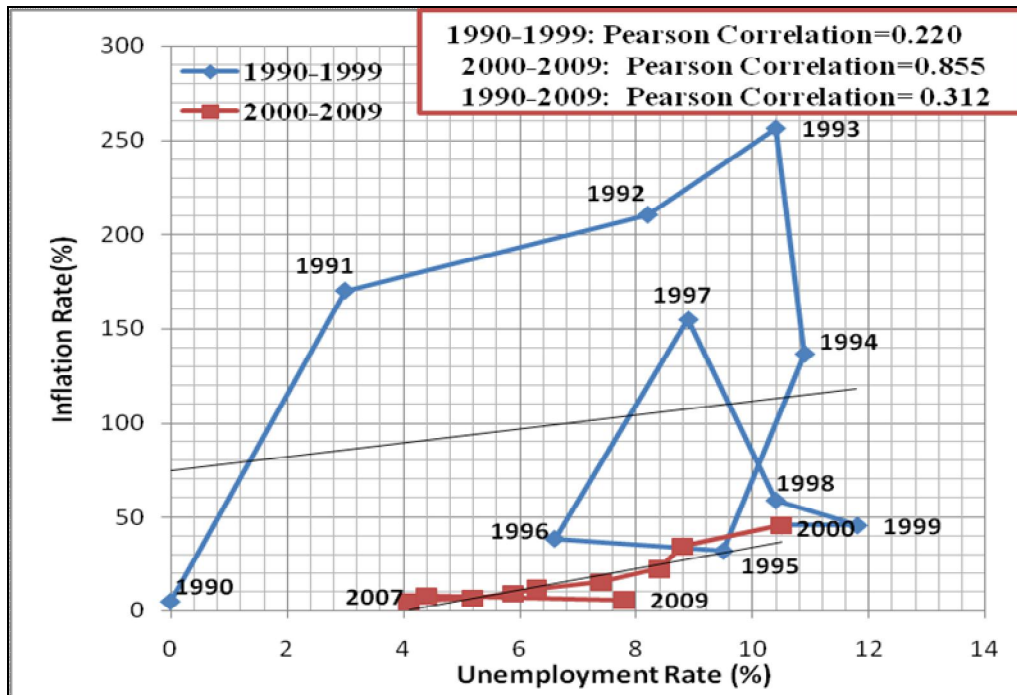
In the study carried out by Pallis (2006), on the 10 New European Union Member-States, it is highlighted that any attempt to push the unemployment rate below the estimated natural rate of unemployment will result in accelerated inflation, thus there is a trade-off between the inflation rate and unemployment rate in the 10 new EU member states.

Analysing the Phillips curve, as the relation between the inflation rate and unemployment rate, for Romania during 1990-2009, we notice that we do not have a gradual decrease of one indicator and an increase of the other, but rather that we are witness of spectacular changes - from low unemployment rate and high inflation in 1991 to high unemployment rate and strong inflation (1993), from lower inflation and high unemployment (1995) to strong inflation and lower unemployment (1997) ... from lower unemployment (1997) ... lower unemployment and reduced inflation (2007) to higher unemployment and inflation rates (2009).

Figure 5 shows what happened to the relationship between the unemployment rate and inflation rate in Romania, between 1990 and 2009. What seems clear is that any trade-off that may have existed during the 1960s, 1970s in various countries of the world did not last in Romania in the period analysed by us.

From the statistical analysis of the data on the inflation rate and unemployment rate, based on the correlation Pearson coefficient (correlation Pearson coefficient =0,312, for a significance level sig. of 0.18 higher than 0.05 the chosen one), it is noticed that between the two variables there is a direct relationship, but of a very low and statistically insignificant medium intensity. This fact entitles us to state that in the long run (20 years) between inflation and unemployment in Romania there is no significant relation, the monetary theory being confirmed, according to which *in the long run* the two variables are

independent, there being a size of the unemployment rate which does not influence inflation and this is the size of the natural unemployment rate.



Source: Table 1

Figure 5. Phillips Curve in Romania, in 1990-2009

The inexistence of a significant relation in the long run between inflation and unemployment can be motivated first of all by the fact that unemployment is affected by a number of factors other than inflation, most of which have nothing to do with monetary policy, such as productivity changes, changes in regulatory systems and various shocks that regularly impact on the national economy. Secondly we have to take into consideration the fact that inflation is affected not only by developments in the labour market, but by many other strictly monetary factors.

Our empirical research has shown that unemployment “explains” a relatively small percentage of total inflation. The determining report, which shows the share of the variable X influence (unemployment rate) on the variable Y variation (inflation rate) calculated for Romania, for the period between 1990 and 2009, based on the data in table 1, is of 0.097, fact which shows that inflation in Romania was influenced by unemployment only in a proportion of 9.7%. This means that inflation developments are largely “explained” by other factors than unemployment.

One implication of the absence of any durable trade-off is that fiscal and monetary policy is limited in its ability to reduce unemployment. If unemployment cannot be pushed below the natural rate for very long without generating continuing

increases in the rate of inflation, suggests that policymakers might as well aim to keep inflation rates low and find ways to reduce the natural rate itself.

But in the case of Romania it is very difficult to determine the natural unemployment rate because this has in view a stable, structured market economy characterized by the inflation's inexistence or its existence in reduced and low limits. In our country as it can be noticed in table no. 1, the instability determined by the price rise makes the determination of the natural unemployment rate difficult.

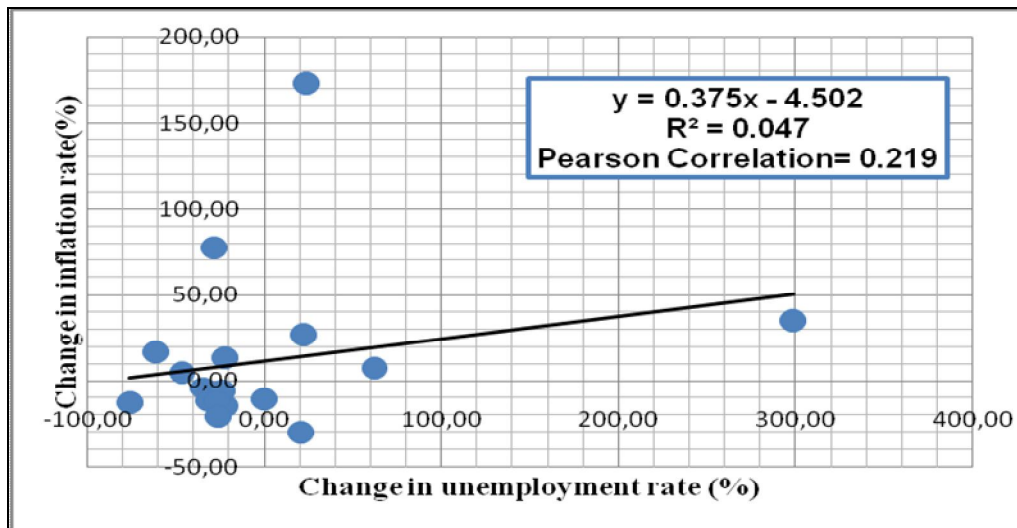
The current economic theory and practice prove the fact that there is no simple correlation between inflation and unemployment. If we analyse the correlation between the inflation rate and unemployment rate on subperiods, between 1990-1999 and 2000-2009 respectively, we notice that in the first period the intensity of the relation between the two indicators is very reduced (the Pearson correlation coefficient = 0.220, for a significance level sig. of 0.541 higher than 0.05 the chosen one) as compared to the period between 2000 and 2009, where we notice that between the two macroeconomic variables there is a direct, very strong, statistically significant relation, (Pearson correlation coefficient of =0.855, for a significance level sig. of 0.002 lower than 0.01 the chosen one).

The low intensity of the relation between inflation and unemployment during 1990 and 1999 can be noticed also through the graphic shape of the relation, which seems to be described by distinct clockwise pattern. The clockwise cycling of unemployment and inflation is believed to be due to the combination of expectations adjustments and policy changes.

If in the first analysed period we are witness, in general, to fluctuations in the unemployment evolution in tandem with the inflation's fluctuations between 2000 and 2009 there was a reduction of the unemployment rate as well as the inflation rate, the last two years being the exception, 2008 and 2009 respectively. Thus, the statistical data after 2000 not only invalidate the Phillips curve but they even prove the contrary, the two variables evolving in the same way. The main factor, which generated this favourable change, is the new information economy, the national economy benefiting from the advantages of the new technology which led to increase in work productivity (Stiglitz & Walsh, 2005, p. 637). However, reduced unemployment and reduced inflation may coexist only to the extent to which pay rises do not surpass work productivity. In Romania, this fundamental correlation between salaries and productivity was not respected, fact which led to the increase in inflation and unemployment in 2008.

The statistical analysis between *the annual relative change* of the inflation rate and the one of unemployment, between 1990 and 2008, highlights the fact that between the two economic variables there is a direct relationship, but of a very low and statistically insignificant intensity (Person correlation = 0.219), as in the case of the correlation between the level of the unemployment and inflation rate.

The low intensity of the correlation between the two macroeconomic variables can be motivated by the fact that Romania, in most of the period in which we detected this relation, went through an ample process of transition, marked by profound economic, structural and institutional transformations.



Source: Table 1

Figure 6. Correlation between annual change in inflation rate and annual change in unemployment rate, in Romania, 1992-2009

On the other hand, the shape and intensity of the relationship between inflation and unemployment depends very much on the changes which appeared in the level and structure of the aggregated supply and demand, and the quantitative relationship between these changes, being known that aggregated supply and demand depend on the monetary policy as well on the fiscal and budgetary policy.

4. CONCLUSIONS

The evolution of inflation and unemployment in Romania, between 1990 and 2009, cannot be noticed with the help of a Phillips curve relation type. The results of the statistical analysis show that between the two macroeconomic variables one cannot identify a stable, statistically significant relationship, because the economic policies applied did not aim directly at the decrease of the inflation rate based on the increase in unemployment and vice versa the decrease in unemployment based on the increase in the inflation rate. This fact does not mean that in Romania, in the short run, there is not a trade-off between inflation and unemployment.

The existence of a very strong, direct correlation between inflation and unemployment, for the period between 2000 and 2009, when in Romania there was a decrease in unemployment as well as in inflation, is considered the result of the increase in labour productivity in the context of the new information economy. We highlight the fact that in order to maintain inflation as well as unemployment at a low level, the fundamental economic relationship between salaries and productivity must be respected, meaning that pay rises have to be based on the increase in the labour productivity.

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THE BASICS OF RATIONALITY AND THE CULTURE OF ECONOMIC BEHAVIOUR

ION HIRGHIDUȘ, VALENTIN FULGER *

ABSTRACT: *Economy nowadays demonstrates that human society must eliminate any waste of time, space, intelligence. Only where this is not followed as stated, the crisis is more obvious. No matter how many disputes it created, we must agree that this economic crisis has alerted the whole world in all its dimensions. The more social rationality was discussed, which led to discussions about economic rationality, the more the depth of this crisis was proved. In fact, this crisis marks out that human society must change, in both its qualitative and its quantitative aspects. The understanding of the crisis we're experiencing, including the economic crisis, implies a concept re-evaluation of the language aspects by which we mark the phenomena of social life.*

KEY WORDS: *economy; economic crisis; social crisis; rationality; utilitarian rationality; economic rationality; homo economics; economic behaviour*

JEL CLASSIFICATION: *Z10*

1. THE BASICS OF RATIONALITY IN SOCIAL SCIENCE

The issue of rationality in social science is not much different than rationality in nature science, but we must take into account that the social aspect brings something more considering all touches.

Richard Rorty spoke about the triple meaning of "rationality" (Rorty, 2003, pp. 114-115): 1) rationality can designate the ability to cope with one's environment; 2) rationality is also the name of an additional special ingredient which humans possess but animals lack; 3) rationality is almost synonymous to tolerance, to the ability of not being disconcerted by that which is different from ourselves, of not responding aggressively to such differences. Rorty's approach indicates confidence in the evolution of rationality, as seen in the development of Western freedom, but he ruled

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out the idea that humans are endowed with rationality while animals lack it (meaning number 2). (Rorty, 2003, p.116). With humans, rationality is a way of being, a legitimate component of their natural order. The problem of rationality is indeed a perennial one because, beyond all controversies, with the passing of time it constantly raises new issues. One of these issues has to do with the increased human capability to conquer new territories with the help of knowledge, within a process of increasingly deep rationalization of human actions. Rationalization operates in all possible directions and comes to represent a theoretical and practical landmark. "Rationalization is currently being discussed also because we are striving for specific achievements in the field of knowledge (overcome the thesis whereby theories are incommensurable, provide a foundation to the social sciences, etc.), in that of action (gain efficiency in our mastery of objects, achieve emancipation in social interactions, etc.), in the forms of existence (legitimize the system of norms), etc. (Marga, 1991, p.28). Since being rational is largely one and the same with being human, the word rationality comes to designate a certain faculty highlighting the significant differences between human and animal behaviour. In this respect, Jonathan Bennet advocates not so much a metaphysical approach to the concept of rationality, but rather one based on (operational) experience, on problem-solving (Marga, 1991, p.28). However, rationality is not a unitary problem, and therefore it must become the object of a taxonomy in which, according to L. J. Cohen, the types of rationality are the same as the roles of the reasoning faculty which emerged in Western culture. Cohen contends that there are nine types of rationality (Cohen, 1999, pp.276-283):

1. A rationality that abides by the laws of deductive logic, based upon inferences generated by connectors such as "if..., then...", by quantifiers such as "some" and "all," by modalities such as "it is possible," "it is necessary."
2. A rationality based upon accurate mathematical computations, starting from truths which are seen as given premises.
3. A rationality that derives from the meaning of words, beyond the vocabulary of logic and of mathematics.
4. A rationality revealed by the inductions leading from the data of experience to a general theory, in the case when it is absolutely necessary to test the hypotheses underlying the theory in question.
5. A rationality involved in the correct assessment of certain mathematical probabilities, when a probability judgment is affected by the mathematical relation it has with other probability judgments.
6. A rationality resulted from inferences generated by factual generalizations.
7. A rationality that derives from the actions of an agent meant to achieve certain goals and interests so as to maximize the arithmetic product between probability and usefulness. This is a rationality of the means employed towards the achievement of certain ends.
8. A rationality involved in the selection of goals, having a fundamentally moral character.
9. A rationality that derives from linguistic communication, which involves the reasoning capabilities of the protagonists. This type of rationality makes it possible to

move beyond the standard principles of deductive or of inductive rationality (Grice, 1975, pp. 64-65).

The development of science also involves a recognition of the increasingly complex issue of rationality, as science is seen as the benchmark for all cognitive approaches. However, this development requires the acceptance of a paradox: an approach envisaging unity and also an approach envisaging plurality. Science is in the same situation as logic on the issue of monism and pluralism. The issue of monism, of dualism, of pluralism must be seen as a more complex situation of logics and of sciences, keeping in mind the axiomatic tendencies of the 20th century, the alternative logics and, in a broader sense, the paradoxical coexistence of unity and plurality. This paradox can be seen as the expression of a constructive “crisis” of rationality, the same constructive crisis that we find in the case of both logic and science. Consequently, one must envisage a parallelism and at the same time a necessary connection between science and logic, as both are subjected to the same paradox.

2. CONSIDERATIONS REGARDING THE RATIONALITY OF SCIENCE

The answers to the question “what makes science a rational undertaking?” give the possibility to consolidate the rationality of science, and at the same time to explain the “crisis of rationality.” The rationality of science seems to be ensured by a certain foundation (Marga, 1991, p.147) located in the realm of subjectivity (the same as with Descartes, in his *Discourse on the Method*), at the level of consciousness, or in the sphere of objectivity. The problem with this point of view, however, is that it cannot separate between science and other manifestations of consciousness.

The rationality of science can be traced within the epistemological trends, within which the approaches to the theories of science are just as diverse as the scientific phenomenon itself. The major epistemological trends which developed starting with the 20th century are: **logical empiricism** (C. G. Hempel, R. Carnap, H. Feigl), **scientific rationalism** (A. Einstein, G. Bachelard, F. Gonseth), **critical rationalism** (K. Popper), **genetic epistemology** (J. Piaget), **phenomenological epistemology** (E. Husserl), **existential phenomenology** (Martin Heidegger), **structuralist epistemology** (M. Foucault, Ş. Lupasco), **realist-critical epistemology** (W. Wundt, G. Santayana), and **neo-Thomist epistemology** (J. Maritain, E. Gilson, J. Bochenski, etc.).

3. CRITICAL RATIONALISM

The fundamental text that generated and favoured the development of **critical rationalism** was K. R. Popper’s *Logic of Research*, published in 1934. Critical rationalism is part of the criticism raised against logical positivism for having restricted philosophy to the logical analysis of language. The new orientation rejected the thesis whereby “the sphere of meaningful problems is restricted to the sphere of experimental sciences.” (Marga, 2002, p.236). Quite important are the distinctions made by Popper between the “problem of meaning” and the “problem of demarcation,” between the “criterion of verification” and the “criterion of falsifiability,” as they appear in his

“Two Notes on Induction and Demarcation” of 1933-1934: “**Main Problem. This, the problem of demarcation** (Kant’s problem of the limits of scientific knowledge) may be defined as the problem of finding a criterion by which we can distinguish between assertions (statements, systems of statements) which belong to the empirical sciences, and assertions which may be described as ‘metaphysical’” [...] The dogma of meaning or sense, and the pseudo-problems to which it has given rise, can be eliminated if we adopt, as our criterion of demarcation, the *criterion of falsifiability*, i.e. of an (at least) unilateral or asymmetrical or *one-sided* decidability. According to this criterion, statements, or systems of statements, convey information about the empirical world only if they are capable of clashing with experience; or more precisely, only if they can be *systematically tested*, that is to say, if they can be subjected (in accordance with a ‘methodological decision’) to tests which *might* result in their refutation.” (Popper, 1981, pp.296-297). Popper did not overlook the contribution of Carnap, who proposed a testing procedure, and also took into account the characterization of empirical sciences made by Einstein in his *Geometrie und Erfahrung* (“In so far as the statements of geometry speak about reality, they are not certain, and in so far as they are certain, they do not speak about reality”), (Popper, 1981, p. 297) but eventually came up with a distinct point of view. He indicated that (unilateral) falsifiability, used as a criterion for empirical sciences, played the same role as non-contradiction in general science. We know that non-contradiction, as a general law of thought, is of maximum importance for any theoretical system, as such a system must be non-contradictory. Thus, Popper contended that “A contradictory system fails to single out, from the set of all possible statements, a proper sub-set; similarly, a non-falsifiable system fails to single out, from the set of all possible ‘empirical’ statements (of all singular synthetic statements), a proper sub-set.” (Popper, 1981, pp 297-298).

Quite significant in this context is Popper’s approach to the relation between “truth” and “corroboration.” Acquainted with Alfred Tarski, Popper became familiar with his discoveries in the field of logic, with the theory on truth in formalized languages, in which he saw a rehabilitation of the classical outlook on truth as a correspondence to facts. From Tarski, Popper moved on to epistemological rationalism. He argued that in establishing a logic of science one could dispense with the concepts of “true” and “false.” Their place could be taken by logical considerations on *derivability relations* (Popper, 1981, pp. 297-298). According to Popper, Tarski managed to replace the concept of “correspondence” with that of “satisfaction” or “achievement” (by introducing the idea of metalanguage). The difference between “truth” and “corroboration” was explained as follows: “Corroboration is therefore not a ‘truth value’; that is, it cannot be placed on a par with the concepts ‘true’ and ‘false’ (which are free from temporal subscripts); for to one and the same statement there may be any number of different corroboration values, of which indeed all can be ‘correct’ or ‘true’ at the same time. For they are values which are logically derivable from the theory and the various sets of basic statements accepted at various times.” (Popper, 1981, p.265).

K. Popper’s outlook comes close to the point of view adopted by pragmatism, where truth is defined in keeping with the success of a theory, that is, in keeping with its usefulness, confirmation, or corroboration. However, Popper differed from the

position of pragmatism precisely by refusing to accept the identity between the concept of “corroboration” and that of “truth.”

Popper ascribed a totalizing meaning to the notion of “empirical science,” refusing to limit “empirical sciences” to natural sciences and including social sciences in their category. His was a methodological monism, in which the difference between the two categories of sciences could be found at the level of the object and not at that of methods (Marga, 2002, p.241). Popper believed that, in the sciences, methodological rules are mere conventions. Methodological rules account for the separation between methodology and the purely logical investigation. In this respect, he focused on two methodological rules:

“1. The game of science is, in principle, without end. He who decides one day that scientific statements do not call for any further test, and that they can be regarded as finally verified, retires from the game;

2. Once a hypothesis has been proposed and tested, and has proved its mettle, it may not be allowed to drop out without ‘good reason’. A ‘good reason’ may be, for instance: replacement of the hypothesis by another which is better testable; or the falsification of one of the consequences of the hypothesis.” (Popper, 1981, p.92).

A systematic approach is required in setting the metrological rules. The first to be set is a supreme rule, a rule **of a higher order**, whereby the other rules of the scientific procedure must be devised so as not to prevent a possible falsification of the scientific utterances.

Methodological rules are correlated among each other and with the criterion of demarcation (Popper, 1981, p. 93). This systemic correlation lies at the foundation of a methodology. Even if it does not necessarily lead to deep truths, it does determine when a probabilistic utterance must be accepted or rejected.

K. R. Popper propounded an anti-empiricist model of science, and differed from Carnap from several points of view (Pârnu, 1998, pp. 74-75): a) he was explicitly concerned with the “increase in knowledge,” which can be achieved through the selection and the evolution of scientific theories and hypotheses; b) any science established under the form of a theoretical system must constantly pass the most demanding tests; c) the rationality of science means a rational critique, which would contribute to the “increase in conjectural knowledge,” by way of an increasingly thorough approximation of truth, as the scientific method is a form of critical debate (Schilpp, 1974, p.119). For Popper, the critical debate was of tremendous importance: “People involved in a fruitful critical discussion of a problem often rely, if only unconsciously, upon two things: the acceptance by all parties of the common aim of getting at the truth, or at least nearer to the truth, and a considerable amount of common background knowledge. This does not mean that either of these two things is an indispensable basis of every discussion, or that these two things are themselves ‘a priori,’ and cannot be critically discussed in their turn. It only means that criticism never starts from nothing, even though every one of its starting points may be challenged, one at a time, in the course of the critical debate.” (Popper, 1962, p.238, Popper, 2001, p.308). This critical debate presupposes the existence of “previous knowledge” which remains unchallenged, for practical reasons. According to Popper, the scientist is faced with a problematic situation when “he wants to find a new theory

capable of explaining certain experimental facts.” A new theory is called upon to solve the difficulties related to the elimination of *ad-hoc* hypotheses, to the unification of two theories, in keeping with the imperative of the increase of knowledge.

Karl R. Popper formulated three requirements for the increase of knowledge by way of the new theory:

1. “The new theory should proceed from some simple, new, and powerful, unifying idea about some connection or relation...”. This is a “requirement of simplicity” involving the idea of testability and which can be logically analyzed.

2. “... secondly, we require that the new theory should be *independently testable*.”. The new theory must be able to predict phenomena which have not been observed yet, and this puts it at a considerable advantage as compared to the previous theories.

3. “We require that the theory should pass some new, and severe, tests” (Popper, 1962, p. 241, Popper, 2001, pp. 311-312). This requirement of an “empirical success” raised the question concerning the importance of the refutation of a theory for the progress of science.

4. FOUCAULT AND THE “CRITIQUE OF MODERN REASON”

Michel Foucault dedicated a whole chapter of his book *Les Mots et les choses* (translated into English as *The Order of Things*) (Foucault, 1996, pp. 402-451) to the human sciences, being interested in man as rendered by “the entire modern episteme—that is, the one that emerged towards the end of the 18th century and which remains even today the positive harbinger of our knowledge...” (Foucault, 1996, p.450). However, “man is neither the oldest, nor the most constant problem faced by human knowledge,” (Foucault, 1996, p. 451) being always on the path from disorder to order, to that which reason has always wanted. In the preface to the aforementioned book, Foucault wrote: “This book finds its origin in a text by Borges” (Foucault, 1996, p. 33) namely, in the bestiary of imaginary beings created by the Argentine writer. Foucault even implied that his book was basically a response to the text in question. Still, his response would set new standards when it comes to representation, language, to a *general science of order* based upon a certain taxonomy specific to the episteme of Western culture. Such a general science of order, also pursued by rationality, finds a precedent in Descartes’ thought. The “new method” devised by Descartes challenged tradition and rejected that erudition that combined superstition with empirical truths. One’s own reason must be the only credible instance, and any authoritative argument (Aristotle, the Church, etc.) had to be rejected. Descartes’ method takes the form of four precepts:

1. “Never accept a thing as true, unless it is clearly known to be so.” “Clear and distinct” ideas emerge as self-evident.

2. “Divide every difficulty I shall analyze,” hence the need for analysis.

3. “Proceed with my reasoning in an orderly fashion, starting from the things that are simplest and easiest to understand.” The deductive reconstruction of the “long chain of reasoning, all simple and easy,” belonging to geometries.

4. “All my enumerations should be complete and my surveys comprehensive, ensuring that I shall not overlook anything.” Here the focus rests with the inductive approach.

The Cartesian project (see *Regulae ad directionem ingenii*) involved the philosophical fundamentation of any science or knowledge. The method devised by Descartes, an expression of methodical doubt and an experience of *cogito* (“Dubito ergo cogito, cogito ergo sum”), represents the very axis of modern rationalism. It would be later challenged by Leibniz and by Pascal (the latter used the reality of the void as a counterargument). However, we believe that the most relevant objections, in the sense that they employ Cartesian thought in asserting the solidity of reason, are those formulated by Edmund Husserl (Husserl, 1994) and by Michel Foucault. The latter, in his *Order of Things*, envisaged a more comprehensive project for a general science of order. The recognition of **order** made possible the ensemble of the classical **episteme**. Classical rationalism, even in its recourse to **mathesis**, was meant to order the **simple natures**, but it can no longer be responsible for ordering the **complex natures**, supported only by a taxonomy instituted by way of a system of signs.

In Western culture, the human sciences do not have a pre-prescribed epistemological field (Foucault, 1996, p.402): “they appeared the day when, within Western culture, man set himself as that which must be thought over and discovered” (Foucault, 1996, p. 403). In historical context, Foucault contended that the emergence of the human sciences was determined by certain theoretical and practical requirements. Their emergence is “an event in the order of knowledge,” “one of the most important steps forward taken by empirical rationality in the history of European culture” (Foucault, 1996, p.402). A new authorized knowledge was achieved when human beings began to be seen as problematic. Still, the human sciences find themselves in a precarious and uncertain situation, caused by the following factors: “their dangerous familiarity with philosophy, the insufficient and poorly defined support extended to them by the other fields of knowledge, their always secondary and derivative nature; but also their claim to universality... the complexity of the epistemological configuration within which they are located, their constant recourse to the three dimensions defining the space that they need” (Foucault, 1996, p.407). Michel Foucault’s position with regard to the human sciences comes in the wake of Kant and Comte, but Foucault is even more demanding than his predecessors.

Kantian criticism focused on the opposition between logic and existence (Anselm’s ontological argument becomes devoid of meaning). Although he admits that Hume awakened him from his “dogmatic slumber,” Kant avoided the scepticism of the latter and considered that all knowledge resulted from the activity of a “transcendental subject” who structures the data of experience. Diversity is perceived by the subject in keeping with the pure intuition of space and time. The *a priori* condition for any possible experience is the categories of quantity, quality, relation, and modality. In discussing the situation of pure mathematics and of pure physics, Kant set drastic possibility conditions for any future metaphysics. He denied the metaphysical claim to the actual knowledge of the soul, of the world as a totality, and of God. For metaphysics to survive, it needs to gain the status of a science (Kant, 1987).

Despite the fact that Kant was repeatedly criticized for his agnosticism and for his ever uncertain “thing in itself,” the true strength of his philosophy, as argued by Windelband, rests in his “unshaken belief in the power of reason.” Kant’s “critiques” stimulated the development of knowledge and brought rationalism to full maturity in science and in philosophy.

A. Comte is a representative of the model of naturalist science. Generally speaking, this model is associated with tinkers such as Auguste Comte, Herbert Spencer, Vilfredo-Federico-Damaso Pareto, Emile Durkheim, and Spiru Haret (see *Mecanica socială*).

The supporters of this type of socio-human science share a number of common beliefs, more or less elaborated upon. If socio-human sciences are to make the transition from pre-science to science proper, then they need to embrace the naturalist science model devised by physicists, chemists, biologists, etc. In the first place, this requires the transfer of the most general theoretical-methodological principles of factual sciences to the domain of the socio-human sciences (one example of such a transfer would be the predictability principle).

The naturalist model of science involves a monist-epistemic outlook, opposed to the model of epistemic pluralism in science. The supporters of this model believe that science is meant to increase human power over **nature** and over **human nature**. Comte, Pareto, Spencer, and Durkheim believed that science was meant to increase the power of man, and that through science man will come to master the future.

Auguste Comte (1798-1857) is considered to be the founder of the first classical positivism, even if this role has also been claimed by Mille, Hume, and Locke. He devised the model of sociology in keeping with the naturalist model of science, and he deserves credit for stressing time and again the need for a factual orientation of sciences. With Comte, factuality becomes a primordial and fundamental criterion for any scientific discourse, including the sociological one. However, when it comes to factuality in sciences, no clear separation between sciences was operated. Comte also deserves credit for having worked in an age dominated by the theological-metaphysical outlook of Western culture, and therefore his contribution was meant to relieve the inquisitive spirit of the burden of phantasms. The positive side of his approach is related to the requirement whereby all sciences should turn to facts, even if this position would be vehemently criticized by Marx. In the context of top level research work, Comte’s requirement seems trivial, but it has considerable educational value when related to common mentalities.

The second objection rose to the main requirement expressed by Comte—namely, that any science should be factually-oriented—stems from the ideological nature of the facts he had in mind.

A. Comte never moved beyond **conscientism** (a direction according to which the conscious is the essence of what we call socio-human), equating the socio-human with the conscious. The exclusion of the postulate of the unconscious (the social non-conscious) rules out the fact that human beings might make history without knowing it. Durkheim noticed that A. Comte reduced social facts and the relations among them to ideology and to the images generated by them. The ideological as an image of the real involves an identification of the social with the ideological, which is a serious fallacy,

as this would restrict sociology to the mere investigation of ideas pertaining to individual periods in time.

A. Comte endorsed the methodological postulate of observation, essential to the investigation of socio-human reality. According to him, the observation of socio-human relations can never reach the precision of an experiment; observation cannot reveal the deepest causes of socio-human phenomena. Embracing a sort of Kantian agnosticism, he accepted the idea of an existential substratum that cannot be known, the substratum of essences.

Michel Foucault's demands with regard to science in general are related to the increased role played by mathematics, which could be seen nowadays as the organon for the whole of knowledge. The expansion of mathematics across all fields of research brought about a unification that is beneficial to scientific knowledge in its entirety. However, it must be said that the issues of formalism and formalization deserve considerable attention. The advantages of mathematical thought derive from the fact that it is functional, axiomatic, analogical, recursive, and strategic, all at the same time. Furthermore, speaking about the manner in which a science becomes inscribed and operates in the realm of knowledge, Michel Foucault contended that mathematics can simultaneously touch upon all the emergences of a discursive formation. These emergences can be "archaeologically" investigated in the evolution of statements that differ in form and are scattered in time, but which "constitute a coherent ensemble when referring to one and the same object." (Foucault, 1999, p. 41). Michel Foucault preferred the term of discursive formation to that of "science," "ideology," "theory," of field of objectivity." (Foucault, 1999, p. 48).

In the development of a discipline there are four stages or thresholds, and their completion is the safest and the only way in which science status can be gained (Foucault, 1999, p. 229):

- The **threshold of positivity** - discursive practice gains individuality and becomes autonomous;
- The **threshold of epistemologization** - a set of statements emerges, verification and coherence norms are imposed, and a dominant function is exerted in regard to knowledge (model, criticism, or verification);
- The **threshold of scientificity** - the epistemological structure thus outlined abides by a number of formal criteria, and its statements no longer obey archaeological rules of formation;
- The **threshold of formalization** - when scientific discourse becomes capable of defining its necessary axioms, the elements it uses, the prepositional structures, etc.

So far, the only discipline that has managed to complete the four stages is mathematics. Still, M. Foucault continued by arguing that "Mathematics was most certainly the model for most of the other scientific discourses, in their effort to reach formal rigor and demonstrability: however, for the historian investigating the actual development of sciences it is a poorly chosen example—at any rate, an example that cannot be generalized." (Foucault, 1999, p. 232). He considered the difficulty in reaching the threshold of formalization, especially in the case of the human sciences, because while there is a manifest tendency in that direction, the tendency in question does have a limit. The human sciences "maintain a certain relationship with

mathematics,” and “some of their approaches are some of their results can be formalized.” (Foucault, 1996, pp. 407-408). The question is how far can formalization go, and whether this is truly the simplest and most direct way for these sciences to gain the status of “science” in the strong sense of the term. Formalization, the application of calculations to the phenomena of human life, of labour, of language, is only the effect, and not the fundamental event associated with these sciences.

It must be said that Michel Foucault did not equate between knowledge and science, as knowledge had a much broader scope. As argued by Gilles Deleuze, “In fact, there is nothing anterior to knowledge, because knowledge, in Foucault’s new definition of the concept, is defined by a combination between that which is visible and that which can be stated within each stratum, within each separate historical formation.” (Deleuze, 2002, p.49). This might make possible the “archaeological” understanding not only of science, but also of knowledge in its entirety, something related to a development within the very order of rationality.

5. THE CRITIQUE OF UTILITARIAN REASON

Given their rational approach, contemporary sciences are dominated by a utilitarian reason which is nowadays nothing more than a historical product. As indicated by Alain Caillé, the history of utilitarianism “is nothing more than the history of modern thought,” (Caillé, 2000, p.17) coming to continue the Greek-Roman and even some Oriental traditions. Consequently, sciences - and especially social sciences—, as an expression of modernity, cannot transcend the limits of utilitarianism. The “classical field” of social sciences is a utilitarian one, because “What we shall henceforth call social sciences emerge when individuals, their needs, and the social relations that unite them are deemed to have a consistency of their own, namely, are deemed to be independent from the political authorities and from the sovereign.” (Caillé, 2000, p.26). The classical field of social sciences first included political economy, sociology, and philosophy, followed by “other discourses and disciplines,” such as: anthropology, psychoanalysis, linguistics, and biology (Caillé, 2000, pp. 38-41). Among them, philosophy had a distinct experience when it comes to the relationship with the utilitarianism “lying at the foundation of modern thought.” (Caillé, 2000, p.36).

Post-Hegelian philosophy emerges nonetheless as “a counter-discourse structurally opposed to the dominant discourse of modernity” (Caillé, 2000, p.37). The confidence placed in Reason by Kant, the most important representative of modern philosophy, is indicated by the task assigned to it, namely, that of finding an answer to the questions “What can I know?”, “What must I do?”, “What am I allowed to hope for?”, followed by the question “What is man?” This last question, with the deepest anthropological meaning, encapsulates all the others and marks the transition from philosophy to social sciences, at a time when philosophy was anti-utilitarian. During the so-called “classical” period of social sciences, between 1770 and 1970, (Caillé, 2000, p.41) there was no clear dissociation between utilitarianism and anti-utilitarianism. The current situation of the social sciences is rather different, especially in the case of economics and of sociology, which are going through a period of widespread utilitarianism. There is a manifest “desire for scientificity,” “based upon

two postulates”: 1. “in nature or in society, nothing can be explained by transcendental causes...,” but only by causes “deriving from the nature of things”; 2. “the only science is that of the measurable and of the calculable.” (Caillé, 2000, p.73). The two postulates lead to **utility** (or **interest**), “a true equivalent of the concept of force in physics”, which comes to accompany calculability: “Scientists are not the only ones who perform calculations. The object also calculates. Social science calculates the calculations of subjects. The circle is thus complete. In order to calculate, scientists must postulate that the human subjects, which are their object, also calculate.” (Caillé, 2000, p.74). Utility is the general concept of the causes behind human actions. According to the fundamental principle of the sociology of action, “any social phenomenon, regardless of its nature, is always the outcome of certain actions, attitudes, beliefs...,” (Boudon, 2006, p.25) which we qualify as rational or not.

In order to understand the behaviour of social actors, who are the object of the social sciences, one must understand their reasons for acting one way or the other, in keeping with a “postulate of the rationality of the social actor,” understood as a methodological principle and not as an “ontological statement.” (Boudon, 2006, p.40). Henceforth, claiming to go beyond the meaning ascribed to the concept of rationality in philosophy and in economics, the sociology of action, as a proper expression of utilitarianism, gives a semantic definition to the notion of rationality: “rational is any behaviour Y about which one can say ‘X has solid reasons to do Y, because...’” (Boudon, 2006, p.43).

Understood in this fashion, rationality is indeed multiple, because we can have the following types of rationality, starting from the “nature of the consequences inserted after ‘because’”: “1) ... because Y meets the interests (or the preferences) of X; 2) ... because Y is the best way in which X can achieve his intended goal; 3) ... because Y derived from the normative principle Z, and X believed in Z and had good reason to believe in it; 4) ... because X has always done Y and had no reason to question this practice; 5) ... because Y resulted from theory Z, and X believed in Z and had good reason to believe in it, etc.” (Boudon, 2006, p.43). In this enumeration, we identify the following types of rationality: utilitarian, teleological, axiological, traditional, and cognitive. The advantages of this definition and taxonomy of rationality are related to the fact that rationality pertains at the same time to actions, behaviours, and beliefs. However, we cannot disregard the fact that, in the philosophical tradition, Kant was the one to reach the highest level in the definition of the various types of rationality. Kant distinguished between “theoretical reason”- which “deals with the objects of the simple faculty of knowledge”- and “practical reason”- which “deals with the determining principles of will” (Kant, 1995, p.47) and of action.

A distinction is made between objective rationality and subjective rationality. Of the two types of rationality, “The notion of subjective rationality is fundamental for the social sciences, because, as suggested among others by Max Weber and K. Popper, the endeavour to replace a rational explanation (in the “subjective” sense) to a behaviour or to a belief with an “irrational” explanation, which common sense has every chance of producing, is one of the primordial tasks incumbent upon the human sciences and one of their main sources of legitimacy” (Boudon, 2006, p.617).

6. ECONOMICAL RATIONALITY

Human rationality as an issue of interest has a central position amongst the concerns of the European spirit. The most developed formulation in European sociology of this problem is Max Weber's sociology. Embracing the idea that in modern history there is a tendency to rationalize human society, the German scientist rushed into stating that it's all about a tendency that emerged into a certain type of society, the Western European society, being closely bounded to a certain kind of civilization, the western capitalist one, and having its own irrational side backs. According to him, there is a triple rationality reason: 1. Social rationality is historic. 2. Rationality is culturally influenced. 3. Rationality is an image that emerges out of the different interpretations it's been given. This makes possible a progressive historic rationality of society (Weber, 1958, p.26).

Among the rationality categories, the economic rationality is the bench mark for most of the theoretical close-up views today. Economic rationality assumes that economic success should be targeted through given or limited resources, the success being as high as possible, thus maximizing the profit. Such an approach assumes utility as reference which takes us to rationality as a mean - instrument. Here is Max Weber's point of view: "The attempt has been made, particularly by Sombart, in what are often judicious and effective observations, to depict economic rationalism as the salient feature of modern economic life as a whole. Undoubtedly with justification, if by that is meant the extension of the productivity of labour which has, through the subordination of the process of production to scientific points of view, relieved it from its dependence upon the natural organic limitations of the human individual. Now this process of rationalization in the field of technique and economic organization undoubtedly determines an important part of the ideals of life of modern citizen society. Labour in the service of a rational organization for the provision of humanity with material goods has without doubt always appeared to representatives of the capitalistic spirit as one of the most important purposes of their life-work" (Weber, 1958, pp.64-63).

In modern economy, because of the increase in influence of the consumer, in economic theory the consumer's behaviour is also analyzed and the economic rationality principle as well. According to it, the consumer tries to reach a high utility, as high as possible, given his limited resources. The utility estimation is made according to necessity. Taking into account the consumer needs, the new economy emerged as an activity that is competitive for production and distribution of necessary means for satisfying the needs.

Thus we can talk of a rational action in a limited manner given this context, in the same manner as Max Weber. His ideal type of rational action contains the same essential aspect, the same secondary possible consequences. The severe problems of the present, especially world crises have as a result largely unsatisfactory consideration of extra economic secondary consequences. The restraint of the human being and his rationality to a "Homo economics" has contributed to the fact that the economic subject might be set free of any extra economical responsibility. "Homo economics" seems to be the subject that dominates the present. We mustn't mistake this "present"

with recent history as the present's horizon is much wider than that. Present represents everything that is mental in the past century, if we have in perspective the history of collective mentality. Present's horizon embraces all achievements, more or less memorable, amongst which economy has a lead role. A "homo economics" today implies, much more than in the past centuries, a rationality principle. Given this reason, the economic rationality principle has become a behavioural pattern of economic theory that leaves space for law formulation and for a mathematical approach of all theoretical concepts.

The rational economical behaviour pattern consists of the following hypothesis, which may trigger an economical-sociological analysis: a. the subject of the economic rationality is conceived as an emotionless individual who may exist outside the socio-cultural world and has in mind only his interests; b. the economic-rational action has a preferential order; c. the subject under discussion had access to all information necessary in performing his activity; d. the economic subject perfectly consistent with his rationality.

Concerning rationality in general, Karl R. Popper states that: "Rationality, as a personal attitude, is the attitude of being open to correcting your sureness. In its most evolved intellectual form it is the predisposition to any critical discussion over someone's conviction and to correcting them as a result of the critical debates against other individuals" (Popper, 2000, p.395). He also tells us that the "principle of rationality" has nothing to do with the theory that man is rational. Even if this principle is minimal, it reduces the randomness of our methods of reality approach.

The edification that Popper gives may be relevant to what we call economic rationality and the principle that must lead today's economy. This economy is, anyway, a behavioural based economy. It may become just that inasmuch economic behaviour becomes ethical. The crisis that the world experiences is a consequence of lack of ethical behaviour and a result of its substitution to actions that are not in any way part of a rational economy of society. The discrepancy that is put in evidence emerges from the fact that the so called rationalistic individualities that are the fundamentals of a spectacular economic progress in some individual cases are not part of a society rational behaviour. These types of behaviour are seen as rather irrational and incompatible with social progress.

Economic behaviour is anything but a unitary phenomenon. Its research may be parted in different several directions. Such an example may be the research of the consumer behaviour that has suffered historical changes. Detailed studies on this matter, applied to different social classes have brought to the conclusion that the consumer orientation coming from the lower classes is done with respect to the fundamental groups concerning behaviour. The prestige and tendency to act rises according to social class positioning, in the same manner the fashion trends show it and interests who it. While inferiors' class consumers favour the forms of selling, the consumers in superior classes practice a selling policy linked to pricing, with an extravagant tray, determined by fashion.

The interrelation between the lifestyle and consumer behaviour has large implications. Social science researchers unanimously believe that being part of a certain social class that is well delimited has as effect ways of behaving that are more

or less different, thus reaching the conclusion that precise behaviour models increases the chance of a subject to reach a social class. Being part of a certain social class reflects a precise lifestyle. This may be seen in the areas that are ecologically delimited or amongst knowledge groups.

Where social mobility is higher, the consumer traits are less clear. There is a global tendency in what concerns behaviour and it exists due to the globalizing effect. This phenomenon erases a good part of the major differences that marked, some time ago, specific social categories.

Research of this rationality theme and especially the economical rationality, also implies researching today's individual's culture. This culture has surpassed the simple fundamental values and embraced more obvious and accessible bench marks. It's very likely that the fundamental values that were the main subject of debate will become obsolete and just "history". Man has grown into a "present consumer" and the spirit of economy follows him everywhere.

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DOES THE RELATIONSHIP BETWEEN GOVERNMENT EXPENDITURE AND ECONOMIC GROWTH FOLLOW WAGNER'S LAW IN NIGERIA?

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ABSTRACT: *While previous studies to test Wagner's hypothesis for Nigeria used total government expenditure, this paper in addition to total government expenditure used a disaggregated government expenditure data from 1961 - 2007, specifically; expenditure on general administration and that of community and social services to determine the specific government expenditure that economic growth may have significant impact on. Economic conditions and policies change implying that it is not only economic growth that can affect government expenditure hence the inclusion of other fiscal policy variable and political freedom to augment the functional form of Wagner's law. All the variables used were found to be I(1) and long run relationship exist between the dependent and the independent variables except in the case where only GDP was used as the independent variable. Wagner's hypothesis does not hold in all the estimations rather Keynesian hypothesis was validated in all the estimation. Elasticity estimates and Granger causality results are in agreement.*

KEY WORDS: *Wagner law; Keynesian Hypothesis; Granger Causality and Cointegration*

JEL CLASSIFICATION: *H5, H11*

1. INTRODUCTION

Wagner's law is a principle named after the German economist Aldolph Wagner (1835-1917). The law predicts that the development of an industrial economy will be accompanied by an increased share of public expenditure in gross national product. Musgrave and Musgrave (1988) opined that as progressive nations industrialize, the share of the public sector in the national economy grows continually.

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Wagner identified three main factors for increased government spending. First, administrative and protective role of government will increase as a country's economy develops. Second, with the expansion of an economy, government expenditures on "cultural and welfare" would rise, particularly on education and health. He implicitly assumed that the income elasticity of demand for public goods is more than unity. Finally, progress in technology requires of developed nations requires government to undertake certain economic services for which private sector may shy away from (Khan, 1990).

While Wagner postulated that causality runs from national income to public expenditure, that is, there is tendency for public expenditure to grow relative to some national aggregates like gross domestic product, Keynes also associated with the link between public expenditure and growth posited that causality runs from public expenditure to income, implying that public expenditure is an exogenous factor and a public instrument for increasing national income. In the early 1960s, studies on Wagner's hypothesis were concentrated in the industrialized nations due to data availability. However, the developments in time-series econometric techniques and changing patterns of public expenditure growth in the late-twentieth century have reviewed research interest in Wagner's law which had hitherto declined in the late 1970s and early 1980s.

Using traditional econometrics techniques, many studies like (Peacock and Wiseman, 1967; Musgrave, 1969; Michas, 1975; Mann, 1980; Khan, 1990) have supported the law. As opined by Afzal and Abbas (2010), the empirical relevance of Wagner's law has been investigated and given unambiguous support by Oxley (1994), while Chletsos and Kollias (1997) argued that support for the Wagner's law could be found only for selected items of government expenditure.

Studies for Nigeria show that there is no consensus as regards Wagner's hypothesis. For example, empirical study by Aigbokhan (1996) found a bi-directional causality between government total expenditure and income, Essien (1997) used two step procedures of Engle and Granger and standard causality tests found no long run relationship between public spending and real income and no causality was established. Though, Aregbeyen (2006) confirmed the validity of Wagner's law in his study, Babatunde (undated) using a Bound Testing analysis found that Wagner law did not hold over the period studied (1970 - 2006) rather; he found a weak empirical support in Keynes's preposition.

The objective of this paper is to empirically investigate if government expenditure pattern in Nigeria follow Wagner's law using data from 1961 - 2007. This paper differs from previous studies for Nigeria because it uses a disaggregated data for government expenditure to test for Wagner's hypothesis as this will have some policy relevance.

For example, while previous studies for of this nature for Nigeria used total government expenditure to determine Wagner's law, this study uses in addition to total government expenditure, a disaggregated government expenditure data to determine the specific government expenditure that economic growth may determine. Second, the world is not static; hence economic conditions and policies change implying that it is not only government expenditure that can affect economic growth hence the inclusion

other fiscal policy variable and political freedom to augment the functional form of

Wagner's law. Section two considers literature review on version of Wagner's hypothesis, section three discusses econometric methods and results while section four concludes.

2. LITERATURE REVIEW ON VERSIONS OF WAGNER'S HYPOTHESIS

Different versions of Wagner hypothesis have been empirically investigated in functional forms since the 1960s as shown below.

$$GE = f(GDP) \quad (i)$$

Where GE is total government expenditure and GDP is gross domestic product. The first functional form above is popularly referred to as Peacock - Wiseman (1961) version of Wagner hypothesis. As cited in Halicioglu (2003), functional form (i) was also used in Musgrave (1969) as well as Goffman and Mahar (1971). A second functional form of the hypothesis shown below was initially used by Pryor (1968).

$$GCE = f(GDP) \quad (ii)$$

Where GCE is government consumption expenditure. Functional form (iii) below represents a modified version of Peacock - Wiseman (1961) version and this was also adopted by Mann (1980).

$$\frac{GE}{GDP} = f(GDP) \quad (iii)$$

$$GE = f\left(\frac{GDP}{N}\right) \quad (iv)$$

While functional form (iv) is linked to Goffman (1968), that of (v) below is linked to Gupta (1967) and also adopted by Michas (1975).

$$\frac{GE}{N} = f\left(\frac{GDP}{N}\right) \quad (v)$$

$$\frac{GE}{GDP} = f\left(\frac{GDP}{N}\right) \quad (vi)$$

Furthermore, the final functional form in (vi) above is Musgrave (1969) version which was also adopted by Ram (1986), Murthy (1993), Herekson (1993) and Halicioglu (2003). The major difference among the models is the measurement of government expenditure and economic output.

Halicioglu (2003) used data for 1960 - 2000 and found no support for empirical validity of Wagner's law in Turkey. Following Mann's (1980) study, Chang, Liu and Caudill (2004) used time series data for 1951 - 1996 for seven industrialized

countries and three developing countries and found no causality between economic growth and government expenditure in either direction. Florio and Colautti (2005) analyzed the experience of five developed economies (USA, UK, Italy and Germany) for the period 1870 - 1990. They developed a model based on Wagner's law and found that the increase in public expenditure to national income ratio was faster for the period until the 20th century.

Dependra (2007) attempted to consider if Wagner's law holds for Thailand using recent advances in econometric technique, the Toda - Yamamoto Granger causality test. The Author found no causality flowing from either direction between gross domestic product and government expenditure. The author concluded that there was no much evidence that Wagner's law holds for Thailand. Sideris (2007) also tested Wagner's law in the 19th century for Greece using cointegration and causality analysis. The author found support for Wagner's hypothesis in line with other empirical studies that examined the validity of the hypothesis in 19th century economies.

3. METHODOLOGY AND RESULTS

Using the functional form that relates the share of government expenditure in GDP with real gross domestic product, this can be written in log form as:

$$LGovExp_t = \beta_0 + \beta_1 LRGDP_t + \mu_t \quad (1)$$

Where $LGovExp$ is log of total government capital expenditure, $LRGDP$ is log of real GDP proxy for economic growth, μ_t is the error term that satisfies the Classical regression assumptions and β_1 is a measure of elasticity. It is expected that $\beta_1 > 0$ therefore validating the Wagner's law hypothesis. Real GDP here equals GDP at (various base years) market prices less indirect taxes net of subsidies. Real GDP was compiled from 1960 - 1973 using 1962/1963 constant basic prices; 1984 - 1980 using 1977/1978 constant basic prices and 1981 - 2008 using 1990 constant basic prices. Murthy (1994) opined that the inclusion of additional variable that are important for economic development in the functional form of Wagner's law would reduce omitted variable(s) and misspecification biases. Since it is not only economic growth that affects public expenditure, particularly for a developing country (like Nigeria, the functional form can be re-modeled as:

$$LGovExp_t = \beta_0 + L\beta_1 RRGDP_t + \beta_2 LEDO_t + \beta_3 POF_t + \beta_4 LTGR_t + \mu_t \quad (2)$$

where all other variables are as earlier defined and L before a variable is the log of that variable:

$LEDO$ is log of public debt outstanding;

POF is political freedom;

$LTGR$ log of total government revenue

It is expected that $LEDO < 0$, $POF, LTGR > 0$

Domestic debt and external is a stock of liabilities with different tenure accumulated by government operations in the past and scheduled to be fully repaid by government in the future. It covers only recognized direct financial obligations of government of which government pays interest on redemption. The external debt figures used for the estimation are converted to Naira using annual average exchange rate of the particular year. Total government revenue is the summation of total federally collected revenue from oil and non-oil. Subsequently, the dependent variable is replaced with different categories of government capital expenditure on administration and expenditure on social and community services. The choice of these variables is as a result data availability. For example it is difficult to get time series data on government capital expenditure on infrastructure like roads, telecommunications, education and health among others. Only recurrent expenditures on the aforementioned are available. Expenditure by government is divided into two which are recurrent and capital expenditure. While recurrent expenditures are payments for transactions within one year, capital expenditures are payments for non financial assets used in production process for more than one year. Another important variable that affects government expenditure according to Musgrave and Musgrave (1988) is population changes which may lead to increase on public expenditure on education, security among others. However, data on population changes from 1960 to date for Nigeria is not common. Therefore, it was not used for the estimation. The subsequent equations to be estimated are:

$$LExpAd_{min_t} = \beta_0 + L\beta_1RGDP_t + \beta_2LEDO_t + \beta_3POF_t + \beta_4LTGR_t + \mu_t \quad (3)$$

$$LExpSCS_t = \beta_0 + L\beta_1RGDP_t + \beta_2LEDO_t + \beta_3POF_t + \beta_4LTGR_t + \mu_t \quad (4)$$

where:

LExpAd min is log of capital expenditure on administration;

LExpSCS is log of capital expenditure on social community services.

Data on all the variables were extracted from Central Bank of Nigeria (2008) *Statistical Bulletin* Golden Jubilee Edition, December.

To establish the validity of Wagner's law, a three step procedure is applied here. First, to avoid any spurious relationship between government expenditure and economic growth, time series econometric methodology requires an analysis of the time series property of the variable in the regression equation using Augmented Dickey Fuller test (Dickey and Fuller, 1979). Second, we tested for possible cointegration among the variables involved using the Johansen (1988, 1995) maximum likelihood methodology and the third is to establish if there is causality between the variables using the pairwise Granger causality tests (Granger, 1986).

To test for stationarity of the data, a general form of Augmented Dickey Fuller (ADF) (Dickey and Fuller 1979, 1981) regression is formed below:

$$\Delta y_t = \beta y_{t-1} + \sum_{i=1}^m \alpha_i \Delta y_{t-i} + \phi + \lambda_t + \varepsilon_t \quad (5)$$

where Δy is the first difference of the series, m is the lag length, t is a time trend, ε_t is a white noise residual. The ADF test is carried out by using the null hypothesis as $H_0 : \alpha_2 = \alpha_3 = 0$. Practically, the lag length should be relatively small to save degrees of freedom and to be large enough to avoid the existence of autocorrelation in the residual.

The test for cointegration follows the Johansen and Juselius (1990, 1992) approaches. The two stage approach has received a great deal of attention because the long run equilibrium relationship can be modeled by a straight forward regression involving levels of the variable (Inder, 1993) as documented in Demirbas (1999). Unfortunately, it does not tell us the number of cointegration relationship. The Johansen and Juselius (1990, 1992) approach is based on the error correction representation of the VAR model with Gaussian errors. The VAR model according to Halicioglu (2003) is also closely related to cointegration. A general VAR model with the lag length, say, p can be expressed in VAR format as:

$$\Delta X_t = \Pi_0 + \Pi_1 \Delta X_{t-1} + \Pi_2 \Delta X_{t-2} + \dots + \Pi_{p-1} \Delta X_{t-p+1} + \pi X_{t-p} + AZ_t + v_t \quad (6)$$

where X_t represents $m \times 1$ vector of $I(1)$ variables, Z_t stands for $s \times 1$ vector of $I(0)$ variables, Π_s are unknown parameters and v_t is the error term. The hypothesis that π has a reduced rank $r < m$ is tested using the trace and the maximum eigenvalues test statistics.

Determination of causal direction became possible after a framework was developed by Granger (1969) and Sims (1972). The main issue here is that the past and present may cause the future but the future cannot cause the past (Granger, 1980). In a causality test, four findings are possible; when the sets of coefficient are not statistically significant, we say none of the variable Granger causes each other, meaning the variables are independence (no causality). On the other hand, there may be unidirectional causality meaning that X may Granger cause Y but not the other way round. It could also be the case where Y Granger causes X but not the other way round. Furthermore, X and Y may cause each other meaning that there is feedback effect (bidirectional causality). Granger causality test in a bivariate form is straight forward based on the following equation:

$$\Delta Y_t = \alpha + \sum_{i=1}^m \beta_i \Delta Y_{t-1} + \sum_{i=1}^n \gamma_i \Delta X_{t-1} + \varepsilon_t \quad (7)$$

$$\Delta X_t = \phi + \sum_{i=1}^p \delta_i \Delta X_{t-1} + \sum_{i=1}^q \varphi_i \Delta Y_{t-1} + \mu_t \quad (8)$$

where ε_t and μ_t are two uncorrelated white noise error term, m, n, p, q are the maximum number of lag length.

3.1. Elasticity Estimates

Table 1. Elasticity Estimates for Model 1 - 4

| | Dependent Variable | Constant | Independent Variables | | | | |
|---------|--------------------|-------------------|-----------------------|-------------------|------------------|------------------|----------------|
| | | | LRGDP | LED | POF | LTGR | R ² |
| Model 1 | <i>LGovExp</i> | -2.95* (-7.52) | 1.43* (17.67) | - | - | - | 0.87 |
| Model 2 | <i>LGovExp</i> | -1.70* (-5.58) | 0.51* (4.90) | -0.11 (-1.61) | -0.02 (-0.26) | 0.81* (10.32) | 0.86 |
| Model 3 | <i>LExpAdmin</i> | -1.38* (-4.73) | 0.09 (0.88) | -0.15* (-2.21) | 0.04 (0.45) | 1.06* (4.73) | 0.97 |
| Model 4 | <i>LExpSCS</i> | -4.24* (-9.53) | 0.97* (6.39) | -0.48* (-4.58) | 0.07 (0.52) | 1.00* (8.66) | 0.95 |

Figures in parentheses are t-statistic and * shows significance at 5%.

From model 1, the elasticity estimate shows the possibility of the existence of Wagner law for Nigeria for the period 1961 to 2007 since a positive relationship exists between total government expenditure and economic growth. In all the other models, with the inclusion of other variables, the possibility of Wagner law was also verified. Specifically, in model 2, all the independent variables met the *a priori* expectations except political freedom. In model 3 and model 4, when specific government expenditure was used (model 3, expenditure on public administration and model 4, expenditure on social and community services), it was found that the relationship between government expenditure and economic growth was also positive and all the other variables met the *a priori* expectation. The major problem here is that elasticity estimates are interpreted with caution because of possible autocorrelation problem (Afzal and Abbas, 2009).

Table 2. Unit Root Results

| Variable | Intercept Only | Remark | Intercept and Trend | Remark |
|------------|--------------------------|--------|--------------------------|--------|
| LRGDP | -4.909205* (-3.5850) | I(1) | -4.951517* (-4.1781) | I(1) |
| LTGR | -5.048184* (-3.5850) | I(1) | -5.119834* (-4.1781) | I(1) |
| LGovExp | -3.986744* (-3.5850) | I(1) | -3.959265** (-3.5136) | I(1) |
| LEDO | -3.486573** (-2.9286) | I(1) | -3.551704** (-3.5136) | I(1) |
| LExpAdmin | -4.761088* (-3.5850) | I(1) | -4.715628* (-4.1781) | I(1) |
| LExpEcoser | -4.161242* (-3.5850) | I(1) | -4.105324** (-3.5136) | I(1) |
| LnExpSCS | -4.483747* (-3.5850) | I(1) | -4.429634* (-4.1781) | I(1) |

Figure in parenthesis are the critical value:

* 1% critical value

** 5% critical value.

The results show that the variables are non - stationary at level except at first difference. Therefore, all the variables used are I(1).

3.2. Cointegration Test

Table 3. Bivariate Cointegration Result for Model 1

Sample: 1961 2007

Included observations: 45

Series: LEXP LR GDP

Lags interval: 1 to 1

| Eigenvalue | Likelihood Ratio | 5 Percent Critical Value | 1 Percent Critical Value | Hypothesized No. of CE(s) |
|------------|------------------|--------------------------|--------------------------|---------------------------|
| 0.232195 | 14.53900 | 19.96 | 24.60 | None |
| 0.057170 | 2.649128 | 9.24 | 12.97 | At most 1 |

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. rejects any cointegration at 5% significance level

Table 4. Cointegration Result for Model 2

Sample: 1961 2007

Included observations: 45

Series: LEXP LEDO LR GDP LTGR POF

Lags interval: 1 to 1

| Eigenvalue | Likelihood Ratio | 5 Percent Critical Value | 1 Percent Critical Value | Hypothesized No. of CE(s) |
|------------|------------------|--------------------------|--------------------------|---------------------------|
| 0.667710 | 90.64204 | 68.52 | 76.07 | None ** |
| 0.421948 | 41.06343 | 47.21 | 54.46 | At most 1 |
| 0.157991 | 16.39930 | 29.68 | 35.65 | At most 2 |
| 0.137602 | 8.660908 | 15.41 | 20.04 | At most 3 |
| 0.043454 | 1.999173 | 3.76 | 6.65 | At most 4 |

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 1 cointegrating equation(s) at 5% significance level

The result for model 1, that is, using only total government expenditure and economic growth data shows the absence of cointegration relationship between the dependent and the independent variables even with the different test assumptions. On the other hand, model 2, model 3 and model 4 show the existence of one long run relationship each between the dependent variable and the independent variables with the inclusion of other variables in the independent variables and with the use of total and specific government expenditure in the model as shown in tables 4, 5 and 6 below.

Table 5. Model 3 Cointegration Results

Sample: 1961 2007
 Included observations: 45
 Test assumption: Linear deterministic trend in the data
 Series: LEXPADMIN LR GDP LEDO POF LTGR
 Lags interval: 1 to 1

| Eigenvalue | Likelihood Ratio | 5 Percent Critical Value | 1 Percent Critical Value | Hypothesized No. of CE(s) |
|------------|------------------|--------------------------|--------------------------|---------------------------|
| 0.715523 | 89.50435 | 68.52 | 76.07 | None ** |
| 0.296821 | 32.93470 | 47.21 | 54.46 | At most 1 |
| 0.175477 | 17.08823 | 29.68 | 35.65 | At most 2 |
| 0.149159 | 8.405480 | 15.41 | 20.04 | At most 3 |
| 0.024943 | 1.136656 | 3.76 | 6.65 | At most 4 |

*(**) denotes rejection of the hypothesis at 5%(1%) significance level
 L.R. test indicates 1 cointegrating equation(s) at 5% significance level

Table 6. Cointegration Result model 4

Sample: 1961 2007
 Included observations: 45
 Test assumption: Linear deterministic trend in the data
 Series: LEXPSCS LR GDP LEDO POF LTGR
 Lags interval: 1 to 1

| Eigenvalue | Likelihood Ratio | 5 Percent Critical Value | 1 Percent Critical Value | Hypothesized No. of CE(s) |
|------------|------------------|--------------------------|--------------------------|---------------------------|
| 0.588157 | 74.56324 | 68.52 | 76.07 | None * |
| 0.338858 | 34.64317 | 47.21 | 54.46 | At most 1 |
| 0.174396 | 16.02274 | 29.68 | 35.65 | At most 2 |
| 0.144737 | 7.398954 | 15.41 | 20.04 | At most 3 |
| 0.008043 | 0.363398 | 3.76 | 6.65 | At most 4 |

*(**) denotes rejection of the hypothesis at 5%(1%) significance level
 L.R. test indicates 1 cointegrating equation(s) at 5% significance level

3.3. Granger Causality

According to Wagner law, the share of public of public expenditure in national income will grow in size with the economic growth. Implying that it is increase in income that leads to an increasing magnitude of expenditure. Therefore, with Wagner's law it is expected that causality runs from national income or economic growth to public expenditure. On the contrary, Keynesian approach used macro econometrics approach to refute Wagner law; rather, he opined that public expenditure is considered as an exogenous policy instrument for aggregate demand management. That is, it is public expenditure growth that leads to economic growth.

Table 7. Bivariate Pairwise Granger Causality Results

Sample: 1961 2007

Lags: 1

| Null Hypothesis: | Obs | F-Statistic | Probability |
|-----------------------------------|-----|-------------|-------------|
| LRGDP does not Granger Cause LEXP | 46 | 0.07711 | 0.78258 |
| LEXP does not Granger Cause LRGDP | | 3.23585 | 0.07906 |

From the table above, we reject the null hypothesis that total government expenditure does not Granger causes economic growth. This implies that Keynesian hypothesis is validated rather than Wagner's law contrary to earlier results obtained by Essien (1997) and Aigbokhan (1996) for Nigeria.

Table 8. Total Gov Expenditure Granger Causality Result

Pairwise Granger Causality Tests

Sample: 1961 2007

Lags: 1

| Null Hypothesis: | Obs | F-Statistic | Probability |
|-----------------------------------|-----|-------------|-------------|
| LRGDP does not Granger Cause LEXP | 46 | 0.07711 | 0.78258 |
| LEXP does not Granger Cause LRGDP | | 3.23585 | 0.07906 |
| LEDO does not Granger Cause LEXP | 46 | 0.54698 | 0.46357 |
| LEXP does not Granger Cause LEDO | | 0.32981 | 0.56876 |
| POF does not Granger Cause LEXP | 46 | 0.22003 | 0.64139 |
| LEXP does not Granger Cause POF | | 1.80451 | 0.18622 |
| LTGR does not Granger Cause LEXP | 46 | 2.64511 | 0.11118 |
| LEXP does not Granger Cause LTGR | | 1.89207 | 0.17609 |
| LEDO does not Granger Cause LRGDP | 46 | 1.6E-05 | 0.99686 |
| LRGDP does not Granger Cause LEDO | | 7.67966 | 0.00822 |
| POF does not Granger Cause LRGDP | 46 | 0.30736 | 0.58218 |
| LRGDP does not Granger Cause POF | | 1.35874 | 0.25018 |
| LTGR does not Granger Cause LRGDP | 46 | 0.70627 | 0.40533 |
| LRGDP does not Granger Cause LTGR | | 0.15087 | 0.69962 |
| POF does not Granger Cause LEDO | 46 | 0.02028 | 0.88742 |
| LEDO does not Granger Cause POF | | 1.06857 | 0.30705 |
| LTGR does not Granger Cause LEDO | 46 | 3.15210 | 0.08291 |
| LEDO does not Granger Cause LTGR | | 5.68330 | 0.02161 |
| LTGR does not Granger Cause POF | 46 | 1.71863 | 0.19683 |
| POF does not Granger Cause LTGR | | 0.21199 | 0.64753 |

Manning and Adriacanos (1993) have argued that in the absence of a cointegration relation between variables, it is still important to examine the short run relationship between them. According to Aregbeyen (2006), even though long run

relationship between two macro variables may not be established for a given period of time, it is still possible for the variables to be causally related in the short run.

As shown in table 8, using total government expenditure as dependent variable, it was found that there is evidence of Keynesian hypothesis with causality running from total government expenditure to economic growth. It was also found that total government revenue Granger causes total government expenditure but not the other way round. Furthermore, using specific government expenditure, there was weak causality running from expenditure on administration to economic growth, implying Keynesian hypothesis and strong causality from expenditure on community and social services to economic growth as shown in tables 9 and 10.

Table 9. Multivariate Pairwise Granger Causality Tests: Expenditure on administration as dependent variable

Sample: 1961 2007

Lags: 1

| Null Hypothesis: | Obs | F-Statistic | Probability |
|--|-----|-------------|-------------|
| LRGDP does not Granger Cause LEXPADMIN | 46 | 0.59036 | 0.44648 |
| LEXPADMIN does not Granger Cause LRGDP | | 1.96161 | 0.16852 |
| LEDO does not Granger Cause LEXPADMIN | 46 | 4.17824 | 0.04710 |
| LEXPADMIN does not Granger Cause LEDO | | 1.19934 | 0.27955 |
| POF does not Granger Cause LEXPADMIN | 46 | 0.72302 | 0.39986 |
| LEXPADMIN does not Granger Cause POF | | 1.73813 | 0.19436 |
| LTGR does not Granger Cause LEXPADMIN | 46 | 10.7244 | 0.00209 |
| LEXPADMIN does not Granger Cause LTGR | | 0.55993 | 0.45836 |
| LEDO does not Granger Cause LRGDP | 46 | 1.6E-05 | 0.99686 |
| LRGDP does not Granger Cause LEDO | | 7.67966 | 0.00822 |
| POF does not Granger Cause LRGDP | 46 | 0.30736 | 0.58218 |
| LRGDP does not Granger Cause POF | | 1.35874 | 0.25018 |
| LTGR does not Granger Cause LRGDP | 46 | 0.70627 | 0.40533 |
| LRGDP does not Granger Cause LTGR | | 0.15087 | 0.69962 |
| POF does not Granger Cause LEDO | 46 | 0.02028 | 0.88742 |
| LEDO does not Granger Cause POF | | 1.06857 | 0.30705 |
| LTGR does not Granger Cause LEDO | 46 | 3.15210 | 0.08291 |
| LEDO does not Granger Cause LTGR | | 5.68330 | 0.02161 |
| LTGR does not Granger Cause POF | 46 | 1.71863 | 0.19683 |
| POF does not Granger Cause LTGR | | 0.21199 | 0.64753 |

Table 10. Multivariate Pairwise Granger Causality Tests: Expenditure on social and community services as dependent variable

Sample: 1961 2007

Lags: 1

| Null Hypothesis: | Obs | F-Statistic | Probability |
|--------------------------------------|-----|-------------|-------------|
| LRGDP does not Granger Cause LEXPSCS | 46 | 0.84878 | 0.36204 |
| LEXPSCS does not Granger Cause LRGDP | | 4.62966 | 0.03708 |
| LEDO does not Granger Cause LEXPSCS | 46 | 1.87061 | 0.17851 |
| LEXPSCS does not Granger Cause LEDO | | 0.59614 | 0.44428 |
| POF does not Granger Cause LEXPSCS | 46 | 0.22034 | 0.64115 |
| LEXPSCS does not Granger Cause POF | | 2.16209 | 0.14873 |
| LTGR does not Granger Cause LEXPSCS | 46 | 4.56902 | 0.03828 |
| LEXPSCS does not Granger Cause LTGR | | 0.02837 | 0.86703 |
| LEDO does not Granger Cause LRGDP | 46 | 1.6E-05 | 0.99686 |
| LRGDP does not Granger Cause LEDO | | 7.67966 | 0.00822 |
| POF does not Granger Cause LRGDP | 46 | 0.30736 | 0.58218 |
| LRGDP does not Granger Cause POF | | 1.35874 | 0.25018 |
| LTGR does not Granger Cause LRGDP | 46 | 0.70627 | 0.40533 |
| LRGDP does not Granger Cause LTGR | | 0.15087 | 0.69962 |
| POF does not Granger Cause LEDO | 46 | 0.02028 | 0.88742 |
| LEDO does not Granger Cause POF | | 1.06857 | 0.30705 |
| LTGR does not Granger Cause LEDO | 46 | 3.15210 | 0.08291 |
| LEDO does not Granger Cause LTGR | | 5.68330 | 0.02161 |
| LTGR does not Granger Cause POF | 46 | 1.71863 | 0.19683 |
| POF does not Granger Cause LTGR | | 0.21199 | 0.64753 |

4. CONCLUSION AND POLICY IMPLICATION OF RESULTS

Using total government expenditure as well as specific expenditure of government as the dependent variables, it was found that Wagner's law was not validated even with the inclusion of other fiscal policy variables in the other models. The implication of the result is that since it is increase in total government expenditure as well as specific expenditure on general administration and community and social services that causes economic growth, it is recommended that policy makers should always increase total expenditure as well as that of specific expenditure as this will not hurt economic growth, rather it will propel economic growth in Nigeria.

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THE IMPACT OF THE FOREIGN DIRECT INVESTMENT ON ROMANIA'S ECONOMY

MIHAELA IONECI, GEORGIANA MÎNDRECI *

ABSTRACT: *Foreign direct investment can be regarded as a factor out of the crisis of the Romanian economy. The relationship between the foreign direct investment and the gross domestic product is beneficial for the economy to the extent to which investment is directed towards innovation and new technologies. The virtuous circle diversity - change - technology needs investment to take effect. Microeconomic level investment completes the strategies and the investment decisions at macroeconomic level.*

KEY WORDS: *investment; foreign direct investment; innovation; gross domestic product*

JEL CLASSIFICATION: *E20, E22*

1. INTRODUCTION

Investment in an economy is a source of development at all levels, because it is considered to represent all the costs incurred to purchase capital goods.

The decision to invest requires a careful analysis of the field to which the investment is directed, and the decision to invest is subject to a number of factors, including:

- the ratio of the present value of income earned through investment and the investment cost - in this case, the decision to invest is advantageous if the present value of the income earned is higher or at least equal to the investment cost;
- the ratio between the net income to date and the actual interest rate or the opportunity cost of the investment - in this case, the decision to invest is

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advantageous if the rate of the net income to date is bigger than the actual interest rate.

Foreign investment is the capital transfers from one country to another, either as direct investment or as portfolio investment.

Direct investment is made for the establishment of companies in different fields of activity and may include a portion of the reinvested profit. This type of investment leads to a lasting relationship between the foreign investor and the country where he chose to invest, because the direct investment results in real capital formation in a company with total foreign capital or in a joint venture.

Portfolio investment represents the purchase by foreign investors of the shares of the already existing firms in an economy. ([5], 2001, pp. 238 - 239)

Usually foreign investment is viewed positively by any state, due to the beneficial effects produced in the economy by the transfers of leading technology, managerial experience, access to foreign markets for sales, etc. It is true that along with the positive effects, investment may cause adverse effects if it is directed towards increasing imports and the balance of payments.

The factors that determine the increase or reduction in investment are:

- the pace of technical progress;
- the stock of the capital goods in the economy;
- the maintenance and operation costs of the capital goods;
- the expectations regarding the evolution of the sales and of the profits;
- taxation.

The role of investment in an economy, particularly of foreign direct investment, will be emphasized in this paper.

2. INVESTMENT AT MACROECONOMIC LEVEL

In JM Keynes's vision, investment is a value added to the production equipment, which was obtained during that respective period by the production activity. During a given period, the economist considers, investment is equal to savings, since both are equal to the excess of income over consumption.

The importance of investment is significant in all economies, because of their opportunities to create, enhance, replace, improve and raise any heritage.

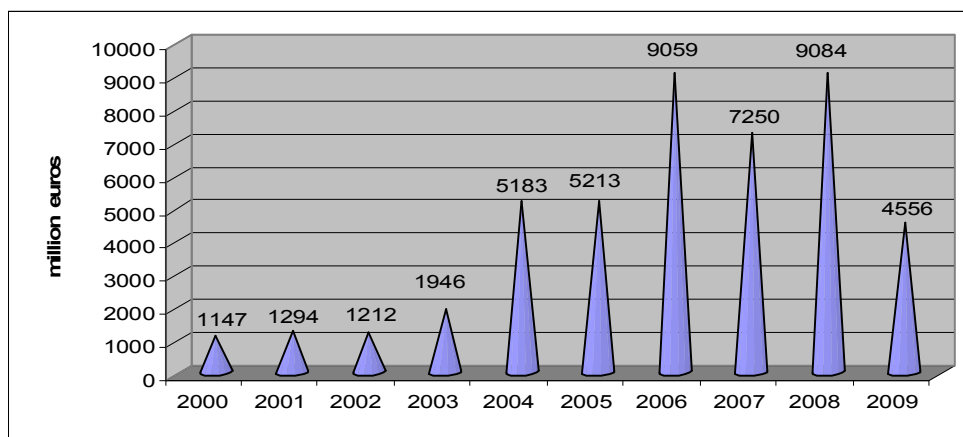
Investments are analyzed according to the aggregation levels: at the microeconomic level, the macroeconomic level.

At the microeconomic level, the company can increase the size and quality of the products or services offered through investment. In the short term, productivity can be increased or the production cost can be reduced. In the long term, new outlets can be gained, the position on the domestic market towards the competitors it strengthened, new product are launched, etc.

At the macroeconomic level, through the investment process, one aims to increase the gross national product, to change the position on the world market, to reduce the current account deficit, etc. At this level, investments are included in national strategies which allow achieving the objectives set by the economic policies. Typically, the government grants the specialized companies the mission to achieve

investments and for the direct investment made by the state the elements of infrastructure, logistics, the health system, etc. are concerned. These last areas of performing the investments determine the economic development investment, stimulating in their turn the private investment (Zait, 2008, pp. 42 - 43).

Even if we separate the two levels of aggregation, it should be noted that the positive changes at within the company generate effects of the same nature at the level of national economy as well. The company is an integral part of the whole economic system, whose activity is influenced by the government decisions through economic - financial leverage.



Source: <http://www.arisinvest.ro/ro/de-ce-romania/statistici-isd/>

Figure 1. Foreign direct investment in Romania

The analyzed period referring to the progress of foreign direct investment in Romania is from 2000 to 2009. During the first three years (2000, 2001 and 2002) the amount of foreign direct investment was at about the same level, with slight differences between these years. The year 2003 recorded a value of investment of about 1,950 million Euros. The early growth in the value of direct foreign investment in our country is represented by the year 2004, when the level of 5,183 million Euros is reached. The year 2005 recorded a value approximately equal to that of the previous year. In 2006 the foreign direct investment increased to 9,059 million Euros, the highest value being recorded in 2008 of 9,084 million Euros. The year 2007 attracts investments of 7,250 million Euros in Romania, a lower number than in 2006, but higher than the previous years from the analyzed period. In 2009, the value of the foreign direct investment is reduced almost by half compared with 2008, the 4,556 million Euros being placed below the level of investment in 2004 and 2005.

The high values of the foreign direct investment in Romania during 2006, 2007 and 2008 may be explained by the fiscal policy adopted by our country's government. The introduction of the flat tax in 2005 gave Romania an advantage in terms of taxation, the country becoming attractive to those who wanted to invest, but had not yet decided. There have been competitors in attracting foreign direct investment,

particularly among the neighbouring countries. Ukraine and Serbia have introduced the flat tax since 2003, Bulgaria adopted the flat tax of 10% after the introduction of the flat tax of 16% in Romania. Hungary has not yet joined the group of central and eastern European countries which have introduced the flat tax, but now the adoption of the flat tax of 16% is desired.

The level of the foreign direct investment in 2009 was strongly influenced by the extent of the financial crisis triggered in the U.S. In 2008 the effects of the crisis were not very visible in Europe's economy, especially in Romania's economy, and the already started ones have continued. But, the end of 2008 showed that Romania bears in its turn the effects of the crisis triggered worldwide. Alongside with other economic aspects produced at the level of our country's economy, the value of the foreign direct investment has experienced a severe decrease compared with the evolution of the last three years.

Table 1. The evolution of the foreign direct investment

| Year | Foreign direct investment | Fixed-base absolute change | Mobile-base absolute change | Fixed-base dynamic index | Mobile-base dynamic index |
|------|---------------------------|----------------------------|-----------------------------|--------------------------|---------------------------|
| 2000 | 1147 | 0 | - | 1.00 | - |
| 2001 | 1294 | 147 | 147 | 1.13 | 1.13 |
| 2002 | 1212 | 65 | -82 | 1.06 | 0.94 |
| 2003 | 1946 | 799 | 734 | 1.70 | 1.61 |
| 2004 | 5183 | 4036 | 3237 | 4.52 | 2.66 |
| 2005 | 5213 | 4066 | 30 | 4.54 | 1.01 |
| 2006 | 9059 | 7912 | 3846 | 7.90 | 1.74 |
| 2007 | 7250 | 6103 | -1809 | 6.32 | 0.80 |
| 2008 | 9084 | 7937 | 1834 | 7.92 | 1.25 |
| 2009 | 4556 | 3409 | -4528 | 3.97 | 0.50 |

Source: Calculations made by the author based on the data from Figure 1

In the past 10 years, foreign direct investment in Romania increased from 1,147 million Euros in the first year of the analysis to 4,556 million Euros in 2009. To highlight the way in which foreign direct investment has evolved the following were calculated: fixed-base absolute change; mobile-base absolute change; fixed-base dynamic indices; mobile-based dynamic indices.

The calculation of the fixed-base absolute change was done using as a basis for comparison the year 2000. Thus, from 2000 to 2009 foreign direct investment increased by 3,409 million Euros.

Mobile-base absolute change presents the increase of the value of foreign direct investment from year to year. The largest absolute decrease recorded was of 4,528 million Euros, representing the difference between 2009 and 2008, this situation having been explained above. In contrast, the largest absolute increase was of 3,846 million Euros, recorded as the difference between 2006 and 2005.

The evolution of the foreign direct investment is also highlighted with the help of the dynamic index, determined using two ways: with a fixed base and with a mobile base. The fixed-base dynamic index was calculated considering 2000 as base year for

comparison and one can notice the permanent increase in investment by 2009, when the index shows a much lower value than the one recorded in 2008. Foreign direct investments in 2009 are approximately four times higher than those recorded in 2000.

The mobile-based dynamic index presents similar values, the years 2004 and 2009 generally obtaining limit values. The largest increase was obtained by comparing 2004 to 2003, an increase of 2.66 times (the increase in absolute value for this period is of 3,237 Euros). The foreign direct investment in 2009 increased by 0.5 times compared to those of 2008, this being the smallest evolution of the years presented, which coincides with the smallest increase (actually decreased) in the absolute value.

The presentation of the foreign direct investment over a 10 year period takes the form of a chronological series, so that for a meaningful analysis it is necessary to also calculate the average indicators.

Table 2. Average indicators specific to the chronological series

| Indicator | Average level (million euros) | Absolute average change (million euros) | Dynamic average index |
|------------------|---|--|------------------------------|
| Value | 4594,4 | 378,77 | 1,16 |

Source: Calculations made by the author based on the data from Table no.1

On average, for the analyzed period the value of the foreign direct investment in Romania was of 4594.4 million Euros. The absolute average change was of 378.77 million Euros showing that in the 10 years examined there was an increase in the absolute value, but seen as average. The dynamic average index was of 1.16, which indicates that on average the value of the foreign direct investment increased from one year to another by 1.16 times. The importance of investment is essential in an economy, especially in an economy in crisis. The data presented demonstrate that the Romanian economy increasingly attracted more and more foreign direct investment. The reality of the last year showed their reduction in full crisis.

In periods of crisis, changes occur in all areas, but by exploiting them one may reach advantageous developments. Trying to overcome the crisis leads to changes in the technologies used so far, to trying to increase productivity with a smaller amount of labour force. The State's intervention in the economy should aim at favouring the creation of this new technology. I consider opportune the existence of the innovative state, which supports through its interventions the virtuous circle: diversity - change – technology (Ioneci, 2009, p. 41).

Making this change and the use of a new, innovative technology are possible through the investment of considerable sums of money, which our country does not have at present. Then, growing out of the crisis, the new recording of the economic growth above the average of the European Union, involves attracting investment.

The argument that during times of crisis one of the factors that can lead to growing out of this negative period is represented by investment is not new. All the great economists have shown in their work that if the volume of investment is increased in the economy the positive effects will soon appear.

However, to demonstrate that this statement is true and when we refer to the Romanian economy we use statistical methods as an argument. We shall demonstrate

that if between the foreign direct investment and the gross domestic product there is a connection and if it exists, we determine the type of connection and its intensity.

Table 3. The gross domestic product in Romania

| Year | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|-------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GDP (billion lei) | 80,3 | 116,7 | 151,4 | 189,1 | 238,7 | 287,2 | 342,4 | 404,7 | 503,9 | 491,3 |

Source: Romanian Statistical Yearbook 2008, Monthly Statistical Bulletin no.1/2010, no.1/2009

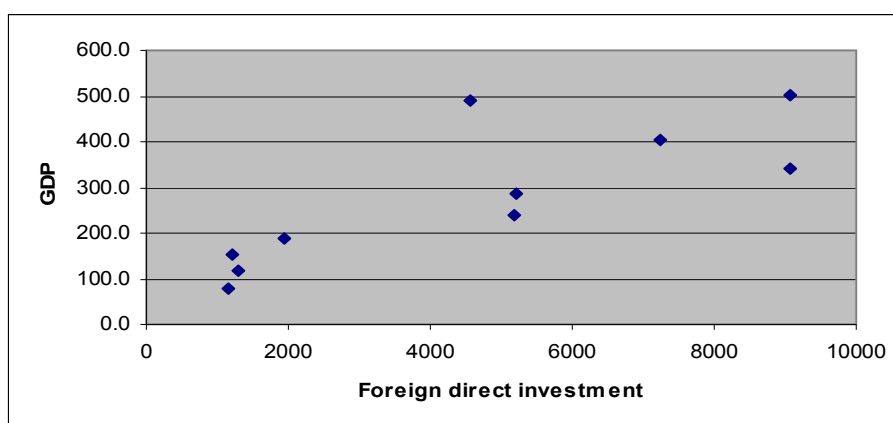
For the past 10 years, the trend of the GDP in Romania has been increasing. As happened with the evolution of the foreign direct investment, in the last year, the gross domestic product is the one that records the decrease of the indicator.

3. STATISTICAL ANALYSIS OF THE LINK BETWEEN FDI AND GROSS DOMESTIC PRODUCT

The statistical methods that demonstrate if there is a connection between the foreign direct investment and the GDP are the regression and the correlation. Foreign direct investments are considered as being the independent variable, and this will further be noted with X. The gross domestic product is considered to be the dependent variable and it will be further noted with Y.

The existence of a link between the two indicators is proven by using the graphic method, one of the simple methods of determining the relationship between phenomena. This implies that on the OX axis the independent variable to be represented, and the OY axis the dependent variable to be represented.

From figure number 2 one can notice that the points of intersection of the two variables focus on the first bisector. This demonstrates that between foreign direct investment and the gross domestic product there is a link and this link is direct.



Source: Chart conceived by the author based on data from Table 1 and 3

Figure 2. Foreign direct investment and the gross domestic product

The intensity of the relation between the two variables is determined by using one of the nonparametric methods for determining the relationship between phenomena, namely the ranking method. Only the Spearman coefficient will be calculated, which involves establishing the specific ranking for each individual variable.

Table 4. The ranks for the X and Y variables

| X | Y | R _x | R _y | R _x - R _y | (R _x - R _y) ² |
|------|-------|----------------|----------------|---------------------------------|---|
| 1147 | 80.3 | 1 | 1 | 0 | 0 |
| 1212 | 151.4 | 2 | 3 | -1 | 1 |
| 1294 | 116.7 | 3 | 2 | 1 | 1 |
| 1946 | 189.1 | 4 | 4 | 0 | 0 |
| 4556 | 491.3 | 5 | 9 | -4 | 16 |
| 5183 | 238.7 | 6 | 5 | 1 | 1 |
| 5213 | 287.2 | 7 | 6 | 1 | 1 |
| 7250 | 404.7 | 8 | 8 | 0 | 0 |
| 9059 | 342.4 | 9 | 7 | 2 | 4 |
| 9084 | 503.9 | 10 | 10 | 0 | 0 |

Source: Calculations made by the author based on the data from Table 1 and 3

The calculation formula for the Spearman coefficient is presented below.

$$C_s = 1 - \frac{6 \sum_{i=1}^n (R_{x_i} - R_{y_i})^2}{n(n^2 - 1)} \tag{1}$$

where:

R_{x_i} - rank of X

R_{y_i} - rank of Y

n - number of pairs

Substituting in the formula (1) the values calculated in Table no. 4 we determine the value of the Spearman coefficient and we show the intensity of the relationship between the two variables.

$$C_s = 1 - \frac{6 \cdot 24}{10(10^2 - 1)} = 0,855$$

Following the calculations performed, the result is of 0.855 which shows again that the relationship between variables is direct. The approach to 1 shows the intensity of the link between the variables, so that between the foreign direct investment and the gross domestic product there is a strong link.

4. CONCLUSIONS

By calculating the Spearman coefficient it was possible to highlight that between FDI and gross domestic product there is a link, and it is strong and direct. Investments affect in a positive way any economy if used in areas that can be internationally competitive.

For the current year, but also for the future continuing to attract foreign direct investment in Romania is a source of implementing new technologies needed to overcome the current crisis, especially since foreign direct investments in Romania have been directed towards sectors that have led to increased imports and implicitly to the current account deficit.

Obtaining the desired results is achieved by directing investment to areas with an innovative character and which use modern technology, to areas where sustainable economic growth is achieved.

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GLOBAL PERSPECTIVES IN AUTOMOTIVE INDUSTRY

NICOLETA ISAC, CONSTANTIN BĂGU *

ABSTRACT: *The automotive sector is characterised by a relatively low trade/sales ratio. While the production of most automotive producers in the world is spread over various countries in the value chain, the brands are still considered to reflect some national identity. Internationalisation strategies may change over the lifecycle of the product and automakers tend to pursue diametrically opposed strategies. In mature markets, it is about managing what goes on beneath a static surface; in emerging markets' dynamic environments, companies must strategically position themselves to benefit from growth opportunities. However, without the right strategy and execution in mature markets, it is clear that traditional OEMs cannot profit from emerging markets-the persistence of structural issues in mature market operations eventually will rob all but the most resilient competitors of the opportunity to compete in emerging markets.*

KEY WORDS: *competitiveness; automotive industry; global market; sales; investment*

JEL CLASIFICATION: *L62, O18*

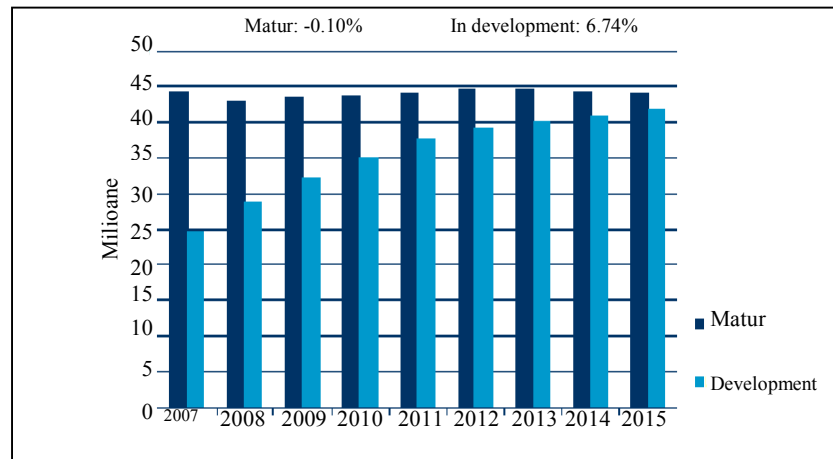
1. INTERNATIONAL MARKET

In Europe, the restructuring process is characterised by the shift east with the new EU member states in Central and East Europe (CEE) acting as the Western's pressure valve against a background of stagnating sales, rising raw material costs, increased competition from Asian automakers and falling new car prices. CEE gives automakers access to less costly labour and new customers, and it allows new entrants, such as Hyundai and Kia, to compete without legacy costs. The net effect has been a rebalancing of automaker footprints in the region with Western Europe losing 1.5 million in capacity since 2000, while CEE countries will have added 1.8 million units of capacity by 2009. While mature market OEMs gradually come to grips with the

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market-specific challenges presented to them, multifarious strategic challenges weigh just as heavily before emerging market investments are considered. Strategic challenges emanate from two sources—legislation or competition—and both add costs to competing in markets where better performance will originate only by increasing market share or reducing costs. Such constraints include increasing fuel economy or CO₂ objectives, recycling initiatives (e.g., the EU's End of Life Vehicle Directive), changing consumer tastes, vehicle content escalation, premium brand growth, rising commodity prices and globalised supply chain management, among others.



Source: PwC Automotive Institute 2008 Q3 Data Release

Figure 1. Global perspective

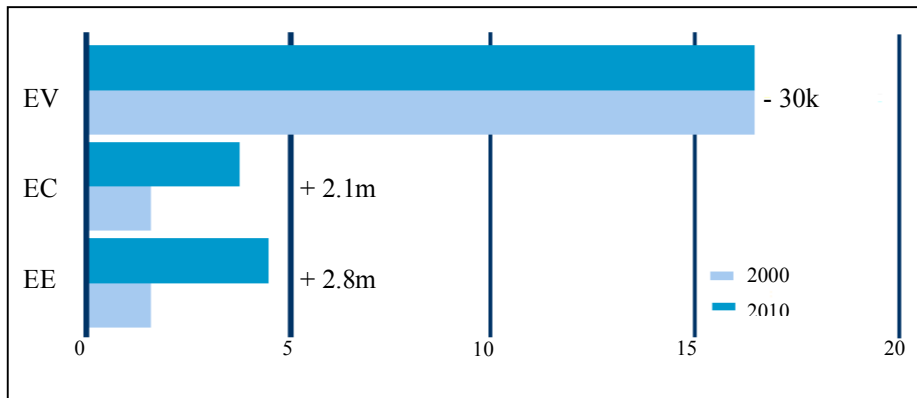
Once automakers meet these mature market challenges, the next stage is to compete effectively in the world's growth markets. From 2007 to 2015, emerging markets are expected to represent 18 times the estimated growth in light vehicle assembly as mature markets in the same period. PwC forecasts that 95 percent of light vehicle growth will originate from emerging markets. Among these markets, the BRIC (Brazil, Russia, India and China) countries are most eminent in the growth stakes, with more than 58 percent of forecasted growth from 2007 to 2015 stemming from them. Of the BRIC countries, PwC expects China and India to lead the growth in light vehicle output as OEMs look to sate the demands of a combined population of more than 2 billion people, with the less populous-but still strategically important-Russia and Brazil expected to grow less rapidly.

With these divergent focuses of OEMs' strategies, those competitors that best execute emerging and mature market strategies will be the winners. Those managing location issues with the concomitant capacity, together with a product portfolio that addresses anomalous market needs at the most attractive cost, will profit from the challenging global environment. Of the various competitors, it would seem that Toyota, despite a recent slowing of its growth in North America and Europe, is executing the most balanced global strategy. By 2015, PwC forecasts Toyota to remain the leading global alliance group with a forecast light vehicle output of 11.3 million. Behind

Toyota lies the growth forecast for GM, thanks to its strong emerging market presence, and the dynamic Renault-Nissan alliance. While the emerging market or low-cost car was once an important differentiator for Renault-Nissan, many of its competitors are looking to launch competing vehicles-e.g., Toyota with its EFC program and VW with its NCC program. Low-cost vehicles will take on increasing importance for global automakers as they seek to accelerate the development of emerging markets and thus reduce the pressure to perform in the world's highly competitive and challenging established markets.

2. EUROPEAN UNION OUTLOOK

Despite a short period of contraction from 2000 to 2003, Western Europe has enjoyed considerable stability since the late 1990s, with sales hovering around the 14.5 million mark in the mid-2000s. A lack of dynamic growth is a feature of a mostly mature market such as Western Europe, where replacement cycles and the prevailing economic situation drive demand. Economic growth in countries such as Poland, the Czech Republic, Hungary and Slovakia, as well as Romania (joined 2007), has spurred a boom in sales volumes. The star performer has been Romania, where sales rose more than 25 percent in 2007-08, thanks to the improving economic situation and the rollout of the Dacia Logan-exactly the type of low-cost car designed to boost sales in emerging markets. Poland also seems to be reaching its potential, with sales increasing almost 23 percent year-on-year and totalling 293,000 in 2007.



Source: PwC Automotive Institute 2008 Q3 Data Release

Figure 2. European regions assembly 2000 vs. 2010 (million units)

In Western Europe, a mosaic of factors influences the new car market. In Germany, the impact of the 3 percent increase in WATT continues to hold the German market back, so that despite a high average vehicle parc age and increasingly positive economic news, sales in 2007 were down almost 10 percent from 2006. Of the other big-five markets, Spain also has moved into the negative, as the country's construction-driven economic boom ended and consumer confidence declined. Italy, France and the UK posted above-average year-on-year growth for 2007, with Italy, in

particular, performing well (up 7 percent), thanks in part to a raft of new vehicle introductions from domestic OEM Fiat. The UK (up 2.5 percent) and France (up 3.2 percent) also posted positive figures; however, increasing disquiet about the general economic situation- stubbornly high unemployment figures in France, the increased cost of credit in the UK, and the rising cost of living in almost all markets (mature and emerging)-suggests the picture for 2008 will not be so rosy.

3. SUPPLY SITUATION

Due to the stable demand noted above, EU light vehicle output also has remained steady. Light vehicle assembly output rose to 18.830 million units in 2007, a significant increase above the previous peak of 18.065 million units in 2000. Following several years of near-flat growth, output increased almost 1 million units in 2007. Looking ahead, light vehicle assembly output should continue to grow, at least until 2013. Then it is projected to reach 20.749 million units, almost 2 million units more than 2007's output. After this, volume likely will stabilise around 20.7 million units. The source of this growth will be twofold. First, a combination of market recovery and, more importantly, new model programme investment will see increased output from traditional Western European automotive assembly countries Germany, France and Italy. Collectively, these three will see an increase in excess of 800,000 units between 2007 and 2015. Second, the countries of Central Europe, specifically those that acceded to the European Union in 2004 and 2007, also will see significant volume gains. Growth of their export industries and burgeoning domestic demand will drive this increase. The key assembly locations in Central Europe will be the Czech Republic, Poland, Slovakia and Romania. Collectively, they will account for more than 1 million units of extra assembly volume between 2007 and 2015. Investment activity by specific alliance groups naturally will have a significant effect on volume growth. The top five contributors to growth during the 2007-2015 period will be Hyundai Group, VW-Porsche, Fiat Group, Renault-Nissan and Ford Group. Renault-Nissan and Ford will enjoy volume growth, thanks to investments in Romania. In all these cases, automakers will rely on both domestic sales (in mature and emerging European markets) and, increasingly, exports to underpin these growth strategies. In the important Central European markets of Poland, Romania, Czech Republic and Slovakia, OEMs will add more capacity to take advantage of the lower-cost location and potential for domestic sales growth. Hence the model mix in these plants will be a combination of low-cost, emerging market products and higherend vehicles for export to developed markets in Europe and around the globe. Romania, in particular, has become the new focus for investment. Between 2007 and 2015, its new capacity will expand by a projected 330,000 units. Some of this will be continuing expansion of the Dacia business by owner Renault, but the recent acquisition of a plant (with guarantees of capacity expansion) by Ford also is a major driver. Thanks to accession, Romania is increasingly on the agenda of other OEMs looking to adjust their European footprints. Sales in Romania are represented in tabel 1.

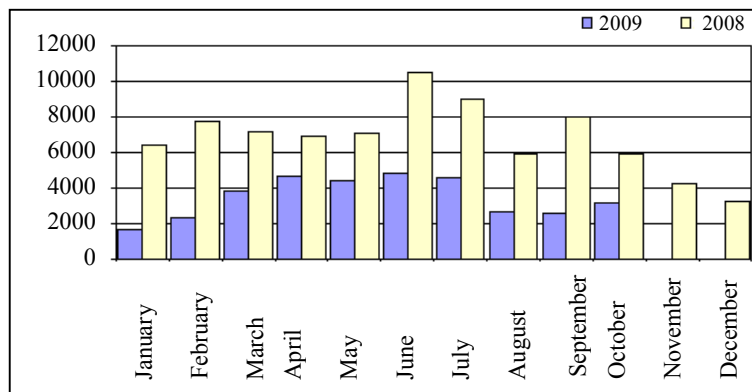
The Russian market is unusual in having so many foreign players with such initially low forecast production plans. Most vehicle manufacturers appear to be

hedging their bets wisely and planning a balanced strategy of local production and continued import. Depending on how investment conditions in Russia develop, vehicle manufacturers have the opportunity to increase or decrease the balance between import and local production. The tables below illustrate the latest Automotive Institute estimates of planned local production levels by brand origin over different time horizons. The next table indicates that production of foreign automotive brands in Russia could rise from about 450,000 in 2007 to a sustainable level of around 3 million units within seven years. Nearly all of this growth will be foreign OEM brands or new Russian brands developed in collaboration with foreign strategic investors, such as between Avtovaz and Renault. What does this imply for the future of the automotive component industry in Russia?

Tabel 1. Car sales

| | Autoturism | | | | Vehicule comerciale (inclusiv minibuse și autobuze) | | | | Total | | | |
|-------------------|------------|---------|---------------|---------|--|---------|---------|---------|---------|---------|---------------|--------|
| | unități | | cota de piață | | <3.5 t | | >3.5 t | | unități | | cota de piață | |
| | Cumul - | Cumul - | Cumul - | Cumul - | Cumul - | Cumul - | Cumul - | Cumul - | Cumul - | Cumul - | Cumul - | |
| | Oct-09 | 09 | Oct-09 | 09 | Oct-09 | 09 | Oct-09 | 09 | Oct-09 | 09 | Oct-09 | 09 |
| DACIA | 3141 | 34424 | 30,3% | 30,7% | 224 | 2450 | 0 | 0 | 3365 | 36874 | 28,0% | 29,1% |
| FORD | 791 | 6912 | 7,6% | 6,2% | 139 | 1430 | 0 | 0 | 930 | 8342 | 7,7% | 6,6% |
| PEUGEOT | 336 | 3243 | 3,2% | 2,9% | 447 | 1365 | 0 | 0 | 783 | 4608 | 6,5% | 3,6% |
| SKODA | 773 | 7382 | 7,4% | 6,6% | 9 | 44 | 0 | 0 | 782 | 7426 | 6,5% | 5,9% |
| VOLKSWAGEN | 725 | 7928 | 7,0% | 7,1% | 43 | 1174 | 2 | 414 | 770 | 9243 | 6,4% | 7,3% |
| HYUNDAI | 695 | 9411 | 6,7% | 8,4% | 8 | 174 | 0 | 0 | 703 | 9585 | 5,8% | 7,6% |
| RENAULT | 575 | 7763 | 5,6% | 6,9% | 107 | 817 | 15 | 167 | 701 | 8747 | 5,8% | 6,9% |
| KIA | 636 | 5356 | 6,1% | 4,8% | 0 | 0 | 0 | 0 | 636 | 5365 | 5,3% | 4,2% |
| FIAT | 386 | 4349 | 3,7% | 3,9% | 150 | 1457 | 0 | 0 | 536 | 5806 | 4,5% | 4,6% |
| TOYOTA | 355 | 2870 | 3,4% | 2,6% | 36 | 365 | 0 | 0 | 391 | 3235 | 3,2% | 2,6% |
| OPEL | 345 | 5062 | 3,4% | 4,5% | 11 | 161 | 0 | 0 | 360 | 5223 | 3,0% | 4,1% |
| CHEVROLET | 336 | 3191 | 3,2% | 2,8% | 0 | 0 | 0 | 0 | 336 | 3191 | 2,8% | 2,5% |
| MERCEDES | 76 | 1106 | 0,8% | 1,0% | 95 | 1270 | 55 | 595 | 226 | 2971 | 1,9% | 2,3% |
| SUZUKI | 205 | 2139 | 2,0% | 1,9% | 0 | 0 | 0 | 0 | 205 | 2139 | 1,7% | 1,7% |
| CITROEN | 175 | 1720 | 1,7% | 1,5% | 20 | 315 | 0 | 0 | 195 | 2039 | 1,6% | 1,6% |
| IVECO | 0 | 0 | 0,0% | 0,0% | 86 | 557 | 45 | 521 | 131 | 1078 | 1,1% | 0,9% |
| NISSAN | 127 | 1042 | 1,2% | 0,9% | 1 | 124 | 0 | 0 | 128 | 1166 | 1,1% | 0,9% |
| MITSUBISHI | 74 | 1230 | 0,7% | 1,1% | 16 | 177 | 4 | 46 | 94 | 1453 | 0,8% | 1,1% |
| BMW | 91 | 929 | 0,9% | 0,8% | 0 | 0 | 0 | 0 | 91 | 929 | 0,8% | 0,7% |
| AUDI | 90 | 1098 | 0,9% | 1,0% | 0 | 0 | 0 | 0 | 90 | 1098 | 0,7% | 0,9% |
| Rest | 434 | 4995 | 4,2% | 4,5% | 4 | 30 | 136 | 1063 | 574 | 9088 | 4,8% | 4,8% |
| TOTAL | 10380 | 112150 | 100,0% | 100,0% | 1396 | 11923 | 257 | 2533 | 12033 | 126606 | 100,0% | 100,0% |

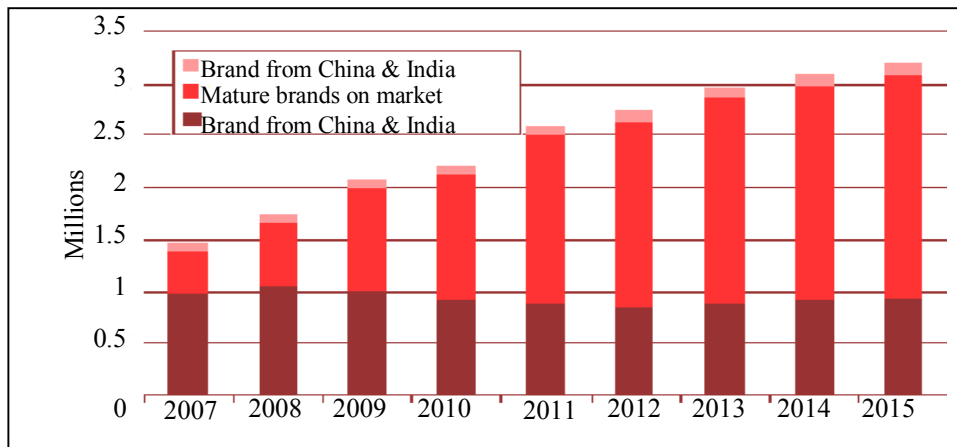
Source: www.apia.ro



Source: www.apia.ro

Figure 3. Car sales

Out of general economic necessity, most vehicle manufacturers will be trying to localise even more of their component supply to reduce customs duties and transport costs, and to benefit from local wage and raw material costs. If this trend is successful, the percentage of OEM components locally manufactured should increase from 10 percent to more than 50 percent over the next ten years, assuming that component cost is about 60 percent of the price of the car. This development could see the market for primary auto components for vehicle brands increase from \$ 0.36 billion today to about \$ 18 billion in seven years' time. At the same time, we could see a similar, if not larger, scale of increase in the secondary market for components. In short, an entire component industry waits to be developed in the wake of the current wave of foreign car manufacturing investment in Russia.



Source: PwC Automotive Institute

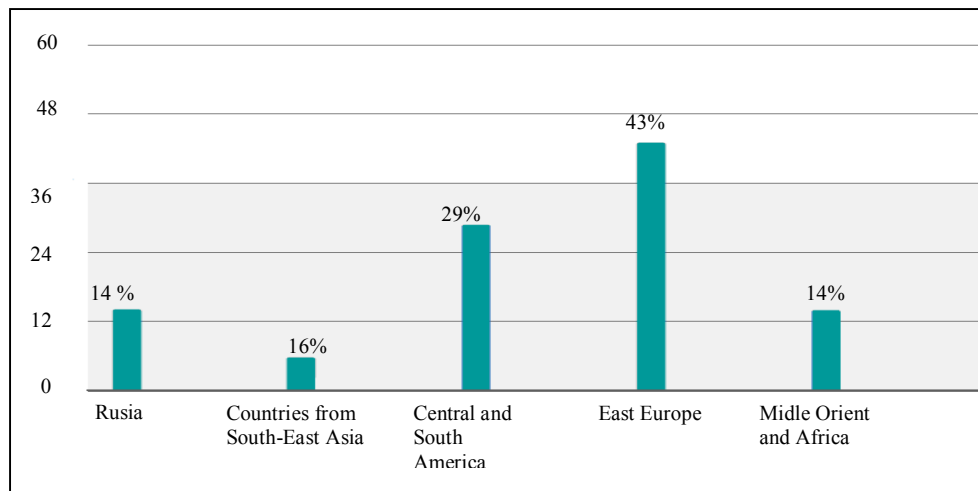
Figure 4. The prospect of Russian manufacturing

4. CHINESE AND INDIAN BRANDS TO GAIN MARKET SHARE

Market share expectations continue to shift in favour of emerging Asian and mature Japanese and Korean brands; U.S. brands are expected to perform worst. Year on year Chinese brands have moved from second to first place in market share expectations, and Indian brands from fourth to second place, relegating Toyota from top position to third. Expectations of Honda's market share have grown, as have expectations for many European brands. Meanwhile, expectations for General Motors, Ford and Chrysler have declined further from an already low level, with 63 percent of respondents expecting Ford to lose market share, 66 percent for General Motors and 69 percent for Chrysler. On a regional basis, EMA companies are markedly more optimistic on market share expectation than companies in the Americas or ASPAC - and in particular, they are more optimistic on the prospects for European brands (more than half of EMA companies see market share increases for VW and BMW).

Companies believe that even when China and India are discounted, emerging markets will still grow faster than any other region. Expectations of growth over the next three 48 years in markets outside China and India are globally well-distributed.

Expectations are strongest for Central and South America, reflecting the relative resilience of Brazilian 36 demand as economies elsewhere turns down. Nevertheless, a significant minority of respondents also expect strong growth in the Middle East and Africa, and again in 24 Russia and Ukraine.



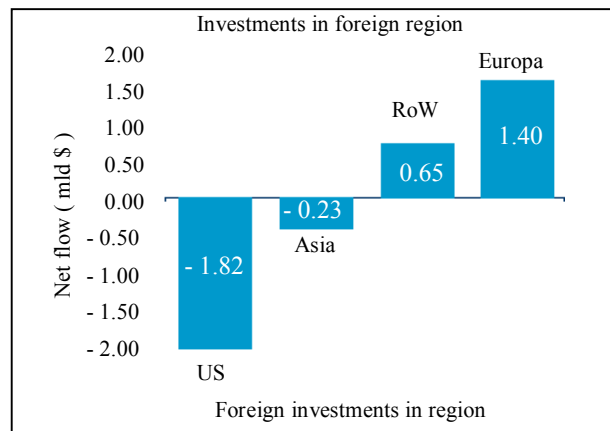
Source: KPMG Global Auto Executive Survey 2009

Figure 5. Markets and regions will present the greatest demand for consumption in the next 3 years

5. GROWTH MARKET BY FOREIGN DIRECT INVESTMENT

Drivers of future cross-border automotive deals will likely include the arrival of new global players, emerging market growth, and currency fluctuations. In many cases, automotive companies in emerging nations are quickly becoming global players looking for increased access to global customers, markets, and technology. Examples in recent deals include India's Tata and Mahindra & Mahindra, China's Chery and SAIC, and Russia's Russian Machines. This trend is likely to feed cross-border deal flow over the next several years. In turn, companies from developed nations seeking to gain further access to the quickly growing markets in the BRIC countries are also likely to be a factor in future cross-border deal activity. This could be especially true of component suppliers who are seeking proximity to local VMs.

There were early signs of this in 2007 including Cummins' purchase of the remaining shares of Tata Holset (a joint venture founded to produce diesel engines in India) and Bosch's increased investment in Motor Industries, an Indian based component supplier. Finally, the weakening of the US dollar versus global currencies in 2008 vs. 2007 is likely to encourage bargain hunting in the US. This trend is already materialising in early 2008 as interest in US automotive assets increases. Overall, the currency situation could lead to a significantly larger net deal deficit for the US in 2008 vs. 2007, including large net deal surpluses from Asia, RoW, and potentially Europe.



Source: Thomson Financial and other publicly available sources

Figure 6. Net flow of business by region 2007

6. CONCLUSION

Taking as a criterion performance on the global market, one can conclude that the European automotive industry is without any doubt competitive. It has expanded its export shares, and has maintained or improved slightly its share in global sales. Its position in emerging markets such as China and the Russian Federation is strong and offers prospects for further growth. This success of the European automotive industry in international competition is primarily based on its dominance of a large, loyal, sophisticated and diversified home market. Moreover, enlargement has been beneficial to the industry through its productive base and market effects.

However, not all is positive. If the performance of the German, French and Spanish industry is strong, Italy and the UK have lost market shares. The new production locations in Eastern Europe will increase pressures on existing locations. Finally, if the home market is indeed the largest in the World, it relies mostly on the replacement of existing cars and its growth potential (at least for EU-15 countries) has peaked.

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THE CURRENT STAGE OF THE DEVELOPMENT OF G2B AND B2G ELECTRONIC SERVICES IN ROMANIA

**ALIN ISAC, MIHAELA MUNTEAN,
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ABSTRACT: *The paper begins with an introduction defining the characteristics of G2B and B2G services, and it continues with the analysis of their stage of development in Romania. Thus, as far as G2B services are concerned we have examined them starting from the general approach in order to determine the degree of development and the use of online public services and from the specific approach in order to examine the quality of this type of services. The quintessence of these types of services is the National Electronic System, for which the second part of the paper presents, in detail, the main modules of this system allowing: routing messages, integrating information systems of government agencies, user management.*

KEY WORDS: *electronic services; public online service; G2B service; B2G service*

JEL CLASSIFICATION: *L32*

1. INTRODUCTION

Currently, in a growing number of areas, the use of information technology is a normal tool of ongoing activities, this is why more and more specialists admit that in ten years' time every worker will be a user or will be logged on, in one way or another, to a computer system.

As a consequence, we can estimate that a multiplication of ICT sectors - statistics show that the number of PC users will increase 10 times every five years, and their performance will double every 18 months (Intel) - has direct implications on the development of the information society and an efficient use of these technologies is the next step towards the social-economic evolution, which produces value and knowledge

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by using the existing infrastructure. It is certain that the development of information technologies has positive impact on the productivity growth, on reducing regional gaps, on reducing unemployment, on increasing the quality of health systems, education or administration, on increasing the level of information, etc.

Nowadays, the access to a minimum set of communication services is considered a fundamental right of citizens, which is essential for their integration into the community and, more broadly, in the information society.

Electronic communication services go beyond the personal and the business side of communication and they represent an important tool for supplying all types of information, goods and services to the public both by the government (social services, education or health) and by the private sector. Those without access to electronic communication services are likely to be outcast from the 21st century society.

All over the world there is an increasing interest in new information technologies and particularly in electronic applications over the Internet. These instruments have gradually become effective tools to improve services for individuals and businesses, so that Romania currently benefits by various electronic services used in administration such as: sites for the presidency, senate, parliament, ministries, prefectures, municipalities, public institutions and portals: e-government, e-democracy, pay points, e-auction etc.

Thus, portals have replaced and completed the sites due to the increased volume of information required to be published, to its dynamics and to the ease with which it can be processed automatically by internal applications. Governmental or administrative portals are the most visited of many portals and they provide “the ease of communication among different departments and citizens” (Batagan, 2008, pp.67-69).

2. TYPES OF ELECTRONIC SERVICES IN ROMANIA

The efforts to determine precisely the existing relations within the informational process conducted by e-Government in Romania enable us to identify four types of delivery models (figure 1):

- ❖ ***relations between government and citizens – G2C (Government to Citizen)***. This component of e-Government includes, beside *public relations* regarding information about everyday life, necessary to separate certain public information and to read certain political and legislative documents, *interactive communication* which provides communication services such as e-mails, blogs/portals and *transactional services* which send certain forms to citizens and stock them over the internet;
- ❖ ***relations between Government and the business environment – G2B (Government to Business)*** represent the most important component of e-Government due to the fact that their efficiency has significant implications in the high costs of traditional data and document transmissions. Thus, G2B includes beside *public acquisition and auction systems* over the internet, *services offered to legal entities regarding the transmission of data and documents* or the registration of companies;

- ❖ *relations between Government institutions – G2G (Government to Government)* can be maintained through information changes on various security levels between the computers of the institutions which interact. This interaction is necessary among public institutions because in order to solve some complex situations it is necessary to process some of the information held by various institutions;
- ❖ *relations between Government and employees – G2E (Government to Employees)* and their interaction based on computer systems represents the essence of public management improvement and it is going to determine in a very short period of time the forming of an organizational culture characteristic for e-Government. The applications used by G2E are represented mainly by *internal data bases* which make it easier and faster to carry out tasks and responsibilities and *specific applications for employees*.

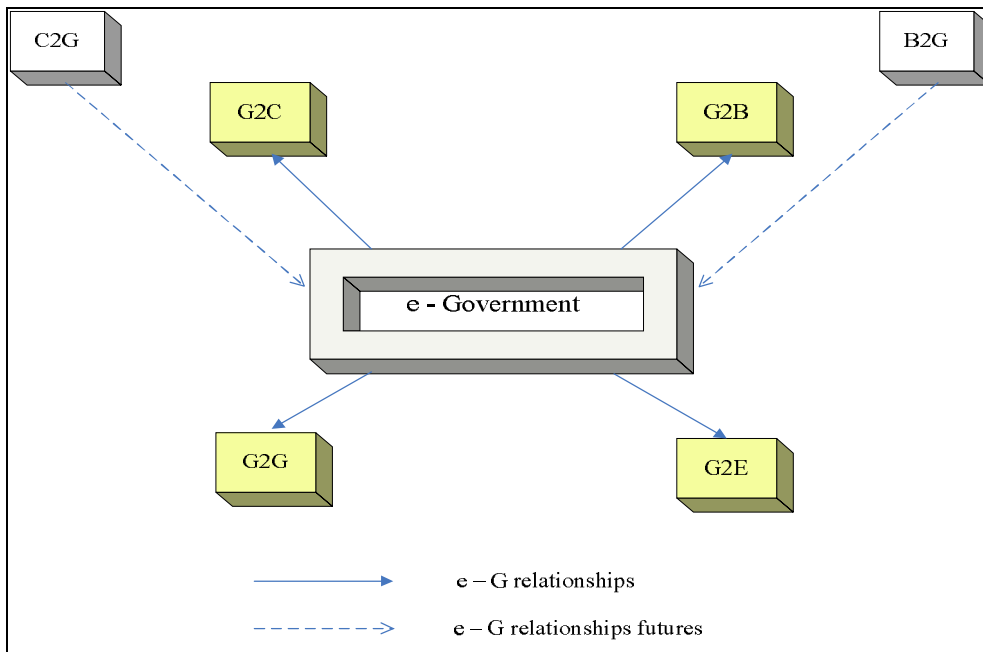


Figure 1. Present and Future in e-Government Relations

3. ONLINE SENDING SYSTEM OF FISCAL DECLARATIONS AND ANNUAL FINANCIAL STATEMENTS

The purpose of accounting operations materializes in summarizing the data in reports, such as annual financial reports which include, basically the balance sheet, the profit and loss account and other annexes, and it can be obtained from the general ledger, from the trial analytical and synthetic balances and registers.

These financial reports must be drawn up by economic units and sent to local financial administrations annually and bi-annually, together with the declarations regarding payments towards the state budget, the social insurance budget and the unemployment budget. In this respect, in order to eliminate the route between economic units and these institutions it is important to create Internet connections which are able to collect all this data (Ghilic-Micu & Stoica, 2006, pp.119-121).

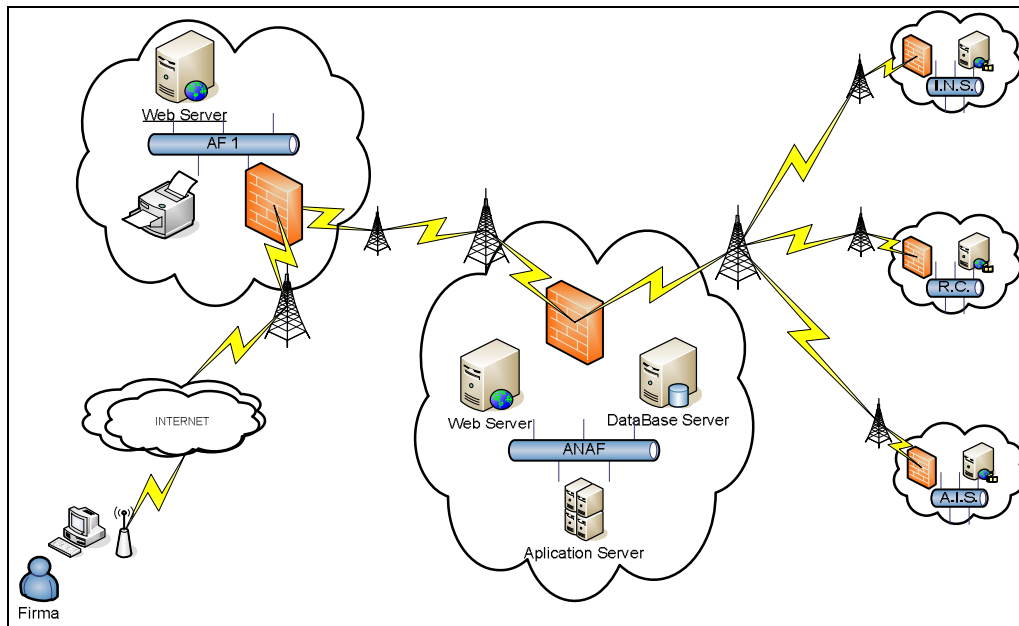


Figure 2. Fiscal information online sending systems

The first compulsory condition for sending these financial declarations on-line is the Internet connection through one of these variants: dial-up connection – it implies the existence of a modem installed on the computer and of a telephone line for connecting the computer to an Internet provider; ISDN connection (*Integrated Services Digital Network*) and ADSL connection (*Asymmetric Subscriber Digital Line*) which provide high speed internet connections, better than common telephone connections; cable TV and DSS connections (*Digital Satellite Systems*) supplied by companies which offer beside cable TV services, access to the Internet using the same cable and special modem.

Thus, with the help of the Internet the data should be electronically transferred from an application that runs on a computer to the application that runs on another computer, located at a certain distance, without being printed out or manually stored on a magnetic support.

After the electronic processing of the accounting information in summarizing reports such as the trial balance, the ledger or other financial books, the information is uploaded in the fiscal declarations found on the site of the National Agency of Fiscal Administration; then they are sent to the SICPU system (Computer System for

Collecting, Processing and Tracking Fiscal Declarations and Annual Financial Statements).

4. ELECTRONIC SERVICES B2G FOR SMALL BUSINESSES

Due to the influence of information transmission using Internet services, to the benefits of using network protocols e-government has direct influence on reducing bureaucracy. Thus, one can identify some public online service with bidirectional availability, such as the statements and social security or tax payments, including VAT; providing information to statistics offices; company registration; obtaining transportation licenses and environmental permits, mostly customs statements, etc..

Filling out online fiscal statements is a major goal of implementing the information society and the achieving of B2G services has several advantages:

- providing a high degree of information security by using digital certificates to identify the users;
- minimizing the time of filling out, submitting and processing the forms by collecting institutions;
- permanent access for submitting statements without following a timetable or schedule; there is no longer needed to go to the collecting institutions,
- users have access to all applications within the system, they can check and even modify the information submitted, if there is the case.

The analysis of the efficiency of B2G transmission should be based on several criteria, such as the period in which data is transmitted, the transmission speed and the complexity of data entry by traders, the frequency of submitting situations, criteria to be met by companies that submit some information, etc.

Based on these factors and on the type of online public service we can make an analysis, we can say that we are in an advanced stage to reach the objectives of the electronic transmission B2G but none of the e-Government services has yet completed the stage. The most advanced electronic transmissions allow legal entities to submit offline fiscal statements, without filling out forms that must be sent immediately in order to be processed by the receiver.

The most commonly used electronic services for small taxpayers regarding fiscal statements are:

- electronic data processing of nominal records of the insured and the payment obligations to the state social insurance budget or other statements that companies must submit to the National House of Pensions and Other Social Insurance Rights;
- submitting statements recording payment obligations to the National Health Insurance House;
- monthly statements of employers recording payment obligations to the unemployment insurance budget, managed by the National Agency of Employment;
- the submission of employers' monthly tax returns and asset statements to the Labour Inspectorate.

In addition to these four ways of submitting financial statements, there is the service which receives these electronic forms within the National Tax Administration

Agency using the e-government portal, which will be presented in the following paragraphs.

5. B2G ELECTRONIC SERVICES FOR BIG TAXPAYERS USING THE E-GUVERNARE.RO PORTAL

The development of electronic transmission services within the public administration, the administrative portals, namely e-Government services, represent a priority for Romania, and it is supported by the legal and institutional framework outlined by direct or indirect effect upon the setting up of sites and information portals.

Currently, according to GD no. 862/2009, the electronic submission of statements can be made through the portal using Unique Forms for big taxpayers, by accessing <https://formularunic.e-guvernare.ro>. Thus, corporate taxpayers have access to nine electronic services like the ones presented in the following table:

Table 1. Electronic services for big taxpayers

| No | Institution | Name of the form |
|----|--|--|
| 1 | The National House of Pensions and Other Social Insurance Rights | Statement regarding payment obligations to the social insurance budget |
| 2 | The National Agency for Employment | Statement regarding nominal records of insured parties and payment obligations to the unemployment insurance budget |
| 3 | The National Health Insurance House | Statement regarding the payment of health insurance |
| 4 | The Ministry of Public Finance | Statement regarding payments to the state budget (100) Statement regarding tax on profit (101) Deduction on VAT (300) Statement regarding payment obligations to the social insurance budget and special funds (102) Statement regarding excises (103) Rectifying statement regarding intra-community deliveries/purchases of goods (390) |

The quintessence of governmental electronic services is the *National Electronic System*, which is the central point of access to information (Figure 1), to forms and administrative procedures that ensure a high degree of security, trust and transparency to users.

The system consists of several main modules which allow: routing messages; integrating information systems of government agencies; user management.

The main subject of the application is the taxpayer, as individual or legal entity - and the application works as follows:

- An e-service is added by a system administrator;
- The user registers in the system;
- The user chooses one or more services and subscribes to them;

- The user sends the documents;
- The user receives responses after the documents have been processed.

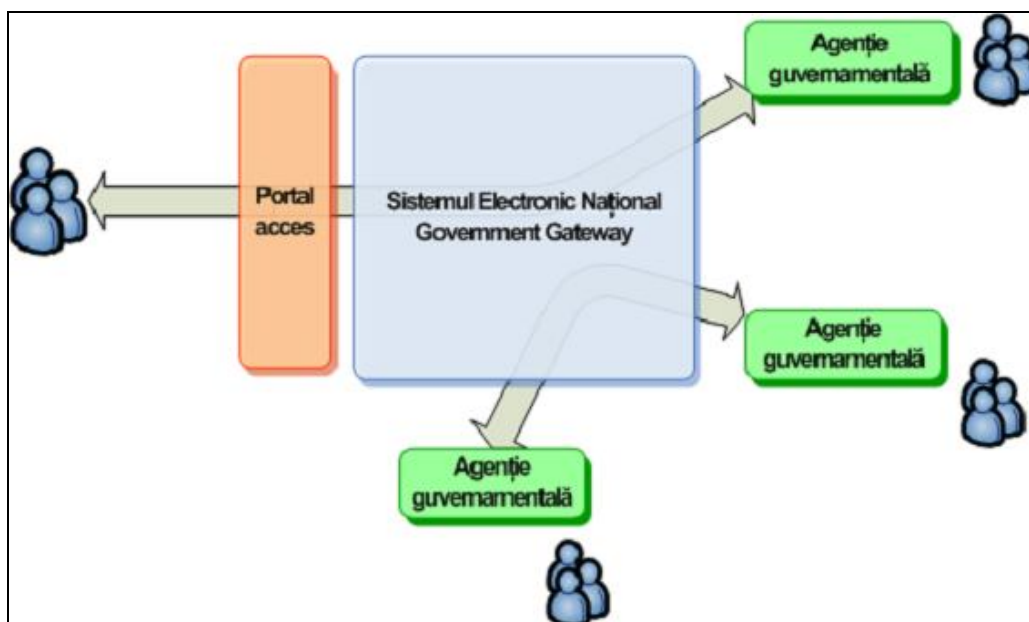


Figure 3. Transmitting and routing information within the National Electronic System

The development of electronic governance, the role of the National Electronic System is to provide a comprehensive infrastructure services for the users (public institutions, businesses, citizens, etc.):

- the only point of access to public services provided electronically,
- single Sign On for e-Government services,
- trading engine for e-Government services,
- secure message routing engine for e-government services,
- messaging engine for e-government services,
- reporting engine for electronic government services,
- common standards and interoperability Layer for electronic government services (including interoperability PKI),
- a collection of documents, services, software libraries that are available to any independent developer who wants to create applications that integrate with the National Electronic System (SEN SDK).

The technological platform and other technical means necessary to ensure interconnection and interoperability of e-Government services with the e-government component of the National Electronic System for the period 2007-2009 were provided by the Agency for Information Society Services whose business and duties were taken over by the National Centre for Information Society Management and the National Digital Romania Centre.

For this interconnection there is a common functional technical platform (SEN SDK) that provides minimal means of standardization, interconnection, interoperability and secure data transfer between both public institutions and between public institutions and recipients of services they provide. Thus, SEN - SDK facilitates the creation of a national standard interface, able to provide interoperability of e-government applications, ensuring reduced costs of infrastructure, development and maintenance for both public institutions and private companies benefiting from the services offered by SEN and providing private companies with access to electronic government services.

In essence, SEN SDK is a collection of documents, services, software libraries that are available to any independent individual who wants to create applications that integrate the National Electronic System.

In order to operate SEN SDK libraries and `sensdkWrapper` the concept of Strong Naming has been used and in order to register them in the system, the first step is to run a file called `install.bat`. The second step is to set the SENS SDK library via a configuration file `sensdk.dll.config` of XML type.

The System Development Kit is organized as a library which consists of several public classes (authentication classes, which may use the outgoing mail functions, classes that identify SEM messages, other classes used in exceptional cases or for data storage), the most important of them being:

- `UserToken` class is a public class used to identify credentials used for authentication at a service;
- `SENMessage` class is an abstract class; all the other classes used for communications with SEN derive from this class;
- `SENSService` class - is a public class that deals with a particular service and it is used to validate the functions of the outgoing mail;
- Exception classes - the most common being: `NullParameterException` used to identify an invalid parameter exception; `UnauthenticatedException` indicates if authentication was performed successfully in a particular service using the given credentials; `WebCommunicationException` identifies any other exception within `SENSService` public methods;
- other classes: `StatusRecord` identifies a message recorded within the National Energy System; `Connector` class used in an auditing mechanism; `Resource` class saves resources used by various SENS SDK libraries.

For the functionality of SEN SDK, the "serviceSENS SDK" Web is also used and it is based on a C # application, with the support of a class derived from the `System.Web.Services`. Class After installation, the service will take the form of a file: `serviceSENS SDK.asmx` located in "C: \ Inetpub \ wwwroot \ sensdkWS".

Another architectural component, used by the system is `SensdkWrapper`, which is a .DLL library forming an interface with .NET `sensdk.dll` library designed for non. NET like Microsoft Visual Basic 6.0. and consists of three public COM classes:

- `authenticateSen` class which makes the interface for `UserToken`, `SENSService` and `AuthenticateUser` method,
- `castSen` Class designed for the interface of various NET objects returned by the public properties of the classes contained by `sensdk.dll`;

- sendSen Class which makes the interface for SendDocument and writeBodyContent of the SENSservice class.

An extension of the sensdk.dll library that allows developers to integrate the functionality of the National Electronic System in Java applications is the SENDSK Web service. It can be installed on another location on the network, if we change the configuration file "setari.ini" within the Java application.

Regarding the type of method used, they can be grouped by type of operation, such as: authentication:

- Log in operations (simpleAuthenticationRequest, initialCertificateAuthenticationRequest, finalCertificateAuthenticationRequest) - Authenticate User - send the request to the log in by using ADM_AUTHENTICATION_REQUEST message;
- operations for sending documents (simpleSendRequest, certificateSendRequest) SendDocument - send a document by using the message SUBMISSION_REQUEST;
- operations to verify the status of a transaction (simplePollRequest, certificatePollRequest) GetDocumentStatus - verify the status of a document by sending a SUBMISSION_POLL message,
- operations to delete a transaction (simpleDeleteRequest, certificateDeleteRequest) DeleteTransaction - send the request to delete a document by using DELETE_REQUEST message,
- operations for listing active transactions (simpleDataRequest, certificateDataRequest) GetTransactionList - get the list of transactions by sending a DATA_REQUEST message,
- operations for interpreting the response from the National Electronic System (readResponse).

6. CONCLUSIONS

As an European country Romania is required to align the objectives of the Lisbon strategy and the i2010 initiative "An European Information Society for economic growth and employment" in which one of the priorities is to promote an information society through a comprehensive set of services "e-government" citizen-oriented and the business environment. In this context taking online tax returns and annual financial statements is an important step for streamlining the relationship between state institutions and economic agents and to eliminate bureaucracy from the system. On the other hand the generalization of information systems for collecting, processing and tracking of various information about the economic agent and the creation of interrelations databases is an easy tool for obtaining information and interaction with government services.

Thus, trends that are evident for the time period immediately following have the jump from static web to a dynamic and interactive web development methodologies to target and streamline internal processes to determine efficiency and shared services, standards for consistent use of information technologies and communication services

transform classical oriented program in e-Government services integrated and not least the education and training of citizens of a culture based information.

In conclusion, the agency provides e-Government application users with software libraries, code samples, detailed descriptions of the electronic components and technical documentation specialized in interconnection and interoperability with the National Electronic System. On principle, the SENS SDK package has three available applications - Java, NetBeans, Visual Basic 6 and Visual Studio C # - each of them is organized as a project and is accessible within that environment.

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PILLARS OF THE AUDIT ACTIVITY: MATERIALITY AND AUDIT RISK

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GABRIELA GREJDAN***

ABSTRACT: *The purpose of this article is to present the issues of materiality and audit risk within the activity of financial audit. The concepts of materiality and audit risk are described from a theoretical perspective, providing approaches found within the national and international literature and within the specific legislation. A case study on the calculation of materiality and audit risk for an entity is presented in the last part of the article. Through the theoretical approach and the case study, it was concluded that materiality has an important role in determining the type of report to be issued, that is why it can be considered helpful for those involved in the audit process.*

KEY WORDS: *audit; statutory audit; materiality; audit risk; opinion; audit report; financial statements*

JEL CLASIFICATION: *M20, N40*

1. INTRODUCTION

In the stage of getting to know the audited entity and in the stage of running analytical procedures, the information gathered by the financial auditor must be sufficient to define materiality and assess risks. Materiality plays an important role in determining the appropriate type of audit report that should be issued. In the audit report, the financial auditor must refer to two important issues regarding the area covered by the financial audit, which highlight the materiality and the risk. These two issues refer to: the auditor's liability is limited to significant information established through the materiality determined by the auditor on the basis of his professional reasoning and supplies a *reasonable* and *not absolute* assurance regarding the accuracy of the financial statements. The determined materiality has a relative feature. A certain

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value established as being the materiality value may be significant for a certain entity, while for a different entity it may not be significant. Certain levels of materiality can't be defined or pre-established, not even as a rough guide for all the entities that are subject to financial auditing. Given the importance of calculating audit risk, no audit standard describes a determining method, the audit risk being determined in accordance to the experience of each auditor, professional reasoning being used the most often in auditing. Materiality is in inverse ratio to the audit risk. Following high audit risk calculation, it is possible that the audited financial statements to material misstatement, materiality is determined slow.

2. RESEARCH METHODOLOGY

Methodology is a complex word (concept). Etymologically, it is formed from *methods* and *logos*, which mean "method" and "science" in Greek, and in free translation it means "the method's science", meaning the science of conceiving, choosing and using the method in the investigation of the economic phenomenon. The research methodology represents the theory and the practice of the methods, namely an activity that is studying the essence, nature, status, definition, classification, etc. in order to build explanatory models. Scientific research is necessary for seeking and finding solutions or answers to immediate problems, as well as for composing reasonable theories for the problems related to materiality, audit risk and their relationship. Any research that wants to be scientific should have a purpose. The purpose of this research is to present, first, the theoretical aspects related to the importance of calculating materiality in financial auditing, as well as to establish the relationships between materiality and the audit risk, and, second, to provide a practical example regarding the calculus of materiality and of the audit risk within an entity.

The scientific approach is based on information from literature and from domestic, European and international practice regarding materiality and the audit risk. In this article, we turned to research methods like documentation, comparison, analysis, synthesis and a case study in order to achieve objectives. The main goals taken into account when writing this article were: contributions to the theoretical foundation of the notions related to materiality and the audit risk, defining materiality and the audit risk; identifying the reference basis of materiality, identifying the main audit risk categories. The research methodology that we turned to for this paper was to study the International Standards on Auditing, the Minimal audit norms, papers on financial audit written by Romanian and foreign authors, we accessed international databases, as well as factual documentation of an entity, namely the Romanian legal person SC Everest SA for the case study.

3. MATERIALITY - IMPORTANT INDICATOR FOR AUDITING AND FOR ISSUING AUDIT OPINIONS WITHIN THE AUDIT REPORT

Materiality means: "the amount or amounts set by the auditor as an error, an inaccuracy or an omission that may lead to annual misstatements, as well as the fairness of the results, of the financial statements and of the enterprise's patrimony"

(ISA 320). Materiality is defined within the “General framework for preparing and presenting financial statements” of the International Accounting Standards Committee as follows: Information is material if its omission or misstatement could influence the economic decisions of users taken on the basis of the financial statements. Materiality depends on the size of the item or error judged in particular circumstances of its omission or misstatement. Thus, materiality provides a threshold or cut-off point rather than being a primary qualitative characteristic which information must have if it is to be useful”. According to FASB (Financial Accounting Standards Board), materiality shows: “The magnitude (gravity) of an omission or misstatement of accounting information that, in the light of surrounding circumstances, makes it *probable* that the judgement of a reasonable person relying on the information would have been changed or influenced by that omission or misstatement”. We may use various reference elements to determine materiality, such as: equity capitals, net result, and turnover. These elements are known as benchmarks, against which materiality is determined in absolute or relative values. The elements noticed by the author could have two influences:

- *Over the outcome of the exercise.* The net result of the financial year is used as benchmark. If its size is less important, it could be changed with a different benchmark, such as: the operating result or the self-financing capacity of the entity. A greater importance is given to the exceptional elements that will regroup so that they refer only to the current financial year. In addition, the auditor should document on the previous net results in order to avoid using as benchmark an abnormal net result.

- *Over the presentation of the balance sheet.* The findings result from an inaccurate bordering of the accounts or from an unjustified compensation between a debit balance and a credit balance. If two bank accounts, one debit and one credit, are compensated, the compensation’s importance is established by comparing it with the total of those posts.

In preparing the audit plan, the auditor requires an acceptable level of materiality so that it may detect the significant distortions from a quantitative perspective. Nevertheless, both the value (quantity) and the nature (quality) of the distortions must be taken into account. Examples of qualitative distortions could be the inadequate or improper description of an accounting policy, when is possible that a user of the financial statements be mislead into the description error, or the failure of the presentation of the regulations’ breach, when it’s possible that the further restrictions given by regulations will significantly deteriorate the operating capacity. The auditor must consider the possibility of distortions occurring at the level of relatively small values, which, cumulated, and could have a significant effect over financial statements. For example, an error occurred in the monthly closing procedure could be a clue for a potential significant distortion if that error repeats every month. The auditor considers materiality in terms of the global level of the financial statements and also in terms of the account balances, with transaction classes and information presentations. Materiality could be influenced by considerations like legal and regulating requirements, as well as by transaction classes, account balances, presentations of information and the relationships between them. The result of this

process may be different levels of materiality, depending on the aspect of the financial statements taken into consideration.

The audit risk and assessing initial materiality in the planning phase of the commitment may be changed in comparison to the moment of assessing the current results of the financial operations and position, which differ significantly from the initial stage of planning the audit. When the total number of inaccurate information that weren't corrected approaches the materiality level, the auditor considers reducing risk by implementing additional procedures or by requesting management to make the corrections in the financial statements associated with the detected erroneous information (Morariu A., & Țurlea E., 2001).

A *foreseen level of materiality* that will be revised during the commitment is determined in the planning stage of the audit commitment depending on new information. *The foreseen level of materiality* is the maximum amount of distortions that the auditor assesses it could influence the decisions of rational users (Oprean I., et al., 2007). If the auditor establishes a reduced foreseen level of materiality, the trust level in the content of financial statements increases, but additional audit evidences must be collected.

Minimum audit standards (Section F0) recommend the following materiality levels:

- between 1% and 2% in regard to total assets;
- between 0.5% and 1% in regard to the turnover;
- between 5% and 10% in regard to the gross result.

Materiality and audit risk are considered throughout the audit, in particular, when: identifying and assessing the risks of material misstatement, determining the nature, timing and extent of further audit procedures and evaluating the effect of uncorrected misstatements, if any, on the financial statements and in forming the opinion in the auditor's report (Socol Adela, 2008)

4. RISKS IN AUDITING

In the analysis of the audit process, risk assessment holds an extremely important role. According to Gray and Manson (2000), the audit risk assessment should be the main concern of the auditor. The International Standard on Auditing 400 "Risk Assessment and Internal Control" defines the audit risk as being "the risk that the auditor will express an inadequate audit opinion when financial statements are significantly distorted". The auditor must plan and conduct the audit commitment so that it reduces the audit risk to an acceptably low level that will be consistent with the audit objective. Reducing the audit risk can be done by creating and running audit procedures that will obtain sufficient and adequate audit evidences in order to be able to shape reasonable conclusions that base an audit opinion. Reasonable certification is obtained when the auditor considers the aspects that could make financial statements to be significantly distorted. The understanding of the auditor regarding the entity and its environment helps establish a reference framework inside which the auditor plans the audit and exercises professional reasoning regarding the assessment of the risks that significant distortions of the financial statements will occur and regarding the reactions

to these risks during auditing. At the same time, it is also useful for the auditor in determining materiality and in assessing if the reasoning regarding materiality remains valid as auditing progresses. The auditor's assessment of materiality in relation to the account balances, the transaction classes and the presentations of information helps him decide on aspects like those regarding the elements that should be examined and whether to use analytical and sampling procedures. They allow the auditor to select audit procedures, which combined are estimated to reduce the audit risk to an acceptably low level.

Dănescu T (2007) says that financial auditors, in the un-fulfilment of the audit commitment, follow especially the audit risks in accordance to which audit procedures and their extent are established. The higher the risk, the more time the auditor will give to checks. These risks are common to all economic units. *Potential risks* are those possible risks against which the economic unit has no means to limit them. During his mission, the auditor seeks to identify these risks with the purpose to assess the impact of errors on annual accounts. The auditor must use professional reasoning in assessing the audit risk and in establishing the audit procedures in order to ensure the risk is reduced to a minimum accepted level.

The audit risk has three components: inherent risk; control risk and detection risk. The International Standard on Auditing 400 "Risk Assessment and Internal Control" defines the three audit risk components as follows:

↳ *inherent risk* represents the susceptibility of an account balance or a transaction category to inaccurate information that could be significant individually or cumulated with erroneous information from other balances or transactions, assuming there were no additional internal controls.

↳ *control risk* represents the risk that an inaccurate statement, which could be found in an account balance or in a category of transactions that could be significant individually or cumulated with erroneous information from other balances or transactions, can't be prevented or detected and researched in due time by the accounting system and the internal control.

↳ *detection risk* represents risk that a procedure will not detect an inaccurate information that exists in an account balance or in a category of transactions that could be significant individually or cumulated with erroneous information from other balances or transactions.

Literature presents a classification of the audit risk components depending on the intervention capacity of the auditor over them, as follows:

- the risk that financial statements contain errors
- the risk that the auditor will not detect these errors.

From this perspective, the first risk category (composed of inherent and control risks) is not under the control of the auditor; he assesses the risks associated with the audited entity, but he can't control them in any manner. The last risk category (detection risk) is under the control of the auditor; he exercises this control by selecting and implementing control tests for certain statements he wishes to evaluate (Dobroţeanu L., & Dobroţeanu C.L., 2002). The audit risk (including its components) can be established in terms of quantity (as percentage), as well as in terms of quality (low, moderate or high level). In order to assess the audit risk, one of the usual

methods is the individual calculus of the values attributed to the audit risk components, followed by their aggregation based on the following formula:

$$\begin{array}{ccccccc} \text{Audit.risk} & = & \text{Inherent.risk} & * & \text{Control.risk} & * & \text{Detection.risk} \\ (\text{AR}) & & (\text{IR}) & & (\text{CR}) & & (\text{DR}) \end{array}$$

$$\text{TR} = 100 - \text{DR}$$

The trust level (TR) of the auditor is defined as the difference between 100% and the detection risk. Therefore, the lower the detection risk, the higher the trust level of the auditor. Similarly, the audit assurance (AA) level corresponds to the difference between 100% and the audit risk: $\text{AA} = 100 - \text{AR}$.

Minimum audit standards require that the audit risk accepted by auditors does not exceed 5%, resulting in an assurance level of 95%. Professor Oprean I. (2007) recommended that in order to reduce audit risk and implicitly increase assurance level regarding the fact that financial statements are not significantly distorted, the auditors must collect a large quantity of adequate evidence, must implement extended procedures, allot the audit commitment to the most competent and experienced collaborators and assistants and must monitor the activity of the audit team.

5. RESEARCH ANALYSIS

To support the theoretical base of this article, we try to facilitate the understanding of the procedure through an actual analysis of the entity, in this case: Everest company. In the preliminary stage of the research analysis we establish *materiality* depending on one of the three reference elements: equity capitals, net result and turnover; after which, in the next stage, consisting of determining the *audit risk*, we'll determine in two consecutive stages: the general inherent risk and the specific inherent risk, the control risk and the detection risk.

The three indicators were compared for the years 2007, 2008 and 2009 at the beginning of the analysis in order to determine the materiality level in the planning stage (work sheets regulated by the minimum audit standards written by the Chamber of Financial Auditors of Romania).

Although the total assets indicator was the most constant throughout the three financial exercises, as can be seen from the chart above, professional reasoning led us to choosing turnover as being the most relevant indicator for the shareholder. Materiality was chosen at the value of 0.5% of turnover because it was decided that by knowing the client, more detailed tests may be done. This level must be used to see if areas of incertitude or disagreement in the financial statements are significant enough to impose a reserved opinion in case incertitude or disagreement can't be resolved. The materiality established in the planning stage is mainly used to determine the size of the samples; at least for the expression stage - in order to determine if final adjustments are needed. Once materiality was established, our research analysis can go to the next phase, namely determining the audit risk through the three stages.

| Audit client Written by: JA 17.01.2010 | | | |
|--|------------------------------------|--|--|
| Audited period: Revised by: SI 19.01.2010 | | | |
| 01.01.09/31.12.09 | | | |
| Financial statements | Current year -required- | Previous years n-1 -required- | Previous years n-2 -required- |
| Total assets (before debt relief) | 28.454.257 | 28.321.834 | 25.311.200 |
| 1% | 284.543 | 283.218 | 253.112 |
| 2% | 569.085 | 566.437 | 506.224 |
| Turnover | 35.414.242 | 27.364.523 | 25.414.132 |
| 0.5% | 177.071 | 136.823 | 127.071 |
| 1% | 354.142 | 273.645 | 254.141 |
| Profit before tax | 12.730.444 | 8.954.222 | 8.715.426 |
| 5% | 636.522 | 447.711 | 435.771 |
| 10% | 1.273.044 | 895.422 | 871.543 |
| Materiality | 177.071 | | |
| Planning stage | 177.071 | | |
| Opinion expression stage | - | | |

Stage I - Determining general inherent risk. At the base of determining the inherent risk lays a so-called “checking list of the inherent risk” that is used to assess the inherent risk of the environment and to make a classification of the clients in entities with a high, average, low and very low risk. This list must be filled for all the audit commitments, regardless of the testing techniques (work sheets regulated by the minimum audit standards written by the Chamber of Financial Auditors of Romania).

Explanations: There are efficient managerial computer systems following the activity of managers, as well as the results of the company in recent years; their experience and qualifications can't be questioned.

| <i>Initials:</i> | | <i>Date:</i> | |
|--|-----|--------------|---|
| Client: SC EVEREST SA Written by: JA | | 25.01.2009 | |
| Audited period: 01.01.2009-31.12.2009 Revised by: SI | | 27.01.2009 | |
| 1. Management Are the managers lacking the necessary knowledge and experience to lead the company? Do the managers have the tendency to engage the company in associations with a high risk level? Have there been replacements of the managers in key-positions during the financial year? Are there certain requirements for maintaining the profitability level or achieving some objectives (for example, to comply with demands from creditors)? Does the reported result have a personal meaning for managers (for example, bonuses related to profit)? Are administrative control and the control exercised by the manager weak? Are efficient managerial computer systems missing? Are managers actually involved in daily tasks? MANAGEMENT RISK GENERAL ASSESSMENT <u>VERY LOW</u> /LOW/AVERAGE/HIGH | Yes | No | |
| | | | ✓ |
| | | | ✓ |
| | | | ✓ |
| | | | ✓ |
| | | | ✓ |
| | | | ✓ |
| | | | ✓ |
| | | | ✓ |
| | | | |

| <i>Initials:</i> | | <i>Date:</i> | |
|--|-----|--------------|---|
| Client: SC EVEREST SA Written by: JAM, SIC | | 25.01.2009 | |
| Audited period: 01.01.2009-31.12.2009 Revised by: Financial auditor | | 27.01.2009 | |
| 2. Accounting Is the accounting function decentralized? Is the accounting personnel lacking the training and ability to fulfil its tasks? Are there attitude problems or ethical issues in the accounting department? Is there a risk for committing errors due to the fact that employees work under pressure? GENERAL ASSESSMENT OF THE ACCOUNTING RISK VERY LOW/ <u>LOW</u> /AVERAGE/HIGH 3. The activity of the audited company Is the company running its activity in a high risk industry? Is there a third party creditor with a significant individual importance? Is there a concentration of shares of voting rights exceeding 25% belonging to members without executive power in the administrative board? Is it anticipated that the business (or part of it) could be sold in the future? Has another person taken over control of the company in the last 12 months? Is the company insolvent? GENERAL ASSESSMENT OF THE BUSINESS RISK <u>VERY LOW</u> /LOW/AVERAGE/HIGH | Yes | No | |
| | | | ✓ |
| | | | ✓ |
| | | | ✓ |
| | | | ✓ |
| | | | |
| | | | ✓ |
| | | | ✓ |
| | | | ✓ |
| | | | |

Explanations: The company runs its activity in an industry with limited competition, its extended experience providing an advantage in front of other competitors, the company has contracts with some of the most important clients at national and international level; therefore, the business risk was assessed as being very low.

| | | | |
|---|----------------|--------------|----|
| <i>Initials:</i> | | <i>Date:</i> | |
| Client: SC EVEREST SA | Written by: JA | 25.01.2009 | |
| Audited period: 01.01.2009-31.12.2009 | Revised by: SI | 27.01.2009 | |
| The audit company | | Yes | No |
| Is it the first time when the company will audit this client? | | | ✓ |
| Has an opinion with significant reserves been expressed in the audit report in one of the last two years? | | | ✓ |
| Would you describe the company - client relationship as “conflictual” or “deteriorating”? | | | ✓ |
| Are there pressures regarding fees or time? | | | ✓ |
| Is there a significant number of “difficult to audit” operations? | | | ✓ |
| GENERAL RISK ASSESSMENT | | | |
| <u>VERY LOW</u>/LOW/AVERAGE/HIGH | | | |

Explanations: It is the second consecutive financial year audited by our firm, we benefited from the services of a previous auditor, we mention that past audit reports had no reserves.

Table 1. General inherent risk

| General inherent risk assessment | Very low | Low | Average | High |
|----------------------------------|----------|-----|---------|------|
| RESULT | 3 | 1 | 0 | 0 |

According to the procedures written by the Chamber, certain positive answers carry a higher risk note than other, which indicates the importance attached to each of the considered particular circumstances. The general risk given to the entity comes from the assessment of each section seen as a whole. The number of positive answers will indicate the risk level attached when each question in being considered and the manager of the audit mission must use **professional reasoning** for the general risk level (Table 1). Consequently, based on professional reasoning, as well as on the results obtained after assessing the components of the general inherent risk, it was established that it is very low, subsequently, the process starts with the following stage in this phase.

Stage II - Determining the specific inherent risk, the control risk and the detection risk. In practice, risk analysis involves the following procedures for each audited field: assessing the inherent risk; assessing the detection risk; calculating the global risk factor; establishing the size of the samples. After assessing the general inherent risk, it's important to consider if there is any audit field with an attached specific risk. The specific inherent risk represents the occurrence possibility for a significant inaccurate statement in a filed due to a specific problem in that field; the detecting method is synthesized through the answers given to the following six questions (work sheets regulated by the minimum audit standards written by the Chamber of Financial Auditors of Romania).

1. System exposed to errors/system in ABeCDat /manual, non-computer system?
2. Accountant responsible for this field trained poorly professionally?
3. Complex operations (the nature of the actual operation, not how it is registered)?
4. Risk of loss / embezzlement / fraud?
5. Many professional judgements / calculations?
6. Unusual operations (the nature of the operation or the nature of the process outside the system)?

Once all these factors were considered, as an answer to the six questions, the analysis is continued to assess the risk in the following categories: high, average, low and very low (Tables 2-5).

| <i>Initials:</i> | | | | | | | | <i>Date:</i> | |
|--|--|-------------------------------|---|----------------|---|---|------------|---|-----|
| Client: SC EVEREST SA | | | | Written by: JA | | | | 25.01.2009 | |
| Audited period: 01.01.2009-31.12.2009 | | | | Revised by: SI | | | | 27.01.2009 | |
| Materiality = 0,5%x turnover=177.071 | | Specific inherent risk | | | | | Ref | Sample size (based on reasoning) / Initial risk fa | |
| General inherent risk = Low | | Questions | | | | | Assessment | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | | |
| Tangible and intangible assets | | - | - | - | - | - | - | Very low | 23% |
| Accounts of the group and investments | | - | - | - | - | - | - | Very low | 23% |
| Inventories and work in progress - quantities | | - | - | ✓ | - | - | - | Very low | 23% |
| Inventories and work in progress - assessment | | - | - | - | - | - | - | Very low | 23% |
| Debtors | | - | - | ✓ | - | - | - | Very low | 23% |
| Short-term investments | | - | - | - | - | - | - | Very low | 23% |
| Bank accounts and petty cash - payments | | - | - | - | - | - | - | Very low | 23% |
| Bank accounts and petty cash - incomings | | - | - | - | - | - | - | Very low | 23% |
| Bank accounts - confronted with bank statements | | - | - | - | - | - | - | Very low | 23% |
| Creditors | | - | - | - | - | - | - | Very low | 23% |
| Long-term creditors | | - | - | - | - | - | - | Very low | 23% |
| Sales | | - | - | - | - | - | - | Very low | 23% |
| Purchases | | - | - | - | - | - | - | Very low | 23% |
| Expenses | | - | - | - | - | - | - | Very low | 23% |
| Wages and indemnities | | - | - | - | - | - | - | Very low | 23% |
| Other audit sections | | - | - | - | - | - | - | Very low | 23% |
| Checking balance and accounting entries | | - | - | - | - | - | - | Very low | 23% |
| Preliminary financial statements and entries after the end of the financial year | | - | - | - | - | - | - | Very low | 23% |

Table 2. Specific Inherent Risks And The Size Of The Initial Samples

| Number of identified specific inherent risks | INHERENT RISK GENERAL LEVEL | | | |
|--|-----------------------------|------|---------|------|
| | Very low | Low | Average | High |
| 0, 1 or 2 risks | 23% | 50% | 70% | 100% |
| 3 or 4 risks | 50% | 70% | 100% | 100% |
| 5 or 6 risks | 70% | 100% | 100% | 100% |

| Initials: | | | | | Date: |
|--|----------------------------|------|-------------------|--|--------------------|
| Client: SC EVEREST SA | | | Written by: JA | | 25.01.2009 |
| Audited period: 01.01.2009-31.12.2009 | | | Revised by: SI | | 27.01.2009 |
| | Inherent risk (R1): source | RNNE | Control risk (CR) | Calculation of risk band R1x RNNEx CR) | Size of the sample |
| Tangible and intangible assets | 23% | 56% | 100% | 12,88% | 20 |
| Accounts of the group and investments | 23% | 100% | 100% | 23% | 30 |
| Inventories and work in progress - quantities | 23% | 56% | 100% | 12,88% | 20 |
| Inventories and work in progress - assessment | 23% | 56% | 100% | 12,88% | 20 |
| Debtors | 23% | 56% | 100% | 12,88% | 20 |
| Short-term investments | 23% | 100% | 100% | 23% | 30 |
| Bank accounts and petty cash - payments | 23% | 56% | 100% | 12,88% | 20 |
| Bank accounts and petty cash - incomings | 23% | 56% | 100% | 12,88% | 20 |
| Bank accounts - confronted with bank statements | 23% | 56% | 100% | 12,88% | 20 |
| Creditors | 23% | 100% | 100% | 23% | 30 |
| Long-term creditors | 23% | 100% | 100% | 23% | 30 |
| Sales | 23% | 56% | 100% | 12,88% | 20 |
| Purchases | 23% | 100% | 100% | 23% | 30 |
| Expenses | 23% | 100% | 100% | 23% | 30 |
| Wages and indemnities | 23% | 56% | 100% | 12,88% | 20 |
| Other audit sections | 23% | 100% | 100% | 23% | 30 |
| Checking balance and accounting entries | 23% | 100% | 100% | 23% | 30 |
| Preliminary financial statements and entries after the end of the financial year | 23% | 100% | 100% | 23% | 30 |

Table 3. Detection Risk Factors Not Associated With Sampling

| | | |
|---|------------|------|
| SAFETY IN ANALYTICAL EXAMINATION | Inexistent | 100% |
| | Moderate | 56% |
| | High | 31% |

Table 4. Control Risk Factors

| SAFETY | CRITERIA | RISK |
|---------------|------------------------------|-------------|
| Significant | Failure rate up to 2% | 13.5% |
| Moderate | Failure rate up to 5% | 23% |
| Limited | Failure rate up to 10% | 56% |
| Inexistent | Failure rate higher than 10% | 100% |

Table 5. The Sample Size For A Population > 400

| RISK BAND | SAMPLE SIZE |
|------------------|--------------------|
| 72.1% TO 100% | 59 |
| 58.7% TO 72.0% | 52 |
| 47.8% TO 58.6% | 48 |
| 39.0% TO 47.7% | 44 |
| 30.2% TO 38.9% | 40 |
| 23.4% TO 30.1% | 35 |
| 18.1% TO 23.3% | 30 |
| 14.0% TO 18.0% | 25 |
| 10.9% TO 13.9% | 20 |
| 8.4% TO 10.8% | 15 |
| 6.5% TO 8.3% | 10 |
| UP TO 6.4% | 5 |

After doing the tests by using sampling methods, it's necessary to evaluate the obtained results. It's essential to determine if there are errors in a different part of the population and, if there are, if they are significant for the financial statements. If that's the case, depending on the nature of the error, alternative tests can be designed in order to provide additional information regarding the occurrence probability of other errors. If this is not possible, then it will be necessary to project the known error in the sample in order to get the projected error for the population. Because the high value elements and the key elements would have already been tested, the projection will be made only for the residual population (procedures elaborated by CAFR).

Once the errors were projected, they must be synthesized so the auditor will see if the accounts present an accurate picture. However, the projected error and the real error won't be the same and that is why it will be necessary once again to make use of professional reasoning to decide if it's probable for an error to be significant or not. If, after deliberation, it's decided that significant errors occurred, then the next step will be: a request to the client to investigate the errors or the potential errors; to extend audit tests in order to have a more accurate conclusion; if possible, to do alternative tests.

6. CONCLUSIONS

In the *audit* of accounting data, the most important thing is to determine if the registered information reflect in an accurate manner the economic events that happened during the accounting year. In the context of a financial statements' audit, in most cases, the applied rules are generally accepted accounting principles. Besides a good understanding of accounting, the auditor must have experience in collecting and interpreting audit evidences.

The conclusions that can be drawn from the study indicate the importance of determining the risk band and the materiality that are at the basis of the entire audit mission. The information supplied with the help of the two calculation methods is significant, but we highlight that the key factor that underlies the entire determining process of the sample, as well as the sampling range, is professional reasoning. No international audit standard describes a technical method to calculate the audit risk, specifying only that it must be set at a low level, with the auditors professional reasoning and experience playing an important role within the audit mission.

It can be said that, although determining significant elements and materiality is important, the determining method is subjective. The audit norms don't establish an absolute level or a percentage or a mathematical formula universally applicable. The elements that will be used will be established by the auditor based on his experience and on numerous factors that must be taken into account and on the relative importance. Considering the consequences of materiality described above, firstly on the nature of the audit report, we can conclude without exaggerating that the nature of the audit report depends also on the accuracy of the financial analysis methods that accompanied the determination of materiality, and the whole process of getting to know the entity.

According to Arens Loebbecke, "*it's much easier to work hard at a complicated audit than justify your decisions and judgements after it's too late to do anything*".

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QUALITY IMPROVEMENT STRATEGY IN ROMANIAN TOURISM PRODUCTS AND SERVICES WITH THE APPLICATION OF SC ASTORIA COMPLEX SRL

**CLAUDIU VALENTIN NITU, ELENA CONDREA,
MIHAELA CONSTANDACHE ***

ABSTRACT: *Quality is an integral part of international competitiveness in the world. Quality has many meanings and implications, based on the quality of products or services to the very quality companies. Competitiveness, defined as the ability of firms to compete is the essence of a good marketing system in place, to be competitive means to succeed in an environment in which firms always try to go one before another by price reduction, by increase the quality of their current products and services and creating new ones. A firm is competitive if it can produce high quality products and services and lower costs than its competitors and internationally. Ability to compete is to do better than firms in the same industry in terms of sales, market share and profitability, capacity to achieve its strategic conduct, defined as the set of actions undertaken to influence the market, finally leading to increased profits.*

KEY WORDS: *quality, international competitiveness, competition, customer satisfaction, perception*

JEL CLASSIFICATION: *M0, M12, M3*

1. CUSTOMER SATISFACTION RATING FROM ASTORIA COMPLEX SRL

Criteria that must be taken into account in assessing the service is the criteria set by customers. As an organization interested in the quality of SC COMPLEX ASTORIA Ltd. through its employees will proceed to the following: identify the needs and expectations of its customers; assess the perception they have about service and

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about its various components; detecting errors and their causes; works to improve quality. Knowledge of customer expectations is essential to plan and evaluate its quality. In fact, there will be pleased when the perception of service will be at least equal, with expectations that there will be about them. Success in this match and even if the perception of the acquisition would exceed expectations on quality service. This idea was already present in the planning stage to realize that the quality to be achieved by placing the needs and expectations in relation to customer perception they have of the service. It is thus apparent that for services that are already in progress, quality planning is based on an evaluation of customer satisfaction, concerning a number of factors that enable the development of new service improvement objectives. It therefore seems clear that the planning, evaluation and improvement are closely intertwined to form a single process: continuous improvement.

Measurement of satisfaction is subjective and is based on the application of surveys and questionnaires. Key issues that must be met are: importance given to each of the factors that characterize the service and therefore will have to sort out one of them is giving them some "notes" on the amount that each customer has; assessment of individual factors, when the service is received; overall assessment of the service, an analysis of its meaning without distinguishing between its various elements. That marketing departments and general management of SC ASTORIA Ltd. have proposed and carried out the 2007 tourist season, applying a questionnaire to measure customer satisfaction, (inspired by the instrument proposed by Zeithaml, Parasuraman and Berry: SERVQUAL) in order improve service quality Astoria complex, and the results of which led to the management measures that will be applied in the 2008 season. The questionnaire was applied to a number of 50 persons with the following structure by sex, age, nationality.

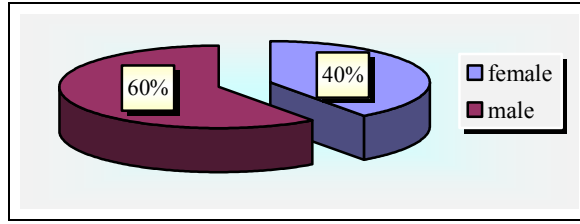
Table 1. Structure of respondents by gender

| Structure of respondents by gender | No. people | Total Percent |
|------------------------------------|------------|---------------|
| Female | 20 | 40% |
| Male | 30 | 60% |

Source: Statistical data drawn from marketing and management department

As can be seen from Table 1, 40% of respondents to surveys are female, while 60 are male, as is graphically illustrated in Figure 1. In Table 2 is shown age structure of those responding, which shows that 30% are between 18 and 25 years, 36% are between 26 and 40, while the remaining 20 percent are persons past 50 years. Graphical representation of the situation is presented in figure 2. Table 3 shows that the citizenship of people responding structure is 58% Romanian and 48% foreign plotted in Figure. 3.

Once known the expectations, it has continued with carrying out successive perception of service, not forgetting that expectations are changing and so it is necessary to update them regularly. Following the application of two questionnaires to the same respondents obtained some important results. 5.59 is the average for the expectations and perceptions is that obtained under 5.87. Quality will be the difference between perception and expectations: $QUALITY = Perception - Watchful waiting$.



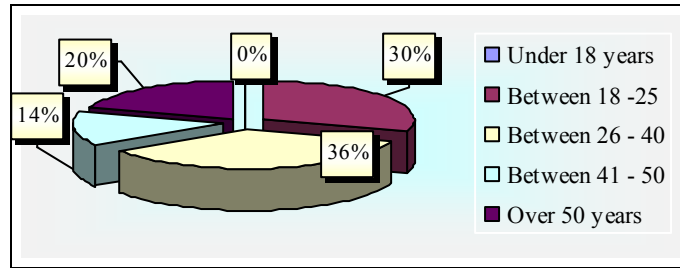
Source: processing of data in Table 1

Figure 1. Sex structure of respondents to surveys

Table 2. Age structure of respondents

| Age structure | No. people | Total Percent |
|-----------------|------------|---------------|
| Under 18 years | 0 | 0 |
| Between 18 -25 | 15 | 30% |
| Between 26 - 40 | 18 | 36% |
| Between 41 - 50 | 7 | 14% |
| Over 50 years | 10 | 20% |

Source: Statistical data drawn from marketing and management department



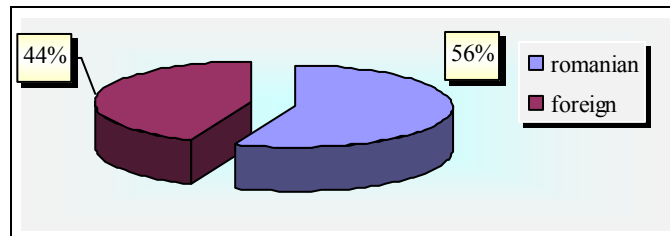
Source: processing of data in Table 2

Figure 2. Age structure of respondents to surveys

Table 3. Structure on the nationality of respondents

| Structure on the nationality of tourists | No. people | Total Percent |
|--|------------|---------------|
| Romanian | 29 | 58% |
| Foreign | 21 | 42% |

Source: Statistical data drawn from marketing and management department



Source: Table data processing 3

Figure 3. Structure by nationality of respondents to surveys

For example calculation of the first light quality item is as follows: Quality = $257-170 = 87$, then the perception of customers about staff courtesy SC ASTORIA Ltd. is good. The calculation for the second item $252-174 = 78$. What is positive aspect because perception exceeds expectations. These calculations were conducted for each item. Customer perceptions of the minimum was recorded in item "environmental conditions provided by our hotel and restaurant should be good, where score was 340 to customer expectations, while the chapter for perception" environmental conditions provided by Our hotel and restaurant were good "score was 338, with two points below the expectations of customers, which means a small imbalance in the ambiance. Overall, this quality evaluation has allowed the definition of quality assessment to improve service points. Also, the method provides a score for each criterion (item).

After the results, the quality of service was evaluated. This is calculated "difference between the scores calculated by the clients of different pairs of statements. The average of expectations and perceptions on each item is as follows:

Table 4. Media expectations and perceptions on each item

| Item no. | perceptions | expectations |
|----------|-------------|--------------|
| 1 | 3,40 | 5,14 |
| 2 | 3,48 | 5,04 |
| 3 | 5,20 | 5,36 |
| 4 | 4,20 | 5,90 |
| 5 | 5,40 | 5,98 |
| 6 | 5,32 | 5,56 |
| 7 | 4,48 | 4,70 |
| 8 | 5,60 | 5,80 |
| 9 | 4,48 | 4,90 |
| 10 | 5,70 | 5,78 |
| 11 | 5,90 | 6,02 |
| 12 | 5,86 | 6,02 |
| 13 | 6,80 | 6,76 |
| 14 | 5,58 | 5,98 |
| 15 | 6,04 | 6,34 |
| 16 | 5,84 | 5,98 |
| 17 | 5,78 | 5,84 |
| 18 | 5,98 | 6,04 |

Source: own calculations

But all these aspects are subjective. Subjective indicators are involving a judgement of quality characteristics covered. An example is customer satisfaction studies. Here the beneficiary pays the characteristic value based on his own opinion. But in that case different customers may have different opinions on the same service, although it functioned the same in both cases. Another type of questionnaire can also be applied to improve service quality and has been applied in the past three years. Based on this questionnaire it has been determined the number of complaints and customer dissatisfaction sources and have taken corrective measures and thus improve the quality of service in this respect. Questions were posed to a number of tourists during the 1000 season in 2005, 2006 and 2007.

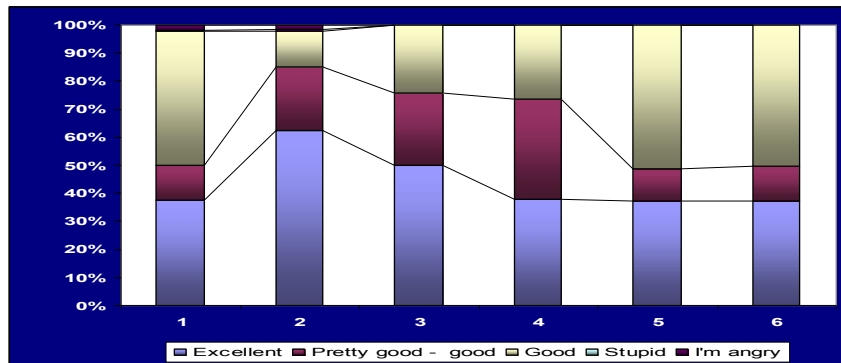
This favourable situation - decrease the number of complaints - has emerged as a result of measures taken by company management on weaknesses of activity determined by questionnaires clients including questions such as: "What do you think about our services and how do you think we could improve? What frustrated you during your stay in our complex? In 2007 the questionnaire was completed by 400 people. Responses to the questionnaire structure was implemented in 2007 as follows:

Table 5. Structure responses to the questionnaire to measure service quality.

| Question | Excellent | Pretty good - good | Good | Stupid | I'm angry |
|----------|-----------|--------------------|------|--------|-----------|
| 1 | 150 | 50 | 191 | 2 | 7 |
| 2 | 250 | 90 | 51 | 3 | 6 |
| 3 | 200 | 103 | 97 | 0 | 0 |
| 4 | 151 | 144 | 105 | 0 | 0 |
| 5 | 149 | 46 | 205 | 0 | 0 |
| 6 | 149 | 50 | 201 | 0 | 0 |

Source: Statistical data drawn from marketing and management department

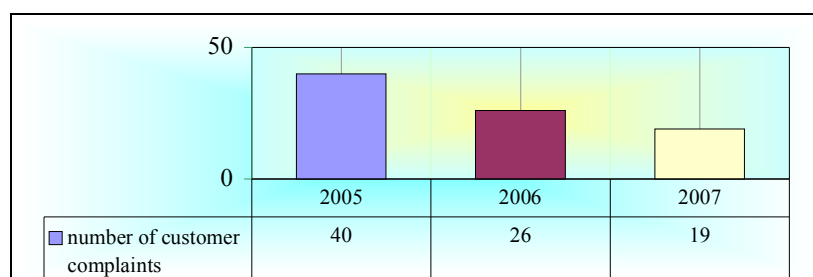
From the above table shows that on average 37.25% of respondents are very satisfied with both the layout of equipment and treatment by hotel staff, services and the quality - price ratio and can say with conviction that given the general assessment : Note EXCELLENT. Other extreme, there is a percentage of 0.35% of customers who have expressed dissatisfaction about aspects of inadequate treatment by hotel staff or delayed responses to requests made by employees of customer. A 50% of customers consider that grant Astoria hotel and restaurant a rating of Good (a) / right, believing that both services and facilities and staff attitude is good. Situation can be depicted graphically as follows:



Source: survey data processing

Figure 4. Structure responses to the questionnaire to measure service quality.

Regarding the number of complaints recorded it fell from 40 in 2005 to 26 in 2006, reaching 19 in 2007. Graphic situation is as in Figure 5:



Source: processing of statistical data drawn from marketing and management department

Figure 5. Evolution of the number of customer complaints in 2005-2007

Application of questionnaires is not the only means used by departments of the hotel Astoria decision to obtain data on subjective indicators. Mystery customer technique is also used. This is the inspection by a trained observer - usually an employee of a marketing company, services offered at different times over which an assessment is determined. This can be supported by clearly defined criteria in order to reduce the subjectivity of the measurement.

Table 6. Factors influencing the quality of tourist services in Astoria Complex:

| <i>FEATURES</i> | <i>INDICATOR</i> | <i>UNIT MEASURING</i> | <i>STANDARD</i> |
|-------------------------------|--|---|---|
| ACCESSIBILITY PHONE | <i>Waiting time to meet phone.</i> | <i>Call number before answering.</i> | 2 |
| WAITING THE SHORT TAIL | <i>Waiting time queue.</i> | <i>Minutes elapsed from when customer waiting be received and until it is received.</i> | 3 |
| COURTESY | <i>Evaluation customers of kindness with were treated.</i> | <i>Subjective scale from 1 (least) to 7 (most)</i> | <i>At least 95% of customers will score at least six.</i> |

Source: Statistical data drawn from marketing and management department

Observer noted the presence of elements in a checklist. However, other factors not easily evaluated. Thus, in this case, staff behaviour is more difficult to assess in objective terms. The same can happen with certain environmental issues such as noise, lighting and cleanliness. However, some criteria is developed in order to reduce subjectivity. Determine which employees must behave during interaction with the customer, building a checklist of behaviour and noting the presence or absence of them during this interaction with the client, in order to reduce the variability of assessments made by different observers on identical situations. Everything will proceed as with every aspect that wants to be evaluated. The truth is that the service is frequent use of subjective assessments. This is due to the fact that its production and reception service to the customer are usually simultaneous. However, subjective indicators are not only used to estimate the quality of service. A service must contain some statements about how to do things, that some criteria and defined standards.

Thus, some parameters can be of service measures for objective indicators. This applies, for example, the term for the entire service. It may be by itself a valuable indicator of quality and may be associated with a given specification (to achieve long service), assuming the client wants to receive service in a short time. But, in turn, the process will be achieved for full delivery service can be split into different results, so that each of them may be assigned to specific standards and indicators. In this way it is possible to exercise quality control not only the final outcome, but also the deployment process to be detected inconsistencies and problems in it and immediately corrected.

In this type of measurement must distinguish the use of control charts to assess the quality of a process. Completeness of service, in turn, refers to that service must be provided in full. An effective indicator would be percentage of items necessary to provide full service elements that have achieved the specified quality standard is 100% of them. Although objective indicators are used in services such as could be in production activities, with appropriate modifications it is possible to use a significant number of them. Once obtained, will be analyzed by statistical techniques of quality control.

2. CONCLUSIONS

Advanced Astoria SWOT analysis highlights the following strengths, weaknesses, opportunities and threats:

Strengths: 1. Placed in the middle of Mamaia resorts, oriented to east and receiving a sunny beach 10 to 12 hours per day in July and full year 2300 to 2500 hours. From this point of view, the resort is one of the most advantaged resorts on the mainland, distance to the sea is 40 meters. 2. The possibility of practicing various activities offered by the resort. 3. Is surrounded by green spaces and recreation areas. 4. In the complex operating skilled labour. 5. From the investment made by the current owners (accommodation, ancillary areas, a restaurant), the complex is required for travel agencies. 6. Complex owners have a large vision, are open to everything new. 7. Hotel guests generally are the same, it returns every year. These customers are from all walks of life, from ordinary people, workers, to executives of banks and even ministers. This is due to low prices charged (the hotel with three stars, two stars are charging prices). 8. Travel agencies are working with are serious agencies, business and contract farming have never been problems. 9. Complex enjoys a good reputation. 10. All work is coordinated with the computer. 11. The number of parking spaces is a problem, our complex has a parking lot with 100 seats which creates an advantage. 12. Complex capacity is 398 seats and 450 seats in the hotel restaurant.

Weaknesses: 1. There is not much available capital, as more loans from the bank contracted to develop complex. 2. There are situations where staff is not sufficient to satisfy all customers' wishes. 3. Lack of conference drew the loss of favourable business contracts. 4. Lack of fitness centres has attracted tourists complained of bad weather days. 5. Lack a playground area for children to create an injury surveillance company. 6. Complex work on a seasonal regime, which requires changing some of the staff each year. 7. Lack of nearby complex medical terms. 8. Access to the station is difficult due to heavy traffic in peak season.

Opportunities: 1. Possibility of contracting some grants on viable projects. 2. Expanding cooperation with NGOs that have the ability to attract extrabudgetary funds. 3. Government policies support tourism. 4. European and government programs to stimulate business development.

Threats: 1. Competition is very high. 2. Taxation by taxes. 3. Negative publicity on television programs tips. 4. Local government policies. 5. Legislative instability. 6. Lack of funds targeting the tourism segment. 7. Continuation of bureaucratic procedures, complex and long duration time, etc. for getting grants or repayable.

Analysis conclusions are: upward trend in the business with opportunities to maintain; satisfactory level of operational profitability; appropriate material and technical equipment; company's quality management and efficient resource management.

Proposals and recommendations that I could do, after analyzing the current situation of the company, both in terms of indicators, as well as market position, and quality of service, the following:

1. diversification* of services offered by trader;
2. business expansion and season;
3. end commitments with partners, business travel abroad;
4. requires more intensive business, and designing* approaches to improve a classic hotel from three to four stars;
5. implement all-inclusive services.

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BUSINESS ANALYSIS OF THE ACTIVITY SC COMPLEX ASTORIA SRL

**CLAUDIU VALENTIN NITU, OANA NITU,
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A firm is competitive if it can produce high quality products and services and lower costs than its competitors and internationally. Ability to compete is to do better than firms in the same industry in terms of sales, market share and profitability, capacity to achieve its strategic conduct, defined as the set of actions undertaken to influence the market, finally leading to increased profits. The European Union said that the product or service quality at a competitive price. It is associated with all activities related to quality management, quality assurance and quality control, certification and accreditation, standardization, etc.

KEY WORDS: *profitability; assets; liabilities; operating income; operating costs; labour productivity; turnover*

JEL CLASSIFICATION: *M3, G0, G1*

1. PRESENTATION S.C. COMPLEX ASTORIA SRL

Strategies Service Company plans to set up five places on the environment in which it is acting components: market strategies, competitive strategies, firm position in the production chain, retail, financial strategies - bank and human resource strategies. To better understand the concept of strategy and its applicability in practice to be analyzed in the following structure, performance and strategy SC Advanced Astoria S.R.L. Advanced Astoria S.R.L. The company was able to impose on the Romanian market through quality services they offer. Its slogan is "favourable rates, promptness, and quality assurance services.

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The company was established in 1995, in accordance with Law No. 31/1990 on trading companies and according to the contract company is organized as a limited liability company, having a sole associate. Field of activity included in the certificate of commercial registration no J13/1158/14.04.1995 is: business services and tourism, hotel and entertainment in its own country.

2. COMPETITION AND MARKET

In terms of competition the Constanta market abounds in county tourism companies specializing in tourism supply, each trying to survive by adopting policies that may be better suited. So competition is fierce Astoria complex direct and indirect existing and threatening. General features of Complex Astoria include completely renovated hotel, restaurant, bar, double rooms, free parking subject to availability, safe-keeping values at reception.

Facilities: double rooms renovated and equipped with cable TV, minibar, air conditioning, windows, oak woodwork and double glazing, new furniture, carpeting, bathroom with shower (tray) completely renovated, key card access, balcony, telephone, armchairs, suites have living room (couch, chairs, coffee table, balcony, carpet), bathroom with shower, bedroom (double bed, telephone, cable TV, minibar, carpeting, balcony), double glazing, air conditioning.

3. GENERAL CHARACTERIZATION OF HUMAN RESOURCES

The company management is achieved through power structures and decision following:

- The Board, composed of five directors elected by the General Assembly for a period of four years. It meets at least once a month and whenever necessary to analyze and decide on important problems of society.
- General Meeting of Shareholders
- Steering Committee, composed of General Manager, Deputy Director and Financial Director, provide leadership operative society within the objects and powers of the Board. In addition, developing rules of procedure, proposed employee rights and obligations for staff, presented the Board progress reports, etc.
- Audit Committee, elected by the General Assembly and has the mission to control the management company.

Driving method is practiced at unit level **management by objectives**.

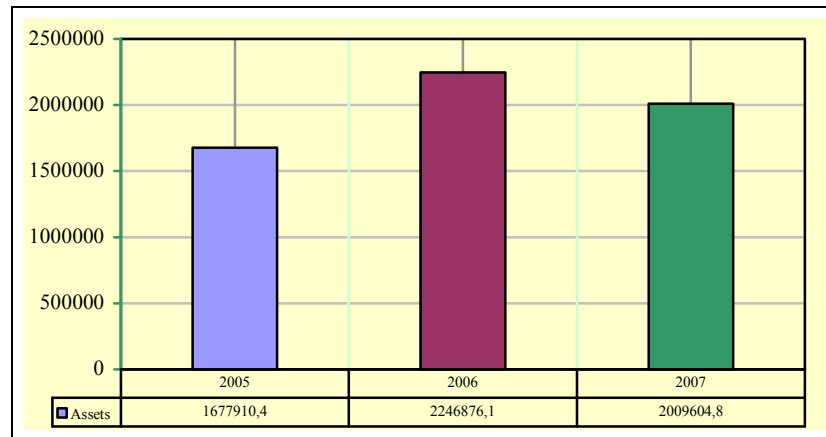
General organization of society is so set that each employee to know the precise definition of business in society, level of responsibility and decision.

Organization is characterized by: functional specialization, minimum level of formalization, enforcement power is decentralized. Also may find the following: organizational system is known at all its levels, responsibilities and objectives are clearly defined, specified and known to all levels, system is effective communication links between the direct management domain, posts are filled by competent persons, number of decision levels is minimal.

4. ECONOMIC AND FINANCIAL ANALYSIS OF THE BUSINESS FIRM

Evolution of main indicators of its balance sheet as an expression of the tourist complex performance between 2005-2007 is as follows:

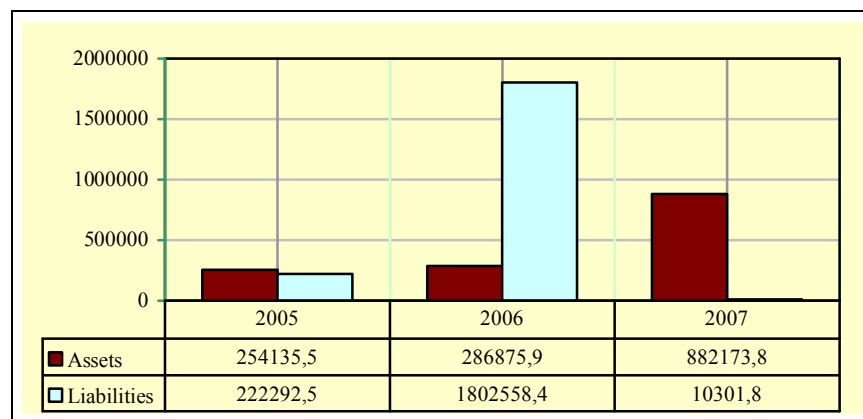
Assets have increased at the end of 2007 to 2005 by 1.33 times, with over 33.35%. Graphic trends during 2005 - 2007, are represented in figure 1:



Source: processing of data taken from the company

Figure 1. Evolution of fixed assets in 2005-2007

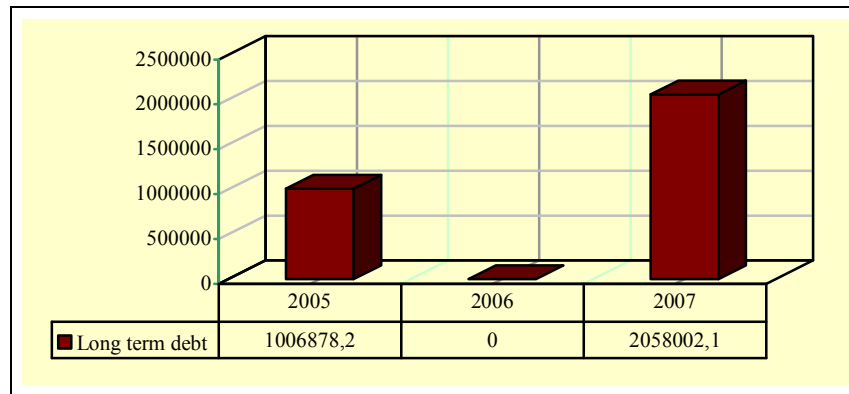
Most explosive growth occurred in 2006, because in 2007, would see a downward trend, a reduction of approximately 10%. Assets increased in 2007 over 2005 of 10.5 times, but the increase correlated with an upward trend of short-term debt, not only reporting year 2007-2006, but earlier in the year 2005, this situation because of higher stocks. Graphically correlated with the development of current assets to short-term debt during 2005 - 2007 can be represented as in Figure 2:



Source: processing of data taken from the company

Figure 2. Evolution of current assets and short-term debt in the period 2005-2007

While an inconsistent trend and had a long-term debt (Figure 2.5)., Knowing a substantial reduction in 2006, reaching zero value for the year 2007 to provide a long-term debt increased to the level of 2,058,002.1 RON, as shown by the Figure. 3.



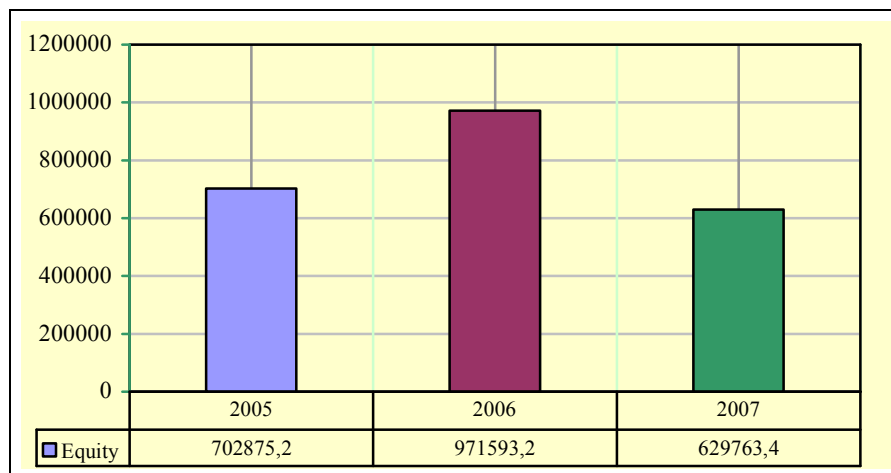
Source: processing of data taken from the company

Figure 3. Evolution of long-term debt in the period 2005-2007

Long-term debt recorded an upward trend in 2007 compared to 2005, causes of this situation are:

- In 2006 there was full payment of bank loan obtained by the firm for investment in infrastructure.
- In 2007, a leasing company contracted to purchase a hotel for business expansion in the season.

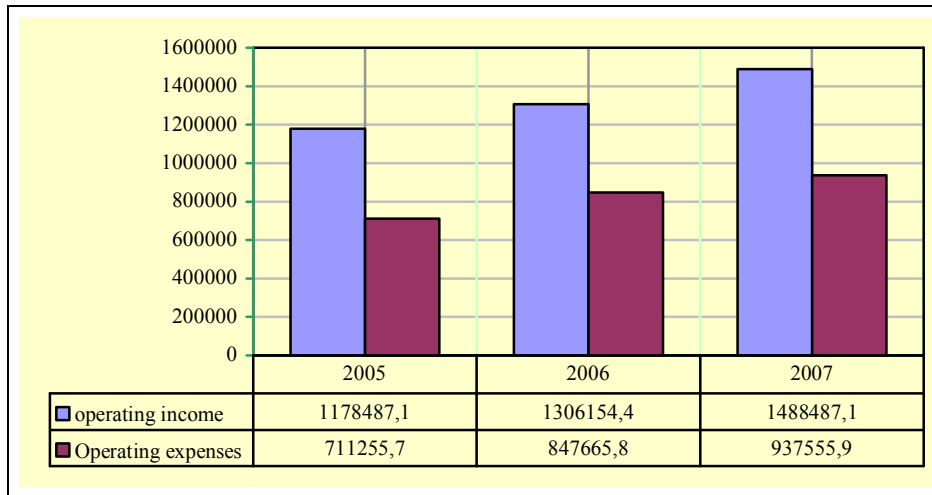
And equity has evolved similar long-term debt, inconsistent, mainly due to increased operating income and legal reserves. (Figure 4).



Source: processing of data taken from the company

Figure 4. Evolution of equity in the period 2005-2007

Evolution of main indicators of profit and loss account between 2005 -2007 is as follows:

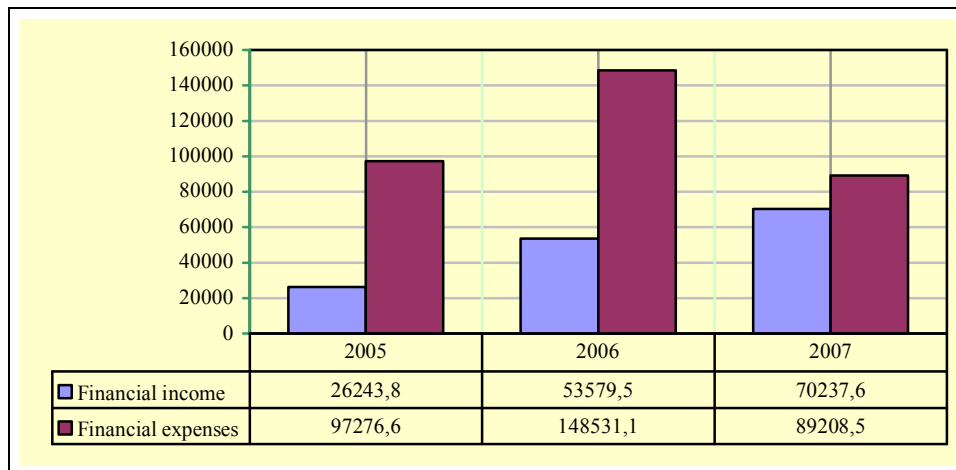


Source: processing of data taken from the company

Figure 5. Evolution of revenue and operating expenses in 2005-2007

Study of operating revenue and expenditure levels and financial firm, plotted in Figure 2.7, we see an upward trend of both revenues and operating expenses for the past three years indicating that the dynamics of income is higher operating expenses dynamics.

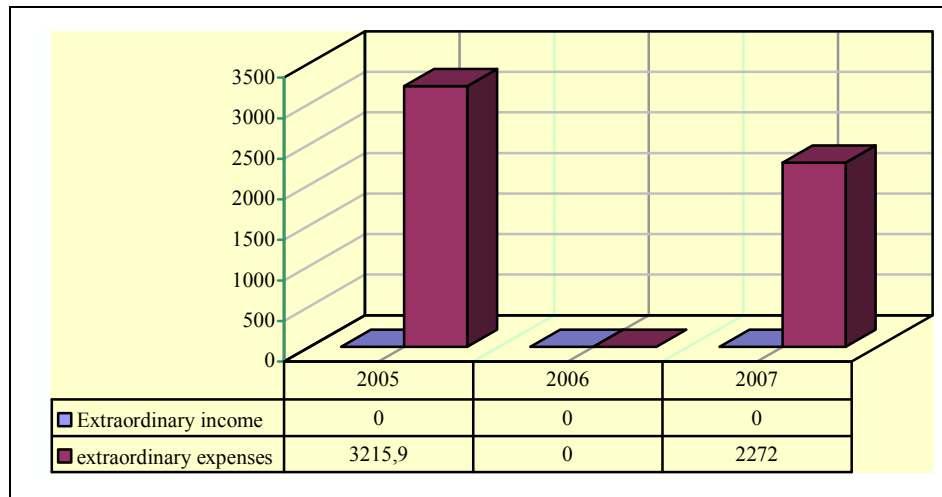
At the same time when the financial revenue and expenditure situation is reversed, namely dynamic financial expenditure exceeds that of financial income (figure no. 6) which is mainly due to the large volume of interest expense.



Source: processing of data taken from the company

Figure 6. Evolution of financial income and expenditure during 2005-2007

During the reported period the company has recorded extraordinary income, but such expenditure (Figure 7).



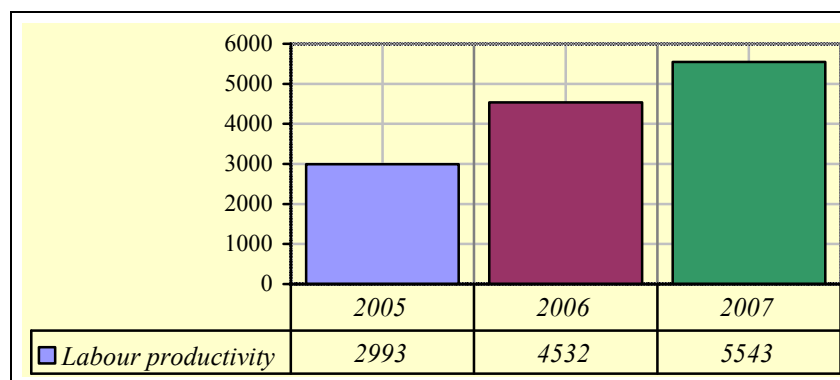
Source: processing of data taken from the company

Figure 7. Evolution of extraordinary revenues and expenditures 2005-2007

What we found from the analysis of company results by type of activity is that the negative financial result and adversely affect the profit or loss, the biggest negative was registered in 2005, which reflect the outcome considerably diminished exercise it.

This is due to the considerable financial costs incurred by the existence of financial leasing in progress. The analysis of it is done as follows:

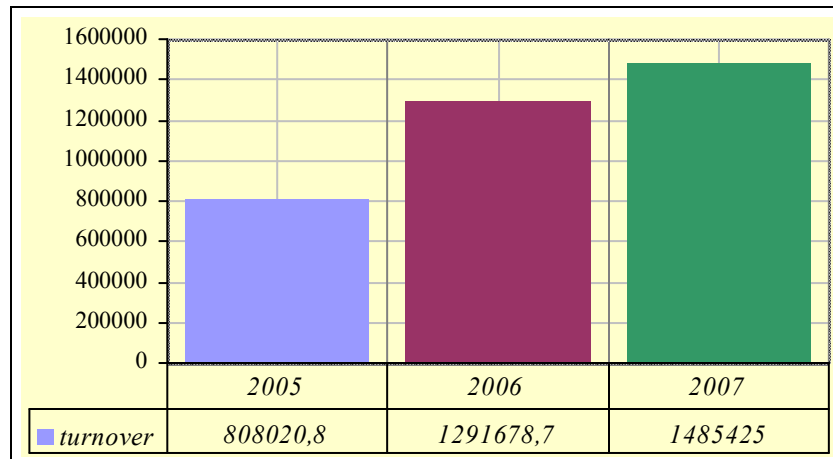
- Labour productivity has evolved in both its upside in 2006 compared to 2005, knowing an increase of over 90% and in 2007, increased but at a lower percentage due to the shrinking turnover dynamics. Graphic situation may be that in Figure. 8:



Source: processing of data taken from the company

Figure 8. Evolution of labour productivity in 2005-2007

- Turnover saw an upward trend over the past four years, as shown by the graphic representation of the Figure.9, both sold due to increased production and revenue due to increases in sales of goods.



Source: processing of data taken from the company

Figure 9. Evolution of turnover in 2005-2007

5. CONCLUSIONS

On an upward trend expected future turnover. As you can see the results of the company were aware of an upward trend.

- ★ Immediate liquidity showed increasing values generally greater than 35%, exceeding the two thresholds of 50% in 2004 and 2005 and 75% for 2006, which is a favorable situation for the company. The evolution of this indicator was very unpredictable, with large increases in dynamics for 2007.

- ★ Total asset side was covered by debt in the period analyzed, a variable proportion between 33.4 and 54.5%, which means a relatively high capacity of the company to cover all outstanding debt at a time given.

- ★ Indebtedness of the analyzed society has experienced a decreasing trend, good situation for society. This situation, coupled with high interest coverage contracting firm commitments allow foreign - credit - to finance investments in tangible assets. Rotational speed of the assets, shows the number of cycles carried out over a period asset, and includes: the rotation of stock, customers' rotation, rotation of suppliers. On the values of these indicators should be noted that the higher number of turns made during a period is greater, the assets were used more efficiently. The high values recorded in July of the years 2005, 2007 respectively of these rates is mainly due to seasonality rotation firm activity that causes a sustained activity during the tourist season, and thus speeds of rotation in all categories of assets.

- ★ It can be seen that the rate recorded positive economic return higher than inflation, which is good for business and has made a real profit.

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MACRO-REGIONAL DISPARITIES IN ROMANIA

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ABSTRACT: *Economic disparities are disparities between levels of economic development of the areas or regions within a national economy. If economic literature has failed to explain the causes of inequalities in economic development of different regions of the EU, this issue became a priority in EU economic policy, especially after the adhesion of Greece, Spain and Portugal, countries characterized by a lower level of development from other EU countries and also marked by significant regional imbalances. European Union supports reducing disparities between different regions of Member States so that all regions and their people to benefit from economic and social advantages of the Union. This paper aims to highlight disparities between the macro-regions in Romania. Regional demarcation criterion in the NUTS system is the population's number within a territory. Most pertinent argument is that the goal of all activities in a society lies in meeting the needs of the individual and of the community. This possibility is ensured by a certain level of economic development in the region. Less developed areas of Romania are located in Northern Moldova and in the South Eastern Romanian Plain and the more developed areas include, in addition to Bucharest and Constanta, Transylvania and Banat regions.*

KEY WORDS: *disparities, macro-regions, regional development, demographic indicators, GDP per capita, employment rate, foreign direct investment, R&D expenditure*

JEL CLASSIFICATION: *R11, R12*

1. INTRODUCTION

Differences and regional disparities exist and, hence, the authorities concern for taking long-term regional strategies designed to allocate resources to mitigate and then remove regional disparities. In such cases government intervention becomes imperative for regional policy development, but also for allocating resources for this purpose. In Romania, regional development emerged first as a necessity to correct the

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existing regional disparities and on the other hand, to retrieve and apply EU law in this area.

In all theoretical and practical approaches that aimed at the foundation of strategies and policies for economic and social development, *the region* is the cornerstone of the county level. Economic and social practice is often viewed as an administrative-territorial unit of a country, having, on the one hand, a geographical determination (a portion of the territory of a country that features individually by historical, cultural, economic, social) and on the other, an administrative determination involving an amount of institutional power, which gives it a certain autonomy in relation to the central authority (wider or narrower, depending on the options, the dominant political orientations in that period).

In Romania the eight development regions are grouped into 4 macro-regions: Macro-region 1 (North - West, Center); Macro-region 2 (North - East, South-East); Macro-region 3 (South Muntenia, Bucharest - Ilfov); Macro-region 4 (South-West Oltenia, West)

2. DEFINITIONS AND CAUSES OF DISPARITIES

According to the economics dictionary, the economic disparities are defined as „quantitative and qualitative disparities between levels of economic development of small countries by comparing the following macroeconomic indicators: gross domestic product, net national product per capita, industry structure and the share of different branches of economy in gross domestic product, per capita production and consumption of major products and services, the degree of literacy, foreign trade structure, indicators of economic and social welfare” (Dobrotă, 1999, p.163).

Social discrepancies can be: *quantitative*, when there are absolute values between different indicators; *quality*, highlighted by structural comparisons; *absolute*, characterized by absolute size difference between level indicators; *relative*, manifested by comparable differences in the proportion and rhythms recorded by the macro-economic indicators used.

In Romania, disparities in regional development were reduced when the economy grew and they grew during the economic downturn, the same like in EU countries.

Among the major causes that led and lead to increased disparities we can find:

- location and extent of foreign investment in developing regions;
- loss of competitive capacity of enterprises, both on domestic markets and on external ones , due to increased physical obsolescence of technologies (especially in regions located in the eastern part of country) and SMEs limited access to the financing
- special factors: specialized workforce; the tradition of crafts and trade; infrastructure’s potential; migration and immigration influence; proximity to sources of raw materials; nearby internal and external markets; the existence of disadvantaged areas or areas receiving government programs or international capital transfer areas, from the work abroad.

Differences between levels of development of different regions are the result of their differential endowment of natural and human resources and the relatively specific staff development (economic, technological and demographic, social, political, cultural) that shaped their development along the history.

This led to the predominance of agriculture as an economic force in regions where climatic conditions were favourable, of the heavy industry in areas where iron ore and coal resources were found and of the concentration of services in administrative centres. These consequences are felt in full, when all counties are facing economic problems and in particular, issues of restructuring the industry.

Economic restructuring had a significant negative impact on mono-industrial areas, deepening regional disparities. Areas which had known an artificially forced industrial development, were first affected by the processes of economic restructuring: on the background of global economic depression, the intensity of the economic decline trend in the infrastructure was reduced in relatively more developed counties than in less developed.

Consequently, regional economic disparities have increased, particularly concerning employment and industrial production, but also regarding the income and household financial resources. It was also registered an increase in disparities and social indicators (education, health care, local public services). Less developed areas of Romania are located in Northern Moldova and in the South Eastern Romanian Plain and the more developed areas include, in addition to Bucharest and Constanta, Transylvania and Banat regions. The trend reversed during the period of economic growth that began in 2000, bringing new opportunities for business growth and reducing regional disparities.

3. DISPARITIES OF DEMOGRAPHIC INDICATORS

From demographic point of view, Romania is characterized by significant regional differences. The population's numerical and structural change, as well as the aging affect, influences the level and structure of the workforce and its components: employment and unemployment. The demographic decrease in Romania, at a macro-regional level, can be seen in Table 1:

Table 1. The macro-regions populations' (thousands of persons)

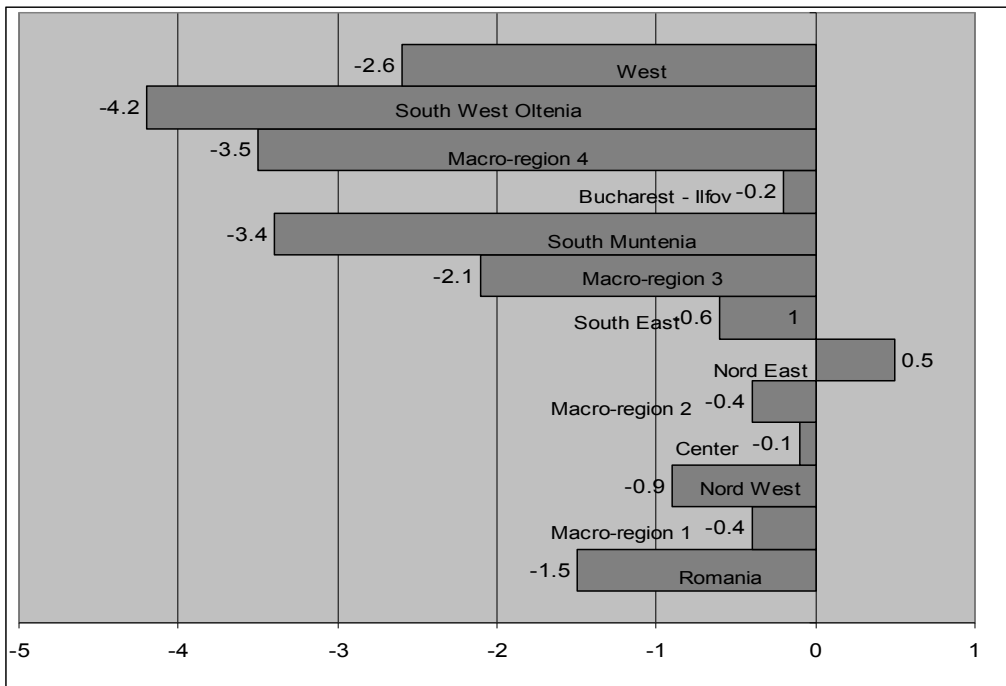
| Years | Romania | Macro-region 1 (N-W, C) | Macro-region 2 (N-E, S-E) | Macro-region 3 (SM, BI) | Macro-region 4 (S-W O, W) |
|-------|-----------|----------------------------|------------------------------|----------------------------|------------------------------|
| 2000 | 22.435,2 | 5.486,3 | 6.757,8 | 5750,2 | 4440,9 |
| 2005 | 21.691 | 5.262 | 6.596 | 5587 | 4246 |
| 2007 | 21.537,6 | 5.249,5 | 6.557 | 5526,8 | 4204,3 |
| 2008 | 21.504,44 | 5.245,57 | 6.538,67 | 5.532,55 | 4.187,65 |

Source: National Institute of Statistics, (2008, 2009), Romanian Statistical Yearbook

It noted that there was a demographical decrease, both nationally and at macro-regional level. The total population decreased from 22 .43 million in 2000 to 21.50 million in 2008, with about 4.15%. In Romania, at a macro-regional level, population number changed as following: Macro-region 1: - 240.73 thousands of persons; (-

4.39%); Macro-region 2: -219.13 thousands of persons; (-3.24%); Macro-region 3: -217.65 thousands of persons; (-3.78%); Macro-region 4: -253.25 thousands of persons (-5.7%). The largest population decrease occurred in macro-region 4 (-5.7%) and the lowest in macro-region 2 (-3.24%). Demographic decline is determined by negative natural growth and by the negative balance of external migration (Figure 1).

In the four development macro-regions it is recorded a negative natural increase, due to lower birth-rates. Two macro-regions (1 and 2) recorded a negative natural increase below the national average and macro-regions 3 and 4 are at a higher average. When talking about developing regions the only exception is recorded in the North Eastern region, where mortality exceeds the birth rate and the natural increase is positive (0.5).



Source: Graph developed from data from the Statistical Yearbook of Romania 2009

Figure 1. Natural increase of population at a macro-regional level in Romania, in 2008 (rates per 1000 inhabitants)

Birth rate is the only component of the population over which it can operate with effective results, while on short and medium term it cannot be expected that external migration and mortality significantly contribute to reducing population's decreasing in Romania.

The population density at a macro-regional scale has significant variations.

Macro-region 3 has a higher density than the national level, due to Bucharest-Ilfov region which surpasses the national average. Two macro-regions (1 and 4) recorded values below the national average and macro-region 2 recorded a density

level near the national average. The poorest populated macro-region is the fourth one, which showed a density of 68.4 inhabitants /km² in 2008. This reduced value is due to Western development region, with the largest population decline of the eight development regions, with a mountainous landscape on a large part of the surface. The degree of density in this region is well below the national average.

Table 2. Population density (inhabitants /km²)

| Years | Romania | Macro-region 1 (N-W, C) | Macro-region 2 (N-E, S-E) | Macro-region 3 (SM, BI) | Macro-region 4 (S-W O, W) |
|-------|---------|----------------------------|------------------------------|----------------------------|------------------------------|
| 2000 | 94,1 | 80,37 | 93,07 | 158,52 | 72,51 |
| 2005 | 90,7 | 77,09 | 90,84 | 154,02 | 69,33 |
| 2007 | 90,3 | 76,91 | 90,30 | 152,4 | 68,65 |
| 2008 | 90,2 | 76,8 | 90,00 | 152,5 | 68,4 |

Source: National Institute of Statistics , (2008,2009), Romanian Statistical Yearbook,

Table 3. Population age structure at a macro-regional level

| Region | Total | Age group | | | | | |
|----------------|--------|--------------|-------|--------------|-------|-------------------|-------|
| | | 0 - 14 years | | 15 -59 years | | 60 years and over | |
| | | 2000 | 2008 | 2000 | 2008 | 2000 | 2008 |
| Macro-region 1 | 100,00 | 18,5 | 15,5 | 63,99 | 65,75 | 17,51 | 18,75 |
| Macro-region 2 | 100,00 | 19,75 | 16,61 | 62,12 | 64,61 | 18,13 | 18,78 |
| Macro-region 3 | 100,00 | 15,95 | 13,74 | 64,14 | 65,79 | 19,91 | 20,47 |
| Macro-region 4 | 100,00 | 17,8 | 14,48 | 62,7 | 64,96 | 19,6 | 20,56 |

Source: calculations based on data from Institutul Național de Statistică, Statistici regionale, www.insse.ro, [accessed 06.06.2010]; Romanian Statistical Yearbook 2009;

Age structure of the population bears the imprint of a specific demographic aging, marked mainly by declining birth rates, which resulted in absolute and relative reduction of the young population (0 -14 years), and increasing proportion of elderly people (60 years and over) . Long term, these demographic trends will affect both the educational system, by reducing the number of students, and expanding demand for health services and social protection.

Aging population will exert a negative influence on the overall economy, as it will unbalance the active population in the way of being a burden, also the social security, and hence the excessive increase of taxes.

4. DISPARITY ON THE DYNAMICS OF GDP PER CAPITA AND ON THE CONTRIBUTION OF SECTORS IN ORDER TO CREATE THE GDP

The relevant indicator for determining the level of economic development is Gross Domestic Product per capita. Per capita GDP growth at macro-regional level in Romania is presented in Table 4. It can be seen from the data analysis presented in the table that , macro-region 3 is ahead of other macro-regions and it owns 140% of GDP per capita nationwide. This percentage is due to Bucharest-Ilfov region, the region experienced this indicator increased by approx. 40%, while for other regions, increases

are below 10%, or even stagnating (South-West Oltenia, North - West). Macro-region 1 is on the next place with a value close to the national level.

Table 4. Dynamics of GDP per capita at the macro-regional level compared with the national average

| Region | GDP/capita | | | | | |
|-----------------------|--------------|---------------|---------------|--------------|---------------|--------------|
| | 1998 | 2000 | 2002 | 2004 | 2006 | 2008 |
| Romania | 100 | 100 | 100 | 100 | 100 | 100 |
| Macro-region 1 | 100,7 | 100,05 | 101,05 | 100,8 | 100,05 | 98,75 |
| North-West | 95,5 | 93,0 | 94,1 | 97,3 | 95,1 | 93,00 |
| Center | 105,9 | 107,1 | 108 | 104,3 | 105 | 104,5 |
| Macro-region 2 | 89,95 | 79,45 | 77,6 | 80,05 | 77,6 | 75,65 |
| North-East | 79,8 | 70,0 | 69,3 | 69,3 | 67,8 | 66,1 |
| South-East | 100,1 | 88,9 | 85,9 | 90,8 | 87,4 | 85,2 |
| Macro-region 3 | 124 | 144,15 | 144,1 | 137,1 | 141,3 | 149,3 |
| South-Muntenia | 85,8 | 81,5 | 80 | 83,6 | 81,8 | 82,4 |
| Bucharesti-Ilfov | 162,2 | 206,8 | 208,2 | 190,6 | 200,8 | 216,2 |
| Macro-region 4 | 95,45 | 93,2 | 94,1 | 99,1 | 99,85 | 95,3 |
| South-West Oltenia | 90,0 | 83,8 | 79,9 | 83,5 | 82,9 | 80,00 |
| West | 100,9 | 102,6 | 108,3 | 114,7 | 116,8 | 110,6 |

Source: Own calculations based on data from the***, Planul Național de Dezvoltare 2004 -2006, National Institute of Statistics, (2008, 2009), Romanian Statistical Yearbook

Although Western region ranks 2 in the country, being surpassed only by the Bucharest Ilfov region (Gross Domestic Product per capita of the Western region exceeds the national average, resulting in a high level of economic development of the region) ,macro-region 4 is the second smallest, due to the low development of the South West Oltenia (being on the sixth place among developing regions). Note also that the Western region is the only region in the country where the disparity index of GDP per capita had always a positive development compared with the national average. Macro-region 2 falls to last place, with a low level of GDP per capita (below 80% of GDP per capita nationally). This situation is due North - East region, where it was reported the lowest regional GDP per capita, something that indicates that the region has the highest level of poverty.

Northeast Region falls within the group of the poorest areas of regional development which also includes: South East, South Muntenia, South West Oltenia and the North West territory, which are below the national average values of this indicator. Gross domestic product is the most often indicator used to determine macro-economic situation and effectiveness of different sectors. One of the indicators that can provide information on the economic situation of the regions is participating in the formation of economic sectors to gross domestic product (GDP). Sectors contribution to regional GDP for the period 2003-2009, in the four macro regions of Romania can be observed in Figure 2.

Analyzing the sectors that share a regional GDP have highlighted the following issues:

- Services Sector in all four macro-regions has a contribution of over 40% of regional GDP, even if the percentage is about half the contribution of all sectors,

the work breakdown reveals that the sub-sector of tourism and of low added value activities predominates. The services sector in Bucharest-Ilfov region has a contribution of over 60% of regional GDP, being the main source of wealth for the region. This sector's contribution to regional GDP has increased in all of the country's regions in the period under review;

- Farming contributes in a lower percent in creating the GDP for all the macro-regions, this sector's share in GDP knowing a loss in 2007 and 2009 compared with 2003. Although agriculture has a small contribution to regional GDP, in this sector operate more than half of the regional employment, which shows the low productivity in the field.
- Industry still has a high contribution to regional GDP, over 20% in all the macro-regions.

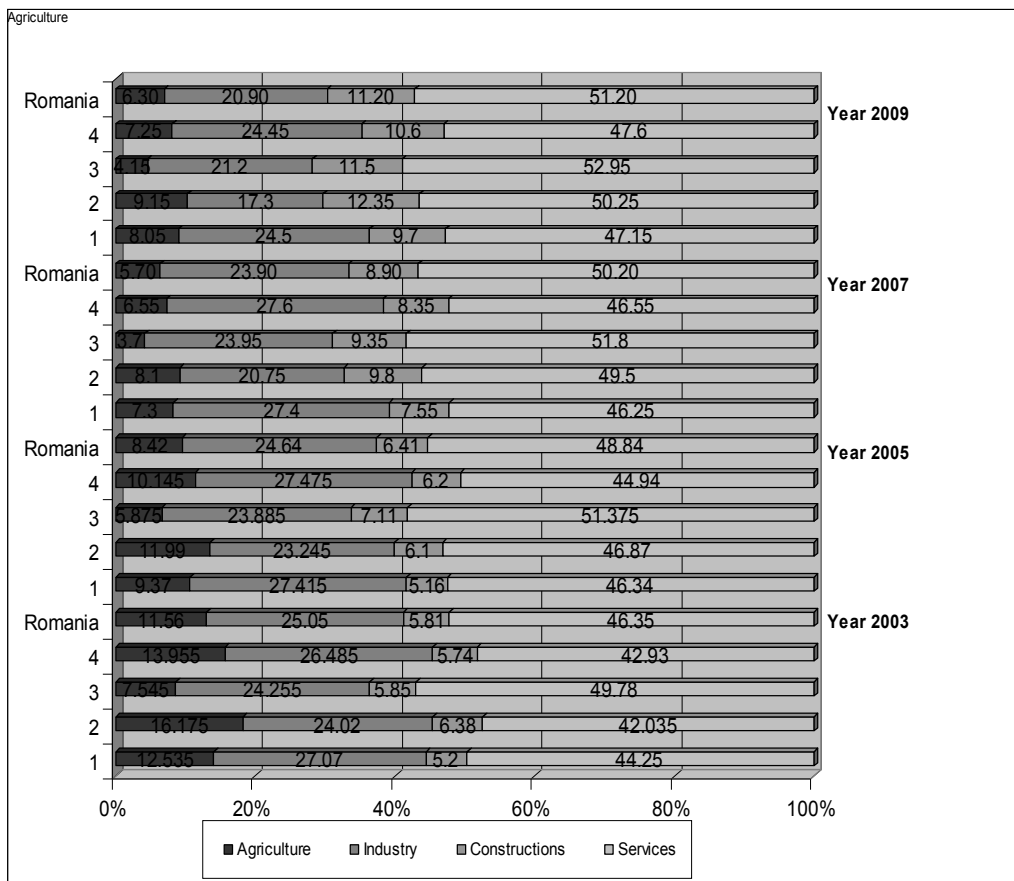


Figure 2. Sectors share in regional GDP

Services contribution to GDP has exceeded the industry's contribution to GDP, which shows the positive trend of development of the tertiary sector, a sign of a modern economy, and a national trend.

We also talk of a „quality” increase of gross domestic product of all regions. Share agriculture and forestry declined, while the share of services in regional GDP increased during the same period. At macro-regional level (table no. 5) the lowest GDP is recorded in macro-region 4, where the employment level is lowest. The average level of productivity is exceeded only in the third macro-region.

Table 5. Labour’s productivity level

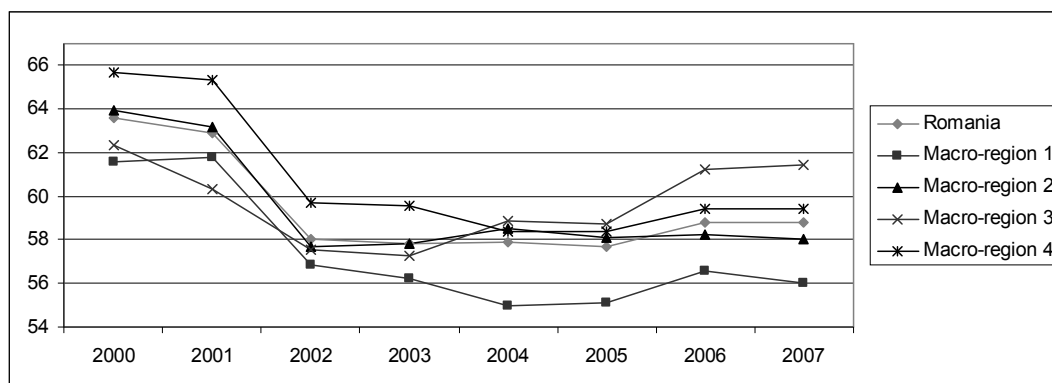
| Macro-regions | GDP | Employment | Labor productivity | GDP % | Employment % |
|----------------|-----------------|---------------|--------------------|---------------|---------------|
| Macro-region 1 | 81097,4 | 2190,3 | 37025,7 | 23,55 | 25,87 |
| Macro-region 2 | 76938,6 | 2282,0 | 33715,4 | 22,33 | 26,91 |
| Macro-region 3 | 122011,9 | 2304,6 | 52942,7 | 35,43 | 27,23 |
| Macro-region 4 | 64378,1 | 1692,4 | 38039,5 | 18,69 | 19,99 |
| TOTAL | 344426,0 | 8469,3 | 40667,5 | 100,00 | 100,00 |

Source: National Institute of Statistics, (2008), Romanian Statistical Yearbook;

Most of GDP (35.43%) comes from the macro-region 3, in which is the highest employment. Macro-region 4 consists of two merged development regions with the lowest contribution to GDP (18.69%) and lowest level of OP (19.99%). The situation can be explained by the low level of labor productivity in the fourth development area.

5. DISPARITIES CONCERNING EMPLOYMENT

The analysis of the population's employment rate shows a significant presence of the underemployment phenomenon in the whole economy. The employment rate in the four macro-regions in the period 2000-2007 is presented in Figure. 3.



Source: Graphic developed based on data from the Institutul Național de Statistică, Statistici regionale, , www.insse.ro, [accessed 06.06.2010];

Figure 3. The employment rate in the Romanian macro-regions between 2000-2007

Employment rate of the Romanian population has remained relatively constant over the period 2000-2007, marking a slight downward trend. This drop in employment is correlated with jobs reduction and with the phenomenon of temporary migration for

work abroad. Employment rates above the national average are recorded in the third and fourth macro-region. It should be noted that South West Oltenia is a part of the fourth macro-region, where the high employment rate is due to the high level of employment in agriculture. The West region brings a significant contribution, but in this case because of much higher and diverse labour supply, situation also encountered for Bucharest-Ilfov region. Employment structure by main activities of the national economy is presented in Table 6.

Table 6. Employment structure by the national economy's main activities

| Institutional sectors | Agriculture | | | Industry and construction | | | Services | | |
|-----------------------|-------------|-------|-----------|---------------------------|-------|-----------|----------|-------|-----------|
| | 2000 | 2007 | 2007/2000 | 2000 | 2007 | 2007/2000 | 2000 | 2007 | 2007/2000 |
| Romania | 43,90 | 29,48 | -14,42 | 25,70 | 31,41 | 5,71 | 30,4 | 39,11 | 8,71 |
| M 1 | 36.60 | 21.61 | -15.00 | 32.25 | 38.65 | 6.40 | 31.15 | 39.75 | 8.60 |
| M 2 | 52.20 | 39.56 | -12.64 | 20.35 | 26.30 | 5.95 | 27.45 | 34.14 | 6.69 |
| M 3 | 27.50 | 17.28 | -10.22 | 30.10 | 30.46 | 0.36 | 42.40 | 52.26 | 9.86 |
| M 4 | 48.80 | 31.15 | -17.66 | 23.65 | 34.08 | 10.43 | 27.55 | 34.78 | 7.23 |

Source: National Institute of Statistics, (2009) Romanian Statistical Yearbook;

It is noted that in the period under review, the farming population suffered a decreasing trend in all the macro-regions, while registering an increase of the population employed in the service sector. The largest decrease of agricultural population is recorded in the macro-region 4 of 17.66%. In this macro-region there is an increasing share of employment in services and industry. In 2007, employment in industrial activities is located in a secondary position in three of the four macro-regions, the services sector holding the top position. An exception is the macro-region 2, where most of the population is employed in the primary sector. Further development effort of the services sector, capable of generating new jobs in the context of sustainable development must be supported, even if we can see employment increase in the services sector and a sharp decrease in agricultural population.

Most of the growth of the tertiary sector is recorded in macro-region 3, because of the Bucharest - Ilfov region, the only region where the country's national services have 38% of total employment and generates most important jobs, reaching 70.53% of total employment in the region. It is noted that in this region there is the largest urban agglomeration, the capital city and most of the government's institutions.

6. DISPARITIES IN ATTRACTING FOREIGN DIRECT INVESTMENT AND IN RESEARCH - DEVELOPMENT

Foreign investment in Romania has been guided by the availability and potential areas and by the business mentality and tradition in the field. Investment is an important driving force for economic development. Foreign direct investment can bring a substantial increase in productivity by bringing not only its own technology, but also the best practice.

Table. 7. Distribution of foreign direct investment in the macro-regions

| Macro-regions | FDI Balance in 31 December 2003 | | FDI Balance in 31 December 2005 | | FDI Balance in 31 December 2007 | | FDI Balance in 31 December 2008 | |
|----------------|---------------------------------|---------|---------------------------------|---------|---------------------------------|---------|---------------------------------|---------|
| | Value (mil.euro) | % total | Value (mil.euro) | % total | Value (mil.euro) | % total | Value (mil.euro) | % total |
| M 1 | 1321.5 | 13.01 | 2867 | 13.10 | 5448 | 12.74 | 6254 | 12.82 |
| M 2 | 1408.5 | 13.86 | 2130 | 9.73 | 3120 | 7.29 | 4687 | 9.6 |
| M 3 | 6317.2 | 62.18 | 14652 | 66.95 | 30458 | 71.21 | 34005 | 69.68 |
| M 4 | 1112.4 | 10.95 | 2236 | 10.22 | 3744 | 8.75 | 3852 | 7.89 |
| Romania | 10159.6 | 100 | 21885 | 100 | 42770 | 100 | 48798 | 100 |

Source: Banca Națională a României și Institutul Național de Statistică, (2003, 2007, 2009), Cercetare statistică asupra Investițiilor Străine Directe în România, www.bnro.ro, [accessed 09.06.2010];

In the period under review, there was an increase in the volume of foreign direct investment (FDI) in Romania (Table no. 7), representing an increase of over 115% in 2005 compared to figures of 2003 and 380.3% in 2008, over the same period. FDI in 2007 compared to 2005 is 95% and in 2008 to 14.1% in 2007. Foreign capital was more concentrated in third three and first macro-region, in Bucharest-Ilfov Region, West, Southeast Centre, which had a positive effect on labour markets in these regions, on the creation of permanent skilled labour and business development services (eg placement firms of specialized labour).

In 2003, 62.18%, and in 2008 approximately 70% of total direct investments in Romania have been directed to macro-region 3 (Bucharest-Ilfov region has attracted more than 60% of total FDI realized in Romania, because the capital is the main magnet foreign investment, as confirmed by the large number of companies with foreign capital located here).

The main receiving sectors are: Real Estate - business and housing - , financial intermediation (Bucharest) and food industry (Ilfov). However it must be taken into account that some direct investment recorded in Bucharest are related to physical investments located in other regions of Romania. For example, it could not be found a connection between the growth rate of SMEs and FDI development.

One of the factors that enhances competitiveness is developing research and development sector. In Romania R & D sector still has weak links with the economic environment, not having a significant contribution to regional economic development. With the economy based on knowledge, on industrial clusters and on clusters based on research, the technology transfer process will be will extremely stimulated.

One factor that may increase business competitiveness is the high share of researchers in technical sciences and engineering. Unfortunately, low salaries, less material resources to achieve proper performance, and opportunities for research programs in other countries have led ,gradually, to reduce the number of researchers.

The main problems the field is facing are: insufficient financing from public funds, 0.53% of GDP in 2007 (No Table. 8) exceeded R&D infrastructure, lack of adaptation to competitive market conditions, the reduction and increase average age of researchers. Another major problem is the weak connection between research, economy and relatively low capacity to exploit research results.

Table 8. Macro-regional share in total expenditure for national R & D

| Total expenditure CD | 2000 | 2001 | 2002 | 2003 | 2005 | 2006 | 2007 |
|----------------------|-------|-------|-------|-------|-------|-------|------|
| % in GDP | 0.37 | 0.39 | 0.38 | 0.39 | 0.41 | 0.45 | 0.53 |
| % Regionally | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Macro-region 1 | 11.59 | 10.21 | 13.44 | 11.46 | 12.01 | 11.34 | 12.3 |
| Macro-region 2 | 11.81 | 11.98 | 9.65 | 8.39 | 9.11 | 10.34 | 11.2 |
| Macro-region 3 | 66.58 | 69.18 | 68.52 | 71.24 | 70.62 | 70.44 | 68.2 |
| Macro-region 4 | 10.02 | 8.63 | 8.39 | 8.91 | 8.26 | 7.87 | 8.23 |

*Own calculations based on data from the***, (2008), Planul de Dezvoltare al Regiunii Centru pentru perioada 2007 - 2013, www.adrcentru.ro, București, data accesării 07.06.2010; National Institute of Statistics, (2008,2009), Romanian Statistical Yearbook*

So far R&D expenditure had a modest dynamic in Romania, but with increasing competition, research and development will be one that will enable firms to survive on the market. The largest share, of over 60% of total spending on research developing, it is found in macro-region three.

Stimulating innovation is however very important to increase the added value, to the long-term competitiveness and for Romanian companies' access on international markets, so, by default, to reduce the trade deficit. That means it is necessary to support the innovative capacity of firms through different activities of assistance, advice, support in accessing to funds, creating conditions for development.

7. CONCLUSIONS

Romanian economy has some features that put into question its regional and national policies and the issues for which solutions must be found, in order that the economy to be integrated into the productive system of the EU, namely: regional development based on disparities, a distorted and underperforming structure for different sectors of activities, an aging and declining population and the migration of the working population. Growth followed a west-east direction, western markets proximity acting as growth factor distribution. Although statistical data shows some oscillations in time, due to local factors, it can be seen as economic growth had a significant geographic component, the underdeveloped areas being the northeast and south. Underdevelopment appears to be largely correlated with unemployment and the predominance of rural activities and inability to attract FDI.

West and north-west area has received a relatively high share of foreign participation in firms' capital, amid continuing traditional exchanges and having a code of conduct that continues to adapt to international business. Foreign investment in Romania has been guided by the areas' availability and potential and also by the business mentality and traditions in the field. Productive system's performance is determined by the labour productivity which has the highest values in the third macro-region, because the high level of productivity in Bucharest-Ilfov region, and lowest one in macro-region 2. The most dynamic regions are considered the Western one and Bucharest Ilfov region, exceeding the average level of labour productivity.

Disparities still remain between Romania's macro-regions. In our country, as in other new countries of the European Union, it is clear there is a centre-peripheral

type of structure, self-sustained by the faster growth of the regions around the capital due to: investment preferences for developed regions, labour migration, government intervention in the more developed regions in order to achieve a higher national growth rate. Romania may be considered appropriate for a policy of training and development of agrarian- industrial structure of the national and regional economic systems. Such a policy must be coupled with policies to boost birth rate, to reduce labour migration, to change the training structure, to retrain people and to develop managerial skills.

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CONSUMERS' SATISFACTION OF HIGHER EDUCATION SERVICES A PROBLEM OF EDUCATION IN THE 21ST CENTURY

MARIA-LAVINIA POPESCU *

ABSTRACT: *The international evolutions show that in unavoidable manner, in any country, Romania inclusively, the overcome of rare difficulties, will necessity and will makes possible simultaneous, the enrolling of tertiary sector on a trajectory by an extensive development. No country can not allows the neglect a thus sector, with a developing role in the turning to account of human resources, materials and financials existing, in the economy modernize on the whole, in the solvable needs satisfy and in the population exigencies covering. The quickening of realize an ones extensive investments programs, the using of suitable materials and technical means, will be felt too in Romania. So as to assure the quality in education it is necessary to bring exchanges in structure, in content, in teaching-learning-valuation process etc. The education quality is affected by the specification of changes of education domain, specification given on the one side by the long history of school which generated a powerful and a bumper organizational culture, and on the other side, by the complexity schools organizations.*

KEY WORDS: *education; educational services; quality; satisfaction; students*

JEL CLASSIFICATION: *I21, I22, I23*

1. INTRODUCTION

The purpose of research is to diminish the errors in decisions taking at the management level of one entity and to help with coaching and improvement those marketing decisions. The research plans are to two vast types: explorers and conclusive.(Plăiaș I coord., 2008) In this context, I resort to using one conclusive descriptive research based by the divided plans or transversal research how this is

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know in specialty literature (suppose collecting the information's by the representative pattern level, all of a sudden- Plăiaș I coord., 2008). The investigation represents the most acquaintance method of obtain primary dates necessities from the fundament of marketing decisions and not only. I resort to using a quantitative research realized in base investigation, what is a method of primaries dates collect through addressing questions included in a questioner at one representative pattern (168 students) by the mother population (students register of FSEGA-UBB, in the last year of studies, daily classes). Thus in study I use a structured investigation which supposes using one questioner with questions which was established to begin with and was arranged in a certain order which must respect. In same times the investigation was one not dissimulate, the fellow being informer about the purpose of research and he could identify him with rapidity in the base of questions of questioner. Much, I used the classic personal investigation which supposes a discussion face to face between the interview operator and fellow asked, which permit obtaining the necessities information's for research.

With the view to realize the research I extracted a pattern with 168 persons by population. Total population (investigate universe) have 1680 subjects. I used the proportionally stratification investigation in function with the students percent in mother population and in same times in rapport with repartitions of section. One advantage of stratification investigation in rapport with others probabilistic methods is the increase of precision estimations makes. Only the proportionally stratification investigation ("representative stratification") is which can be interpreted as a census (Chirouze, 1993). The interest of this investigation type is that number of persons asked having common characteristics is proportionally with layer population. The proportionally stratification investigation assures a investigation rate "n/N" in each layer equal with on the whole population "n/N".

2. THE THEORETICAL PROBLEMATIC OF CONSUMERS' SATISFACTION IN ECONOMIC HIGHER EDUCATION AND CONCEPTUAL DELIMITATIONS

A side which must had in view when the subject is educational marketing it is the satisfaction face to educational services. The subjects can be directly asked if they are or are not satisfied by the educational services offered. Theirs affirmations must report at the expectations level or theirs aspirations, but in the same time to formers experiences. If it knows what expect the public by educational process, thus can draw up marketing strategies which assure the maximum audience of educational offer.

Must make one analyze of the manner how is situated the offer in report with the public requests or with the rivals offer. The offer research bases by hers dimensions, by hers parts elements, the territorial distribution, the quality goods and services offered, the factors which influence the offer, the changes of offer volume and structure, the report between the reel offer and the potential offer, offer strategies, the rivals effects over offer structure.

The educational marketing policy must draw up through the motivations study and symbolic representations of consumers, through the define fundamentals options of

groups and of fellows. The realization of market strategy of educational marketing policy requests a complex activities focus on fundamentals elements: the product/the service, the price, and the promotion, the distribution, known as marketing mixture. That is, the combination of elements which compose the educational marketing policy.

The first step which must have in view in the framework of marketing process is to the education institutions realize one personal analyze of fact situation: what they undertaken in past, what they make in present, and what they propose for future. With the view to undertake of this objective is necessary a mission review and a history of education institutions, of tendencies which are registered in present in the framework of demographic environment, as well as the identification of strong and weak points of programs undertaken, as well as of following domains: academic, social, spiritual and vocational. Much more than must stated the fact that the actions undertaken by these institutions have repercussions over this image, over their ability to attract and to maintain the students satisfied by the services offered, over of loyalty construction, as well as over of one's own will givers attract. Taking into account institution mission, the individuals' needs of clients, as well as by the experience obtained by others education institutions the next step which must done it is as the institution to take a decision regarding the activities development, a restraint or a elimination of certain programs which represents elements sides of his educational offer. After these steps, follows one wording of action strategies.

Romania is supporter of Bologna Statement by 1999 and member of European Union beginning by 1st January 2007. This aspect involves, though others that the Romanian universities are in a powerful rival environment, total different by the hothouse climate offered by the governmental monopoly over the national system of education (Brătianu & Lefter, 2001). The statute by state universities will not help very much in the new market created though the realization of European Space of Higher Education. From this reason, is necessary as each university, redefine the vision, the mission and develop in future the capacity to be competitive in a powerful rival environment (Brătianu, 2005b; Brătianu, 2005c).

In the context of Bologna Treaty, referring at the harmonisation of higher education systems by European Union, the mobility and the possibility to be employed students, teachers and researchers will develop, fact for which the universities less competitive risk to lose a significant percent of students. For this reason, the study of students' satisfaction and theirs analyze in the context of higher education become fundamentals. The bigger and bigger competition by present stressed the strategic importance of satisfaction and of quality in the competition for to gain consumers and for to maintain certain substantially competitive advantages. Thus, the satisfaction is focused by consumers expectations and by theirs perception over services quality (Johnston & Lyth, 1991; Ekinci, 2004; Cronin & Taylor, 1992; Christou & Sigala, 2002). Therefore, the universities must try understanding theirs target markets (students or externals partners by different types), value the needs of these markets and modify the offers for meet these needs, contributing thus to one development of consumers satisfaction through services with higher quality (Keegan & Davidson, 2004).

The students' satisfaction in generally is defined as an attitude on short term, which results by a valuation of educational experience (Athiyaman, 1997). The satisfaction appears than when the effective's realizations meet or surpass the students' expectations (Szymanski & Henard, 2001). Browne, Kandelberg, Brown and Brown (1998) shown that the global satisfaction face a university is determined by a valuation of courses quality, as well as others factors associated with this university. As services purveyors, the universities must try satisfy the students' needs through the information offer, diplomas and the career orientation, all these instead of students time, of their effort, of fees and of „word-of-mouth” advertising (Kotler & Fox, 1995).

Grossman (1999) demonstrated that the satisfaction is influenced in big measure by confidence. The universities can construct this confidence through the assurance of one fair and equitable treatment for all students, through these expectations meeting or through their dissatisfactions solving. Mentioning Drucker, we learn the marketing aim is the so much profound consumer knowledge, so that the product or the service becomes him so good so that it sells by oneself.

A study has been realized at Iași and it tried identifying the perceptions regarding the Romanian higher education through five public categories: the secondary school pupils, the ex-students, the academics teachers, the employers, and not in the last place the students. Corresponding of study results, the teachers have the bigger confidence in universities promises, the students manifest only a medium level of confidence, while the ex-students and the employers have a confidence level significant more reduced. The study shown in the same time that no partner's categories are not clear expectations as concern the educational system, in generally, situation recognized even teachers (which indicate an insufficient communication by universities part), and by the ex-students, who are disappointed in present by higher education followed in past. Comparing the results with the results of other similarly study realized in 2002, the researcher could observe a confidence diminution of students in Romanian higher education quality.

3. VALUATION OF HIGHER EDUCATION SERVICES IN CLUJ-NAPOCA BY THE STUDENTS SATISFACTION POINT OF VIEW

The education is a system by educational goods and as totality of institutions and activities involved in her promotion and broadcasting. The education regards values which refer to humans needs. The goods and services request by this domain depend by the motivation intensity of consumer. With others words, educational marketing involves a human activity or an activities system, orientated one towards to satisfy the requests of presents and potentials consumers. The most important reasons which stay on the base of studies continuation are the advantage obtained in the view of finding a job and knowledge's looked into, only a very small percent are not prepared to confront with the work market.

Between 62 persons graduated from of a secondary school with economic profile, 15 do not study again in FSEGA, those wishing to make other choice in a big percent than the students for which this domain do not be known in period of

secondary school (approximate 25% between the graduates of economic secondary school compare with 17% between the others).

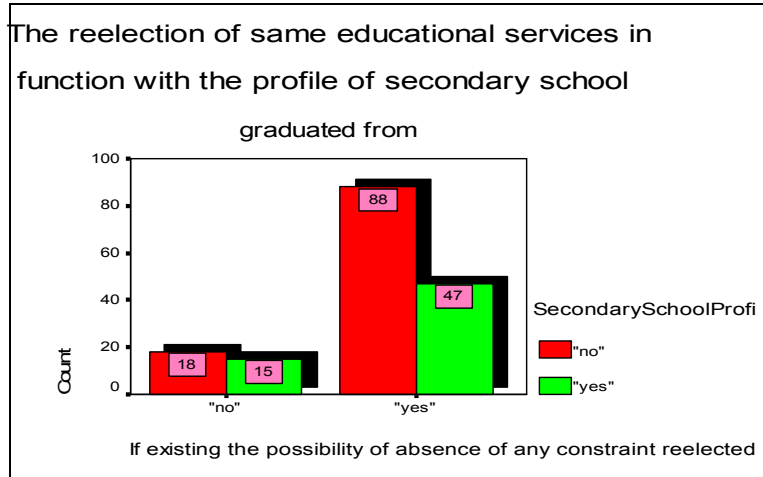


Figure 1. The reelection of some educational services in function with the profile of secondary school graduated from

Between 98 students which chosen to study to FSEGA because of fact that they are been attracted by domain, 12.25% do not manifest the same prefer if they have the possibility to choose again the faculty in absence of any constraint. Between the 70 persons which chosen from other reason this faculty 21 would not repeat this fact.

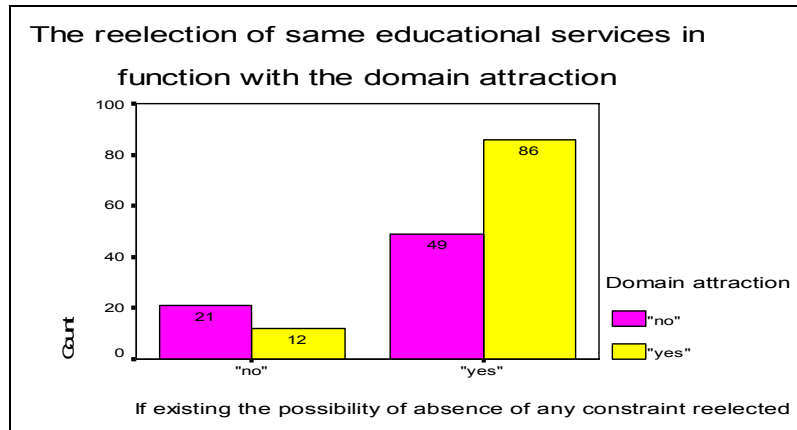


Figure 2. The reelection of some educational services in function with the domain attraction

8.93% between the examinations opted from FSEGA with the hope that therefore when they will graduate from they will find easily a job, but if would must choose again, then they should opt for other faculty, while 10.71% between the

students which are based the choice by another reason declare that they should not make same choice. Approximate 20% by the population studied would choose other option for the faculty which they should follow if they should not be supposed of any type of constraint. Generally, the futures graduates consider that the prepare which they accumulated corresponds with the work market requests (82.74%), being reduced the percent of persons which say the contrary (5.36%) and much more these frame principally among the students with mediocre means at learning, while a quite important number (11.90%) they have the persons which believe that the prepare which they have help them more and less. Between the persons which answered and which they expect that the knowledge's posed be by the work market request the majority have means 7-8 (46 between 168 asked, that is 27.38% by the population studied) follow by the students with means 8-9 (23.81%) and by the students which obtained means 9-10 (17.26%).

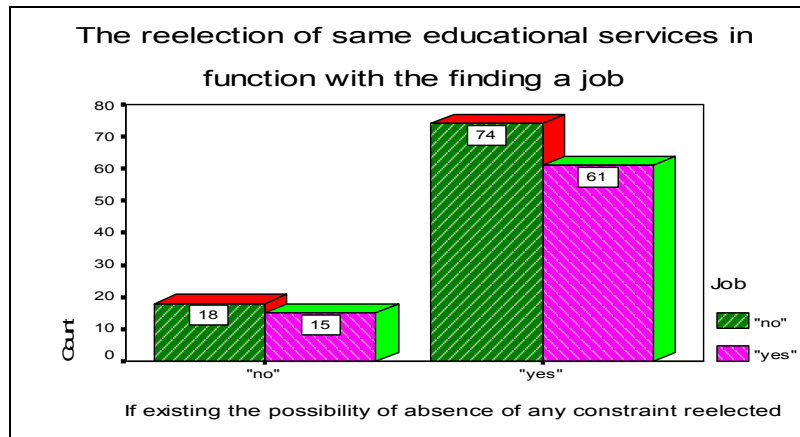


Figure 3. The reelection of same educational services in function with the finding a job

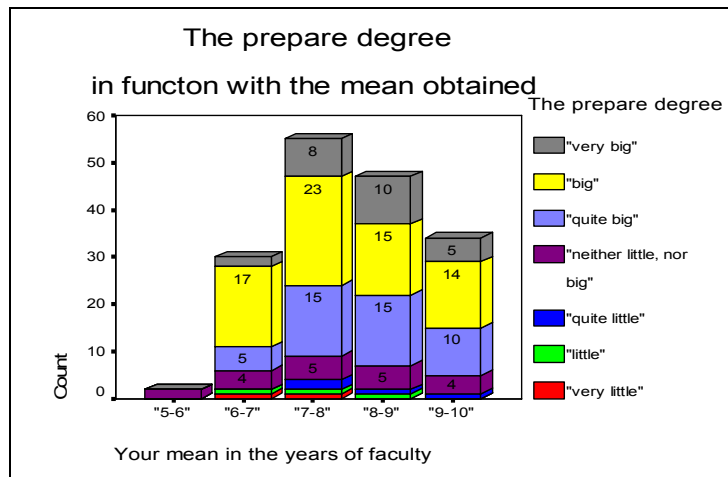


Figure 4. The degree prepare in function with the mean obtained

Half between students wish as after the faculty finish have the possibility to work, but in same time follow too the master courses, thus the percent of persons which would opt from a master touching 82.14%, between these 45.83% considering that the higher education is very important, and 26.79% say that it is important.

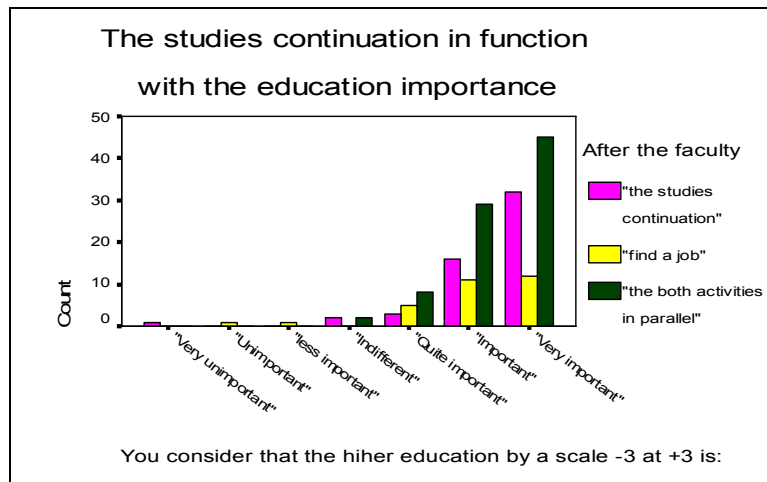


Figure 5. The studies continuation in function with the education importance

It is a direct correlation between the theoretic knowledge's which the students accumulated and the degree prepare of teachers which they guided, 102 persons between 168 considering that they obtained a big or a very big luggage by theoretic notions grace to good or very good prepare of teachers which guided they.

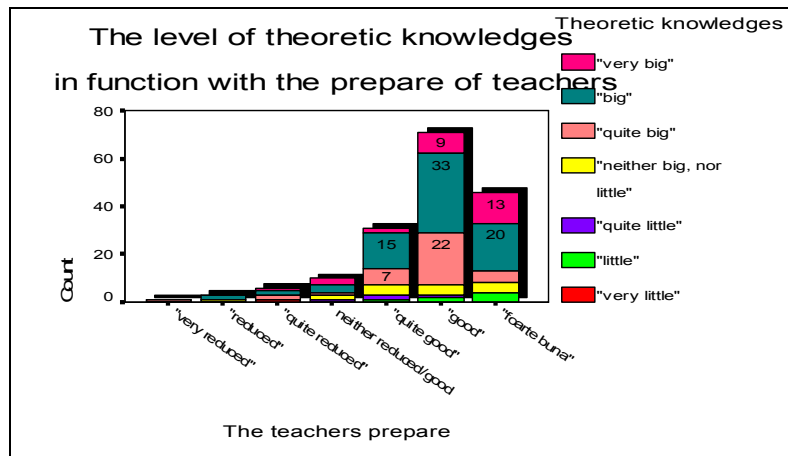


Figure 6. The level of theoretic knowledge in function with the prepare of teachers

Although a number of 117 persons between the asked say that the teachers prepare with which they entered in contact is big or very big, 44 between these are not

prepared practical point of view that is 26.19% by studied population. 70 between the persons asked say that they are satisfy so much by the their general degree of prepare, as much as by those which they educate, 14 say that they are not satisfy by theirs prepare, but they consider adequate the teachers prepare, 33 between they assert that they have a quite big degree of prepare, while theirs teachers are good or very good prepared, 15 are dissatisfied so much by theirs generals knowledge's, as much as of these which they prepare, and 36 even if they feel prepared, are not satisfied by the teachers prepare.

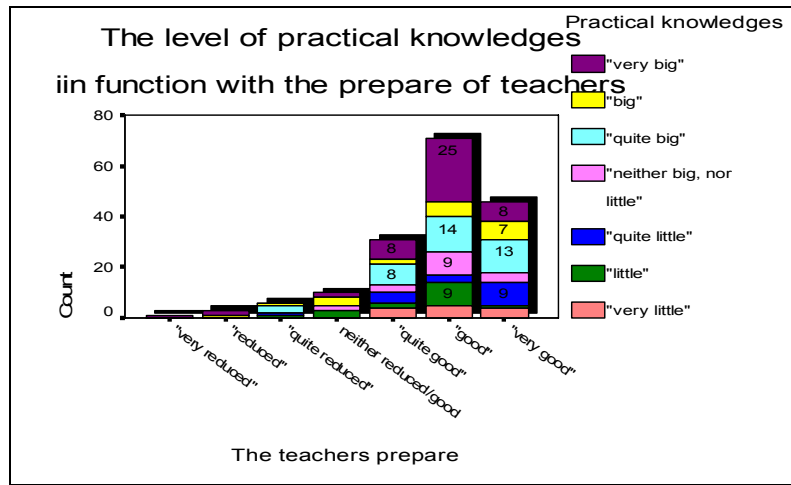


Figure 7. The level of practical knowledges in function with the prepare of teachers

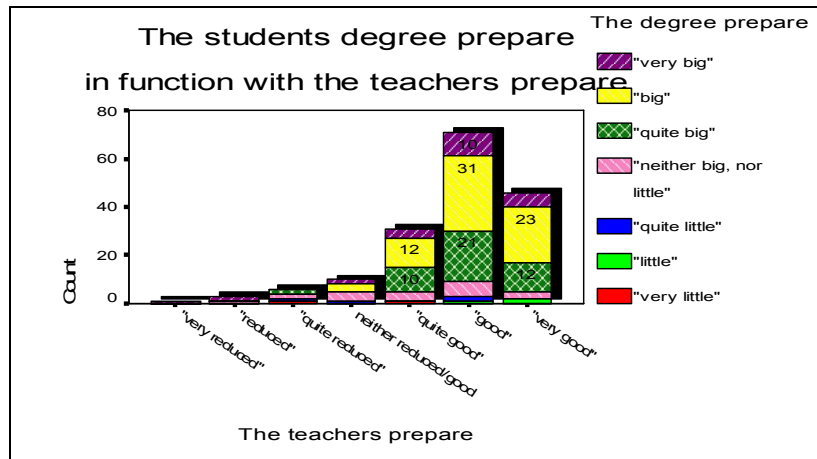


Figure 8. The students degree prepare in function with the teachers prepare

Although the number the persons which wish to follow a master is very big, only 18.51% between they which want to continue only the studies and 11.90% between the students which want simultaneous to study and to work know good or

very good the master offer proposed for them. 25.93% between the persons which wish to continue the studies are quite good acquainted with this offer, but 12.96% assert that they know not this offer neither much, nor little. The students which would opt for the realization of both activities in parallel are less informed about the master offer than the students which opt only for the studies continuation in present, 23.81% between them knowing quite well the proposals for master, and 9.52% knowing neither much, nor little. The persons who wish to find a job after the finish of higher education, contrary, they affirm that they possess quite much information's, as regard masters, and 23.33% declare that they know not neither much, nor little things with referring at this subject. Approximate half by the number of asked declare that they know not or know in a very little measure the master offer, between these 26.74% being between the students which want the studies continuation, 53.49% between the persons which have in view the realization of both activities in parallel and 19.77% between the people which are not interested by studies after faculty.

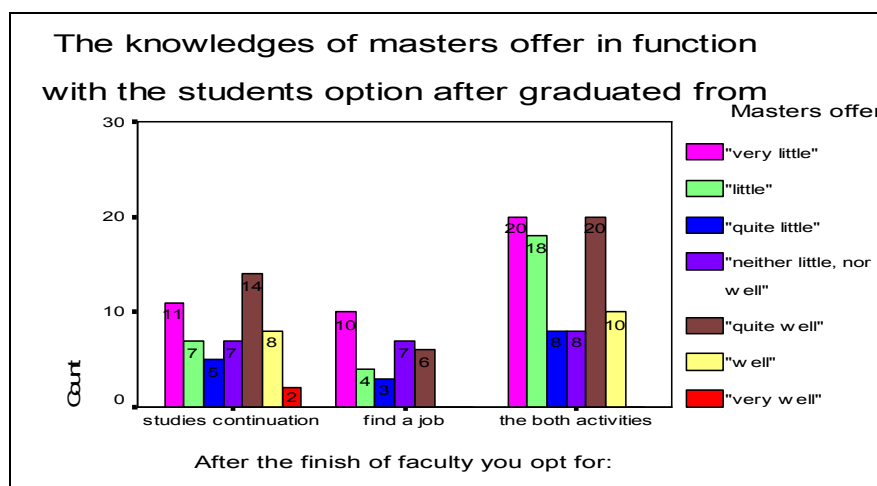


Figure 9. The knowledges of masters offer in function with the students option after graduated from

From the results interpretation regarding the relation student-teacher, correlated with specialization emerge the fact that the students of MK and FB established most good relation with teachers (65% between the MK students declare that they are satisfied or very satisfied 10% and 57.14%, respectively 7.14% between FB students are in agreement with this fact). As regards of dissatisfied persons or partial satisfied by the relation developed between students and teachers are the students of MG section, 57.14% between the students of this specialization opting for one of this variants, being followed by the ECTS students with an percent by 55.55% and REI students with 44.44%.

As concern of reasons which could determine renounce at the studies continuation among students which wish the studies continuation with masters

programs are very big fees (48.15%), wish to work (29.63%), reduced number of budget places (12.96%) and others reasons (9.26%).

The persons which opt for the finding a job have as reasons the wish to work (46.67%), the big fees (30%), others reasons (13.33%) and the small number of budget places financed by state (10%).

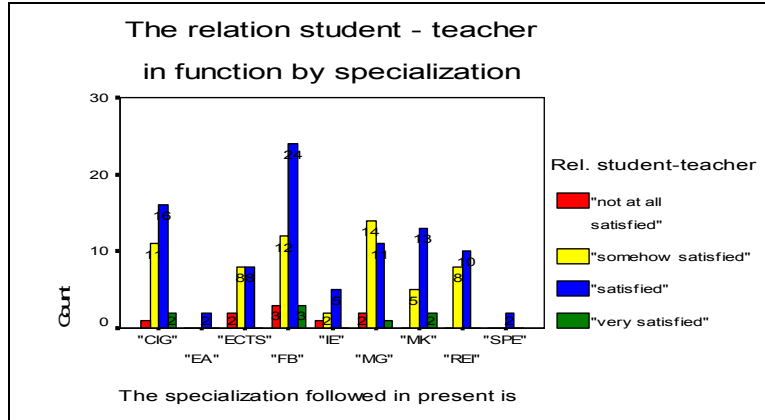


Figure 10. The relation student – teacher in function by specialization

For the students which want realization the both activities in parallel the principal obstacle is the quantum which they would to pay for school in the case when should not obtain a budget place (54.76%), followed by the wish to have a job (30.95%), for 11.90% between they representing a constraint the reduced budget places number compare with the graduates number which wish to complete the higher education and only 2.38% between they invoking others reasons.

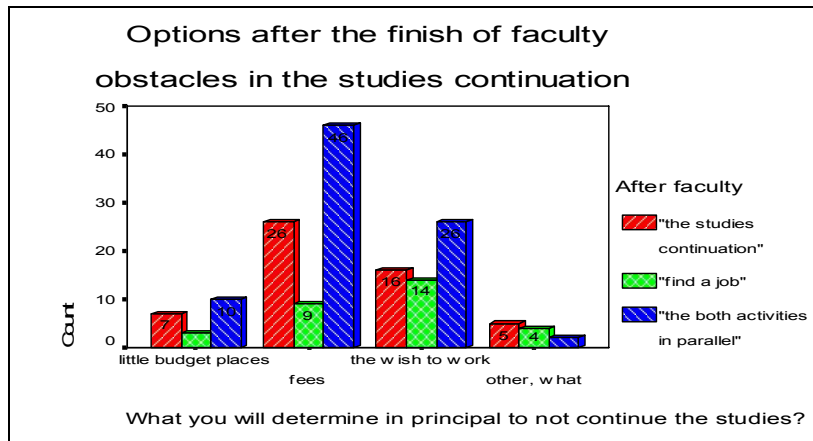


Figure 11. Options after the finish of faculty obstacles in the studies continuation

The majority which considers that the educational services followed in the framework of FSEGA are very good quality compare with others similarly institutions by our country wish to continue their professional form through the masters following in the framework of this (63.16%), while 7.89% between they want remain in same higher education centre, and 10.53% opt for other centre. The persons who affirm that the educational services offered by the faculty of which they study compare with the educational services offered by similarly faculties and they would wish to follow a master here are in percentage 69.16%, while 9.35% wish change the faculty, and 8.41% too the higher education centre. The students who consider that they have similarly conditions of educational point of view choose same principal variant to studies continuation as the persons who are very satisfied, 62.50% between they wishing can follow a master of faculty which they graduate, an more big percent opting for the change of higher education centre (18.75%).

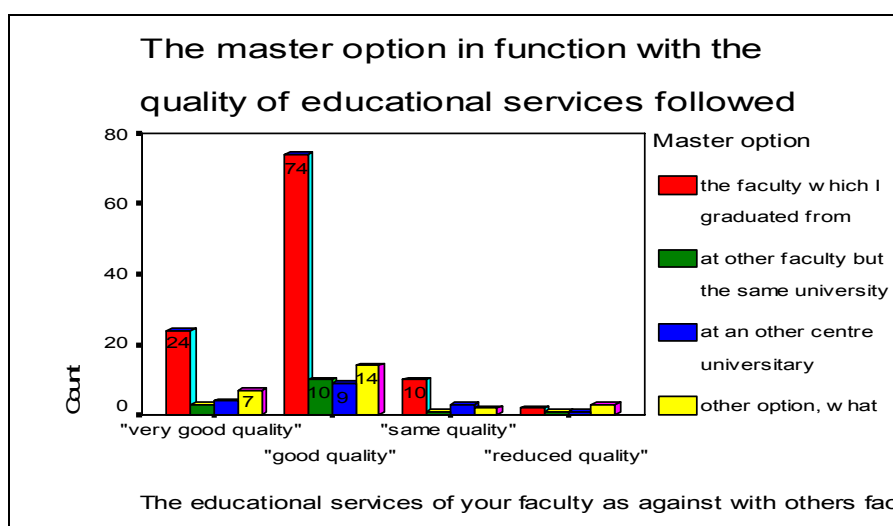


Figure 12. The master option in function with the quality of educational services followed

4. CONCLUSIONS

In a society in change all the time what pass through a transition period makes very rapid for the modern world, educational domain must not neglect, especially thanks to the importance obvious and obvious which that has for the behaviour and the fellows personality by contemporary period.

Studying the population direct implicated in process of professionally formed within the framework of university centre of Cluj-Napoca with economic profile emerge the following conclusions:

- the education need represents one between the important aspects taken in consideration by students included in the pattern studied, thus remarking easily that the students of the framework of FSEGA (52,98 %), who consider the higher

- education very important declare that they wish in big measure continue the studies (82,14%);
- as concern the principals reasons which motivated then when they chosen the study domain, the FSEGA choice been due in big measure of economic domain attraction;
 - the knowledge's represent a factor which has a special importance in the purchase decision influence of consumers, on the base of study realized seeing that the FSEGA students know in a little measure the master offer of their university (39,88 %), but too the persons who consider that they know she they appreciate that the knowledge level is very little;
 - the attitudes represent an expression of internal feelings which reflect if a person is favourable or not favourable with a bent at certain "objects", thus the educational services of FSEGA proved to be appreciate as having one much better quality than of others faculties with the same profile by country and the prepare obtained comes near much by the consumers expectations;
 - the expectations, the perform, the comparison, the (not)confirm, the discrepancy, the prices/ the action benefits, the personals characteristics are elements which contribute to satisfy or dissatisfy attraction of client which can lead at a new purchase decision.

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THE IMPACT OF ECONOMIC CRISIS ON UNEMPLOYMENT, EMPLOYMENT AND SMEs DEVELOPMENT IN SERBIA

MIRJANA RADOVIĆ-MARKOVIĆ *

ABSTRACT: *The establishment of macroeconomic stability, the conducted reforms and the institutional changes in the past years resulted into the improvement in the business conditions in Serbia. Significant advances were made in 2008 as regards the formulation and implementation of the policy of development of SMEs, and in the implementation of the European chart on small enterprises. Despite the improvements achieved, the business environment in Serbia is still ranked as insufficiently stimulative for the development of SMEs. In 2009 ,Serbia ranked 93th out of 133 countries in the World Economic Forum's Index of Business Competitiveness .This country ranks is lower than in any other country in the region. In this context, the importance of the state support to the development and stability of this sector is invaluable, especially because the entrepreneurship sector was most severely hit by the economic crisis in Serbia. In addition, the economic has also resulted into the fall in the employment rate and the rise in the unemployment trend, which will be especially analyzed in this paper.*

KEY WORDS: *Economic crisis; employment; unemployment; corruption; business environment; SME; Serbia*

JEL CLASSIFICATION: *M13, O11, O10*

1. INTRODUCTION

Until the 2002 to 2008 period, Serbia's economy experienced a relatively high growth rate, (over 6% per annum). In the second half of 2008, the global economic crisis affected negatively the dynamics of the economic activity in Serbia. It hit Serbia harder than has been expected; although not so hard as other economies in the region.

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The estimations are that the GDP growth, as an effect of the global economic crisis, decreased in 2009 by 2.9% in comparison to 2008. The FDI also decreased in 2009 (1 112.5 million EUR) in comparison to 2008 (1 812.1 million EUR) mainly as a result of the economic crisis.

The European Committee report titled “The SME Policy Index” points out that Serbia succeeded in passing from the policy formulating and strategic goals definition stage to the policy execution stage, especially in the areas such as the support to the innovative and start-up firms, delivery of business services and dissemination of information via on-line services, as well as general social climate improvement. In 2008 the number of actively operating firms in Serbia amounted to 304,017, of which 303,449 (99.8%) operated in the SME private sector. According to the latest official reports, the SME sector employed 940,000 workers, which is around 43.2 per cent of the total number of employees in Serbia. It is important to point out that this sector played a crucial role in creating new jobs in the 2004-2008 periods, when, due to the restructuring of economy, the number of work posts was reduced by 163,620; however, in the same period the SME sector employed 187,419 people. In 2009 however, Serbia ranked 93th out of 133 countries in the World Economic Forum’s Index of Business Competitiveness. It is therefore necessary that the business environment supportive to creating an efficient and competitive economy be improved, especially in view of the fact that this country ranks lower than any other country in the region, hence its position is worsened in comparison to that of 2008.

2. UNEMPLOYMENT

From the beginning of the world economic crisis, October 2008, until January 2010, the number of unemployed in Serbia rose by 34,182. In January 2010, the National Employment Agency recorded 751,590 unemployed, 2.9 per cent more than in December 2009. The unemployment growth rate¹, according to the October 2009 Workforce questionnaire, was 16.6%, which is by 2.3 percentage points higher compared to the same period 2008. In the analysis of the factors that have the greatest impact upon unemployment, the following ones are identified: qualification, gender, age.

The average period the unemployed person in Serbia wait in line to get a job exceeds three years. Women wait longer than men, and by an unwritten rule, in case of economic, social, or political crises they are the first to lose their jobs. In many ways this further aggravates their already unfavourable economic and social position. In 2009, the unemployment rate among women in Serbia amounted to 18.4%, whereas the unemployment rate among men was 3.1% lower and amounted to 15.3%. During 2009, 161,190 people older than 50 was unemployed (20% in the total structure of unemployed). The unemployment rate among the 15-24 year olds in 2009 ranged around 40.7%.

¹ The unemployment rate shows the number of unemployed in the total number of working age population.

Table 1. Unemployment rates in April and October 2008 and 2009 – comparative review

| | April 2008 | October 2008 | April 2009 | October 2009 |
|-------------------|-------------------|---------------------|-------------------|---------------------|
| Unemployment rate | 13.3 | 14.0 | 15.6 | 16.6 |

Source: Workforce questionnaire, Statistical Office of the RS, 31th Dec, 2009

According to the data provided by the Statistical Office of Serbia (RZS), towards the end of December 2009, women prevailed in the structure of unemployed population, which by then amounted to 52.87%. The data also show that 55.41% women were unemployed on a long-term basis. In 2009, the unemployment rate of women amounted to 17.3%, compared to 14.3% for men. Unemployment is especially a serious problem in the population of women older than 50, who find it really difficult to get a new job.

Table 2. Unemployment rates according to gender for the period 2005- 2009

| | 2005 | 2006 | 2007 | 2008 | 2009 |
|-------------------|-------------|-------------|-------------|-------------|-------------|
| Unemployment rate | 20.8 | 20.9 | 18.1 | 13.3 | 16.6 |
| men | 16.8 | 17.9 | 15.8 | 11.7 | 14.3 |
| women | 26.2 | 24.7 | 21 | 15.2 | 17.3 |

Source: Adjusted according to Workforce questionnaires (October, April 2004, 2005, 2006, 2007, 2008, 2009), <http://webrzs.statserb.sr.gov.rs>, accessed on 18.03.2010.



Figure 1. Unemployment growth rate in Serbia, 2000-2009

3. EMPLOYMENT

The labour market indicators in Serbia are significantly lower compared to the EU average. The total number of the employed in Serbia at the end of 2009 was 1,889,085, indicating the 5.1% fall in employment compared to the previous year. The number of employed men fell by 4.8%, whereas the total number of employed women fell by 5.6%.

3.1. Employment rates in the formal and informal sectors

The employment rate of 40.8% in Serbia (October 2009) is significantly below the goals set by the Lisbon strategy of 2000, the employment rate of 70%. In 2009, the employment rate fell by 3.1% compared to 2008. In comparison with the previous year, the employment rate in October 2009 was 48.5% for men, 33.7% for women. The highest employment rate for the period was recorded in central Serbia (42.0%), followed by Belgrade (41.0%). The lowest rate was recorded in Voivodina (38.3%).

Table 3. Employment rates in April and October 2008 and 2009 – comparative review

| | April 2008 | October 2008 | April 2009 | October 2009 |
|------------------------------------|-----------------------|-------------------------|-----------------------|-------------------------|
| Employment rate | 44.7 | 44.2 | 41.6 | 40.8 |
| Employment rate in informal sector | 23.6 | 23.0 | 22.2 | 20.6 |

Source: Workforce questionnaire, Statistical Office of the Republic of Serbia, 31 Dec, 2009

3.2. Employment in the informal sector

The definition of employed in the informal sector that we used in this paper is the same as the definition used in the AWS analysis of 2002. According to this definition, employed in informal sector are all the individuals without a formally and legally regulated employment status, i.e., those not employed in registered firms or estates, are not owners of a registered firm or estate/farm and are entitled to no insurance on the basis of their work. According to the AWS data, nearly 35% employees were engaged in the informal sector in 2007, which is approximately 4% more compared to 2002, however, the number is equal to that for the year 2003. The informal employment rate fell by 1.4% in April 2009, in comparison to April 2008, and it further fell by 2.4% in October 2009, compared to October 2008.

Although the rise in the number of employed in the informal sector included all the levels of education, in comparison to 2002, the number of employees with the lower educational background was by far the largest. Whereas in 2002 the informal sector employed about 49% of those with primary education, the percentage rose up to 70% in 2007. Out of the total of employed work force with secondary education, slightly less than 28% work in the informal sector and the number of people with higher or university education working in the informal sector is the lowest. There were important changes in the socio-economic position of the employed in both formal and informal sectors in comparison to the year 2002. While in 2002 a larger number of employed in the formal (58%) than in the informal (42%) sectors lived below the poverty line, the 2007 data reveal a totally opposite situation. Out of the total of employed living below the poverty line, more than 72% are employed in the informal sector. Viewed by the consumption quantal, among the employed that make up the category of 20% poorest citizens, 40% are engaged in the formal and 60% work in the informal sectors, whereas among the 20% richest citizens, as many as 82% work in the formal and only 18% work in the informal sectors.

The percentage of the employed in the informal sector was reduced by 0.3% in the urban areas. In other areas, more than 52% of the employed are in the informal sector, which is 11.3% more compared to 2002. Since the largest percentage of the employed in the informal sector is made up of the employed in the rural areas, they can be assumed to be the individuals engaged in farming. The high percentage of employed in the informal sector is, among other things, the result of a higher flexibility that allows for such a method of work as regards the schedule and working hours, as well as avoiding costs related to taxation and contribution payment.

The situation since 2002 has shown that the informal sector increasingly absorbs unskilled and unqualified work force. Out of the total of the employed in the informal sector, 53% are those with low education level, 39% are with a secondary education, and 8% are those with higher and university education. The differences in the presence of the informal sector across the region are significant too. The lowest percentage of employed in the informal sector is recorded in Belgrade, 21%, while the highest is in western Serbia, over 47%, where the highest percentage of employed (55%) is recorded simultaneously.

All the above presented data corroborate the fact that the economic position of the employed with formally regulated employment status has significantly improved.

Table 4. Firms with female participation, 2009

| Gender | Serbia | Region |
|--|---------------|---------------|
| % of Firms With Female Participation in Ownership | 28.76 | 36.16 |
| % of Full Time Female Workers | 33.93 | 38.10 |
| % of Female Permanent Full-time Non-production Workers | 17.67 | 12.35 |
| % of Firms With Female Top Manager | 15.87 | 18.66 |

Source: World Bank Group, 2010

Most widely represented in the structure of informal employment are women. Namely, the women that remained in the work process in the impeding conditions of economic activities, were predominantly engaged in the least profitable industries or in the informal (residual) sector. A modest family budget often prevented women from starting their own business, with their own funds or savings, which women typically use in launching new businesses. The aid from the society was also missing – there were no special - purpose loans nor credits, which further prevented women from implementing their obvious entrepreneurial and managerial potentials. The majority of them, hence, settled to doing marginal jobs in informal economy or working at certain, predominantly non-managerial, work posts in state or public firms. Although the contribution of the informal sector to the country's GNP can be recognized and measured easily, it is rather difficult to measure the extent to which women contribute to the informal sector and the earned GNP in general. There are at least two reasons that the contribution of women to the informal sector is underestimated: they are engaged in those informal activities that are most difficult to track and measure, such as housework; they are engaged in doing secondary and many fold jobs more than men, especially in rural regions.

In transition economies and in developing countries, informal work emerges primarily for existential reasons and the need to survive, while in the developed countries, it is spreads from chances and opportunities, although the contribution of women to the informal sector of economy in all countries is rather marginalized. In the majority of transition economies, in fact, those employed in the informal sector are not protected by the currently ruling laws. Here we have in mind primarily the unfavourable conditions of work and long working hours, as well as the rewarding system and the pay for the job accomplished. In the majority of transition economies evident is the growth in inequality as regards earnings, which is brought into relation to the informal sector share in the economies of these countries. This disparity in earnings is present in both economy sectors; however, it is higher in the informal than in the formal one.

Table 5. Average monthly net earnings in the formal and informal sectors for the period 2002, 2007

| Earnings in formal and informal sectors (in RSD) | | |
|--|---------|----------|
| Earnings | 2002 | 2007 |
| Formal | 9,288.6 | 24,067.3 |
| Informal sector | 9,280.3 | 16,647.5 |

Source: (European Bank for Reconstruction and Development, *Earnings Inequality and the Informal economy evidence from Serbia*) <http://www.ebrd.com/pubs.econo/wp0114.pdf>, accessed on 18th March, 2010

3.3. Self-employment

Serbia is, of course, not exempt from the general trend of self-employment growth in the former socialist lager. In the first place, the increased global competition has increasingly pressured the firms to reduce their costs via more flexible forms of work contracts with the employed. This has been made even more serious by the reduced opportunities of formal employment, due to low economic growth rates and the capital intensive economic growth model. The share of the informal sector in the overall employment in Serbia in 2009 was about 30%.

Table 6. Women and men's self-employment participation in Serbia for the period 2004-2009

| 2004 | | | | | |
|-------|-----|-----|------|-------|------|
| total | | men | | women | |
| 000 | % | 000 | % | 000 | % |
| 659 | 100 | 496 | 75.2 | 163 | 24.8 |
| 2005 | | | | | |
| total | | men | | women | |
| 000 | % | 000 | % | 000 | % |
| 564 | 100 | 429 | 76 | 135 | 24 |
| 2006 | | | | | |
| total | | men | | women | |

| | | | | | |
|--------------|-----|------------|------|--------------|------|
| 000 | % | 000 | % | 000 | % |
| 530 | 100 | 414 | 78.1 | 116 | 21.9 |
| 2007 | | | | | |
| total | | men | | women | |
| 000 | % | 000 | % | 000 | % |
| 535 | 100 | 410 | 76.6 | 125 | 23.4 |
| 2008 | | | | | |
| total | | men | | women | |
| 000 | % | 000 | % | 000 | % |
| 740 | 100 | 519 | 70.1 | 221 | 28.9 |
| 2009 | | | | | |
| total | | men | | women | |
| 000 | % | 000 | % | 000 | % |
| 627 | 100 | 458 | 73 | 169 | 27 |

Source: Adjusted according to Workforce questionnaires (October, April 2004, 2005, 2006, 2007, 2008, 2009), <http://webrzs.statserb.sr.gov.rs>, accessed on 18th March, 2010

Table 7. Obstacles to SME Development

| Serbia | Region |
|--|--------|
| ✘ Permits And Licenses | |
| ✘ Days to Obtain Operating License | |
| 28.00 | 26.05 |
| ✘ Days to Obtain Construction-related Permit | |
| 133.49 | 79.30 |
| ✘ Days to Obtain Import Licenses | |
| 16.11 | 15.99 |
| ✘ Corruption | |
| % of Firms Expected to Pay Informal Payment to Public Officials (to Get Things Done) | |
| ✘ 17.98 | 17.42 |
| ✘ % of Firms Expected to Give Gifts In Meetings With Tax Officials | |
| 3.62 | 12.90 |
| ✘ % of Firms Expected to Give Gifts to Secure a Government Contract | |
| 15.93 | 25.95 |
| ✘ % of Firms Identifying Corruption as a Major Constraint | |
| 5.62 | 33.53 |
| Source: World Bank Group ,2010 | |

4. CORRUPTION

The quality of business environment is a crucial element for the enterprise development. A favourable business environment is an essential prerequisite for long-term competitiveness and growth of any market economy. It is an environment in which the State encourages and protects competition, creates clear and stable rules,

effectively ensures the compliance of all market participants, minimizing administrative burdens and requirements to entrepreneurs. Small and medium-sized enterprises play a significant and essential role in all countries with a market economy. They are also extraordinarily significant in the development of the economy of Serbia, both in creating new jobs and in regional development.

However, small and medium-sized enterprises are to an increased extent sensitive to the quality of the business environment. In the last few years, number of organizations that measure of quality of the business environment set up various indexes to measure the quality of the business environment. In this paper we would like to make a comparison of the four indices – Corruption Perception Index (CPI), Aggregate Governance Indicators (AGI), Capture Index, Opacity index. The Corruption Perception Index (CPI) measures the perceived level of public-sector corruption in 180 countries and territories around the world. It ranks countries on a zero to ten scale, with the score of zero representing a very high corruption. The higher value of the index, the better.

The analysis of the corruption on the territory of Serbia is conducted by the TNS Medium Gallup Agency, on the sample of 1,015 respondents. Serbia was scanned by the Global Barometre in the years 2005, 2006, 2007 (GCB was not composed for 2008), and 2009; only the 2009 analysis differs from the previous ones. Thus, the 2009 Global Corruption Barometre analysed the following questions: What is the citizens' perception of the corruption spread in Serbia and to what extent does it coincide with the foreign businessmen' and risk analysts' opinions? How do the citizens rate the Government's measures in fighting corruption? How often did the citizens offered to pay bribe during 2008 and in which sectors? What is the average value of the bribe?

This year, Serbia was ranked on the basis of the data from 6 independent analyses of the attitudes of risk analysts and business people.

Table 8. Corruption Perceptions Index (CPI) 2009

| Rank | Country/Territory | CPI 2009 Score | Surveys Used | Confidence Range |
|-----------|------------------------|----------------|--------------|------------------|
| 66 | Croatia | 4.1 | 8 | 3.7 - 4.5 |
| 69 | Montenegro | 3.9 | 5 | 3.5 - 4.4 |
| 71 | Bulgaria | 3.8 | 8 | 3.2 - 4.5 |
| 71 | FYR Macedonia | 3.8 | 6 | 3.4 - 4.2 |
| 71 | Romania | 3.8 | 8 | 3.2 - 4.3 |
| 83 | Serbia | 3.5 | 6 | 3.3 - 3.9 |
| 95 | Albania | 3.2 | 6 | 3.0 - 3.3 |
| 99 | Bosnia and Herzegovina | 3.0 | 7 | 2.6 - 3.4 |

Source: http://www.transparency.org/policy_research/surveys_indices/cpi/2009/cpi_2009_table

The CPI score indicates the perceived level of public-sector corruption in a country/territory. The perceptions Index (CPI) in Serbia in 2009 was 3.5. The confidence range indicates the reliability of the CPI scores and displays it allowing for a margin of error. The score shows an increasing tendency in Serbia in 2009 in comparison to the 3.4 in 2008.

5. CONCLUSIONS

In Serbia, potentials had not been completely used for entrepreneurship development. This unusual possibility is especially related to those women who, despite their high education and high participation in labour market, became entrepreneurs to twice an extent as men. In the field of small and medium-sized enterprises development, the initial framework was given by the adoption of the European Charter on Small and Medium Enterprises by the Western Balkan countries, at the EU - Western Balkan Summit, in Thessaloniki, in 2003. The charter presents the pan-European instrument developed within the Lisbon agenda (long-term development vision of the EU). It resulted into changes in the policy towards this sector in the countries of the Western Balkans which adopted it.

Since then, ten policy guidelines defined in the Charter, have become the main references in the SMEs policy development in the region: education and training for entrepreneurship; more favourable and faster start-up (on-line access for enterprise registration); better legislation and regulations; available capacities (the training institutions providing adequate knowledge and skills, adapted to the needs of small enterprises, including the forms of life-long learning); training and consultations; promotion of on-line access (communication between small enterprises and public administration); promotion of activities of small enterprises on domestic and foreign markets (execution of European and national competitiveness rules); taxes and financial issues; strengthening technological capacities of small enterprises; models of successful e-business activities and efficient support to small businesses; development of stronger and more efficient presentation of small enterprises interests on the professional and national levels.

One part of the proclaimed policy is the establishment of the European Fund for South Eastern Europe which was founded by the national and international donors in December 2005. The Fund is expected to provide additional development financing, especially for the sector of small and micro-enterprises and family businesses, through local financial institutions. For the last four years, the fulfilment of tasks presented in the Charter has shown a considerable progress. The improved skills and technologies along with the government supported export promotion, present the new orientation in government policy, which will help small and medium enterprises in Serbia to become competitive. In spite of changing policy, most of entrepreneurs in Serbia encounter numerous problems such as: long delays in securing permits and licenses (Causes of entrepreneurs' problems in the implementation of regulations do not refer to the quality of legal regulations but rather to the procedure of their application; problem with corrupt government officials; lack of Entrepreneurial skills; in Serbia, micro loans are mostly dealt with by the specialised institutions, such as certain banks and the Development Fund. Especially involved in this activity were certain foreign countries which opened the credit lines that were supposed to, if in part only, compensate for major weak points of the banking system of that time. The picture is not that good still, considering that the number and scope of credit lines is not sufficient and that private entrepreneurs still make most of their investments out of their own funds / in 2008, 82% of the financing from internal sources were those of the SMEs and, out of

the total borrowed funds of the loans, 84% were short-term loans/, which is not good for the pace of economic development and development of entrepreneurial activity.

Finally, it could be concluded that Serbia should overcome a lot of obstacles to economic development such as the following: a) Economic and financial crisis, b) Inflation c) Inefficient bureaucracy, d) Policy instability, e) Corruption, f) The informal economy, and g) Unemployment.

The European Accession presents significant opportunities and challenges to Serbia. In the process of European integration Serbia has to fulfil the following economic criteria: 1) building of functional market economy and 2) capacity to meet the competition pressure at the EU market. That is, the pre-accession phase of integration of Serbia into the European Union requires a more intensive work in the harmonization of the reform processes with Union's policies and strategic goals in various spheres of life. One of the most important fields of future reforms is the implementation of content, principles and goals of European Regional Policy, whose basic purpose is to assist less developed regions as well as to diminish regional disparities. The additional advantage for the participants from the countries of the Western Balkans is the new opportunity to participate in tenders which are announced within different programs for pre-accession assistance in all considered countries.

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ADVANTAGES AND DISADVANTAGES OF E-LEARNING IN COMPARISON TO TRADITIONAL FORMS OF LEARNING

MIRJANA RADOVIĆ-MARKOVIĆ *

ABSTRACT: *Internet education is soon to become the dominant form of education in the world. A lot of effort is being devoted into furthering the work methods and communication among students and professors, aimed at bettering the quality of this kind of studying. Moreover, further development of virtual education in the future will depend on the advance of contemporary technologies and the Internet. Having this in mind, the author of this paper has tried to explore to what extent the previous results have been accomplished, as well as to classify the different modalities of this kind of learning and to ascertain their advantages and disadvantages. A special emphasis has been put on the great utility value for all developed economies, which have made great progress in the development rate and in the spreading of virtual faculties' network. At the end of this research paper, recommendations are given, and further trends of Internet education are established, juxtaposed to the classic forms of studying, based on the latest research results in this field. The author especially emphasizes the fact that faculties with "classrooms without walls" will not fully replace traditional faculties. The value of this paper lies particularly in the fact that it builds not only on the contemporary research findings, but also on the author's personal experience as a professor engaged in this form of student education.*

KEY WORDS: *Internet education; knowledge; syllabus; e-learning; learning models; students; women; USA; Serbia*

JEL CLASSIFICATION: *A22, I20, L26*

1. INTRODUCTION

The education system provided via the Internet is being improved year after year and has been enhancing along with the development and advance of Internet technologies. The advance of e-learning has, to a great extent, been affected by the development and application of wireless Internet.

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Furthermore, the advance of e-learning has been influenced by numerous software programs, such as the Blackboard system, and others. By means of these, as well as other programs, students are enabled to be in constant contact with their virtual professors.

Most often, they have lectures or consultations with their professor live, twice or more times a week, whereas during other days throughout the semester, professors ask students questions, initiate discussions, send additional reference materials, assign topics for seminar papers, etc. Yahoo voice messenger, Skype and similar programs, where the professors' voice may be heard, along with video conferences, are used for lectures.

However, certain faculties do not offer this means of communication among professors and students; instead, they use readymade software packages which are bought by students along with the tuition fee at a certain faculty (for example, Lacrosse University), and he/she may contact a professor in regard to covering the syllabus material, when the need arises. At the end of the semester, the student takes the examination, most commonly in a test form, also performed online and writes an independent final paper defended orally.

Depending on whether the student has chosen a certified or a non-certified program, upon completing the study program, he/she will or will not be awarded a diploma. However, what is most important to many students graduating from virtual faculties is the fact that the diploma most often does not state the type of studies, that is, whether he/she studied online or face to face. The reason for this lies in the fact that these two methods of studying are regarded fully equal and no distinction is being made among them in terms of employment.

In spite of the fact that virtual faculties have been in existence around the world for about ten years, not much research has been conducted showing to what extent the knowledge acquired in this way differs to the traditional knowledge acquisition, in respect to quality, pedagogical methods used, and other matters.

Furthermore, there are still doubts about what is considered e-learning, what the e-learning process is, and what has to be included in order to create a quality online study program. Bearing this in mind, in this paper, we will endeavor to provide an answer to these questions, based on the latest research conducted in the past several years in the world, as well as first-hand experience and personal research.

2. THE SPECIFICS OF E-LEARNING: ADVANTAGES AND DISADVANTAGES IN COMPARISON TO TRADITIONAL LEARNING

As far as e-learning development is concerned, American faculties, which have more than a decade long tradition in this field, have made the biggest advancement. Firstly, this fact may be explained by great investments being made by the American state for online studies development and encouragement of professional education for e-learning activities. About 13 billion US \$ has been allocated from the American budget for this purpose.

However, such big investments into e-learning follow significant research, the purpose of which is to determine the policies of its further development. In accordance

with this, recent research has been conducted in the US, covering a sample of 990 educational institutions, organized by Sloan Consortium.

The aim of this research was to find the answer to several crucial questions, as follows:

1. To what extent does e-learning improve the process of knowledge acquisition, by juxtaposing this educational model with numerous other models?
2. What are the prerequisites in terms of the technical infrastructure and logistics for e-learning?
3. What models of e-learning are in use and which ones give the best results?
4. To what extent is the role of the professor-instructor modified in working with students who opt for this model of education?
5. What are the costs compared to the profit earned at faculties organizing Internet studies?

Based on the results of this research, which is considered one of the most comprehensive and recent of this kind in the world, indicative data for this form of education have been collected. The most significant indicators include:

- It is only 18.7 % of all educational institutions in the USA that do not offer some of their study programs via e-learning.
- About 2.4 % of state educational institutions in the USA have not included this kind of knowledge acquisition in their educational models and have kept to the traditional forms
- Students at more than 90% of virtual faculties are satisfied with this kind of education and knowledge acquisition
- All the faculties that provided an adequate training for the professors, as well as other members of virtual faculties, have managed to adapt to the new method of work in a fairly short time and achieve the desired results
- Educational institutions have made significant savings in terms of human and other resources utilization, and thereby have increased their profits.

For example, at the Wisconsin-Madison University, 172,000 US\$ have been saved, due to savings in professors' time, who previously had to spend much more time in teaching sessions in order to cover for large groups of students; in addition, the number of traditional classrooms has been reduced, and thereby costs necessary for their use.

On the other hand, by designing an online program, many faculties, which previously did not have their business site, managed to save large sums of money for buying their business premises, an example of which is the University of North Carolina in Charlotte. According to their estimate, they managed to make a savings amounting to more than 5 million US\$, by not making investments into business premises.

- Furthermore, the number of students has increased, and a higher study efficiency has been achieved. For example, some American faculties have, owing to varied and high quality programs, succeeded to reach the number of 800,000 students showing further growth tendency.

- E-learning has enabled a higher degree of interactivity among professors and students and easier study material coverage in both undergraduate and graduate students. Furthermore, professors and assistants have developed their students' critical thinking and have given them more freedom in their choice of discussion topics and mutual exchange of ideas and information and knowledge expansion
- Students have shown a great adaptability to this kind of studying. Namely, e-learning has proven to be a very popular and acceptable way of studying, owing to its flexibility, as well as its higher degree of innovativeness in terms of introducing new and contemporary programs in comparison to traditional faculties.

In addition, many faculties that have opted for e-learning have started implementing various software packages supporting online learning, and applying different studying modalities. University of North Texas (UNT), for example, which started offering online and onsite courses in 1995, has significantly improved its activities since their introduction. Namely, by using video conferences they managed to link all the locations in a radius of about 40 miles from the University's headquarters.

Since 1997, this University has developed a Center for providing services to other faculties for establishing and developing online study programs. The Center combines the technological resources with expert consultancy services.

Beside this, this University had about 29,000 students in 2003 attending more than 4,000 online courses. The University of Phoenix also offers e-learning courses for more than 140,000 students earning a clean profit to the amount of about 5 million US\$ annually. This University enrolls 500 students from more than 53 countries worldwide, on a monthly basis.

- Many prestigious world universities have long withstood this kind of education, such as Stanford, yet despite this, even this University has not resisted to this new way of education, and in 2005 it also offered this kind of studying. It has entered the market with the highest quality world programs in e-learning as well, and has thus maintained its decades long standing high rating.
- Research has revealed that both students and administrators believe that the quality of e-learning responds to the traditional teaching methods in terms of quality. According to this research, three quarters of leaders in state faculties and universities trust Internet-based learning quality to be the same or even better than face to face learning. This research has also shown that universities offering online studies have so far had more than 2 million students and that the number has been increasing by 25% on an average every year.
- Compared to traditional ways of studying, study efficiency is increased in this way, as a result of continual learning, so that studies may be completed in a time frame shorter than assigned.

- This kind of studying also leads to a higher quality of professors' work, as they have to observe students' work on a daily basis. Furthermore, at the end of each semester the professor's work is always evaluated by both students and the supervisor, who oversees all posts, comments, questions, and overall activities and the professor's work quality. Unless he/she receives good grades and recommendations, it is not possible for them to carry on their work and sign a new contract with the faculty. This highly motivates professors to invest into their knowledge and their work with students.
- Estimates show that online faculties earn 17.6 billion US\$ annually, which is four times more than traditional faculties.
- Although the popularity of online learning has been on an increase worldwide, many traditional faculties use extensive e-learning, i.e. they use it as a supplement to traditional ways of learning, and few are willing to organize exclusively independent online programs.

This is particularly characteristic of faculties with the highest rankings. They are reluctant to abandon the traditional teaching ways and are not so keen to invest money into new programs and new technologies required to support online programs.

3. WOMEN AND DISTANCE LEARNING

The changes in women's educational and career attainment may have multifaceted characteristics. Women might have increased their enrolment in colleges compared to men, but women may still differ in terms of the types of subjects in which they are enrolled. Distance learning is becoming increasingly attractive for women, as shown by some research studies. Namely, more than 60% of those over 25 years of age and female opt for this type of development and education in the world. The reason for this lies in the fact that this method of learning offers numerous advantages. Among the most prominent benefits, the following may be pointed out:

- the flexibility of the learning process (students study at the time most convenient to them);
- achieving a better balance between personal and other commitments (they may spend more time at home with their families);
- minimizing costs (both time and money savings are made);
- a deeper sense of self-fulfillment (acquiring relevant and useful knowledge and achieving professional goals).

Furthermore, women at a certain age, over the age typical for students (18-22 years of age), consider virtual classrooms to minimize the embarrassment and alienation factor (Capogrossi, 2002). In addition to these advantages provided to women by online studying, it also enables women to choose a certified course, offered by more than 90% of faculties in the world (Radovic- Markovic, 2007).

Accordingly, women are given the opportunity of choosing some of the programs from a broader range, the ones that best suit their professional interests and goals, without the requirement to move geographically. In other words, women are no longer limited to the local educational institutions, but have at their disposal a more comprehensive choice of educational programs offered worldwide.

Also, studying over the Internet enables women permanent development thus reducing the educational gap in comparison to men. At the same time, the social status and life quality of women are being improved. Higher qualifications enable women to contribute more to their community.

In her research, professor Radovic-Markovic tried to measure the role of online learning and how much it is accepted among students and entrepreneurs in Serbia.

She asked respondents the following questions:

- ✓ *What do you think about online learning?*
- ✓ *What do you think about virtual professors?*
- ✓ *What is the interaction between students, students and professors?*
- ✓ *Does new technology isolate students from teachers?*
- ✓ *Do you prefer Online Learning than Face-to-Face? Why yes or why not?*
- ✓ *Does Gender Matter in Online Learning for entrepreneurs?*
- ✓ *What are Online Learning Outcomes vs. Face-to-Face?*

3.1. Methodology and Few key findings

- ❑ Interviews conducted from 54 people: 34 women and 20 men
- ❑ Interviewees were individuals between 18 and 30 years of age
 - The majority (68%) think that online learning is great as an new alternative for learning. It's not for everyone, and obviously every subject.
 - Most respondents (95%) say that computer literacy is the most significant for online studying.
 - Women choose some computing courses when offered in combination with other disciplines that emphasize social issues and computer applications. At the same time they think that online studying and virtual faculties are not so much popular in Serbia because the lack of computer literacy, especially among women.
 - Anytime, anyplace" nature of online learning suiting female students more than male where women are fitting their education in among their regular work was the opinion of 70 % of respondents (female and male together).
 - Men and women respondents (45%) course favors women and older students who seem more motivated, better at communicating online and at scheduling their learning.
 - The half of 54 respondents don't like to have discussions with other students and teachers that they can't see.

- The great amount of interviewees (63%) haven't heard about online courses for entrepreneurs and are not sure how virtual faculties work.
- There are lots of reasons for taking online courses; it was opinion of 30% of respondents. They selected low costs of online learning as the major reason. However, the most significant contribution of online programs particularly to women is the opportunity for working at your own pace and at your time schedule.

Because Serbia doesn't have longer experience with online studies and virtual faculties, there is a lot misunderstanding how do they work and what are they benefits for students as well as professors. If they become more popular in the near future and commonplace, people could much real consider pros and cons of them.

4. PERSPECTIVES OF E-LEARNING

Throughout the year 2006, a research has been conducted (Pulichino, 2006), exploring the future trends in e-learning. A questionnaire was made, covering three groups of subjects:

1. higher education institutions
2. corporations
3. e-learning providers

They were offered a multiple choice form, dealing with several aspects of e-learning and its future use. One of the most important questions referred to the development perspectives of e-learning. To this purpose, subjects were offered the following responses:

- e-learning has a big future and will continue to grow
- e-learning will show decline in its importance in the years to come
- e-learning will not develop in either of the two ways

As many as 75% of the subjects circled the first proposed answer, i.e. that e-learning has a big future and that "it will continue to grow", whereas 16% circled the second answer that "e-learning will show decline in its importance in the years to come". During the year 2006 the same survey was conducted showing that the number of those believing that "e-learning will show decline in its importance in the future" has gone down, while the number of those believing that "e-learning will continue to grow" has remained stable" (75%).

With regard to perspectives of e-learning, subjects were also offered several items to choose from, such as "significant increase", "moderate growth", "same rate of development", "moderate decrease", "significant decrease", and "I don't know". In this case, about 43% of all the subjects answered that there will be a moderate growth of e-learning in the future. Additionally, opportunities for extending the use of e-learning to other domains, where it has not been applied so far, such as employee, customer and business associates training, have been considered.

According to the findings of this questionnaire, we can see that 38 % of all subjects expect "moderate increase in the application of e-learning in other spheres of its application", whereas 20% expect "significant development". The development of e-learning by means of complex media (simulation models, interactive algorithms,

databases, flash and streaming tapes) was also covered in the questionnaire. In this respect as well, subjects expressed their high expectations regarding the application of the latest state-of-the-art media (48%) in the near future.

Further research can continue to explore how and when online instruction is most effective. For instance, additional investigation should look at motivational factors affecting students in taking elective and required courses in traditional, online, and blended approaches to instruction.

4.1. What should be changed for supporting online learning in Serbia?

According to our research it is necessary to obtain conditions as follow:

- Flexible environment to support 21st Century Learning
- Forming an international learning network
- It is necessary to invest monies in developing a cyber infrastructure.
- Building a more inclusive distance learning environment in Serbia involves making technological choices built on flexibility and an ability to respond quickly to changes in constantly evolving technology and informational resources.
- Integrate existing administration, management & learning tools
- Collaboration, involving teachers, mentors, and instructional designers who truly represent hard to reach learners
- Start small, grow fast

5. CONCLUSION

The development of modern technologies, the Internet in particular, on the one hand, and the changes in ways of managing, communication and work organization in enterprises, on the other hand, have in the recent years resulted in changes in the kinds of knowledge and ways for its acquisition.

Having in mind that the Internet has found its way into daily life and use, both in various domains of entertainment and business transactions, the use of the Internet in the education sphere is naturally expected. Namely, in the sphere of education, the Internet offers a global platform for information storage and its presentation in textual, visual, graphical or any other form. It also serves as a means of synchronous and asynchronous communication (Keegan, 2000).

Taking into consideration the above mentioned statements, it is logically expected that online studies will grow in popularity, and that the network of virtual faculties will keep spreading in the future. Further to this, Internet education will soon become the dominant form of education worldwide, which is to reach its peak in a few years.

At the same time, it is to be expected that the methods of work and communication among students and professors will continue to improve and that efforts will be made in increasing the quality of this kind of studying. The extent to which a country will become part of the global educational Internet network, will, to a

great degree, depend on the degree of utilization of new Internet technologies and the level of popularization of this form of education. Namely, many world prestigious faculties offering distance learning studies, engage famous people studying there as the best promoters of this way of studying.

This form of studying still does not have a large number of advocates in Serbia, since, in fact, there are no real Internet studies. In other words, Internet education is even now considered as some form of correspondence studies. In addition, many faculties yet lack the relevant software and accompanying equipment, as well as adequately trained staff, which would use them in their work with students.

Furthermore, the development of Internet studies is still lagging behind in this country, as it is still at the bottom of the ladder among countries in terms of Internet users (about 20%). A factor further aggravating Internet studies development here is the fact that people's beliefs here change very slowly regarding any kind of novelty, especially in education.

In compliance with this, most people cannot imagine a "classroom without walls", nor a completely different way of studying. For a large group of people, it is unimaginable not to go to the faculty and not to attend lectures, as this would make it impossible for them to feel as academic citizens.

The number of those among them, who are skeptical towards the quality of thus acquired education, must also be high. As a result of this, although the Ministry of Education has made provisions for Internet education in the Law of Education, it is still in its infancy and has not received full media promotion.

This is why little is known about this area, which is approached with a certain grain of salt and suspicion. In order to change the existing prejudice, it is necessary to point out to the general public all the advantages of online education, so that both future students and their prospective employers could get the real picture. In this way, in times to come, this country as well could enlist among those who have developed a new and very profitable branch of economy, by using a modern and flexible form of education.

This does not mean that faculties with "classrooms without walls" will fully replace traditional faculties. They will continue to exist and to attract those students who prefer classical learning models, yet they will also have to change in accordance with the needs and requirements of contemporary education. In keeping with this, it may be concluded that virtual faculties and their expansion will have positive consequences and impact on innovating traditional faculties work as well.

It may reasonably be expected that in addition to high profits earned by faculties, students will be the ones to enjoy highest gain as they will get the education to their order and needs, as well as suited to the requirements of their future job positions. This is further corroborated with the fact that more and more employers do not distinguish between those students who have graduated from Internet schools and those who have graduated from other schools in their recruitment decisions.

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WEALTH TAX WITHIN EUROPE IN THE CONTEXT OF A POSSIBLE IMPLEMENTATION IN ROMANIA– THE EXISTING WEALTH TAX AND ITS DECLINE IN EUROPE

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ABSTRACT: *The purpose of this paper is to focus our attention on the conceptual basis upon which the wealth tax system may be implemented in Romania taking into consideration former and actual presence of wealth tax within Europe. The idea of increasing the taxable basis based on imposing the wealth constitutes one of the most important debate topics on the agenda of the Romanian Parliament and Government and also within specialists' theoretical approaches. The vast range of such approaches and further solutions is to be analysed in the global context of direct taxation in Europe and worldwide and particularly relevant for the complexity of the problem is the evolution of wealth tax during the last decades and also the very important context of moving corporate main offices in countries with more advantageous systems of taxation.*

KEY WORDS: *wealth tax; property taxes; direct taxation; fiscal solutions; economic downturn*

JEL CLASSIFICATION: *H24*

1. INTRODUCTION

The starting point should be the assertion that “fiscal policy decisions reflect the related tax system and ensure its functionality in order to obtain the aimed economic effects” (Dobrota & Chirculescu, p.207-213). In the specific condition of worldwide economic downturn, Romania has also faced new challenges in finding various solutions and designing fiscal and budgetary scenarios in respect of fiscal policy and budget policy that may lead to limit the effects of economic and financial crisis.

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Some economists agree that most taxes distort economic behaviour, which leads to reduced economic efficiency and hence reduced economic output. Under these circumstances the analysis in respect of wealth tax reveals that it has a negative impact in economic growth in a number of ways. But first of all it is important to define the concept of wealth, generally defined as a direct tax imposed on the wealth possessed by individuals, but usually finding various meanings and understandings in each country taking into consideration the different tax policy and fiscal environment.

2. WEALTH TAX CONCEPT IN THE ECONOMIC LITERATURE

According with the finance and business dictionary wealth tax is defined as: “tax on accumulated wealth a tax on somebody's accumulated wealth, as opposed to their income” (available on <http://www.qfinance.com/dictionary/wealth-tax>). Another definition positioned the wealth tax as a tax which is levied on the wealth held by a person or entity and being mostly levied on net worth, i.e. the amount of someone's wealth minus his or her debts. Several nations all around the world use the wealth tax to raise funds for the government, using various types of wealth taxes and taxable basis.

A wealth tax is generally conceived of as a levy based on the aggregate value of all household holdings actually accumulated as purchasing power stock, cash, bank deposits, money funds, and savings in insurance and pension plans, investment in real estate and unincorporated businesses, and corporate stock, financial securities and personal trusts. Net wealth tax can be distinguished from property taxes due to the fact that property taxes are imposed on the gross amount of property, without any reduction for debts and usually are imposed only on certain kinds of property, while net wealth tax is a more or less comprehensive tax on net worth, i.e. the value of property reduced by debt (Thuronyi, 2003, p.329).

What it is very important to first define is that the wealth tax is a tax not on income but on assets, i.e. that the taxable basis will vary from country to country according with the fiscal policy and taxable revenue based-interest, as follows: taxes on premises, houses, real estate properties, cars, art collections, jewellery, stocks and bonds, bank accounts, pensions, investments, companies owned in whole or in part and the taxable persons may be individuals or corporate persons (the example of India).

Another characteristic revealed by the economic studies has enhanced on one hand the fact that most of the governments levying this net worth tax are advanced welfare states with a relatively high government spending to GDP rate. (France, India) and on the other hand the long-term trend in wealth-tax receipts as a share of total taxes and of GDP has generally been downward or constant in many of these countries (Hansson, 2002).

Most of the countries apply in the field of direct taxation only the property taxes on the market value of real estate assessed almost by the local tax authorities, because they rely upon the fact that real estate cannot be moved out of another jurisdiction, whereas income, paper wealth, etc. are more easily moved to other localities where they may be taxed less or not at all. In comparison with wealth tax apply to other assets than real estate properties, it was in many areas demonstrated that

real estate tax revenues can be a very effective way to raise large sums of money, as people who hold valuable real estate investments can owe substantial property taxes annually. In regions where overall real estate values are high, property tax revenues provide a great deal of revenue to local governments.

3. EXISTING WEALTH TAXES WITHIN EUROPE

France is the only EU country to impose a standard wealth tax model since 1981. In the continent of Europe, Norway and Lichtenstein have versions of it, Switzerland levies at cantonal level at variable, mostly low levels, Hungary start implementing it since 1st January 2010 and Spain wants to reintroduce it since mid 2010. Several countries have abolished their versions of the tax in recent years, including Austria (1994), Denmark, Germany (1997), The Netherlands (2001), Iceland (2006), Finland (2006), Sweden (2007) and Greece (2009). Others countries, including Britain and Belgium, have never had such a tax, although the similar concept was implemented through the Window Tax of 1696 (tax introduced under the Act of Making Good the Deficiency of the Clipped Money in 1696 under King William III, designed to impose the prosperity of the taxpayers).

Italy offers another pattern of possible wealth tax philosophy implementation, such as a limited temporary application from 1992 from the next 3 years. Officially wealth tax was abolished a few years later (1998) (Heckly's, 2004, pp. 39-50).

In case of Spain the government abolished in 2008 a wealth tax that charged 0.2 to 2.5 percent on assets above 600,000 Euros, amounted a general impact in the annual state revenues to 2 billion Euros (around 0.2 percent of GDP), but Spain's Socialist government will impose a new tax on the wealthy mid 2010 broadening its deficit-cutting campaign to 3% of the GDP in 2013 from 11.2% in 2009, after unions threatened a general strike to protest against austerity measures. This new tax will affect (according with the Spain Prime Minister Luis Rodriguez Zapatero debates in the Parliament) only people with "high-economic capacity" and "it won't affect general taxes and it won't affect 99.9% of the Spanish population".

France. Individuals resident in France and non-residents with assets in France are taxed on the basis of their assets in excess of 790.000 euro (Starting with 2009) as at 1 January each year applying the wealth tax known as ISF (*Impot de Solidarité sur la Fortune*). This direct was one of the Socialist Party's 1981 electoral program's measures, titled 110 Propositions for France and has represented in 2006 approx. 1,28% from the general state budget revenues, i.e. 3,68 billion Euro collected from the taxpayer.

Residents are liable to wealth tax on their net worldwide assets including all properties, subject to the provisions of tax treaties, based on the wealth of the household, including spouse and infant children. Taxable assets include: real estate, cars, other vehicles, debts due to you, furniture (except antiques), horses, jewellery, shares, bonds and the redemption value of any life assurance, but there are also exempt assets, such as: those necessary to a business conducted by its owner or their spouse; pictures, tapestries, statues, sculptures, lithographs, antiques over 100 years old, funds

in a pension fund constituted in respect of an employment or business, subject to certain conditions and also portfolio investments and cash held by non-residents.

A new law was enacted on 6 August 2008 exempting the non-French assets of anyone arriving in France after that date for five years, provided that they were not resident in France at any point during the five years prior to their arrival in France.

Table 1. French Wealth Tax Bands 2010

| Fraction Taxable | Rate of Tax (%) |
|--------------------------|-----------------|
| Up to €790,000 | 0 |
| €790,000 - €1,290,000 | 0.55 |
| €1,290,000 - €2,530,000 | 0.75 |
| €2,530,000 - €3,980,000 | 1.00 |
| €3,980,000 - €7,600,000 | 1.30 |
| €7,600,000 - €16,540,000 | 1.65 |
| Over €16,540,000 | 1.80 |

Source: <http://www.french-property.com/guides/france/finance-taxation/taxation/wealth-tax/rate/>

Norway. The tax quota is up to 0.7% (municipal) and 0.4% (national) and represents a percentage of 1.1% levied on net assets exceeding Nkr. 470,000.

Liechtenstein. Net worth tax is charged on the net assets of the taxpayer: assets, securities, cash, deposits and valuables at a maximum rate of 0.9%. Liabilities, such as mortgages and loans are deducted and assets and liabilities are taken in at fair market value.

Switzerland. Individuals are subject to an annual wealth tax in all cantons (political regions) and communities and no wealth tax is levied at federal level. Wealth tax is levied on the entire wealth of a tax liable individual i.e., all movable and immovable assets, rights and claims of monetary value, securities, participations, etc. but household effects and articles of personal use are exempted. Wealth tax should not decrease the net wealth of an individual, but indirectly tax the income deriving from this wealth. Wealth tax can thus be understood as a tax amending income tax.

Tax resident individuals are subject to wealth tax on their world wide assets. Non-resident individuals are liable to wealth tax only for assets closely linked to Switzerland (i.e., for real estate and permanent establishments located in Switzerland, but not for securities deposited on a Swiss bank account or participations held in a Swiss company). Even though the tax liability of non-residents is reduced on assets linked to Switzerland, the progressive tax rate is always determined on the basis of an individual's worldwide wealth. The tax payable varies between cantons to cantons. Subject to slightly differing cantonal regulations the amount of gross assets is reduced by the underlying debt so that only an individual's net wealth is taxed.

In general, all assets are evaluated at their fair market value. Some assets are, however, subject to specific valuation rules (e.g., participations in stock quoted companies are usually evaluated at their stock price at the end of the tax period whereas for non quoted securities estimated values determined according to published valuation regulations apply). The annual wealth tax stands at approximately 1.5% in many cases. In most cantons tax rates follow a progressive scale. The base rate is determined in the cantonal tax law. The amount of wealth tax is computed by multiplying the individual's net wealth with this base rate and subsequently multiplying the result with the cantonal and communal tax multipliers as published on a yearly basis.

Luxembourg. The net worth tax in Luxembourg is known as the Fortune Tax and is levied on resident and non-resident corporate entities. For businesses, the two main components of Net Worth are Real Estate Unitary Value and Business Net Worth which is an adjusted version of net worth as calculated for the Corporate Income Tax. The rate of tax is 0.5%. However, for most companies the amount of Fortune Tax payable is offsettable against Corporate Income Tax, subject to some balance sheet reserve requirements.

Hungary. Wealth tax has been introduced in Hungary as of January 1, 2010 having as main target the governmental needs to meet budget deficit targets attached to the country's International Monetary Fund-led bailout. The taxable basis was established as follows: real estate, watercraft, aircraft and high-powered automobiles. Due to the fact that the law fails to provide clear guidelines to determine the property's market value as the taxable basis the regulation in case of wealth tax for high-value real estate have been struck down by the Constitutional Court and only a tax on high-value yachts, planes and helicopters and cars has been finally confirmed. Wealth tax advance should be paid by May 20, 2010 and September 30, 2010 and the wealth tax return deadline is the personal income tax return submission deadline of the related tax year (i.e. the 2010 wealth tax should be reported by May 20, 2010, as an attachment to the personal income tax return).

4. SOME REASONS OF THE WEALTH TAX DECLINE IN EUROPE

One of the most recent examples of wealth tax being abolished is that of The Netherlands, under the 2001 General Tax Reform. However, while the wealth tax was removed, it was just as soon replaced by a 30% tax on theoretical revenue on capital, assumed to equal 4% of net assets (excluding main place of residence and capital invested in personal enterprise). As a result, wealth tax there stands at 1.2%; at the same time, actual revenue on capital (interests and dividends) is fully exempt. That being said, it is admittedly too early to assess the impact of the said reform.

In other countries, such as Finland and Norway, where wealth tax still applies, it has been criticised, though it seems unlikely that it will be done away with in the near future. To wit, Norway's Skauge Committee recommended, in a report on tax reform handed in to the government in February 2003 that the tax be cut in half and, in the longer term, done away with entirely. However, the prospect of such a measure stirred negative reactions in public opinion.

France, too, is familiar with beating around the wealth tax bush: removed by the Chirac government in 1986, the tax was re-established by the Rocard government in 1989, under a new name – perhaps drawing on the solidarity-based capital tax, which had been temporarily instituted by the 15 August 1945 Order.

The scientific literature has surprised some reasons why wealth tax was abolished in some European countries, as follows:

- *It contributes to capital drain.* This is the factor that most influenced the Irish and Dutch governments, when they decided to do away with the tax. As they had realised, it had a harmful effect on the country's economic activity, causing productive capital to leave and discouraging foreign investors from coming in. In contrast, the desire to prevent capital drain was less a factor for Austria. This could, admittedly, be due to the country's banking and tax system, which is attractive to investors. The same is true of Germany, where capital drain played a secondary part, the decisive factor being the Constitutional Court's decision, and the cost-return ratio observed.

- *It entails high management costs yet low returns.* In this age of fiscal competition, governments and authorities also need to be competitive and have shown a clear preference for modern taxes with high yield, as in VAT or France's CSG. The complexity of wealth tax is such that a large number of civil servants are required, to perform the checks, when it rarely yields more than 1% of total tax income in most countries. It is that complexity which, as early as 1976, made the Germany's Union Fiscal Civil Servants demands the abolition of wealth tax. In Austria too, the complexity and lack of clarity around the tax played a decisive part in bringing it down. In The Netherlands, a comparative study listed the various taxes by management cost (cost of tax collection for the government and costs borne by taxpayers to come in compliance with tax legislation), compared to the revenue brought in: the aggregated cost (those borne by taxpayers, on the one hand, and by the government, on the other) amounted to 26.4% of the tax's yield, as compared to 4.8% with income tax.

- *It distorts resource allocation.* In Germany and Austria alike, the wealth tax was levied both on corporate capital and individual wealth. As a result, companies and shareholders were hit with double taxation. While it would, admittedly, have been possible to remedy that by limiting taxation to individual wealth, this would have brought about a degree of fiscal discrimination against individual enterprises, which would have remained subject to tax. The tax system would thus not have remained neutral as regards corporate taxation. It is true that the German tax authorities might also have exonerated working equipment, as France had done, but given the tax's high collection cost, they did not wish to reduce its yield further.

Imbalances can also arise in how savings are spread between the various types of assets, given that some of them are exempt from tax. In Finland, for instance, checking accounts, savings accounts and certain types of bonds (in particular those where an automatic deduction is taken on interests, at the source) are all tax exempt. Moreover, since real estate there is under-valued, the Finnish wealth tax is by no means neutral regarding how various investments should be carried out. In Germany, such distortion is even more noticeable, hence the Constitutional Court's decision. The various types of assets were not given equal treatment. Real estate was considerably under-valued, as the official taxation bases used were, for the most part, those of 1964.

For instance, it was estimated that the land's official value was around 50% that of market value, the value of farming and forestry properties only 10% and that of unlisted corporate shares only 35%. In contrast, listed securities and financial assets cannot be undervalued. Thus, while Germany's wealth tax creates economic distortions, it is also inequitable, and it is that aspect, above all, that the Constitutional Court sought to condemn.

- *Wealth tax is not as equitable as it appears.* This is probably the most serious criticism under which the tax can fall, as it was precisely in order to ensure equity that it was instituted. To witness, in France, the fact that the solidarity wealth tax was instituted at approximately the same time as the subsidised minimum mainstreaming income (RMI) is highly symbolic: the total yield from the former was approximately equal to the total cost of RMI, as though the wealthiest people were coming out to help the least privileged populations. However, it has to be recognised that, in most industrialised countries, disparities in income and estate have considerably increased over the last twenty years, despite the existence of wealth tax. Inheritance tax has probably been more effective in re-distributing resources than annual wealth tax, in that the latter would need to be confiscatory in order to bring about any real redistribution. This is exactly what the Constitutional Court in Karlsruhe stated when it criticised German wealth tax: that the sum of wealth tax and income tax should not be greater than half of a taxpayer's income. The tax thus gives rise to a dilemma: either it is effective in fighting inequalities, or it is confiscatory – and it is for that reason that the Germans chose to eliminate it.

5. CONCLUSIONS

Despite recent debates in the political arenas of a number of European countries in the wide context of the economic downturn, there has been little empirical study of the relationship between the wealth tax and economic performance. In Romania there was a recent legislative initiative that sets the proposal to levy an annual quota of 0.5% affecting people net wealth over 500,000 euros, considering the family's wealth, including spouse and their underage children.

The taxable basis should have been real estate goods and properties, financial rights and values belonging to the individual, his/her spouse and their children (underage) in the case they administrate the individual's goods. The law project also sees that resident individuals should pay an annual duty for net patrimony owned in Romania and overseas, while non-residents pay for the net patrimony owned in Romania, on condition that the international convention addressing double taxation is respected.

Using the information presented above our assumption is that in case of Romania the advantages of levy the wealth tax over the fiscal benefits (increasing the state revenues in the near future and also in a mid and long perspective) are not material. The arguments in favor of wealth tax are less than the arguments against the wealth tax and therefore the Romanian government should take into consideration these assumptions.

Even if the wealth tax would generate revenues, which could be used to decrease the national debt, on the other hand the same wealth tax would generally incur high management costs, for both the taxpayer and the administrating authorities, compared to other taxes.

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GENERAL GOVERNMENT REVENUE IN CERTAIN EUROPEAN UNION COUNTRIES

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ABSTRACT: *The paper presents a comparative analysis of the amount and the structure of general government revenue in eight countries of the European Union for 2000-2008. The analysis aims at emphasizing both the individual and the similar features of fiscal policies within European Union countries. On the grounds of this information, the paper wishes to identify new solutions for a faster integration of Romanian budgetary policies in the framework established by European treaties.*

KEY WORDS: *general government revenue; national tax structure; EU*

JEL CLASSIFICATION: *E62, H20*

In the analysis of budgetary policies of various countries, studying the structure of government revenues provides crucial information. The results of national fiscal policies, consisting in the size of the revenue collected by the central government consolidated budget, are another tool within reach of national governments to ensure a balanced budgetary policy in order to maintain the lowest budget deficits and public debt, therefore a decent level of national welfare.

The concept of national sovereignty is currently experiencing a new approach however, due to the integration of tax policies of the member countries of the European Union in the context of general policies and agreements of the European Union to achieve socio-economic prosperity and security in Europe. Although tax policy is vital for each country, its effects reaching beyond national borders easily influence the budgetary policies of neighbouring countries, members or non-members of the European Union.

That is why the issue of tax harmonization in the EU has arisen, an already accepted issue, even though partially, especially when it comes to indirect taxes

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(where, as widely known, the European customs tariff was generalized, intra-community custom duties were abolished, VAT and the main types of excise duties were harmonized); further solutions are needed when it comes to direct taxes, still under each country's national sovereignty.

Analyzing the ratio of budget revenue (consolidated revenue of governments) in the GDP of EU countries, we see that the EU wide average has fallen since 2000 from 45.8% (EU 15) to 44.5%, especially after 2004 when 10 new member countries joined, and the percentage dropped sharply to 44%. The year 2004 recorded the lowest level in all countries. Over the next two years the budget revenue increased by almost one percent of the community GDP (44.9% by 2007), and then in the context of the new world economic crisis, it began to drop again in 2008, which could be easily forecasted due to the financial problems which have affected all EU member countries regardless of their economic power.

In the Euro area the situation is better, government revenues holding a larger GDP share (from 46.3% in 2000) due to the careful monitoring of fiscal policies. A drop in the share of revenue was also present here by almost one point in 2008, mostly due to monetary policies of stabilizing the euro. In the context of the GDP dropping, the fall of government revenues had a higher rhythm in highly industrialized countries in Europe, due to disruption of businesses and bankruptcy of many pan-European enterprises.

Particular values of each country, and therefore European averages, were calculated based on tables drawn up by the European Institute of Statistics.⁷ We must bear in mind that they are compiled on the basis of quarterly data provided by national reports, as defined by the European System of National Accounts (ESA 95). Although the information provided should be consistent and comparable, there may be differences between countries in data processing, due to different approaches of national statistical systems. In recent years the data provided have become more homogeneous, with the introduction of ESA95 standards in all countries.

In 2000-2008 the European Union countries have had different evolutions of government revenues. There are many reasons why government tax revenue varies from year to year as a percentage of GDP. It would take a more in-depth analysis than the one presented here in order to explain the causes of such variations in particular countries. However, in general, the main reasons are changes in economic activity (affecting levels of employment, sales of goods and services, etc.) and in tax legislation (affecting tax rates, thresholds, exemptions, etc.). It should be noted that, even when using accrual methods of recording, the effects of changes in legislation or economic activity tend to have a delayed impact on tax revenue.

Germany has a government revenue share of GDP above the European average, due to its high taxation. The German evolution of revenue contribution to GDP has followed a similar trend with the whole union, the average decreasing over the past eight years from 46.4% in 2000 to 43.8% in 2008, there was a curve with a minimum value in 2004 (43.3%) , followed by a period of much weaker growth. This was due to policies of fiscal relaxation initiated after 2001 in order to prevent migration of capital to countries with lower taxation. The past two years have been subject to the strong impact of the economic crisis.

Table 1. Share of total public revenue as a percentage of GDP

| Country | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|----------------|------|------|------|------|------|------|------|------|------|
| EU (27) | 45,4 | 44,8 | 44,2 | 44,2 | 44,0 | 44,4 | 44,9 | 44,9 | 44,5 |
| EU (25) | 45,5 | 44,9 | 44,2 | 44,2 | 44,1 | 44,5 | 45,0 | | |
| EU (15) | 45,8 | 45,1 | 44,5 | 44,5 | | | | | |
| Euro Area | 46,3 | 45,5 | 45,1 | 45,0 | 44,6 | 44,9 | 45,4 | 45,7 | |
| Euro Area (16) | 46,2 | 45,4 | 45,0 | 45,0 | 44,6 | 44,8 | 45,3 | 45,4 | 44,7 |
| Euro Area (15) | 46,2 | 45,4 | 45,0 | 45,0 | 44,6 | 44,8 | 45,4 | 45,5 | 44,8 |
| Germany | 46,4 | 44,7 | 44,4 | 44,5 | 43,3 | 43,5 | 43,8 | 44,0 | 43,8 |
| Spain | 38,1 | 38,0 | 38,4 | 38,2 | 38,5 | 39,4 | 40,5 | 41,0 | 36,6 |
| France | 50,2 | 50,0 | 49,5 | 49,2 | 49,6 | 50,4 | 50,4 | 49,6 | 49,3 |
| Great Britain | 40,4 | 40,7 | 39,1 | 38,8 | 39,6 | 40,8 | 41,6 | 41,4 | 42,3 |
| Hungary | 43,6 | 43,2 | 42,4 | 42,0 | 42,6 | 42,3 | 42,7 | 44,8 | 46,5 |
| Poland | 38,1 | 38,6 | 39,2 | 38,4 | 36,9 | 39,1 | 39,9 | 40,2 | 39,2 |
| Slovenia | 43,0 | 43,6 | 43,9 | 43,7 | 43,6 | 43,8 | 43,3 | 42,9 | 42,7 |
| Romania | 33,8 | 32,5 | 33,0 | 32,0 | 32,3 | 32,3 | 33,1 | 34,0 | 33,1 |

| | | | | | | | | | |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Max EU (27) | 59,30 | 57,20 | 55,30 | 55,80 | 56,40 | 57,80 | 56,60 | 56,30 | 55,70 |
| Min EU (27) | 33,80 | 32,50 | 32,90 | 31,90 | 31,80 | 32,30 | 33,10 | 32,50 | 32,70 |
| Std. Deviation (%) | 16,16 | 16,22 | 15,51 | 15,64 | 15,50 | 15,44 | 14,47 | 14,10 | 14,83 |
| Skewness | 0,78 | 0,57 | 0,56 | 0,54 | 0,61 | 0,76 | 0,66 | 0,39 | 0,31 |
| Kurtosis | -0,12 | -0,46 | -0,52 | -0,39 | -0,13 | 0,31 | 0,20 | -0,08 | -0,46 |

Source: adaptation from Government Finance Statistics, Summary tables

France has been throughout the whole period above the average of the European Union or the Euro area. It has followed the general trend as well, starting from a 50.2% share of GDP. Then government revenues formed a curve with a first minimum corresponding to the year 2003 when the lowest recorded value was 49.2% (well above the European average). Then the values started to increase, managing to exceed the baseline in 2005 and 2006 (50.4% of GDP), while during the last two years under research there was a drastic fall to the second minimum of 49.3% of GDP, also influenced by the existing economic crisis.

Great Britain has followed a reverse trend, as a curve oscillating around 40% of GDP. The low contribution of government revenues compared to the EU average was due to Britain's low volume of compulsory social security contributions to budget revenues, as this country has a more developed private social security system. Overall government revenues in GDP increased from 40.4% in 2000 to 42.3% in 2008, despite the existing economic recession.

Spain, whose government revenues are about 89% of the EU average, has also recorded an oscillating trend, increasing slightly from 38.1% in 2000 to a maximum of 41.0% in 2007, then suffering a dramatic drop by 36.6% of GDP in 2008, due to the strong economic recession that swept the country.

Among the new countries which joined the EU after 2004, **Hungary** seems to have had a satisfactory government revenue share of GDP from 46.3% in 2000 and followed a trend similar to the European average to which it is pretty close. The year 2003 recorded the lowest value (42% of GDP), then following a significant increase to

values exceeding the EU average (46.5% in 2008). For countries with emerging economies however, there are other causes of this high government revenue share of GDP. Here it is mainly about the economic development of former communist countries, which enabled an increase of government revenue on the grounds of a pretty high taxation, and Hungary came second in 2007 under the EU average, right after Germany. This growth was however accompanied by an even faster growth rate of budgetary expenditure.

Hungary's fiscal policy aimed at ensuring economic neutrality, promoting privatization and encouraging savings and investment. Hungary's tax burden is relatively high; we can say the highest among the former communist countries, being close to the EU15 average.

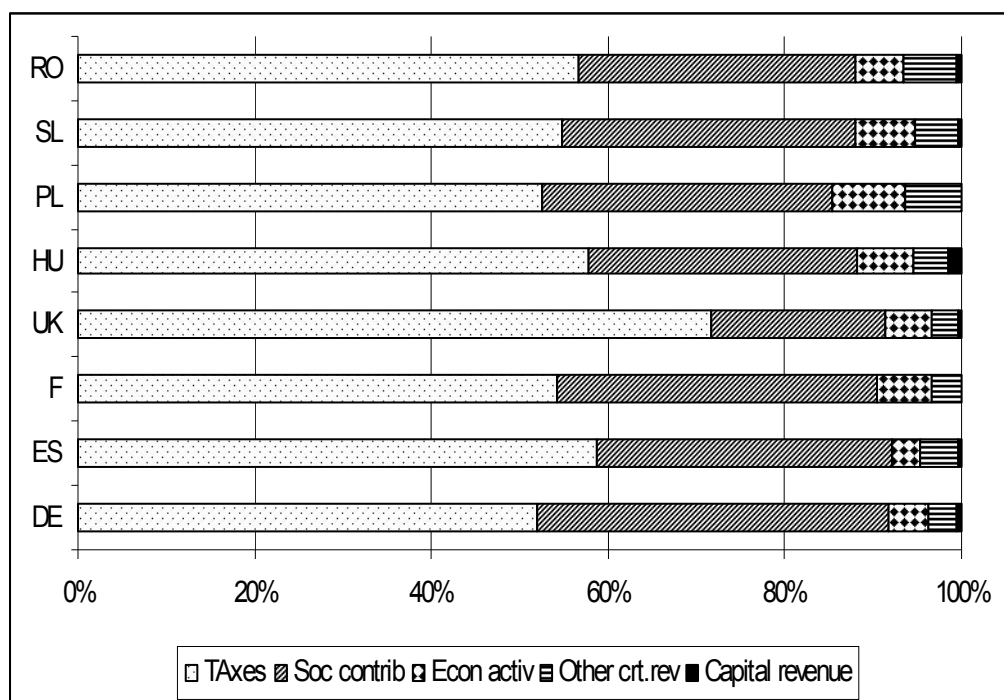
Slovenia has maintained a relatively constant level of government revenue contributions to GDP, around 43%, close to European averages. Despite being a small country, Slovenia has maintained economic and fiscal stability, constantly reducing the budget deficit close to balance. Among the latest countries to join the European Union, Slovenia was the first one who was able to meet the accession criteria to the European Economic and Monetary Union, joining the union in 2007.

Poland has a relatively low government revenue share of GDP, although more than Spain, already a member country of the Euro area. Starting from a level of 38.1% of GDP, government revenue in Poland has followed a relatively ascending trend to 40.2% of GDP in 2007, followed by a drop to 39.2% in 2008. This country's government revenue has also been subject to the significant influence of economic development. In 2002-2003 there was a dramatic slump in economic growth, accompanied by rising unemployment, leading to a drop of government revenue to 36.9% in 2004. Due to the reform policies implemented after the accession to the EU, Poland's economic situation began to improve, a fact proven by an increase of government revenue to a maximum of 40.2% in 2007.

The analysis of the average structure of government revenue and its major components (including mandatory social security contributions and revenue from government economic activities) during 2000-2008 in figure 1 reveals that: the largest share in total government revenue is held by *revenues from taxes and duties*, which exceed 50% of the total government revenue. Great Britain holds the first position, with a 71.68% share of revenues from taxes and dues in total government revenue, exceeding by far European averages (around 60%).

Spain has a share of taxes and dues close to the European average (58.64% of total revenue), followed by Hungary (57.83%) and Romania with 56.59%. Lower shares of revenues from taxes and dues are found in Poland (52.6%), where besides social security contributions, revenues from economic activities hold a significant share (8% of total revenue), as well as other current revenues (6% of total revenues).

Germany holds the lowest share of revenues from taxes and dues of all countries under study, 52.04% of total government revenue, not because of low taxation or a poor representation of such revenues within taxation structure (Germany being reputed as a high taxation country throughout the European Union), but because of the higher share of revenues from social security contributions.



Source: adaptation from Government finance statistics, Summary tables

Figure 1. Average structure of government revenue as a share of total revenue between 2000/2008

In what concerns *direct taxes*, their average in 2000-2008 varies between 18.58% in Poland and 39.64% in Great Britain, where they represent the most important source of government revenue. In economically developed countries indirect taxes hold shares around 25%, while in former communist countries their share is lower because of the economic instability they experienced in the period under study. Spain holds quite a significant share of indirect taxes in total government revenue (28%), larger than Germany's (24.5%) or France's (23%). During the years of economic growth, Hungary held a consistent share of indirect taxes in total government revenue, with an average of 22.1%, close to the one in highly developed countries. Unfortunately, Poland and Romania hold very low shares of indirect taxes in total government revenues (18%).

Revenues from social security contributions come second as importance within government revenues, reaching 30% averages throughout the entire European Union. Germany holds the first place when it comes to this type of revenues, as a result of high shares of mandatory social security contributions (39.78% of total revenues), which must provide the necessary resources in order to finance a social security system which is still very generous.

The second place is held by France (36.18% of total revenue), also having a very generous social security system. Spain and Slovenia hold shares of social security

contributions still above the average of the European Union (33.3% of total revenue). Poland comes next with 32.73%, Romania with 31.35%, and Hungary with a 30.37% share of total government revenue. An exception to the series is Great Britain where, as known, public social security contributions are the lowest in all the EU (only 19.66% - thus lowering the European average), because of the poor representation of public mandatory social securities within the country's taxation landscape, while Great Britain also has the lowest expenditure on social security, which makes it possible to achieve budgetary sustainability on the long run.

In former communist countries, having a poorly developed economy, social security contributions make up for the low share of other common government revenues, representing (given that employment is normal) an important addition to the other government revenues.

In these countries the revenues from social security contributions hold a share between 30-33% due to other reasons besides covering the actual expenditure on social security. Here social security contributions are compensating for the absence of other reliable and consistent budget revenues, they represent (as far as the employment of the population is a normal one) a secure and constant source of revenue in addition to income taxes. However, these countries have been subject to continuous battles between employers and governments to reduce social security contributions, which raise the cost of paid work, and thus the economic development of these emerging market economies was held back.

Many governments of these countries have had to raise again the rates of social security contributions after a period of reduction in order to complete the budget revenues which were beginning to drop once again. The phenomenon was accentuated during the process of restructuring former communist enterprises (in the mid 90s), when rising unemployment and reduced social security contributions revenue caused major imbalances to the government social security budgets. In order to cover the costs of social security there had to be made significant transfers from the central government budgets to social security budgets. Then, along with economic stabilization, the rates of mandatory social security were gradually lowered to stimulate employment and economic growth

The other types of government revenue hold low shares, varying in the countries under study around 6% for *revenues from government economic activities*, 4.4% for *other current revenues* and only 0.5% for *capital revenues*.

In terms of the convergence process of European policies, the statistical analysis of data for the entire EU, presented in the second part of the table, reveals that the harmonization phenomenon is also present in the field of fiscal policy. The results derive from the statistic calculation of time series representing the share of total government revenue in GDP for all 27 member countries of the EU. During the last eight years, the maximum share of total fiscal revenues in GDP has slightly decreased due to tax reduction policies in highly developed countries as a measure taken in order to stop the migration of capital to low tax countries. The maximum has thus decreased from 60% to 55.7% of GDP, also under the influence of the economic crisis of the last three years.

The minimum values have followed an oscillating trend due to the radical reform processes in former communist countries especially, which accessed the EU in the middle of the analyzed period. The standard deviation has been around 15 %, with a decrease towards the end of the period, which indicates a low degree of data dispersion around the average value, bringing yet another argument in favour of the harmonization process of financial policies in member states with a tendency towards an average share of tax revenues in GDP. This statement is also supported by the results describing frequency distribution. The value close to zero of the Skewness coefficient indicates a symmetrical distribution of values around the average, while its positive value indicates the fact that most values are below average, which could be explained by the large number of countries with small economies (and a lower share of tax revenues) within the EU. In terms of distribution, the Kurtosis coefficient, with mild negative values, indicates a flattened distribution, the values having a relatively normal dispersion.

In conclusion, all EU members apply fiscal policies under the European Fiscal Stability and Growth Pact regulation that will lead to the harmonisation of all fiscal policies and attaining a relative equal fiscal pressure.

Romania finds itself unfortunately at a 70% level of the European Union government revenue average, with a 33.8% share of GDP in 2000, the lowest of the entire series of countries under study. Although at the beginning of the period under study Romania had a relatively high taxation, this did not lead to increasing government revenue. The malfunction of an economy supporting bankrupt state enterprises, which not only wouldn't contribute to government revenue, but were having arrears that, in most cases, couldn't be cashed, the wide spreading of an underground economy also not contributing to government revenue, were the main causes leading to a low level of government revenue.

The economic and financial policy of the government in that period consisted in the closure or privatization of state enterprises, strengthening fiscal control and relaxing taxation in order to attract foreign investment in Romania. The budgetary effects of this policy merely began to appear in 2004, when there was a slight increase in the government revenue share of GDP (33%), reaching a peak in 2007 (34%), as a consequence of the strong economic development in 2006-2007. Recession emerged in our country as well, leading in 2008 to the lowering of the government revenue ratio to the value before 2000 (33.1%).

A prerequisite for ensuring the sustainability of public finance in Romania and converging with European economies is to increase the share of government revenue by approximately 10% of GDP, which implies a sustained economic growth and an improved tax revenue collection (reducing tax evasion). Although lowering the tax rate in Romania was meant to stimulate economic development and, according to the tax multiplier, GDP growth and automatically an increase in tax collections, the global economic crisis suddenly stopped the action of these mechanisms. A short term solution in order to increase government public revenue might be increasing the tax base or the rates (from July 2010 VAT increased from 19% to 24 %) of certain taxes, as has been done in other EU countries.

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AN APPLICATION OF SPATIAL - PANEL ANALYSIS - PROVINCIAL ECONOMIC GROWTH AND LOGISTICS IN CHINA

YANG SHAO *

ABSTRACT: *This paper introduces the spatial panel autocorrelation model, utilizes C-D production functions, constructs the spatial econometric model and finally studies the spatial correlativity between provincial economic growth and logistics. By using the spatial package of Matlab software, it verifies the possibility if there is the remarkable autocorrelation of the Chinese provincial economic growth and local logistics. On the base of building the spatial panel model, we research the spatial quantitative autocorrelation of the Chinese provincial economic growth and local logistics.*

KEY WORDS: *economic growth; logistics; spatial panel autocorrelation*

JEL CLASSIFICATION: *C10, O40*

Modern economic growth depends strongly on logistics. Logistics has become one of the most important factors to promote economic growth, adjust industrial layout and drive the evolution of economic spatial structure. Previous studies of the relationship between economic growth and logistics, limited in time series, which ignored the differences between locations. This paper introduces the spatial factor into a unified analytical framework, considers not only the spatial heterogeneity but also spatial correlation between economic growth and logistics. This paper uses individual fixed-effect model as the basic panel-data model, and uses latest spatial panel-data model to study the correlation between provincial economic growth and local logistics in China.

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1. SPATIAL-PANEL MODEL AND CORRELATION TEST

1.1 Spatial-panel Models

Spatial effects of the spatial econometrics include spatial autocorrelation and spatial differences. The former is the correlation of the observations between a regional sample and other regional samples. The latter is the spatial-effect non-uniform at the regional level caused by the heterogeneity of spatial units (Anselin, 1988a). Spatial autocorrelation in the spatial autoregressive model is reflected in the error term and the lagged item of dependent variable. Therefore there are two basic spatial econometric models, one is Spatial Auto Regressive Model (SAR), the other is Spatial Error Model (SEM), and the basic formulas of two models are:

Spatial Auto Regressive Model (SAR):

$$y = \rho W_N y + X' \beta + \varepsilon \quad (1)$$

Spatial Error Model (SEM):

$$y = X' \beta + \mu \quad (2)$$

$$\mu = \lambda W_N \mu + \varepsilon$$

y is the dependent variable, X is the vector of independent variables (including constant term), β is variable factors, ρ is spatial regression coefficients, λ is spatial autocorrelation coefficients, ε is the error components obeying the normal distribution, W_N is the spatial matrix of $n \times n$ (n is the number of region), the weight coefficient can be defined on actual conditions.

The above-mentioned model is a model for the cross-sectional data. In order to apply it to panel data, we need to change the model to meet the basic formula of panel data model. This paper uses individual fixed-effect model (Elhorst, 2003). The model controls two kinds of non-observable effects: spatial fixed-effect and time fixed-effect, the former is the effect of background variables which changed with the location, but no changed with time (such as economic structure and natural endowments, etc.) on steady-state level; the latter is the effect of background variables which changed with time, but no changed with location (such as the business cycle and temporary shock, etc.) on steady-state level.

To assume sF is N -dimensional column vector of spatial fixed-effect; tF is T -dimensional column vectors of time fixed-effect, the form is showing as follows:

$$sF = (\alpha_1, \alpha_2, \dots, \alpha_N)^T, \quad tF = (\delta_1, \delta_2, \dots, \delta_N)^T$$

The column vectors of spatial and time fixed-effect of each observation are showing as follows: $\eta = i_T \otimes s_F, \delta = tF \otimes i_N$, where i_T is T -dimensional column vector and i_N is N -dimensional column vector, all elements of these two column vectors are 1. Then the equation (1) and (2) can be transformed into the following model (3) and (4):

$$y = \rho(I_T \otimes W_N)y + \eta + \delta + X' \beta + \nu \quad (3)$$

$$y = X'\beta + \eta + \delta + \mu$$

$$\mu = \lambda(I_T \otimes W_N)\mu + v \tag{4}$$

In the one-dimensional error decomposition model, $\varepsilon = \eta_i + v_{it}$ or $\varepsilon = \delta_i + v_{it}$; In the two-dimensional error decomposition model, $\varepsilon = \eta_i + \delta_i + v_{it}$, $\eta_i \sim \text{IID}(0, \omega_i^2)$, $\delta_i \sim \text{IID}(0, \xi_i^2)$ and $v_{it} \sim \text{IID}(0, \sigma_i^2)$. t is the time dimension, i is cross-section dimension, I_T is an unit matrix of T -dimensional time matrix.

1.2. Spatial Correlation Test

Spatial correlation test bases mainly on the hypothesis testing of the maximum likelihood estimate, Wald, LR and LM statistics and spatial-related indices” Moran'S I”, the null hypothesis $H_0: \rho=0$ or $\lambda=0$. However, Moran'S I (Moran,1948), LMerr (Burridge,1980), LMsar, Lratios, Walds (Anselin,1988b) and other spatial-related tests are applied for a single cross-section regression model, and can not be directly used by panel-data model. In this paper, block-diagonal matrix” $C = I_T \otimes W_N$ “replace spatial-weight matrix of Moran'S I statistics, etc. So we can easily extend these tests to panel-data analysis. In the selection of model, we use firstly the LSDV (Least Square Dummy Variables) method estimation, do not consider the bound model of spatial correlation, and then carry out the spatial-related test. If LMsar (or LMerr) estimation is more significant than LMerr (or Lmsar) estimation, then the spatial lag model (or spatial error model) is more appropriate than the spatial error model (or spatial lag model). Anselin and Rey (1991) use Monte Carlo experiments method to show that this method can provide a good guidance on the selection of spatial econometric models.

1.3. Parameter Estimation

Usually we use the maximum likelihood method (ML) to estimate spatial econometric models (Anselin, 1988a; Anselin and Hud1992). ML estimation program can not be used directly by the spatial panel-data model, because it is applied to the cross-section regression model. In addition, when the dimension of spatial-weight matrix is large, there is a problem (Kelejian and Prucha, 1999) in the usual ML estimation procedures in spatial econometrics. At present, a solution can be used, it is the Monte Carlo method to approximate the log-likelihood function, the Jacobian determinant of natural logarithm (Barry & Pace, 1999). This method can be implemented in the spatial package of Matlab, and can be used to estimate model (3), (4).

2. MEASUREMENT MODEL

The local production function can be denoted by the homogeneous equation of Cobb-Douglas:

$$Y_t = f(K_t, L_t) = AK_t^\alpha L_t^\beta \quad (5)$$

Logistics become more and more important factor in the process of production, logistics has been seen as "the third profit source", same as the factors of capital and labor, to promote economic growth. Therefore, the C-D production function is improved. As the logistics(W) is independent of capital and labour, on Solow production function, the production function which include the elements of logistics can be described as:

$$Y_t = f(K_t, L_t, W_t) = AK_t^\alpha L_t^\beta W_t^\gamma \quad (6)$$

Y is the output, A is combination of technological advance, K is capital investment, L is labour input, W is logistics, α , β , γ are elasticity coefficient of capital, labour, logistics on economic growth, respectively. Considered the comparison of data and economic significance, all variables should be logarithmic, as follows:

$$\ln Y_{it} = \ln A_i + \alpha \ln K_{it} + \beta \ln L_{it} + \gamma \ln W_{it} + \mu_{it} \quad (7)$$

Subscript i is the province name, t is time series, is μ_{it} the random disturbance.

3. EMPIRICAL ANALYSIS

3.1. The Selection of Factors and Data Collection

Panel data from 1978 to 2007 of 30 provinces in China are used to be empirical analysis. Data is mainly from the "New China, Compiling Statistical Information on Fifty-five Years" and "China Statistical Yearbook" (2006-2008). In order to compare data and reduce heteroscedasticity, all data should be changed into logarithm.

The detail data of variables are as follows:

1. GDP: for the elimination of price change factors, we think 1952 year as the base period, and generate the real GDP according to GDP index (Unit: hundred million).
2. Logistics level: we use cargo turnover of various province to measure the level of logistics and logistics capacity (unit: 100 million ton-km).
3. Labour: we use employment numbers of the whole society (unit: ten thousand).
4. Capital stock: we use a perpetual inventory method (Goldsmith 1951), which is now used widely by OECD countries, and its basic formula is:

$$K_{it} = K_{i,t-1}(1 - \delta_{it}) + I_{it} \quad (8)$$

K_{it} represents the capital stock of i-region's at t-year, $K_{i,t-1}$ represents the capital stock of i-region's at (t-1)-year, I_{it} represents the investment of i-region's at t-year; δ_{it} is the t-year's economic depreciation rate. We use Zhang Jun's capital stock data which mentioned in the paper "China's Provincial physical Capital Stock Estimate: 1952-2000", and capital stock in the other period is calculated by the data of "China Statistical Yearbook". Depreciation rate $\delta_{it} = 5\%$. (Unit: hundred million).

3.2. The Determination of Economic Spatial-weight (W_{ij})

Spatial-weight matrix (W_{ij}) embodies the regional spatial-effect. Obeying the rule of “Rook”, the adjacent rule, the matrix W_{ij} is:

$$w_{ij} = \begin{cases} 1 & \text{When the region } i \text{ and the region } j \text{ are adja} \\ 0 & \text{When the region } i \text{ and the region } j \text{ are not adjacent} \end{cases}$$

the main diagonal elements are 0. w_{ij} ($i=1,2,\dots,n,j=1,2,\dots,n$) should be standardized.

There are borders between neighboring regions, but the economic ties are not identical between neighboring regions. Relative to the backward regions, the driving impact of backward regions on developed regions is weak, while the developed regions can generate great driving impact on the backward around regions, which is intensive spatial influence. Therefore, we get economic weight-matrix based on the binary weight matrix (Lin Guang- Ping, 2005), the formula is:

$$W^* = W * E, E_{ij} = \frac{1}{|y_i - \bar{y}_i|}, \text{ and, } \bar{y}_i = \frac{1}{t_1 - t_0 + 1} \sum_{t=t_0}^{t_1} y_{it} \tag{9}$$

W is the weight-matrix of spatial location, E is the matrix of economic strength. We calculate the mean of proportion which is the real GDP of every region accounted for real GDP of all regions, with the result of them, measure the regional economic level. And assuming that the economic strength of this region is strong, the spatial impact of it on surrounds is strong, contrary to the weak (Xiao-ping Chen, Guo-ping Li, 2006). Economic spatial-weight matrix (W_{ij}) is the diagonal matrix which is the product of a geo-spatial-weight(w_{ij})and the mean of proportion of regional GDP, the formula is:

$$W_{ij} = w_{ij} * \text{diag}\left(\frac{\bar{y}_1}{y}, \frac{\bar{y}_2}{y}, \dots, \frac{\bar{y}_n}{y}\right) \tag{10}$$

$$\text{and } \bar{y}_i = \frac{1}{t_1 - t_0 + 1} \sum_{t=t_0}^{t_1} y_{it}, \bar{y} = \frac{1}{n(t_1 - t_0 + 1)} \sum_{t=t_0}^{t_1} \sum_{i=1}^n y_{it} \circ$$

3.3. Empirical Analysis

With these assumptions of the model and estimation methods, using sub-provincial panel data, we establish the individual fixed-panel regression model of 30 regions from 1978 to 2007, analyzed by Eviews 6.0 software, use LSDV method to estimate the individual fixed-effects model, and get the elasticity coefficients and associated test results of the regression model, and estimates of the individual fixed-effect coefficients η_i . The results are showing in the table 1.

In table1 the values of R^2 and Adjust R^2 is high in the regression models, it indicate that the result of the simulation fitting of the model data is very good. In table 2 judging from the fixed-effects estimate of various region, we can find the size of the

value of fixed-effects is close in adjacent regions of Beijing and Tianjin, Jiangsu and Zhejiang, northeast, southwest and northwest provinces, it shows that there is significant regional relevance, it is necessary to do spatial-related test firstly, with the result of it, we can know if it is necessary to do spatial-panel analysis further.

Table 1. The empirical results of individual fixed-effect model of spatial-panel data of various province from 1978 to 2007

| | $\ln K_{it}$ | $\ln L_{it}$ | $\ln W_{it}$ | c |
|---|--------------|--------------|--------------|---------|
| Coefficient | 0.5983 | 0.1388 | 0.0670 | -0.7626 |
| t-Statistic | 72.0240 | 4.9840 | 4.6823 | -4.1491 |
| Prob. | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| R ² =0.9632 , Adjusted R ² =0.9826 , F-Stat.=521.147 , DW-Stat=0.4665 | | | | |

Table 2. The cross-sectional estimate of influence coefficients of various province from 1978 to 2007

| Province | η_i | Province | η_i | Province | η_i | Province | η_i |
|----------------|----------|----------|----------|-----------|----------|----------|----------|
| Beijing | 0.1551 | Shanghai | 0.4440 | Hubei | 0.3215 | Yunnan | 0.2717 |
| Tianjing | 0.1316 | Jiangsu | 0.3564 | Hunan | -0.1819 | Shanxi | -0.2021 |
| Hebei | 0.3704 | Zhejiang | 0.1954 | Guangdong | 0.1238 | Gansu | -0.3782 |
| Shanxi | -0.2962 | Anhui | 0.1720 | Guangxi | -0.1373 | Qinghai | -0.3994 |
| Inner Mongolia | -0.0777 | Fujian | 0.3934 | Hainan | 0.3018 | Ningxia | -0.0905 |
| Liaoning | 0.3742 | Jiangxi | -0.1314 | Chongqing | -0.9655 | Xinjiang | -0.1368 |
| Jilin | 0.1558 | Shandong | 0.6441 | Sichuan | -0.3181 | | |
| Heilongjiang | 0.2090 | Henan | -0.3460 | Guizhou | -0.2232 | | |

According to the regression result, $DW_{1978-2007} = 0.4665$, it shows that there is autocorrelation between the variables, and then we test autocorrelation of spatial - regression error terms, the following estimate of the model are used with Spatial Econometric Modules of Matlab7.0, the results of estimation are showing in the table 3.

Table 3. The spatial correlation test

| n =900 | Lmerr | Lmsar | Lratios | Moran'I | Walds |
|------------------|---------|---------|---------|---------|---------|
| value | 66.5840 | 79.6035 | 86.6162 | 26.3590 | 21.6285 |
| chi(1) .01 value | 17.6110 | 6.6350 | 6.6350 | 1.9657 | 6.6350 |
| Prob. | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

With the test results, five test values (spatial dependence) are very significant (Prob. =0.0000), it prove that there is a significant spatial correlation between the logistics and regional. Thus the spatial factors must be taken into account in order to show the interaction between various regions GDP and logistics. The test value of spatial-panel lag term is bigger than the test value of spatial-panel error term, that is, $Lmerror_{1978-2007}=66.5840 < Lmsar_{1978-2007}=79.6035$;
 $Lmerror_{1978-2007}=66.5840 < Lmsar_{1978-2007}=79.6035$.

Based on the criteria described previously, the Sar-panel lag model is the optimal model. The spatial-panel lag model is used to estimate the correlation between economic growth and the logistics. Results are showing in the table 4 and table 5:

Table 4. The estimation results of Sar-panel model parameter from 1978 to 2007

| | LnK | LnL | LnW | ρ/λ |
|---|---------|---------|--------|----------------|
| β | 0.5609 | 0.3040 | 0.0848 | 0.1250 |
| t-Stat | 67.5058 | 15.3086 | 2.9924 | 8.8159 |
| Prob. | 0.0000 | 0.0000 | 0.0064 | 0.0000 |
| R-squared=0.9775 , Rbar-squared=0.9758 , $\sigma^2=0.0308$, log-likelihood=219.95985 | | | | |

Table 5. The estimate of spatial-fixed influence coefficient of various regions from 1978 to 2007

| Province | η_i | Province | η_i | Province | η_i | Province | η_i |
|----------------|----------|----------|----------|-----------|----------|----------|----------|
| Beijing | 0.2365 | Shanghai | 0.5753 | Hubei | 0.4321 | Yunnan | 0.3234 |
| Tianjing | 0.2145 | Jiangsu | 0.5638 | Hunan | -0.1143 | Shanxi | -0.1761 |
| Hebei | 0.4582 | Zhejiang | 0.4631 | Guangdong | 0.4542 | Gansu | -0.3012 |
| Shanxi | -0.3758 | Anhui | 0.2315 | Guangxi | -0.1004 | Qinghai | -0.2874 |
| Inner Mongolia | -0.1436 | Fujian | 0.4327 | Hainan | 0.3570 | Ningxia | -0.1923 |
| Liaoning | 0.4653 | Jiangxi | -0.3421 | Chongqing | -0.8541 | Xinjiang | -0.1028 |
| Jilin | 0.2153 | Shandong | 0.6743 | Sichuan | -0.2181 | | |
| Heilongjiang | 0.3645 | Henan | -0.2653 | Guizhou | -0.1843 | | |

In table 4 and 5, with the results of model estimation, we can draw the following conclusions. Firstly, in the estimation results, the estimation of the parameters ρ in the spatial-panel lag model significance test is by 1%. It indicates that there is a significant spatial correlation between GDP and logistics in 30 provinces. As the logistics has the network properties, the logistics can connect economic activity into a whole unit. Through the spatial overflow (diffusion) benefit, the rapid economic growth regions drive the economic development of slower economic growth regions. It demonstrates positive spillover effect. Meanwhile the logistics will have a negative spillover effect, production factors flow easily into developed regions, the economic growth in a region is likely to be on the expense of economic recession in other regions. Secondly, the fitting of R^2 value which we introduced the spatial and time fixed-effects into the spatial-panel lag regression model are better than that of the traditional fixed-effect model. It proves that it can explain the model better and show the actual situation better after we introduce the time and spatial fixed effects into the model. The elasticity coefficients of GDP with capital stock and labour are 0.56 and 0.30, respectively. The significant level is 1%, indicating that the effect of investment and labour on economic growth is still the most important factor, the elasticity coefficient of GDP on logistics is 0.08, the significant level is 0.64%. Indicating that the logistics has a significant impact on GDP, but the degree of influence on economic growth is limited, which is showing the current situation of China. i.e. modernization

of Chinese logistics is not high, the logistics network system is imperfect, it is lack of the application of information technology and the level of logistics management is low.

Thirdly, with the estimate results of spatial-fixed influence parameter (η_i) of the various region, the fixed-effect parameters of different regions are showing significant difference. The logistics development level is better in the developed regions, worse in the developing regions. There are three levels of logistics development in China. The best one is developed coastal areas, such as Shanghai city, Jiangsu province, Zhejiang province and other developed coastal areas, second level is middle level which include central and north-eastern region of China, such as Jiangxi province, Hunan province, Hubei province, Liaoning province, the third level is the worst one include north-western region of China. It is consistent with the actual development situation in various regions of China.

4. CONCLUSION

Based on spatial-panel model, we estimated the correlation between the logistics and economic growth. We can draw the conclusion that there is significant spatial-correlation between GDP and logistics in various regions, the GDP and logistics has obvious spatial overflow (diffusion) benefit between adjacent regions. The logistics has a significant impact on local GDP, but the degree of influence on economic growth is limited, the reasons are low degree of logistics modernization in China, the imperfect system of logistics network, lack of application of information technology and the low level of logistics management. Fixed effect parameters of different regions are showing significant differences. The local economic development is better; the local logistics development level is higher.

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PROFIT VERSUS INSOLVENCY IN ROMANIAN ECONOMY

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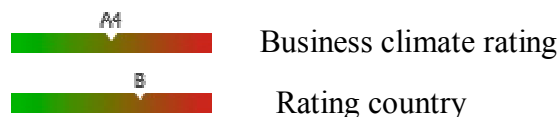
ABSTRACT: *The recession has affected a proportion of 6-7% in Romania, which confronted with the consequences of current deficit and sizable debts in foreign currency. Under these circumstances, Romanian companies faced big difficulties, therefore just a little part of them managed to reach their target - to get profit. Most of the companies are recording losses, and are in insolvency procedure.*

KEY WORDS: *profit; insolvency; rating country; corporations; crisis*

JEL CLASSIFICATION: *G01*

On global scale, the systemic regional financial crisis which represented a fear for a period of time, could be avoided. The impact was less powerful than it was predicted due to the coordinated help of more multilateral institutions, of European Union, central banks and foreign commercial banks continued to back up their local subsidiaries. In the same time, Romania had no choice but to resort to IMF programmes.

The recession affected Romania in a proportion of 6-7%, which confronted with the consequences of the current deficit and big debts in foreign currency. The high risk of crisis, the activity decline and in parallel the deterioration of payment behaviour performed by enterprises at the beginning of year 2009 have determined the reduction of the rate of sovereign risk, Romania being downgraded to B.



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The profit is the key element for the existence and the progress of companies, and of course for developing national and global economy. The profit, in its restrained meaning, is the revenue that is obtained by economic agents, as a product of fund usage, and in its wide mean the profit is the revenue obtained by economic agents as a surplus over the production costs. Total profit has two components: the normal profit and economic profit. The normal profit is the minimum revenue that a company must obtain to function. In this case, the level of total income collected is identified with opportunity costs, which means that by virtue of collections can be assured the continuous activity at the same functional parameters.

Besides these two main types of profit, normal and economic, within market economies in contemporary world there are also encountered other forms, differenced from other points of view, like the one with a special interest that is the profit achieved on markets with imperfect competition - monopoly profit or monopoly overprofit. This is achieved by companies, respectively corporations which ensured their monopoly position on the market and is produced from a large variety of situations in which they have their activity, being able to impose monopoly in the quantity of sold goods, their quality, using the new technical and scientific achievement.

Half of credit institutions in Romania ended year 2009 with a surplus, the achieved profit of these institutions exceed three times over the revenue resulted at the level of banking system. Out of 42 banks, only 22 have recorded profit, and 20 ended the fiscal year with losses. In 2009, in banking system were achieved total profits of 772.3 million lei, 5.7 times less than the peak value of 4,4 billion lei in 2008. Profitable banks cumulated in 2009 revenue of over 2 billion lei, while losses in the system were more than 1 billion lei.

The most profitable two companies in Romania have recorded decreases of incomes with up 23%, for year 2009. Orange Romania, the most profitable company in the country in 2008, was affected as well. OMW Petrom, the second most profitable company in Romania in 2008, had in 2009 decreased incomes with 23%. Despite this result, the net profit of the largest company in Romania has increased with about 33% to 1,368 billion lei. At the end of the list there are a series of companies that no only didn't record profit but are in insolvency procedure.

Out of the analysis realized on the basis of the data provided by the National Trade Register Office, results that in 2009 a total number of 18421 companies were in different stages of insolvency procedure. Out of them, 8950 companies were in general insolvency procedure, 4890 in simplified insolvency procedure, 4543 in bankruptcy and 38 in judicial reorganization. Out of the 18421 companies that were in insolvency procedure, most of them were registered limited companies (95%), followed by joint companies (3%) the rest of 2% being represented by the other forms of organisation.

Analysing the evolution of the counties we observe that the first 10 positions of this top cumulates over 50% of the total insolvencies opened at national level (51.35%). Under 1% of total cases litigate in 2009 are recorded in Giurgiu, Teleorman, Alba, Covasna, Salaj, Mehedinti, Calarasi, Botosani, these counties being also with the lowest number of insolvency. As we can see from the analysis of insolvency cases on geographic zone, the most affected region in 2009 was N-W of Romania with a number of 3516 companies in insolvency, followed by S-E of the country with 3193

cases and Western region with 2280 cases. Bucharest landed on the fourth position with a number of 2109 cases. The regions that were less affected by the crisis were S-W with 1524 insolvencies, N-E with 1660 cases and the centre with a number of 1069.

Table 1. Sector and territorial distribution of insolvencies in year 2009

| Activity sector | Total bankruptcies | % total bankruptcies |
|---|--------------------|----------------------|
| Wholesale | 3684 | 20,00 |
| Retail | 3501 | 19,01 |
| Transports | 2497 | 13,56 |
| Hotels and restaurants | 1237 | 6,72 |
| Other service activities performed mainly for enterprises | 1,022 | 5,55 |
| Agriculture | 979 | 5,31 |
| Wood and wood products | 927 | 5,03 |
| Textile, textile clothing and footwear | 762 | 4,14 |
| Food and drink industry | 573 | 3,11 |
| Metallurgical industry | 496 | 2,69 |
| Real estate transactions | 281 | 1,53 |
| Chemical products and substance production | 223 | 1,21 |
| Clearing waste, salubrity and similar activities | 206 | 1,12 |
| Other personal activities and services | 204 | 1,11 |
| IT | 172 | 0,93 |
| Automotive industry | 166 | 0,90 |
| Recreational, cultural and sport activities | 157 | 0,85 |
| Financial intermediation | 139 | 0,75 |
| Postage and telecommunications | 129 | 0,70 |
| Extractive industry | 54 | 0,29 |
| Health and social care | 47 | 0,26 |
| Electrical and thermal production and supply, water and gases | 31 | 0,17 |
| Total | 18421 | 100,00 |

A comparative analysis of the existing situation in 2008-2009 emphasize the same most affected industries, with no content differences between the two periods in Top 10 industries from the point of view of bankruptcy number, which highlights the weaknesses of these domains and the reduced capacity of companies to adapt to markets new conditions. Even if the first three positions - wholesale, retail and constructions - concentrates the most of recorded insolvencies in 2009, respectively 52,5%, comparing it with the previous year we observe a decrease of 4% of the rates of these positions, from 56,27% in 2008, showing the expansion of the problems to the other domains.

The main engines of the economy from 2004-2008, trade and constructions have collapsed in 2009, determining decrease in GDP of 7,1%, these being the most affected sectors by the crisis and which record the highest number of insolvencies. According to data provided by National Institute of Statistics, the decrease in GDP was determined by the low volume of gross added value in all sectors of activity, the most

affected being retail, car and hardware fixing, hotels and restaurants, transports, telecommunications and constructions which contributions to GDP was 31,1%.

Geographical repartition of insolvencies recorded in 2009

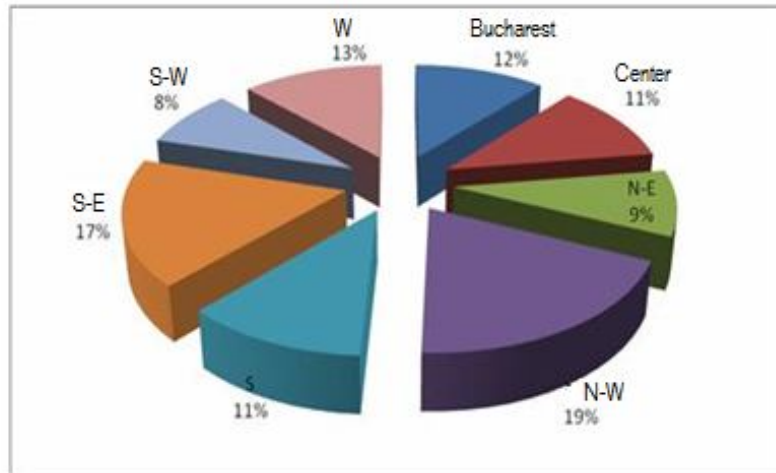


Figure 1. Graphical representation of insolvencies recorded in 2009

Top 10 industries concerning bankruptcies recorded in 2009

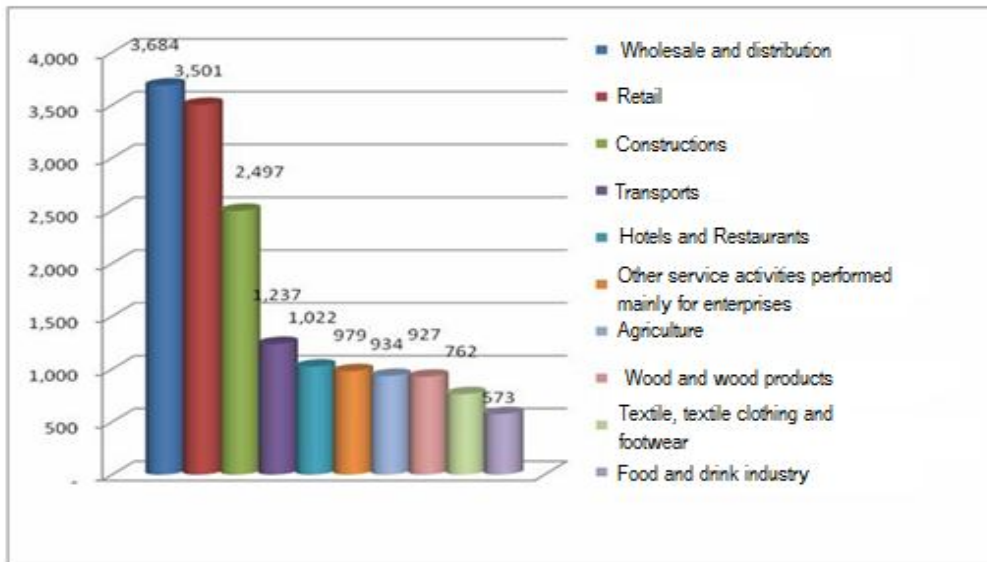


Figure 2. Top 10 industries concerning bankruptcies recorded in 2009

On the first position, with the highest number of insolvencies recorded in 2009 are wholesale and distribution which concentrates 20% of national level of bankruptcies. We can say that the first two sectors in this top had an almost identical evolution, the difference between them is only 1%, but due to the demand contraction and aggravation of credit conditioning, distribution is the most affected field by the recession.

The main characteristics of distribution companies are also the main weak points of them; high stock in trade, low operational margins, limited investments and capitalizations, increased dependency towards creditors. If in the next months will be as difficult from the point of view of sales, is expected that the incapability of these companies to adapt their policies to the new dimensions of the market to determine forward the growing number of insolvencies.

On the second positions according to the number of insolvencies is the retail. The volume of the turnover for this sector, excepting the vehicles has decreased in 2009 with 10.3% due to reduction of fuel sales in specialised stores and food and non-food stores, according to NIS. Therefore, in 2009, comparing to 2008, the retail of fuels for vehicles in specialised stores declined with 19,7%, the non-food retail with 9,6% and sales with food, drinks and tobacco dwindled with 4,5%.

The number of companies in insolvency in this sector was just a bit lower then the one recorded in 2008 (3501 companies then 3553). In the past few years the commerce in hypermarkets contributed to the extinction of small traders, the number of clients who wanted to buy from them being in decrease. The stagnation of the insolvency number in this segment appears to indicate the fact that they have adapted.

After the economic boom in retail when all the players struggled to occupy a space in commercial centres, the year 2009 have brought a period of abatement and restraint of business. The majority of retailers redimensioned the level of their business and adjusted their costs, exerting a big pressure upon suppliers which were under the necessity of reducing prices - so many of the retailers benefited of renegotiations of rent prices, or they could take larger spaces, of better positioned at lower costs then previous year.

Even if the majority of retailers have modified their commercial politics to counter attack the decrease in consumption by promoting the products with the highest commercial margins and by developing their own production lines, there were store chains that weren't that flexible, an example being PIC retailer, which closed 3 out of 5 stores in 2009, ended in insolvency. The year 2010 will bring a stabilization of international retail chains to the detriment of locals, situation which shows that in this business it's hard as an independent operator to compete with the financial power international competitors.

Taking into account the bigger and bigger delays on the chain of supplying and the increased pressure exerted by the creditors, for taking refuge from execution actions initiated by the main paymaster of the company, Flamingo retailer asked for its insolvency, suggesting a reorganisation plan. The negotiations with the main financing bank (ING) had failed, the request of Flamingo to re-echelon the debt being refused, the bank taking the decision to start the enforcement of the stocks in some stores of the company. It appears that in 2009 the company tried to implement a reorganisation plan,

designed to save the company from insolvency and which had as a main target the decreasing of the costs. Even if the company managed to reduce the debts to suppliers and banks, the financial resources of the company have proved to be insufficient to cover the level of the existent debt.

The third position in the top of the insolvencies is taken by construction domain, which recorded a constant increase of the number of insolvencies. According to data provided by NIS, in 2009 the volume of construction projects decreased with 15.1% situation which leads to the growth of bankruptcies in this sector.

On structure elements have been recorded abatements at all components:

- capital reparations (-24.1%);
- new construction projects (-13.8%);
- maintenance and current reparations (-13.2%).

On construction types, the decline has been recorded as following:

- residential buildings with 20.2%;
- non residential buildings with 15.7%;
- engineering constructions with 12.2%.

The main problems which builder confronted with in previous year was the decline of the demand, ceasing projects and investment works due to the lack of funds, the decline of purchasing power and deterioration of the payment behaviour of the partners. Besides these, the high costs of finance and the obstruction of real estate have contributed to deterioration of company's situations which activated on construction market, placing this sector on third place of the most affected industries of year 2009 from the point of view of insolvencies.

Is expected that in 2010 to be as difficult as last year for construction players, considering that in 2009 were released 48833 construction authorisations for residential buildings, in decline with 20.1 % than in corresponding period of previous year. Significant declines have been recorded also in developed regions: Ilfov-Bucharest (3015 authorizations), Centre (-1974 authorizations), South-Muntenia (1884 authorizations), and North-East (-1797 authorizations), declines which will influence the evolution of year 2010.

For the next period, the main engine of economic growth in this field could be constituted by the projects in infrastructure, under this circumstances the associations in construction domain requesting to the authorities measures for reduction of corruption in public acquisitions, sustaining loaning for companies by reducing the credit interest and a new program concerning road and highway construction.

Even if constructions in infrastructure should support construction sector and economy, by propagating the horizontal effect, unfortunately because the lack of funds not only the start and continuation delays, but jeopardizes the existence of a large number of companies.

Out of the first months of 2010 the majority of the companies in construction field which got in payment incapability indicates that also the main cause for that situations was low or no collection from local or state budget of some invoices for already realized workings, and every payment incapability generates a domino effect towards the other creditors of that company.

The transport domain also records a high number of insolvency requests - 1237 - being on the fourth place in the top in year 2008. Having a very tight connection with the level of development of the industry, transports in Romania have recorded in the last few years, alike the other economic sectors not only growths but abatements, year 2009 clearly being a descending one, when was estimated that transport market declined with 20%. The only transport branch which recorded growth was the low cost one, recording 30% higher revenues than 2008; this led of course to deterioration of situation for passenger by road transport, where the decreases are estimated to 30%.

The most bankruptcy was recorded in goods road transport, general economic situation, but also specific problems affecting mostly the small transporters which couldn't reorganize to cope the new market conditions. Those became more and more dissatisfied also because the state delays the deductions, but also because there are more and more taxes, some of them being considered abusive (tolls for passing some cities) and the poor quality of the roads continue to exert great problems for deploying under normal circumstances of the activities, this contributing to increased costs of repairs.

Compared to year 2008, in 2009 hotel and restaurant field have recorded and insolvency growth of 30%, this being the direct result of demand decline on this market also because of more and more restricted access to liquidity.

According to NIS, arrivals recorded in touristic accommodation structures in 2009 have totalled 6.1 mil, a decrease of 13.8% than the previous year. Even though Tourism Ministry have developed a promotion program of Romanian tourism - Romania the land of choice, the Romanian tourists' arrivals in accommodation structures have represented 79.2% in 2009 out of total arrivals, while foreign tourists have represented 20.8%, rates that were near to those in 2008.

The most assured domains, having the lowest rate in total insolvencies recorded in the first half of the year 2009, are postage and telecommunications activities, extractive industry, health and social care production and electrical, thermal energy supplying, water and gases. Nevertheless the main characteristic of investments and the number of players being limited, a comparison with the other very dynamic sectors where the access on the market is easy, and the number of economic agents and respectively the competitors are in large numbers are irrelevant.

In 2010, there will be a slow growth (+1%) despite maintaining almost general politics for adapting, the first semester is marked by a deceleration due to disappearance of temporary sustaining factors, like scrapping bonus or reserve regeneration. The reappearance of the demand in global level which to attract a growth, won't be high enough to reduce significantly the exceeded capacity at the moment.

There will remain the imbalances that were before the crisis, like private household debts, enterprises or banks, real estate excesses, lack or sartorial diversity and affectation of public finances.

Enterprises have made progresses in re-establish their capitalization, by a progressive adjusting of production at a lower cost, ameliorating their productivity. The process should continue with an economical policy (interest rates, public expenses decreasing of taxes) which will be forwardly favourable. We also consider opportune the elimination of minimum tax and reintroducing progressive tax.

After many years of credit growths, clearing of debts of private households and enterprises will be long and in any case, and resuming loaning will be made gradually. In addition, private consume will be stuck of limited by freezed wages and increasing unemployment. Usually, the manoeuvres on budgetary plan will be weak because of adjustment necessity of public finances which will be clearly deteriorated. Finally, this growth will depend mostly of conjuncture maintaining in Western Europe, where the growth will be slow.

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TRENDS REGARDING THE LEVEL OF THE PROCESSING, ASSORTMENT STRUCTURE AND THE QUALITY OF THE FOOD PRODUCTS

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MARIETA STANCIU ***

ABSTRACT: *Foods differ qualitatively depending on the range part. Commodity classification of food products can provide us important information about their composition, their inclusion in one group or another being made according to their origin (vegetable origin, animal origin or mixed), chemical composition and inside group depending on the measure of processing, consumer destination, stability, method of packing, etc. The rapid development of science and technology, increasing concern for consumer safety and concern for innovation in order to streamline production processes and diversification of food supply have contributed to the emergence of mutations in production, quality and assortment structure. All these things will be presented in this paper.*

KEY WORDS: *foods quality; health; packing methods; biotechnologies; biological foods*

JEL CLASSIFICATION: *D18, I18, L66, Q18*

1. INTRODUCTION

The food products differ from a point of view of the quality according to their sort. The commodity classification of the food products can show us important information about their composition, their inclusion in a group or another being done according to their origin, their chemical composition, and within the group according to

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the measure of processing, the consumption destination, the stability, the manner of packaging etc. The commodity scientific classification, internationally accepted, orders the food products as follows (Diaconescu, 2005, pp.13-14):

- grains, vegetables and products resulted from their processing;
- vegetables, fresh fruit and products resulted from processing;
- sugar products (sugar raw materials and products resulted from processing);
- gustative products: spices, stimulants, non-alcoholic beverages and alcoholic beverages;
- vegetable, animal and mixed food fats; milk and products resulted from the processing of milk;
- eggs and egg products; meat and products resulted from the processing of meat.

We notice the fact that the first four groups of products have a vegetable origin, the next being of animal origin (partially groups 5 and 10, these being mixed). The practical classifications used at a microeconomic level, in the majority of the cases, are non-systematic classifications (the products are introduced in the order of their appearance), following the efficient solution of the merchandise codification, according to the own informational systems of the companies.

Also, we notice that the products from groups 1-3 are characterised by a high content of carbohydrates, mineral salts and vitamins (especially those from groups 1 and 2), the gustative products (group 4) are mostly missing the nutrients, and the products from group 5 are rich in lipids, and the products from groups 6-9 are characterised by a high content of proteins (especially complete proteins, amino acids) and in small quantities in lipids.

2. TRENDS REGARDING THE PROCESSING, THE ASSORTMENT STRUCTURE AND THE QUALITY OF THE FOOD PRODUCTS

The rapid development of science and technique, the more intense preoccupation for consumers' safety and protection, the preoccupation for innovation in order to simplify the production processes and to diversify the food product offer have contributed to the occurrence of some mutations within the production, assortment structure and quality.

The tendencies from production and the food product offer take into account a wide series of specific phenomena of both the production and the food sector, among which most important are:

- new quality implementation and control systems, where the focus is on the traceability of the food products;
- the innovation in the food industry, process within which the most important evolutions are the involvement of research in order to obtain the food products and the development of new ones and the use of new preservation, packaging and marking methods;

- the development of new agricultural production systems, like the intelligent agriculture, the biological one and the use of biotechnologies;
- the renewal of the food product offer through the appearance on the market of some new categories of products;
- the development of the products already on the market as a consequence of the new exigencies of the demand, among which there are the functional food products, the diet products, the products based on genetically modified organisms, traditional products with the name of the region and, last but not least, the biological products.

3. TRENDS REGARDING THE METHODS OF PRESERVING THE FOOD

In the last few years, great progresses have been made in the study of the fundamental behaviour of the food products, in their packaging and handling. The preservation procedures of the food must be constantly improved, in order to increase the quality of the products, to reduce the nutritive losses, to increase the safety and the efficiency of the industrial equipment used for preserving and packaging. Experts have found out that the traditional preservation, refrigeration and freezing methods are not sufficient for maintaining the colour, the flavour, the texture, the enzymes status, the proteins, the carbohydrates and the vitamin content of the food products.

That is why alternative methods have been developed, also called *unconventional* methods, in order to reduce the effects caused by time and temperature on the food products. Among the unconventional preservation methods of the food products we mention (Gogu, 2004):

- treatments with ionizing electromagnetic radiations (radiations, X-rays) and non-ionizing (microwaves and radio waves, UV radiation);
- the ultraviolet;
- the high pressure processing;
- oscillating magnetic fields;
- packaging in the modified atmosphere;
- the combination of these methods with the conventional preservation methods.

The appearance of the new technologies made it possible to understand better the food complexity, leading to the appearance and the development of the new preservation and packaging the food products. The permanent preoccupation is to offer as fresh products as possible on the market, new products or less processed products in order to be in the trends and wishes of the consumers. Also, the producers must pay attention to the safety they offer the consumers with their products.

Thus, besides the traditional methods of preservation - thermic, salting, drying treatments - new methods of production and packaging have been designed to extend the period of preservation of the product and of the freshness of the perishable products: the processing under very high hydrostatic pressure, the use of the electrical fields, the

ohmic heating, the processing with the pulsating light of high intensity, processing with radio waves, thermo-sonic processing.

The packaging in modified atmosphere, the use of the inert gases, the reaction gases and the vacuum boxes allow the control of the micro-organisms, the maintenance of the colour and of the freshness of the product. In the future, this type of packaging shall develop even more. The packaging material may have active functions as well besides the one of protection, for oxygen, moist and light. For example, the packaging may act as an absorbent and eliminator of oxygen. This active packaging reduces the degradation produced by the oxidation chemical reactions and the development of aerobes microbes. In this way, the products can be preserved for a longer period of time. For the future, the acceptance of the new technologies shall depend very much on the manner of informing the public and its education.

4. TRENDS REGARDING THE FOOD PRODUCT PACKAGING METHODS

The active adaptation of the packaging to the food product properties which must be protected by it, is one of the main tendencies that characterise the new food product packaging methods. It aims at the products characterised by respiration like the fresh fruit and vegetables, the use of the hermetic packaging could lead to their alteration through the tenuity of the oxygen resulting the same effect as when the fruit and vegetables are not protected and the respiration takes place too rapidly.

In order to avoid this kind of effects, a series of adapted packaging methods have been already put in practice, like:

- the use of permeable packaging with CO₂;
- the inclusion within the packaging of some substances which absorb the oxygen, thus the preservation period of the pastry and meat products is being extended;
- the use of the absorbents for humidity;
- the use of the packaging signalling the ethanol (which can protect the wheat bread against the action of the moulds), the allyl isothiocyanate (AITC), component of the mustard with a bacteriostatic effect, or the sulphides (for the protection of the grapes against the moulds).

Another tendency in the field of packaging is the passing to the use of the "*intelligent*" packaging, able to offer information on the status of the product inside them. An "intelligent" bar code for the product packaging can inform the consumer and the traders if the refrigerated products are in a fresh status or not. The label with the special bar code uses an almost invisible ink, but which turns into the red colour, when the food is contaminated, thus preventing the scanning at the cashier's desk.

Another preoccupation of the manufacturers related to the packaging used is related to the search for some *biodegradable materials*, which could solve the problem of the waste generated by these. The cheapest and the easiest to use of the biodegradable materials are the paper and the cellophane, which have the cellulose as basis. The

polyethylene may be replaced by the biodegradable plastic materials based on polyactic acid (PLA), manufactured from fermented carbohydrates. This type of material, as well as others of vegetable origin like flax, hemp and coir, may replace the plastic foils used in agriculture. The problem that occurs in the use of these materials is related to their costs, being much higher than those of the conventional plastic materials.

5. TRENDS REGARDING THE PRODUCTION AND THE OFFER OF FOOD PRODUCTS

The processing of food products has constituted a permanent preoccupation of the experts in the field, fact proved by the new technologies and methods of obtaining them discovered lately. We cannot talk about the processing of the food products without mentioning the manner of obtaining the food raw material, and we have to see the mutations that have taken place in agriculture.

The "rational" agriculture or the integral agriculture has been imposed as a compromise between the conventional agriculture and the biological one, in the effort of taking over their advantages and of reducing the disadvantages. In the "rational" agriculture there are solutions which seek to combine the advantages of the intensive agricultural production with the ones of the biological agriculture and which focus on obtaining the best production returns under the conditions of the environment protection.

The use of the biotechnologies is another major tendency which aims at the improvement of the food product properties, but also at their economic efficiency. The starting idea is that not only the plants are cultivated or the animals grown, but also their genetic potential. Although the term is not new, and the improvement efforts of this potential are probably as old as the agriculture itself, the tendency consists of the tools of this improvement, that is the control of the plants and animals reproduction, the identification of the "interesting" genes or the cloning of the embryos and the genetic manipulations.

The biological agriculture and the biological (ecological) products are one of the important tendencies that characterise the agricultural and food production of the European Union at the present moment and it is well known due to its intense promotion of which it has benefited and it still does. The reasons of this promotion are without a doubt related to the perception that the community consumers have on this type of production which seems to answer to a great extent to their new expectations. The biological agriculture is a production system that needs to follow the two basic requirements, to aim at *protecting the culture environment* and to *limit to a minimum the content of residues of the final product*. We may consider that the biological agriculture is an integrated approach of the entire life cycle of the product that focuses on the nutritional and organoleptic properties of the product, starting from the production and ending with the labelling.

The functional food products - called **medicinal food products** as well, the functional food products are different from the ones in the other food groups, firstly

through their nature, being products resulted from specific industrial processing, which have usually the role of offering the functional features that are attributed.

As a principle, they are based on the relations, already known, among the some nutrients and the evolution of some diseases:

- the effect of the unsaturated fat acids of reducing the risk of cardiovascular diseases,
- the effect of the calcium on osteoporosis,
- the effect of the food fibres on the digestive process and others.

Starting from these prerequisites, the so-called "food products with specific effects on health" have been perfected. Together with these, the terms like "nutraceutical", "dietary supplement" ("alicament") or "food farmaproducts" have entered the vocabulary specific to the food field. These products do not have curative virtues. They cannot be prescribed by doctors, and do not have an associated manner of administration. Of course, they do not need the certification for trading from the pharmaceutical certification institutions.

The diet products - These are the products presented as "light", "shape", "slimming", "fitness" or "0%" products, very much requested by the consumers that keep certain food diets. According to Codex Alimentarius, a food product is considered light if it has a content reduced with at least 25% from a certain nutritional component, compared to the product it derives from. The respective component can be sugar, fat, salt etc. It is important to notice the fact that these products cannot be considered as being diet products (at least not all of them).

The problem results from the fact that the diet products are the ones that answer the nutritional needs of the persons with specific health problems. The "light" products are addressed to all the consumers who have the freedom to choose the quantity and the manner of consumption of these products. From the point of view of the industrial processors, the "light" products are the ones that contain less fats with a negative effect (saturated fat acids), do not contain sugar (especially succharose) and other components of similar carbohydrate nature whose taste is sweet and all the processed food products can be included.

The products that contain the genetic modified organisms - are the products that have been obtained from raw materials, in variable proportions, generally reduced, coming from one or more genetically modified plants. There are no products that are obtained exclusively from these types of plants as there are no products obtained from genetically modified animals, because the latter do not exist.

The traditional food products with the origin/geographical indication - the tool which proves the origin of the product from a region and the use of the traditional method of production, it is the brand "*Controlled origin denomination*" (DOC). The conceptual basis, "origin denomination", is defined as being the "name of the region or a determined place that serves for the designation of some agricultural merchandise originating from this place and whose characteristics are owed essentially and

exclusively to the geographical environment through which the natural and the human factors are understood".

The regional feature is provided by the raw material which in turn is marked DOC and fulfils the conditions stipulated by the specific tender books. In opposition with the initial situation, the traditional food products with the regional denomination are the result of the use of the production technologies, from the raw material up to the final product, as well as some special complex conditions.

The biological (ecological) food products - are products that come from the biological agriculture which defines them. That is why from the point of view of quality, they are characterised by the techniques used for their production: the neutralisation of the pesticides, the use of natural methods of fighting against the pests, the use of extensive cultures, the neutralisation of the fertilisers etc. Nevertheless, the main feature of these products is the neutralisation of the synthesis chemical substances. Lately, the prohibition of the ionisation radiation usage, of the genetically modified organisms and of the derivatives is taken into consideration.

6. OTHER TENDENCIES IN THE FOOD PRODUCT TRADING

The reduction of the availability term - the use of a biological agriculture, the reduction of the food additives introduction, the desire for healthier food products, are only a few of the factors that request the reduction of the availability term for the food products. Although it would be believed that the tendency would be, on the contrary, to increase this term, the safety of the consumers and the faith in the product existing on the market determine the producers to grant shorter availability terms for the products offered. The tendency of the consumers to purchase and consume fresh and natural products determines the producers to trade the food products in conformity with their wishes.

The importance granted to the list of ingredients - another obvious tendency is the fact that more and more consumers are not attracted to the ingredients they cannot pronounce and prefer not to find flavours or artificial colourants or preservatives on the packaging labels. The consumers check the price only as well. They should read the labels, and if they do not know some of the ingredients, they should leave the product on the shelf, they should research and then they should decide whether to buy it or not. The detailed knowledge of all the ingredients and their evaluation by the buyers has become a sine qua non requirement in the purchase of food products.

The products low in salt are also sought - The American Medical Association has request the food producers to reduce the quantity of salt used in their products. (Samoilă, R., 2008) The recommendation of the experts is for people to consume only 5 grams of salt per day, meaning the tip of the knife. There are other food products already containing salt, like milk, yoghurt or margarine. That is why the avoidance of added salt in food is recommended.

The use of the alternative sweeteners - the natural sweeteners like sweet dock shall replace the artificial ones in more and more food products or juices. In general, those who want to lose weight use the artificial sweeteners which produce the opposite effect to that intended. It is about those people who consume saccharine, aspartame or acesulfame-k. It is preferred to consume a small quantity of sugar or honey than to use the sweeteners that are toxic for the body.

The purchase of smaller quantities of food products - the more and more accentuated economic crisis lately, the lack of financial resources of the population have determined the consumers to rethink the quantities of purchased food products. Thus, the larger quantities of food products, like kilos, are transformed into smaller quantities, under a kilo, which determines the producers to portion the products traded on the market in smaller units. Also the producers shall have to supply the traders with reduced quantities of food products, at a reduced interval of time (daily). The orders of the traders for the producers are reduced, strictly specifying the quantities and the delivery terms.

The choice for local product consumption - the economic crisis, the appeal made by the authorities in order to purchase local products, to which the increased faith in these products have determined consumers to prefer the food products obtained from the internal production. Thus, the population has at its disposal a variety of fresh products, of good quality, which, due to the fact that do not pass through the many links of the distribution chain, are consumed more rapidly, the circulation speed increasing a lot. Through the consumption of the local food products, the internal production is stimulated, granting a greater attention to the quality and to the maintenance of the quality features on the technical and economic circuit which is shortened.

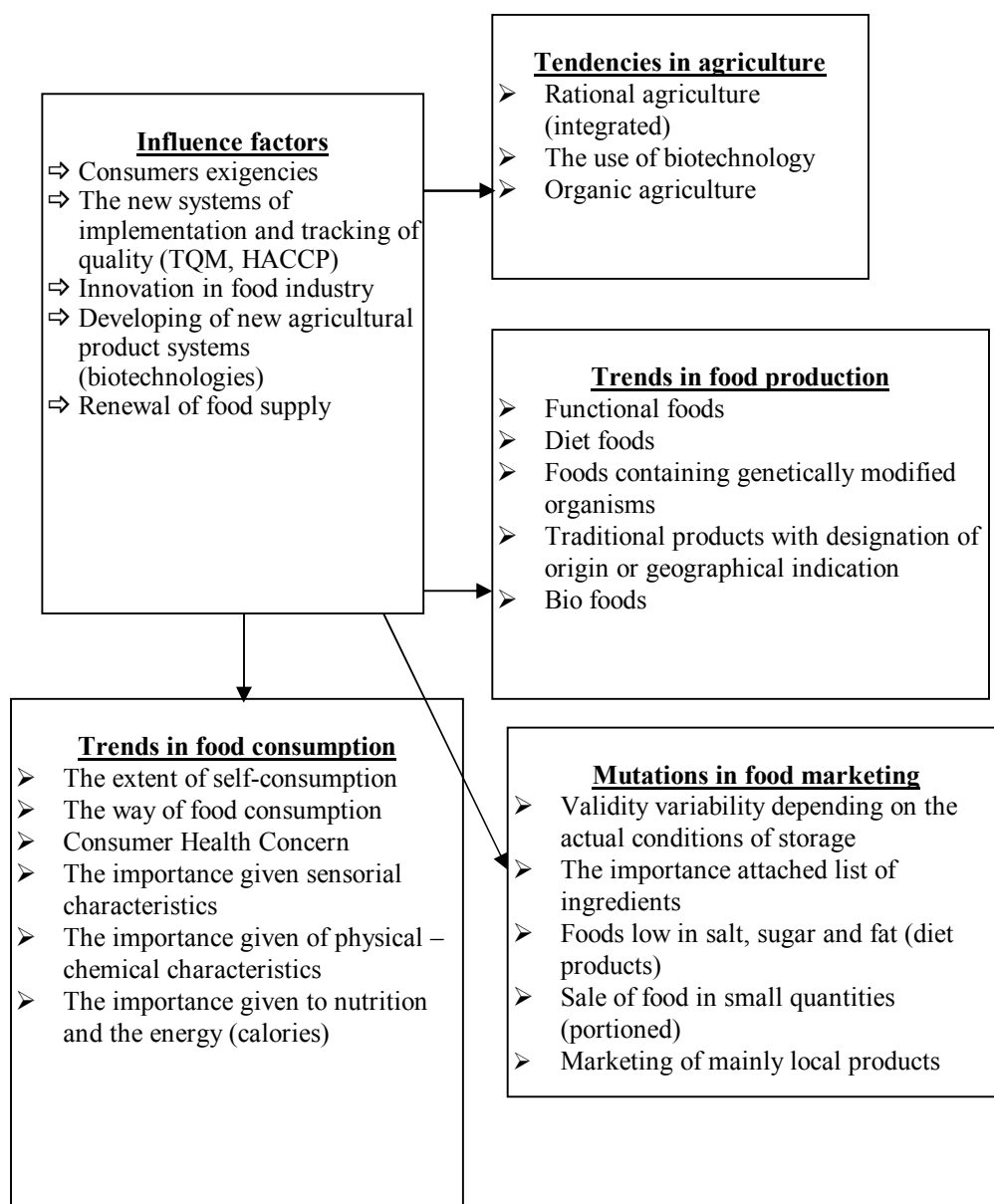
All of those trends and its influence factors are exposing in figure 1.

7. CONCLUSIONS

Quality has become in recent times, special meanings, consumer health and safety becoming an increasingly important factor in assessing the characteristics of the products purchased. The changes in consumer behaviour have triggered some important changes both in the assortment structure, production, supply on the market, and food marketing. We invaded a lot of foods that have chemicals in their composition, synthetic, that can greatly affect the long-term health of consumers.

Concerns for a healthy diet and practice have led to the discovery of new methods of organic food production, modern methods of packaging in order to maintain the quality characteristics over a long period of time. Also focus on those biological products, which present no risk in consumption, and because they possess properties that could prevent the onset of certain diseases. The economic crisis also led to a new vision of food consumption, resulting in promoting the consumption of local products with high quality features against imported products. All these changes in production,

marketing and consumption of food leave its mark on the quality of life and health of consumers.



Source: Sperdea, N., 2010, p. 41

Figure 1. Trends regarding the level of the processing, assortment structure and the quality of the food products

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THE INTERNATIONALIZATION OF THE ESTONIAN ACCOUNTING SYSTEM

JUTA TIKK *

ABSTRACT: *The purpose of the given article is to explore, describe, compare and sum up the process of internationalization of financial accounting in Estonia in the period of market economy. The research methods used comprised investigating specialist literature and valid international and local standard documents. The data received from a questionnaire about the influence of the latest amendments in acts on the administration of financial accounting in companies, were used. Specialists' opinion and estimates were used in drawing conclusions. The transition from planned economy to market economy actually meant the creation of a new accounting system. At the same time the legal reform of accounting took place, which called for the preparation and enforcement of legal acts. The period under study (1918-2008) embodies respectively periods with little legislation, almost no legal requirements, enormous social changes and integration the Estonian accounting system into the international framework.*

KEY WORDS: *accounting legislation; internationalization; accounting problems*

JEL CLASSIFICATION: *M40*

1. INTRODUCTION

The activity of accounting is long and rich in traditions, dating back to the era of several ancient civilizations (Babylon, Egypt, China, etc.) about 4,000 years ago. Much of what we know about culture, traditions and economy of the ancient nations comes from accounting records, found at archeological sites. The development of accounting to the modern level took place alongside several other factors, such as the development of calligraphy and mathematics, business administration, the emergence of private property, the development of trade.

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Similarly to other Central and Eastern European countries the history of accounting had not been extensively researched in Estonia until recent times, i.e. after the collapse of the socialist regime. The development of accounting in Estonia has to be viewed within the framework of historical changes and general cultural development of the country. The regained independence of the Republic of Estonia in 1991 brought along the transfer from the centrally planned economy to market economy, which led to radical changes in the economic system of the country. At the same time the legal reform of accounting took place, which called for the preparation and enforcement of legal acts. The period under study embodies respectively periods with little legislation, almost no legal requirements, enormous social changes and integration the Estonian accounting system into the international framework.

Within the last decade several Estonian researchers have investigated the history of financial accounting, its development and administration both globally and in Estonia as in a country of transition.

Kallas (2002) deals with the most important development stages of accounting from Luca Pacioli's treatise "Summa de Arithmetica, Geometria, Proportioni et Proportionalita" to the present, emphasizing a remarkable acceleration in the development process of accounting in the 19th century and in the early 20th century, when the main forces of development were the industrial revolution, the rapid development of technology, the emergence of new forms of business (corporations) and an increase in the management of business activities by the state. The emergence of cost accounting in the 19th century can be considered as a result of the industrial revolution. In the 20th century financial accounting become closer to statistics. Economic mathematical models and calculation machinery came into extensive use.

Järve (2006) treats the historical development process of accounting as a series of rises and falls that can be characterized by three conceptual levels. At the first level, the accounting object was counted in a simple, direct and natural way and the results were fixed, i.e. accounting on primitive data carriers available. At the second level, accounting transactions were already documented. Thus, the accounting object was significantly changed - it was not objects in their natural form any more but information about them fixed in documents. The third conceptual level, which was defined only in the second half of the 19th century, is characterized by the emergence of several accounting theories, which made it possible to interpret accounting information and its indicators separately. This meant also that the essence of accounting could be expressed by relations between profit, cash and assets, i. e. by profit paradoxes.

The aim of financial accounting is to present and report information to internal and external interest groups, which can be used in making managerial, investing and financing decisions. The task is 'evergreen' and has not changed over years. Acquisitions, amalgamations, mergers and the internationalization of economic activities in general, especially since the beginning of the 20th century, have contributed to the spread of both accounting methodologies and procedures from one country to another. The formation of accounting policies presumes the establishment of specialist organizations in a country as well as at the global level. Thus, the state legislation on accounting was introduced and developed at the national level; at the global level international accounting standards were worked out and amended. Today,

acts regulating financial accounting in different countries are being harmonized with the international accounting standards. It is caused by an increasing economic and political interdependence of the member states of economic communities as well as autonomous countries, and by an interest in generating and presenting comparable economic information. Several leading industrial states (e.g. Australia, Canada, Russia, the USA, etc.) are either considering the use of international accounting standards instead of the local ones or have done it already.

The purpose of the given article is to explore, describe, compare and sum up the process of internationalization of financial accounting in Estonia. The research methods used comprised investigating specialist literature and valid international and local standard documents. In addition, the data received from a questionnaire about the influence of the latest amendments in acts on the administration of financial accounting in companies, where respondents were specialists in accounting entities, were used. Specialists' opinion and estimates were used in drawing conclusions.

The focus of this paper is on the development of accounting regulation in Estonia within the framework of historical changes and cultural development. The remainder sections of the paper present creation the financial accounting system by three stages (Haldma, 2004) and conclusions follow.

The paper does not deal with broader topics such as the development of accounting practices in general or in particular industries.

Hopefully, this study will contribute to further optimization of accounting systems and management tools for business entities in Estonia.

2. THE APPLICATION OF FINANCIAL ACCOUNTING IN ESTONIA IN THE 20th CENTURY

As indicated earlier, history of accounting in Estonia has not been a subject of thorough investigation. There was very little information about the administration of accounting in Estonia until the early 20th century. Based on the history of the country we can assume that bookkeeping was probably performed in accordance with the accounting practice of the ruling country, which means according to Danish, German, Swedish and Russian practice in the given order. The Estonian accounting literature appeared only in the late 19th and early 20th century.

Alver, L. (2004), having researched bookkeeping in the Republic of Estonia (1918 - 1940), concludes that the standards, textbooks and instruction manuals that were valid in those days contain many aspects characteristic also of today's market economy. The main document of those days was the Russian Trade Act accompanied by the Act of Golden Balances and the Language Act of Business Entities.

According to Šinman (1931), by the Russian Trade Act business entities were divided into three groups: banks and wholesale traders, retail traders and small-scale retail traders. The trade books that companies active in different fields have to keep and the rules for bookkeeping were determined. The compulsory trade books were given for the wholesale traders, retail traders and small-scale retail traders. Double-entry system was obligatory for the wholesale traders (not defined exactly but presumed), single-entry bookkeeping was allowed for the retail traders and small-scale

retail traders. All the books, obligatory for wholesale traders in those days are in use for contemporary businesses.

The Act of Golden Balances was enforced on January 1, 1926. According to the given act a common monetary unit became the basis for preparing the balance sheet - the Estonian mark. This act foresaw that fixed assets should be reported at the acquisition cost or at the construction cost in the balance sheet (similarly to contemporary approach). Subsequent revaluations (depreciation) should be reported at the capital side of balance sheet (contrary to current balance sheet layout). Abovementioned act defined that the evaluation of investments into securities should be reported either at the market value or at the disposal value.

The Language Act of Business Entities stated that only the Estonian language was to be used in bookkeeping starting from January 1, 1935. An exception was made for companies working on concession contracts, the majority of whose shares or stakes were owned by foreign companies or which functioned as affiliates of foreign companies.

During the Second World War Estonia had been under the German occupation from June 1941 till May 1945. At the beginning of the German occupation the entities had used both the regulations introduced during the republic of Estonia and the Russian (Soviet) accounting legislation. On 30 December 1942 regulations on accounting in Easter districts which stated framework for accounting under the German rules became effective. The most important amendments were as follows: the German language should be used for accounting, the "Reichmark" should become the common monetary unit, the double-entry bookkeeping should be taken into use (except for the small-scale retail companies).

After the end of the WWII, the occupation by Germany was replaced by the occupation of the Soviet Union. At the time when Estonia was part of the economy of the Soviet Union (1940 - 1941; 1945 - 1991) the administration of accounting and reporting was not easily understandable for others because there was no act regulating accounting and reporting. The latter was replaced by legal acts issued by the Council of Ministries of the USSR, Ministry of Finance, the Central Government of Statistics, etc., which were insufficient for the administration of bookkeeping but expressed ideological aspects. Accounting was centrally managed. Common regulations, common rules for accounting in institutions and enterprises were set, common accounting forms and documents were confirmed. Accounting principles of market economy, capitalist industrial relations, protection of private property and the possibility of establishing a common system or framework of accounting were criticized and ignored. In order to record economic transactions a lot of work was done by hand and it was time consuming. Recording economic events has gradually become more precise and systematic.

Before the 50ies the chronological recording of mass operations was practiced, which was really inconvenient. Starting from the 50ies transactions were already registered in journal orders only once, at the same time in the account debited and the one credited (Linnaks, 1983). From the late 50s the unified chart of accounts was created for most state organizations, except for banks, collective farms, cooperative trades and insurance companies. The most important task of the Soviet accounting was

to have control over planned economy. The data had to be as precise and objective as possible, creative accounting was strictly prohibited and punishable. The uniformed reports introduced the actual and planned results for the current period and the actual results of the previous reporting period.

From the aspect of market economy accounting in those days constituted a set of regulations for the mechanical recording of economic transactions, which was continuously amended, however, there was no compact system that could be used for making economic decisions.

We can distinguish that under the Soviet accounting system

- Only financial accounting (bookkeeping) was introduced. There was no managerial accounting applied;
- Only tangible assets were included for accounting purposes;
- Only the historical cost method was used for recognizing assets.

During the Soviet system the double-entry bookkeeping was used with some exceptions of the collective farms and some small institutions.

3. TRANSITION TO MARKET ECONOMY AND CREATION THE BASIS FOR NEW ECONOMIC THINKING

The decline of the communist regime in Estonia created the basis for new economic thinking. The transition from planned economy to market economy involved radical changes in economy, including financial accounting. The Soviet accounting system was no longer appropriate for the informational needs of the managers. The main problem to face was how to build a flexible accounting regulation system, which would meet the challenges of 21st century to enable integration into and harmonization with the international accounting framework. Noticeable changes became possible after approving the Declaration of independence on August 20, 1991. Actually, the transition to market economy which began in the late 1980ies but was in full swing after 1990 meant the creation of a new accounting system.

At the same time the legal reform of accounting took place, which called for the preparation and enforcement of legal acts. On July 6, 1990 the accounting statute was approved by the Estonian Government and came into effect on January 1, 1991. Järve (2006) emphasizes the substantial changes arising from the statute, such as the use of terminology related to market economy, the replacement of cash-basis accounting by accrual-basis accounting, the structure of the financial statements in the annual report changed, the preparation of internal regulations for bookkeeping was required, etc. Passing the statute was the first step in the administration of financial accounting in accordance with market economy in Estonia and its implementation laid foundations for the introduction of financial accounting in conformity with the international accounting standards under the conditions of market economy. According to the statute the Accounting Standards Board reporting to the Ministry of Finance became an institution responsible for the administration of financial accounting, which gave methodological recommendations, prepared regulations, regulated reporting and solved organizational problems. However, the accounting statute was quite modest in content and volume.

From the specialist literature, Bailey (1998 p 1462) suggested for the countries in transition a phased approach to the accounting reform. Haldma (2004), analyzing the Estonian accounting reform and development of the Estonian accounting system, divided this process into three stages:

- Introductory (1990 - 1994);
- Creation of the system (1995 - 2002) and
- Development of the system (since 2003 onwards).

Haldma (2004 p 45) concluded that the phased approach followed in three directions: development of the accounting regulations towards implementation of the IFRS; development the scope of accounting regulations from private business to governmental institutions; development of the degree of independence of the accounting regulatory institution - the Estonian Accounting Standards Board.

During the introductory stage of the development of contemporary accounting system the main emphasis was laid on the regulation of accounting in business entities.

4. ESTABLISHMENT OF THE FINANCIAL ACCOUNTING SYSTEM BASED ON INTERNATIONALLY ACCEPTED PRINCIPLES

The accounting statute soon became obsolete. The rapid changes in economy brought along a necessity for the establishment of legal bases and main requirements for financial accounting in accordance with internationally accepted principles. The Estonian Accounting Board drafted the first Estonian Accounting Act which was enforced on January 1, 1995. In those days the act was largely conforming to the International Financial Reporting Standards (IFRS).

Since 1995 two sets of standard documents have been regulating the administration of accounting in Estonia. These are the Estonian Accounting Act and the Guidelines of the Accounting Standards Board. The Accounting Act is primary, its purpose is to establish legal foundations and to set requirements arising from internationally accepted accounting and reporting principles for accounting entities in the Republic of Estonia. The Guidelines of the Accounting Standards Board specify and explain the Accounting Act. The given documents laid foundation for the accounting system - the Estonian GAAP. 16 guidelines were worked out over time, which were then called the Estonian Accounting Standards; in addition, several recorded decisions were made, which were updated in due course.

Estonia signed an association contract with the European Union, which came into effect on September 18, 1995. The given contract stated that the approximation of the valid legislation as well as the one under creation to that of the union was a significant prerequisite for the integration of Estonian economy into the European Union.

The orientation in Estonia was and is to maintain the rules and regulations for accounting in conformity with the International Financial Reporting Standards, which required amendments in local standard documents in order to harmonize them with the International Accounting Standards. Thus, due to the changed conditions a new accounting act had to be worked out in Estonia, which came into effect on January 1, 2003. The basis was the accounting act that had been valid until that date, and which

had been well applicable in practice, nevertheless, it contained several remarkable shortcomings.

A large part of the former act was not applicable for accounting in the public sector; that mistake was corrected in the new act. The concept of a public accounting entity was defined, its obligation to prepare the annual report and consolidate it at the level of the state as one public legal entity was determined. By passing the act, the principles for financial accounting in the public sector that had developed in the member states of the European Union, were now implemented in Estonia, too.

The new act conformed concepts and basic principles, bringing them into accordance with IFRS. Some terms and definitions were added, on the other hand, several outdated ones were eliminated. For example, the definitions for revenue, expense, assets and liabilities were corrected. Unfortunately we have to admit that not all corrections were successful and there are some discrepancies and sometimes misinterpretations in definitions used in the IFRS, in the Accounting Act as well as in the Guidelines of the Accounting Standards Board (Alver, 2003).

According to the previous act the financial report consisted of two main statements (the balance sheet and the income statement) and notes. Now the annual report contains four main statements (the balance sheet, the income statement, the statement of cash flows, the statement of owners' equity) and notes. Both the structure of the statements with small exceptions and the information disclosed in the notes has been conformed to the requirements of the IFRS and international practice.

The status of the Accounting Standards Board was changed. Now it is a functionally independent institution, which is administratively dependent on the Ministry of Finance, because according to the practice of developed countries accounting guidelines are issued by independent organizations. The Accounting Standards Board is administratively dependent on the Ministry of Finance. It was feasible to retain the administrative dependence in order to minimize costs.

The new act set the requirement that the Guidelines of the Accounting Standards Board have to be based on the IFRS, with references to the corresponding IFRS. If needed, it was allowed to determine differences, to simplify or not to imply the IFRS.

The new act presents additional requirements for a public employer, for a private or exclusive employer and for an employer providing services of general economic interest, the aim of which is to ensure the transparency of accounting in the entities mentioned in their financial relationship with the state or the local government. According to the joint position of the European Union Estonia was compelled to harmonize the above-mentioned directive with the Estonian legislation within the year 2002.

The previous act had included several articles, which were not applicable in practice, or were senseless or copied other laws. Such articles or parts of them were not included in the new act any more, such as asking for permission to transfer from one income statement scheme to another, asking for permission to maintain journals and ledgers electronically without having them in paper; the part dealing with the responsibility of an auditor and the responsibility for the administration of accounting. The latter two are provided by different laws.

The regulation of accounting in public institutions was under serious focus only from the creation of the system stage. The situation was analysed by the Ministry of Finance and the conclusion was that the existing regulations did not meet the expectations set for the public accounting system both from the aspect of internal and external users. The first Accounting Act almost did not touch upon the regulation of accounting in the public sector. However, the given field was regulated by the regulation of accounting for public institutions and decrees by the Minister of Finance. The accounting methods used were a mixture of cash-basis and accrual-basis accounting, and therefore the outcome was unsystematic both in content and in form. The lack of systematic methods also casts doubt upon the reliability of the data. Thus, we can claim that the state did not have a true overview about its assets, liabilities, accrual revenues and expenses. According to Jansen (2004) there were two parallel accounting and reporting systems - bookkeeping and fulfillment of the budget, whereas the latter was considered of primary importance. The mentioned systems did not have any logical connection. It was not possible to consolidate the data. Consistent information was available only in accounting for money earned and spent.

5. HARMONIZATION OF THE LOCAL FINANCIAL ACCOUNTING REGULATIONS WITH THE INTERNATIONAL ACCOUNTING STANDARDS

A new Accounting Act came into effect on January 1, 2003. Not only did the new accounting act bring the Estonian accounting legislation closer to the international standards, but also contributed to a better organization of the economic environment. The financial reports by business entities became more informative and enabled different interest groups to have a better overview about the reporting company's financial position, assets and liabilities.

The new accounting act also applied to the public sector with a few exceptions. Accounting in the public sector was converted into accrual basis accounting and harmonized with the International Accounting Standards. The adaptation of the accounting act to public sector enterprises, including the local government ones, gave a remarkable rise in the level of financial accounting in the public sector. The change in the regulation of accounting at the state level led to reforming the accounting sector in the state as a whole. The new general rules for organization of the accounting and financial reporting of the state and the state accounting entities that became effective from January 1, 2004 was taken into use as the Estonian equivalent to the International Public Sector Accounting Standards. In the given stage the accounting principles in the public and private sector were harmonised.

According to the Accounting Act it was allowed all entities (excluding the listed companies) to prepare their statements either in accordance with the international standards (IAS/IFRS) or in accordance with the local guidelines. The Estonian GAAP, which are described in the Guidelines of the Accounting Standards Board (12 guidelines were enforced since January 1, 2003, at the same time the former guidelines and recorded decisions were declared invalid), are meant to be followed first by such companies who do not have to prepare their statements fully in accordance with the

IFRS. These are, for example, small and medium-sized enterprises. Although the Estonian GAAP is based on the IFRS, they allow for simplified treatments in certain fields and set fewer requirements for the information disclosed in the notes. The fact that Estonia joined the European Union on May 1, 2004 made it necessary to review the documents regulating financial accounting in Estonian companies.

Although Estonia has been ahead of time to a certain extent as according to the Accounting Act that has been effective since January 1, 2003 companies may prepare statements either in conformity with the International Financial Reporting Standards (IAS/IFRS) or with the Estonian GAAP, which were based on the international standards in principal, the local standard documents had to be amended due to changes in several international standards introduced in 2005.

The International Accounting Standards Board (IASB) changed about 20 existing standards, declared several interpretations of standards invalid and adopted a number of new standards. The amendment of the international standards was caused by the necessity to comprise areas that had been unregulated before, to decrease the number of alternative treatments, to eliminate possibilities of formal and malevolent interpretations (e.g. extraordinary items), reassess several terms and aspects (e.g. the treatment of goodwill).

According to the decision made by the European Commission all listed companies in the EU have to prepare financial statements in accordance with the IFRS starting from 2005 at the latest, for other companies the implementation of the IFRS is recommended. Thus, all the 17 Guidelines of the Accounting Standards Board were amended again. For now, all the Estonian local standard documents have been brought into accordance with the international standards, being actually simplified summaries of the latter.

On December 1, 2005 several changes were introduced in the Accounting Act. They emphasize the necessity of providing the users of financial statements with adequate information; transactions are allowed to be documented and journalized within a reasonable time period after the business transaction has occurred, whereas one has to take into account that statements have to be presented on time; the essence of journals and ledgers, the possibility of making excerpts and the requirements for the format of registers have been defined because the mechanical procedure of bookkeeping has changed due to computerization. An important change compared to the previous version is the provision of the implementation of internal control measures in internal regulations. The use of internal control is widely spread in the entities' practice and obligatory for state institutions. The given amendment eliminates the respective loophole in standard documents.

A written declaration by the management is to be added to the annual report. The methods of accounting for the owners' equity and its presentation in the consolidated statement are adjusted.

According to the amended act more information is required in the management report, such as the description of the main fields of activity as well as products and services; also the most significant investments made in the ending year and those planned in the near future. The accounting entities subject to auditing have to provide a macroeconomic analysis of their working environment, to disclose the seasonal or

cyclical nature of business activities, to describe the environmental and social effects influencing the business activities or caused by them, to assess risks arising from fluctuations in currency exchange rates, interest rates and stock exchange rates, to disclose the main financial ratios for the ending financial year and the methods used for calculating them. The introduction of these changes must ensure the preparation and presentation of financial statements in accordance with the generally accepted accounting principles, concerning particularly the unconditional observation of the disclosure principle.

The responsibility taken by those signing the annual report for the accuracy of the data presented is under focus.

The tendency is to simplify and generalize the main statements. However, several balance sheet entries have to be explained in detail in the notes to financial statements. Some amendments in the Accounting Act came into force on January 1, 2007.

The annual report states the entity's field of activity according to the classification used for Estonian economic activities based on 10 most significant fields of activities. The management report is and will be a textual document written in a free form, where also the entity's activities, product and service groups of the accounting year as well as those planned for the beginning year are indicated. Here the employers are not bound to the classification categories but may use them if they so wish.

Since November 19, 2007 the Accounting Act has been amended concerning the management report by an issuer of securities traded on the regulated securities market in Estonia or another member state (includes also the management report by a consolidated group). In conclusion, the idea of the amendments is following the disclosure principle in all economic transactions or events, where a business entity issuing securities is one of the parties.

The frequent changes in the international standards have caused real dissatisfaction among users, therefore the International Accounting Standards Board (IASB) made a statement in which they promise not to make any major changes in the Financial Accounting Reporting Standards until 2009. The pressure by the European Union on the given statement cannot be underestimated as the EU clearly expressed their dissatisfaction about too frequent changes in the IFRS (Vilu, 2006). The local documents are conformed to the IFRS and changes in the IFRS will cause changes in the local documents. According to the specialist questionnaire answers, frequent changes/amendments in acts are confusing for users and might cause mistrust in the legislative system. It would be better to work on acts for a longer time and more thoroughly, to discuss the projects and suggestions and only then make amendments. But in general, the users find the Estonian accounting system be satisfactory.

6. CONCLUSIONS

The transition to the market economy in Estonia starting from the late 1980ies actually meant setting up a new accounting system. At the same time a legal reform was performed in the field of accounting. Major changes were made in legislation, terminology, accounting principles as well as in financial reporting. A foundation was

laid for the administration of financial accounting based on the principles of a market economy in Estonia, which made it possible to implement financial accounting according to the international accounting standards.

By the implementation of those principles Estonia was a step ahead of other EU member states, implementing the international accounting principles already before they became compulsory for listed companies in 2005.

The changes made in the documents regulating the general administration of modern financial accounting can be divided into:

- Formal changes made for the clarity of the documents and to avoid misinterpretations;
- Changes of the content (incl. corrected terms and/or definitions, accounting methods and accounting principles added or changed, etc).

We can conclude that the reasons for changes introduced in the accounting act at the development stage of the financial accounting system are derived from the mistakes and inaccuracies occurred while dealing with financial accounting and preparing financial statements, and from possible misinterpretations of guidelines, contradictions between different acts, but also from the development of the general economic environment and information technology.

The harmonisation of Estonian standard documents and the international standards is necessary in order to reduce differences in financial statements and increase their comparability on the international scale.

The adaptation of the Accounting Act to public sector enterprises, including the local government ones, gave a remarkable rise in the level of financial accounting in the public sector. The change in the regulation of accounting at the state level led to reforming the accounting sector in the state as a whole. Now the accounting principles in the public and private sector are harmonised.

Since the accounting legislation and guidelines are based on the internationally accepted principles, the financial statements by Estonian companies are globally more understandable than the statements by companies located in several other countries. The developments in the field of accounting in Estonia have also attracted attention elsewhere in the world and several countries have either considered implementing the Estonian experience or have used the ideas.

The professional education and general level of financial specialists is rising in Estonia, however, people employed in the field of accounting have to be continuously provided with specialist training, also in theory. A strong theoretical background of the users of standard documents enables them to analyse documents, assess their user-friendliness and to solve technical problem based on theory.

By introducing the amendments in the legislation at the development stage of the system, Estonia has taken another step in the consistent development of the financial accounting system. The development is still continuing, because there are several areas that have not been dealt with or have been dealt with insufficiently, which, however, have to be regulated and updated in the development process of financial accounting.

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THE EVALUATION OF RISK REGARDING INSURANCE. STATISTICAL METHODS OF RISK DISSIPATION

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ABSTRACT: *Value at risk (VaR) is a summary statistic that quantifies the exposure of an asset or portfolio to market risk. Value at risk is now viewed by many as indispensable ammunition in any serious corporate risk manager's arsenal. VaR is often used as an approximation of the maximum reasonable loss a company can expect to realize from all its financial exposures. The purpose of any risk measurement system and summary risk statistic is to facilitate risk reporting and control decision. VaR certainly is not the only way a firm can systematically measure its financial risk. But, its appeal is mainly its conceptual simplicity and its consistency across financial products and activities.*

KEY WORDS: *insurance; value at risk; risk management; risk statistic*

JEL CLASSIFICATION: *C10, C23*

1. INTRODUCTION

In a competitive framework, agents adopt a neutral stance towards risk will spend a sum of money which will be equal to the amount of rent for which they compete. This is not the same place where rent seeking agents through a strategic game in which the relative costs of each agent determines the probability of winning a fixed annuity.

Position to risk an agent is given the reality of a particular state of the economy, but this is more the rule than the exception. Even if agencies are public companies, they can address some risk aversion. Moreover, different socio-economic

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factors such as individual wealth or age, are often regarded as some factors that affect the degree of risk aversion. The question is whether the two sets of players will consistently behave differently in the same competition by getting rent.

In addition to the types of expenses to obtain rent we talked about, in which players pay a certain amount for their willingness to receive a fixed annuity, we will consider the cost of resources to increase the size of rent. For example, in addition to lobbies for a government contract, players can compete and to increase the size of the contract, the desire to obtain a higher rent than that normally get this type of contract. We call this type of activity as a behavior to increase the rent.

If the annuity will be divided between several players, each will strive to maximize their due part. If this maximization is deterministic, we have a rent maximizing behavior, whether done by maximizing the likelihood, we obtain a rent behavior. It should be noted that for individual investments, risk is increased by all investors hate risk aversion but we have no certainty that they will reduce their investments in risky assets. Therefore not be surprising that the increased risk in a competition will have an effect that can not be determined a priori. As is true and vice versa: a risk-loving investor will always invest less in risky assets.

2. RENT – SEEKING BEHAVIOR

We'll consider the next example: a company with abhorrence at risk who has the initial fortune of 20 u.m. and which preferences are described by the function of utility of the final fortune $u(y) = \ln y$. The company has the possibility to obtain the premium (the rent) of 50 u.m. with the probability $p = 0,5$. For an expenditure of 9 u.m. the company can also increase the probability of obtaining a premium at $p = 0,7$. It can be observed that a player who search a premium and is neutral given the risk, will want to spend 9 u.m., while the expected fortune will increase from 45 u.m. at 46 u.m.. The following calculus show that the player with abhorrence at risk previous described will not invest 9 u.m. to obtain the rent because this will decrease the utility from 3,622 at 3,597. So, the player with abhorrence at risk will invest less to obtain the rent than the player which is neutral given the risk.

To verify if the contrary hypothesis have place, we'll consider the initial fortune as the previous but the first one will be decrease at 5 u.m. with the probability of $p = 0,5$. We'll consider the potential investment of 1,01 u.m. for the probability increase to obtain the rent at $p = 0,7$. The neutral player who search a rent will not invest 1,01 u.m. because this investment will produce a decrease of expected fortune from 22,50 u.m. at 22,49 u.m. Anyway, the investor from 3,1073 u.m. at 3,1075 u.m. after the investment to obtain the rent.

Let's consider a fixed number of n competitors (seekers of rent), each of them endowed with an initial fortune of $w > 0$, that compete for a given rent $b > 0$. Having $X \equiv (x_1, \dots, x_n)$ the vector of expenditures made to obtain the rent for n competitors. The probabilities to win the premium are showed by the vector $(p_1, \dots, p_n) \in S^{n-1}$, where S^{n-1} represents the simplex an \mathbf{R}^n . The competition is characterized through a

successful function after the competition noted with $P : [0, w]^n \rightarrow S^{n-1}$, so $(x_1, \dots, x_n) \rightarrow (p_1, \dots, p_n)$. The element of i degree of this function, $P(X) = [p_1(X), p_2(X), \dots, p_n(X)]$, is the function of probability of the I player. We suppose that p_i has positive values when represents the effort of player and negative values when represents the competitors' effect, where $p_i' = \frac{\partial^2 p_i}{\partial x_i} > 0$ and $\frac{\partial p_i}{\partial x_j} < 0$, for any $i \neq j$. Also, $p_i'' = \frac{\partial^2 p_i}{\partial x_i^2}$ and that $\frac{\partial^2 p_i(x, x, \dots, x)}{\partial x_i \partial x_j} \leq 0$ for $i \neq j$. These conditions are valid succes functions more general of the type $p_i(X) = \frac{f(x_i)}{\sum f(x_i)}$ with $f' > 0$, $f'' < 0$ and $x_i = x_j \quad \forall i, j$.

Each player choose the level of monetary effort which maximizes his utility:

$$E_u = [y_i(X)] \equiv p_i(X)u(w - x_i + b) + [1 - p_i(X)]u(w - x_i) \tag{1}$$

The aleatory variable $y_i(X)$ represents the final profit of player which depends of the expenditures vector for obtaining the rent X .

A Nash equilibrium in pure strategy as part as the games for obtaining the rent is a vector of efforts of searching a rent $X^* \equiv (x_1^*, x_2^*, \dots, x_n^*)$ so, because the vector of other players efforts, $X_{-i}^* \equiv (x_1^*, \dots, x_{i-1}^*, x_{i+1}^*, \dots, x_n^*)$, x_i^* maximizes the expected utility given by the relation (1), for any $i = 1, \dots, n$. We suppose that all the players are likewise and that $E_u(y_i)$ has one maximum point $\forall i, \forall X_{-i}$. It's obtained an equilibrium of type Nash in pure strategies that satisfies the relation:

$$\left. \frac{\partial E_u}{\partial x_i} \right|_{x^*} = p_i' [u_1 - u_2] - E_{u'} \geq 0 \tag{2}$$

The equality has place when $x_i' < w$ and $u_1 \equiv u(w - x_i + b)$, $u_2 \equiv u(w - x_i)$ and $E_{u'} \equiv p_i u_1' + (1 - p_i) u_2'$.

The condition of two degree given by the relation (2) defines the function of reaction of i player, where the marginal utility of benefits equalizes the marginal utility of expenditures made to obtain the rent in optimum point. In the case where preferences are neutrally at risk, the ecuation (2) is reduced at an equality between the marginal benefits and marginal costs:

$$\left. \frac{\partial E_{y_i}}{\partial x_i} \right|_{x^*} = p_i' b - 1 \tag{3}$$

From the relation (2) and from the condition that $p_i'' < 0$ we obtain the following result:

Proposition 1: For each two functions of utility u and v has place the inequality $x_u^* > x_v^*$ only if $\frac{(u_1 - u_2)}{v_1 - v_2} > \frac{E_{u'}}{E_{v'}}$ where u, u' and v, v' are estimated in point $y(x_v^*)$. We abandoned the utilization of index i because we are interested in the symmetrical inequality $x_i^* = x_j^* \quad \forall i, j$. This proposition compares the expenditures to obtain a rent at equilibrium as part as two games to obtain symmetrical and different rent: one in which all the individuals have the same function of utility u and other in which all have the function of utility v . The feature of utility function of having a single maximum point on the study interval involves the fact that the relation (2) determines an unique value x^* in each game.

The condition $\frac{\partial^2 p_i}{\partial x_i \partial x_j} \leq 0$ shows that the agents i and j expenditures are strategically replaced. Results that the marginal efficiency of one u.m. to obtain the rent by the player i is more little when j spends more. This condition leads us

at: $\frac{\partial \left[\frac{\partial E_u(y_i)}{\partial x_i} \right]}{\partial x_j} \leq 0$, in a symmetrical equilibrium of Nash type, we have $x^* = x_i = x_j$.

Then,

$$\frac{\partial \left[\frac{\partial E_u(y_i)}{\partial x_i} \right]}{\partial x^*} = \frac{\partial^2 E_u(y_i)}{\partial x_i^2} + (n-1) \frac{\partial^2 E_u(y_i)}{\partial x_i \partial x_j} \quad (4)$$

where the first part from left is negative because the hypothesis that says the conditions of two degree rest valid for x_i . In proposition 1, the second inequality involves the fact that $\frac{\partial E_u(y_i)}{\partial x_i} > 0$ in point x_v^* .

To understand the way how the individual behaviour affects the equilibrium, we take $x_j = x_v^*, \quad \forall j \neq i$ and we'll have in consideration the incitation of the individual i . We suppose that a change in the function of utility from v at u will lead to an increase of x_i . Because we have a symmetrical equilibrium exists a certain incitation of increase the expenditures in order to obtain the rent for all the players. If $\frac{\partial E_u(y_i)}{\partial x_i} > 0$ for player i when $x_j = x_i^*, \quad \forall j \neq i$, the condition (4) guarantees that the inequality will keep itself when all other x_j to obtain the rent. So, that the new level of equilibrium expenditures x_u^* will be bigger than the old equilibrium level x_v^* . It can be observed that the restriction x_i and x_j to be strategically replaced is more powerful

than the necessary one for obtaining the equality between the individual incitation to increase x_i and much bigger value of equilibrium x^* as part as symmetrical game. Indeed, we need only the relation (4) to obtain this result.

For the case of comparison, between the preferences that are neutral given the risk, we will obtain:

Corollary 1: Having $v(y_i) = y_i$. Then
$$\begin{cases} x_u^* > x_v^* \\ x_u^* = x_v^* \\ x_u^* < x_v^* \end{cases} \text{ only if } \begin{cases} E'_u < \frac{u_1 - u_2}{b} \\ E'_u = \frac{u_1 - u_2}{b} \\ E'_u > \frac{u_1 - u_2}{b} \end{cases} \text{ where } u \text{ and } u'$$

are estimated at any $y(x_v^*)$.

The expression $\frac{u_1 - u_2}{b}$ represents the average progress of utility at one dollar from rent and is the slope line AB from the next figure. E'_u represents the cost of utility for a marginal investment of one u.m. to obtain the rent and is a well-balanced mean of u'_1 and u'_2 . With $\frac{u_1 - u_2}{b}$ fixed, any function of utility with abhorrence at risk will satisfy the condition $u'_1 < \frac{u_1 - u_2}{b} < u'_2$, where u and u' are calculated in the point x_v^* (the neutrality given the risk).

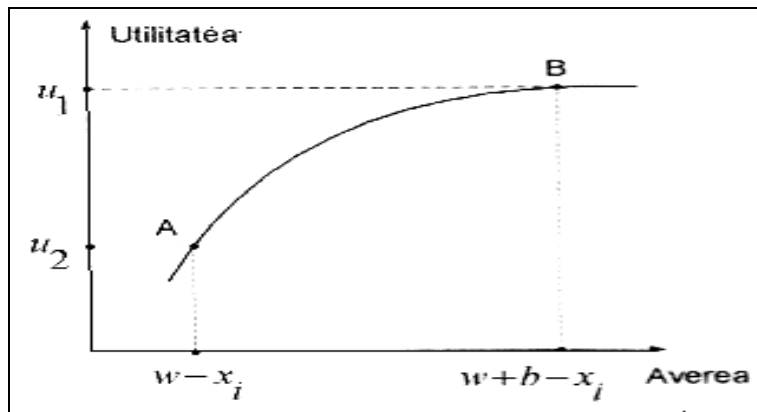


Figure 1. The marginal utility of costs and benefits for obtaining the rent

Because $\frac{u_1 - u_2}{b}$ can be close by u'_1 or u'_2 , x_u^* can be more little or bigger than x_v^* . Because this reason it's possible the rent be more dissipated in the

competition with players that have abhorrence at risk than the one where the neutral players given the risk.

For a general case, where u has a bigger abhorrence given the risk than v , it's possible that more rents to be spread in competitions with many players, because the second inequality from proposition 1 is valid even in this case.

To isolate the risk's effects we'll consider the case where the marginal investment to search the rent is neutral from the actuarial point of view. Supposing that the person i wants a little growth of expenditures to obtain the rent from x_i to x'_i and has opinions like those described by Nash concerning the contributions of the other agents X_{-i} . This thing will lead to a growth of p_i at \hat{p}_i level. If $\Delta x_i \equiv x'_i - x_i$ and $\Delta p_i \equiv \hat{p}_i - p_i$, the actuarial neutrality involves the $\Delta x_i = (\Delta p_i)b$. We make this supposition here only in an illustrative goal. Of course, the changes from the monetary value of expenditures for obtaining the rent will affect the player's behaviour. If we want to isolate the risk's effects we suppose that the expected value of profit is not affected.

The passing from the level x_i of expenditures at level x'_i , as is described, is represented graphically in figure 2.a). It can be observed that a growth of x makes the support line of the fortune's distribution to move at left, while through the competition is given a big probability to the best profit and keep the expected fortune E_y .

The arrows from the figure 2 show the direction of the probability's change. The points circles thickened represent the fortune's levels which have positive probabilities after has place the change in rhombus points represent the levels of all unoccupied probabilities. In the section b) of figure 2 is moved all the probability from the value $w - x_i + b$ at $w - x'_i + b$ and a part from the probability $w - x_i$ at $w - x'_i + b$ because the average value E_y , of the fortune must stay unchanged. This represents a contraction for keeping the mean of fortune's repartition and a risk's decrease. In section c) of figure 2 we move the probability remained from $w - x_i$ and we'll move it at $w - x'_i$ and $w - x'_i - b$. This is a spreading of the probabilities so the fortune's mean stay unchanged and also a risk's increase:

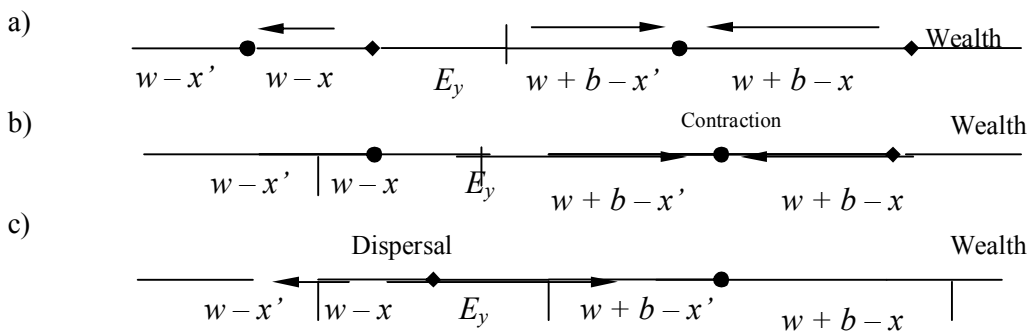


Figure 2. Decomposing the effects of risk into a contraction and an average scattering

Because the total change of the probability includes a contraction and also a spreading of fortune's distribution, in general, the risk remains unchanged. So, some players with abhorrence at risk will obtain a bigger utility if they invest x_i in searching the rent when others will prefer to invest x'_i . It doesn't exist a correlation between the level of abhorrence at risk and the level of expenditures to obtain the rent.

The previous analysis involves the fact that the incitation of a person – of investing more or less – in function of his abhorrence changing given the risk cannot be a priori predicted. If the comparative effect of change given the risk cannot be predicted for individual behaviour, not even when we have restrictions over the preferences such as the constant abhorrence given the risk, then it'll not be surprising if the effect of such changes over the equilibrium's level of expenditures as part as the games of obtaining the rent is also hard to predict.

In case which the persons expenditures to obtain the rent are not strategically replaced we can have the certitude that the equilibrium level of expenditures x^* in the symmetrical game will be modified in the same direction as the individual incitation for changing the x'_i when X^*_{-i} is fixed, increasing the incertitude.

In case which the expenditures to search the rent are strategically replaced a comparison between the Nash equilibrium in pure strategies in a symmetrical game with neutral players at risk and with players with abhorrence given the risk is possible, if the number of players is big enough. If we fix $v(y) = y$ as being the utility of neutral player given the risk and $u(y)$ to be only concave, then, because $p^* \rightarrow \frac{1}{n}$ at equilibrium, we have $p^* \rightarrow 0$ when $n \rightarrow \infty$. So, at big values of n , we have E'_u arbitrary close by u'_2 . Thus, $E'_u > \frac{u_1 - u_2}{b}$ and $x_u^* < x_v^*$ from corollary 1.

3. BEHAVIOR TO INCREASE RENT

We will consider that p_i is exogen, but the individuals can increase their part of rent if this is received. For example, we'll consider one model with collective rents in which certain number of groups (coalitions between players) has a fight of the type “the winner takes all for his group”. In this case the rent is shared between all the members of the group. Having $\beta_i(x_1, \dots, x_n)$ the part of rent corresponding to the player i , if his group wins the game to obtain the rent, where x_i represents the expenditures of player i for the rent's growth. Is created the hypothesis that the function β_i of rent's division is differentially is increasing and concave in direction of x_i , with $\beta'_i \equiv \frac{\partial \beta_i}{\partial x_i} > 0$ and $\beta''_i \equiv \frac{\partial^2 \beta_i}{\partial x_i^2} < 0$. Moreover, we consider that $\frac{\partial \beta_i}{\partial x_j} < 0 \quad \forall i \neq j$ and β_i is differentially everywhere.

In the previous scenario, we suppose that $(\beta_1, \dots, \beta_n)$ is part of unitary simplex on \mathbf{R}^n that $\beta_i = 0$ when $x_i = 0$. Another scenario supposes that the rent's size can be

growth, so $\beta_i \geq 1$ represents a scalar factor. Keeping the hypothesis where we have the same players in a symmetrical and pure strategy. The Nash equilibrium, the equilibrium levels of growth expenditures of the rent satisfies:

$$x_i' = \arg \max \{p \cdot u[w - x_i + \beta_i(X) \cdot b] + (1-p) \cdot u(w - x_i)\} \quad (5)$$

the solution of equality $X_{-i} = X_{-i}^* \equiv (x_1^*, \dots, x_{i-1}^*, x_{i+1}^*, \dots, x_n^*)$ with $p = p_i = \frac{1}{n}$.

The condition of first degree for each i in the relation (5) is:

$$\left. \frac{\partial E_u}{\partial x_i} \right|_{x^*} = p \cdot u_1' \cdot \beta_i' \cdot b - E_u \quad (6)$$

where $u_1' \equiv u'[w - x_i + \beta_i(X) \cdot b]$ and $E_u \equiv p \cdot u' + (1-p) \cdot u'(w - x_i)$. For the neutral player given the risk and who wishes to increase his rent, we'll obtain the next condition of first degree:

$$\left. \frac{\partial y_i}{\partial x_i} \right|_{x^*} = \beta_i' \cdot p \cdot b - 1 = 0 \quad (7)$$

Unlike the model to obtain the rent, the conditions of second degree for (6) and (7) are satisfied because $E_u(y_i)$ is concave in x_i . Supposing that $\beta_i' \cdot p \cdot b > 1$ for $x_i = 0$ (so $x_i = 0$ in the case of neutrality given the risk), results from the standard fixed points certain arguments which uses the fact that $\beta_i \leq 1$ is everywhere and β_i is concave in x_i and $\beta_i \cdot (x_i, X_{-i})pb = x_i$ so the relation (7) is maintained. Therefore the neutral player given the risk who search to increase his rent invests less than the expected value of total rent, pb .

Also, we note that $x_i^* < pb \quad \forall X_{-i}$. So, the space of the efficient strategies is included in the cartesian product with size n : $[0, pb] \times [0, pb] \times \dots \times [0, pb]$. Because this is a compact set and $E_u(y_i)$ is concave in x_i , we can say that exists a Nash equilibrium in pure strategy.

Unlike the activities to obtain the rent, the activities to rise the rent lead to rent's increase for obtaining the final fortune. This fact is easy to observ in growth rent expenditure's case. This investment leads at final support spreading of fortune decreasing the value $w - x_i$ and increasing the value $w - x_i + \beta(x) \cdot b$. Therefore such investment is a spreading of average value of fortune's repartition that represents a high level of risk.

As results, a player with a high level of abhorrence given the risk will be tempt to invest less in the rent's increase. Of course, the marginal expenditure for rent's increase will not keep untouched the average value of fortune. From the relation (6) results that $\beta_i' \cdot p \cdot b > 1$ at expenditure of equilibrium x_u^* for a player with abhorrence

given the risk, for example, the marginal expenditure with rent's increase leads at expected fortune growth.

The final effect at high level of abhorrence given the risk over the growth expenditures of rent is similiary to the final effect in models of individual insurance. If is considered that x_i and x_j are strategically replaced, thus

$$\frac{\partial^2 E_u(y_i)}{\partial x_i \partial x_j} \leq 0 \quad \forall i \neq j \tag{8}$$

Results from the relation (8) and from the condition of second degree for x_i that:

$$\frac{\partial}{\partial x^*} \left[\frac{\partial E_u(y_i)}{\partial x_i} \right]_{x^*} = \frac{\partial^2 E_u(y_i)}{\partial x_i^2} + (1-n) \frac{\partial^2 E_u(y_i)}{\partial x_i \partial x_j} < 0 \tag{9}$$

Thus, a change of the utility from u at v which makes the value of x_i to growth, supposing that X_{-i}^* stays fixed will also make that the equilibrium value x^* to growth. The individual behaviour as an answer at changing inside the utility's level is the some from qualitative point of view like a modification at equilibrium expenditures level. So, in strategical replacement's case wi'll obtain the next result:

Proposition 2: For any two functions of utility u and v , $x_u^* > x_v^*$ only if $\frac{u'_1}{v'_1} > \frac{E_{u'}}{E_{v'}}$ where u' and v' are estimated at the value $y(x_v^*)$.

As example at proposition 2, we can observe that for u concave and $v(y) = y$, the second inequality from the preposition 2 is inverted. Thus, $x_v^* > x_u^*$; the equilibrium expenditures for rent's growth in a game with neutral players given the risk are bigger than those as part as a play with participants with abhorrence at risk. This fact can be expressed more general like this:

Corrolary 2: We'll consider two functions of utility u and v thus u is with abhorrence at risk bigger than v . Then, $x_v^* > x_u^*$.

Also proposition 2 and the corrolary are valid any time when x_i and x_j are strategically replaced. If x_i and x_j are strategically complementary, then the inequality (9) can't be quaranteed. Even if the individuals who have a high level of abhorrence at risk will personally invest less for rent's growth the equilibrium expenditure doesn't need an expenditure less than x^* in the condition of a high level of abhorrence at risk. For example, we suppose we have only the condition that

$\frac{\partial^2 \beta_i}{\partial x_i \partial x_j} \leq 0$, is not sufficient to generate a strategical replacements. As result, a game

of rent's growth with players that have a high level of abhorrence given the risk can lead to obtain a high level of equilibrium expenditures with more little abhorrence given the risk.

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GOVERNMENT INVOLVEMENT IN CONSUMPTION BEHAVIOUR

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ABSTRACT: *In this article, we will follow the involvement that the government has, through its expenses, on the consumption behavior. The involvement that the government has in the consumption behavior is made through fees and taxes that are applied on income. Fees and taxes are applied to the different forms of income but in this article we will be focused only on the influence of them on wages. In order to analyze the involvement of government expenses on consumption behavior an utility model will be used.*

KEY WORDS: *Cybernetic system of consumer; consumption; optimality; wage; consumption dynamics; utility; utility model*

JEL CLASSIFICATION: *D11, D12, D13, D31*

1. INTRODUCTION

Fiscal policy represents the way in which the government adjusts the level of its own expenses with the purpose to monitor and influence the economy. This is used by the government to influence the level of total request, to reach the set objectives that regard price stability, total employment and economic growth.

In the case in which the government is facing a budget deficit, the necessary funds for covering this deficit will be procured from public loans – expressed in the form of governmental bond, currency issue. By covering the deficit through bond issue will probably cause a growth in income tax on the market, because the loans that the government makes, will lead to an increase in the request of credits on the financial market. This increase of total credit request will lead to an increased need of income

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available to investment, thing which is contrary to the objectives of the budget deficit – concept named crowding out (Blaug, 1999).

Fiscal policy may also influence the level of macroeconomic production through the growth or decrease of duties and public expenses. This influence will hold back on inflation and will lead to a growth in employment, maintaining at the same time a good currency level.

In what regards fiscal policy, a balance between influences must be found. Thus, by stimulating a stagnating economy will lead to an increase in the risk of inflation, because an increase in consumption request may lead to a decrease of currency value – meaning that a greater quantity of currency will be needed to purchase a product than it was needed if the value of the currency was not modified (Dobrotă, 1997).

In the case of an economy that has a decrease, the level of unemployment and consumer expenses are high, and the businesses do not produce money, the government will decide to „put the economy back on its feet” by reducing duties, fact that will lead to increased consumer expenses and also governmental expenses to acquire services on the market. By acquiring more services, the government will create new work places and wages, which will influence the economy by pumping money and by reducing the level of unemployment. With more money in the economy and lower taxes to pay, consumers will request for more goods and services, which will lead to a „rebirth” of businesses.

When inflation is very high and powerful, an economic recession will be needed. In this case, government may use fiscal policy to increase taxes and duties instead of accumulating money from economy. Fiscal policy may dictate a decrease of currency circulation. The negative effects on long terms of such policy may be a slow economy and a very high level of unemployment (Gilbert, 1994).

The effects of fiscal policy are not always the same, these depends on political orientation and the goals that the politicians have set. Thus, a reduction of duties and taxes will affect the middle class (the biggest economic group). In the case in which an economic decline will occur, this same economic class will be influenced by the payment of higher taxes and duties.

In the present economy, usually, the necessary of resources exceeds the procurement possibilities. While resources have a limited character, the demand for them has a continuous growth tendency. Resources, as an element of national wealth, include in its structure, include not only material, human, informational, currency resources but also financial resources.

Among the financial resources of the society and the public financial resources there is a report as from a whole to a part, because the financial resources of a society have a wider range. Financial resources of a society include public financial resources and private financial resources. In theory, it is appreciated that the allocation of resources is optimal when consumer demand are satisfied at a peak level, by mean of private and public sector.

The structure of public finance differs from a country to the other, and during its historical evolution a lot of changes have been recorded. From the point of view of their economical content, financial resources are made up of: compulsory levied (fees,

taxes, contributions), treasury resources, resources resulted from public loans and resources resulted from non covered monetary emission.

The most important category of public financial resources is the compulsory levied, which is presented in the form of fiscal and non fiscal revenues. Fiscal revenues are those imposed by the state, as a result of its financial sovereignty, in its position of public right subject and are imposed on revenues created by economic units and population, also linked to the fact that the latter own imposable proprieties and fortunes. These fiscal revenues are formed of fees, taxes and direct contribution and non direct fees and taxes (Krusell, 2004).

The consumer, as employee of a company, is interested in the first place by the salary that he receives in hand and not by the salary that he receives „on paper”. The employer also does not take into account only the brut salary that he is paying to the employee, and is also taking into account the contributions he has to pay to the state in the form of employer paid contributions. Thus, for an employer, the value of the work of an employee is given by the base salary to which it adds the contributions paid to the state. Due to this fact, each employee must know that roughly half of what he gains from his work goes to the state in the form of fees and taxes applied to his labour.

2. CONSUMPTION BEHAVIOR – THE INFLUENCE OF GOVERNMENTAL EXPENSES

The government represents the agent that buys consumption goods and finances these acquisitions by sums obtained through fees and taxes levied from consumers and other economic agents. We will mark by g the amount of goods that the government buys, represented here in the form of governmental expenses. This is considered as being an exogenous variable, because it is involved in the calculus of various macro economical indicators, such as GDP or prime budgetary deficit. In the budget that the government has there must be a balance between expenses and income, this being represented by the following relation, where τ represents total fees:

$$g = \tau \quad (1)$$

In order to make the problem of fees easier, it is presumed that the government will destroy the goods it acquired, a false thing in most cases. This assumption will not be made in the case when we wish for the optimal determination of governmental acquisitions (Oprescu, et al., 2004). Taking into account this assumption, we will also assume that governmental expenses are introduced in the utility function of the consumer expressed in the form:

$$w(c, \ell, g) = u(c, \ell) + v(g) \quad (2)$$

where $w(c, \ell, g)$ represents the utility function of the government, $u(c, \ell)$ is the utility of the consumer, and $v(g)$ represent a function of governmental expenses.

Knowing that the utility function of government is separable (it is independent of the two inputs), and g is an exogenous variable (the expenses do not bring any change to the analysis), it will be presumed that the governmental expense function is null

($v(g)=0$), and the only factor of production (labour) is expressed in the form: $y=zn$, where y represents the salary income, z tariff salary, and n the number of labour hours.

The consumer optimization problem, taking into account the fees and taxes levied, can be defined like this:

$$\begin{cases} \max_{c,\ell} U = u(c, \ell) & (3a.) \\ \text{ținând cont de conditia} & , \\ c = w(1 - \ell) - \tau & (3b.) \end{cases}$$

where c represents consumption, w – labor income and ℓ - free time.

Being an optimization problem, we will first set up the Lagrange, as follows:

$$L = u(c, \ell) + \lambda[w(1 - \ell) - \tau - c] \quad (4)$$

where λ represents the Lagrange multiplier. For the Lagrange function the first degree conditions will be written, as follows:

$$\begin{cases} \frac{\partial L}{\partial c} = 0 & (5a.) \\ \frac{\partial L}{\partial \ell} = 0 & (5b.) \\ \frac{\partial L}{\partial \lambda} = 0 & (5c.) \end{cases}$$

By solving the first degree conditions the equilibrium conditions will be obtained:

$$\begin{cases} U'_c - \lambda = 0 \\ U'_\ell - \lambda w = 0 \\ w(1 - \ell) - \tau - c = 0 \end{cases} \Rightarrow \begin{cases} U'_c = \lambda & (5a') \\ U'_\ell = \lambda w & (5b') \\ c = w(1 - \ell) - \tau & (5c') \end{cases}$$

The equilibrium conditions determined define the following laws for optimal decisions:

- consumer decision reported to the free time is optimal if the marginal utility of the consumer is inversely proportional to the obtained salary for the labour executed;
- the marginal rate of substitution between consumption and free time is equal to

the inverse of salary income: $RMS_{c/\ell} = \frac{U'_c}{U'_\ell} = -\frac{d\ell}{dc} = -\frac{1}{w}$ and it shows by

how much the free time decreases if consumption raises by one unit.

Using the relations (5a') and (5b') the following relations will be obtained:

$$wU'_c - U'_\ell = 0 \tag{6}$$

By substituting the consumption c in the objective function, and by maximizing the free time ℓ , the first degree condition of the problem will be presented in the form of an equation which will be solved in ℓ :

$$-wu_0[w(1-\ell)-\tau, \ell] + u_1[w(1-\ell)-\tau, \ell] = 0 \tag{7}$$

where u_i represents the marginal utility in report to the two factors: consumption or free time.

The relation (7) represents the consumption equation in report to free time and is represented in diagram 1, by AB. Point D that appears represented on AB represents the competitive equilibrium point between consumption and free time.

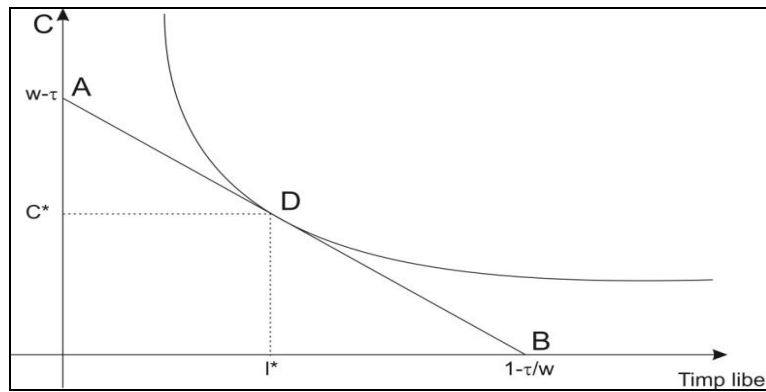


Figure 1. Constrainers regarding economical resources

What is important is the effect that the alteration of governmental expenses will have, expressed in fees and taxes (from the equality 1), applied to consumption and employment. In figure 2 we notice that if governmental expenses g increases from g_1 to g_2 , resource constrainers will be modified. In the case of a constrainer of governmental budget, this will lead to an increase of income applied fees (wage). This increase of the fees will represent for consumers an increase of the income effect, meaning it will lead to an increase in the time given to work, in detriment of free time.

Taking into account that free time and consumption are considered as normal goods, than their amount will drop leading to an displaced of private consumption, but the decrease of consumption will be lesser if the increase of governmental acquisitions (expenses that government makes), which in turn leads to an increase in yield.

Deriving the relations (6) and (7) and arranging in a system we will obtain:

$$\begin{cases} (wU''_{00} - U''_{10})dc + (wU''_{01} - U''_{11})d\ell = -U'_c dw & (8a.) \\ dc + wd\ell = (1-\ell)dw - dg & (8b.) \end{cases}$$

where $U''_{ij} = \frac{\partial^2 U(\cdot)}{\partial x_i \partial x_j}$, and x_i represent the consumption factor or the free time. The relation (8a.) represents the second degree condition and it verifies the hypothesis of the utility function (second degree utility function is negative), because the Hessian matrix is negative. The second relation of the system represents Slutsky's general equation. With the help of the system we will analyze the effects that external factors have: wage (dw) and governmental expenses (dg) on consumption (dc) and free time ($d\ell$).

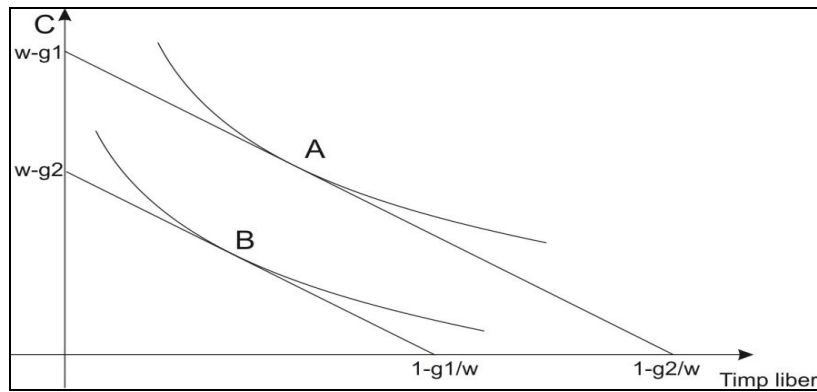


Figure 2. The influence brought by the modification in governmental expenses

By solving the system (8.) we will obtain:

$$d\ell = m_{11}dw + m_{12}dg \quad (9)$$

where:

$$m_{11} = \frac{(1-\ell)(wU''_{00} - U''_{10}) - U'_0}{\Delta} \quad (9a.)$$

$$m_{12} = \frac{wU''_{00} - U''_{10}}{\Delta} \quad (9b.)$$

and $\Delta = 2wU''_{10} - U''_{11} - w^2U''_{00}$ and

$$dc = m_{01}dw + m_{02}dg \quad (10)$$

where:

$$m_{01} = \frac{(1-\ell)(wU''_{10} - U''_{11}) + wU'_0}{\Delta} \quad (10a.)$$

$$m_{02} = \frac{U''_{11} - wU''_{01}}{\Delta} \quad (10b.)$$

In what regards the signs of the multipliers m_{01} , m_{02} , m_{11} and m_{12} , these are easily determined by taking into account the fact that the second degree derivatives of the utility functions are negative and $U''_{10} < 0$ from the Hessian matrix conditions. In conclusion, $\Delta < 0$.

By using the relations (9.), (10.), (9b.) and (10b.) we will analyze the effect of the increase of governmental expenses on consumption and free time:

1. *the effect of the increase in governmental expenses on free time* is manifested through:

a. substitution effect: $\Delta_g^S = \frac{wU''_{00}}{\Delta} > 0$

b. income effect: $\Delta_g^V = -\frac{U''_{10}}{\Delta} < 0$

The reaction to an increase in governmental expenses, represented to the population by mean of fees and taxes, is manifested through an increase of labour time, due to reduction of wage income (substitution effect). This reduction of wage income will lead to a decrease in population spending power, which will lead to an increase in labour time and a decrease in free time.

2. *the effect of the increase in governmental expenses on consumption* is manifested the same in the case of an increase in governmental expenses, but in the opposite direction:

a. substitution effect: $\Delta_g^S = -\frac{wU''_{01}}{\Delta} < 0$

b. income effect: $\Delta_g^V = \frac{U''_{11}}{\Delta} > 0$

An increase in governmental expenses will lead to a decrease in acquisition power, due to the reduction of wage income. Such a reduction in the acquisition power will lead to an increase in labour time and a decrease of free time.

3. CONCLUSION

Maintaining a balance in macro economics cannot be done only through monetary policy, but also through fiscal policy and income policy which must have a supporting role, taking a bit from the stabilization efforts.

The state, through its fiscal policy, should encourage exports and productive economic activities in order to acquire supplementary income, which in turn it will use to acquire goods or to pay wages in the public sector. If it will encourage exports and not imports, the state will not be forced to increase fees and taxes, and the employees will not be forced into working overtime in order to satisfy their needs.

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THE GLOBAL FINANCIAL CRISIS, WHERE DOES PLACE ROMANIAN ECONOMY IN EU?

PAUL-BOGDAN ZAMFIR *

ABSTRACT: *Along with joining the European Union, Romania became a full member of the largest economic bloc in the world, strengthening its position in terms of the global division of labour. The access to innovation and financing networks of the European Union will have visible effects concerning economic growth of Romania on medium and long term. Meanwhile, the entry under the full Europe's competition policy will lead to increase the productivity and economic growth as its main result obtained national welfare. However the global financial crisis has a serious impact on the Romanian economy. In this context the banks have become more restrained in lending and therefore, the companies are facing difficulties in accessing credit. Thus, lack of capital block business activity, which seriously affects the entire economy. The question which arises is: will be able Romania, to find the resources and managers to take out the country of one of the greatest economic crisis of the last century?*

KEY WORDS: *global financial crisis; Romanian economy; European Union; gross domestic product; labour productivity; inflation*

JEL CLASSIFICATION: *F15, F41, F43*

1. GENERAL CONSIDERATIONS

Romania's adhesion to the European Union (EU) was the most important political event in the last 90 years after the Great Union of the 1st December 1918. The significant performances registered in political, economic and legal performances contributed to increase the attractiveness of Romania, namely the essential changes in Romanian society. In these circumstances, there was upward development of the economy in the years preceding accession, and then after accession as we show below.

The last three years that preceded Romania's adhesion to the EU marked successive growth of the Romanian economy induced by increased foreign investment, of labour productivity growth and increase export-oriented production, and increasing

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domestic demand for consumption, in terms of an improved European economic climate, characterized by economic recovery of EU (Zamfir, 2009a).

At the same time, the significant economic performances of Romania were supported by a favourable international economic conjuncture, with a robust growth of world economy, effervescent international trade, high prices of goods and international financing with relatively low cost. In this context, continuing the process of globalization, increasing economic and financial interdependences, the relocation of production, liberalization of the movement of goods, services and labour, constituted for Romania both economic development opportunities and vulnerabilities. Triggering the global financial crisis at the end of 2008, found our country unprepared, so that Romania was in a strong domestic economic crisis, marked by severe reduction in economic activity in all sectors, and rapid deterioration of all economic parameters (Vigaru, 2009).

In these circumstances, the crucial question arises: What should Romania do to secure first for cover domestic demand with supply of products manufactured locally to harness renewable natural resources and non-renewable (primarily the agricultural and energy)?

In my opinion, one possible answer to this question is the adoption of a consistent, coherent and effective economic policy for Romania's exit from the crisis that should take into account certain elements such as:

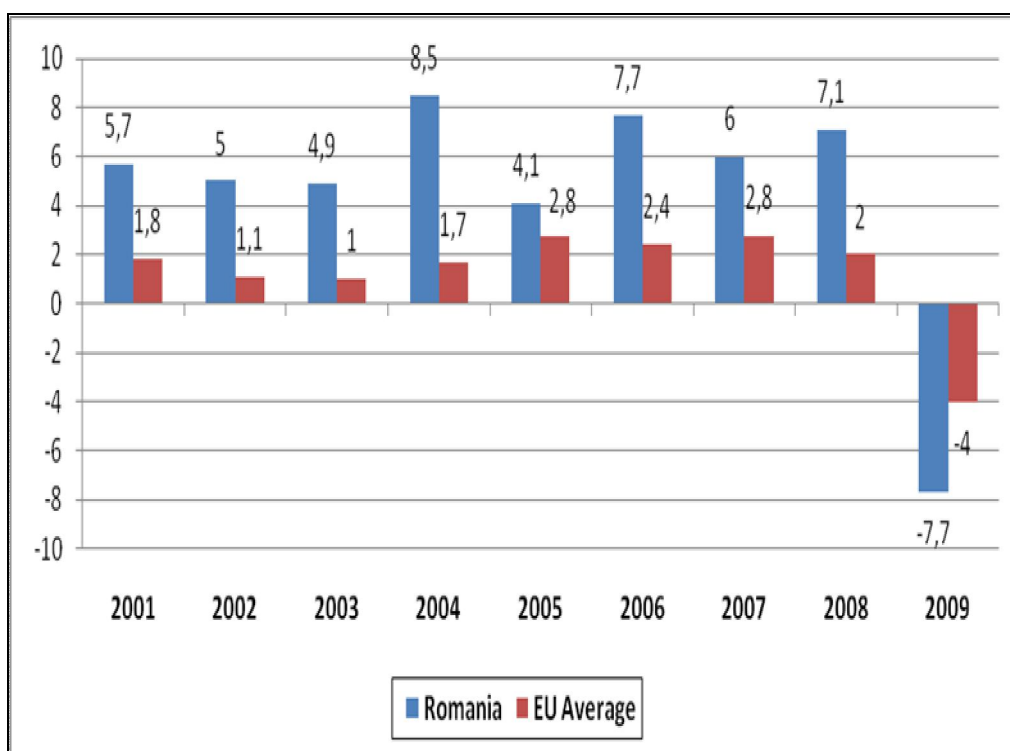
- A gradual reduction of economic development up to 50%, on the recovery of non-renewable natural resources;
- Reducing energy consumption, at the EU average and support programs for private investment or public / private in projects to ensure a constant compensation of reduction the quantities made from the gas and oil production;
- The organization of agricultural production on industrial basis; recovery through advanced processing of the vegetables and animals resources;
- The achieve of one complex system, in order to streamline of the money and currency markets in times of turbulences (Zamfir, 2009b);
- The stimulation of investments process aimed at the modernization, refurbishment or achievement of new production capacity in Romania;
- An aggressive computerization of Romanian society including rural areas; sustained process of preparing the population, notably the adult people for using information and communications systems in everyday life.
- Stimulate research-development and innovation, dissemination and technology transfer, increased interest of companies to apply the results of production activities.

Therefore, we consider that the impact of global economic crisis and integration into the EMU structures for Romania becomes stringent the application of these actions and salvation strategies oriented to real, present and future needs of our national economy.

2. THE PLACE OF ROMANIAN ECONOMY IN EU

Romania, the seventh largest country in the EU depending on the number of inhabitants (4.7% in EU-27), has an economy which is only 0.7-0.8% of gross domestic product (GDP) European Community. The rate of growth in our country in recent years has been among the most consistent, compared to the EU-27. For example, GDP growth in the years 2001-2007, was approximately 6% annually, advancing most EU countries. If in 2007 after a GDP growth rate which was 6%, Romania ranked 9th place, in 2008, GDP growth (GDP) in real terms was 7.1% which has located Romania on the first place in the top EU-27 (Gartoi, 2009).

Following the international economic crisis in 2009 the GDP growth of our country will have a significant decrease, reaching -7.7% of EU-27 average which will be -4%. At the same time should not be overlooked that in terms of negative economic growth Romania will be on the 5th place in the EU-27 being brought forward by Latvia (-13.1%), Lithuania (-11%), Estonia (-10,3%) and Ireland (-9%) in the year 2009 (<http://epp.eurostat.ec.europa.eu>).

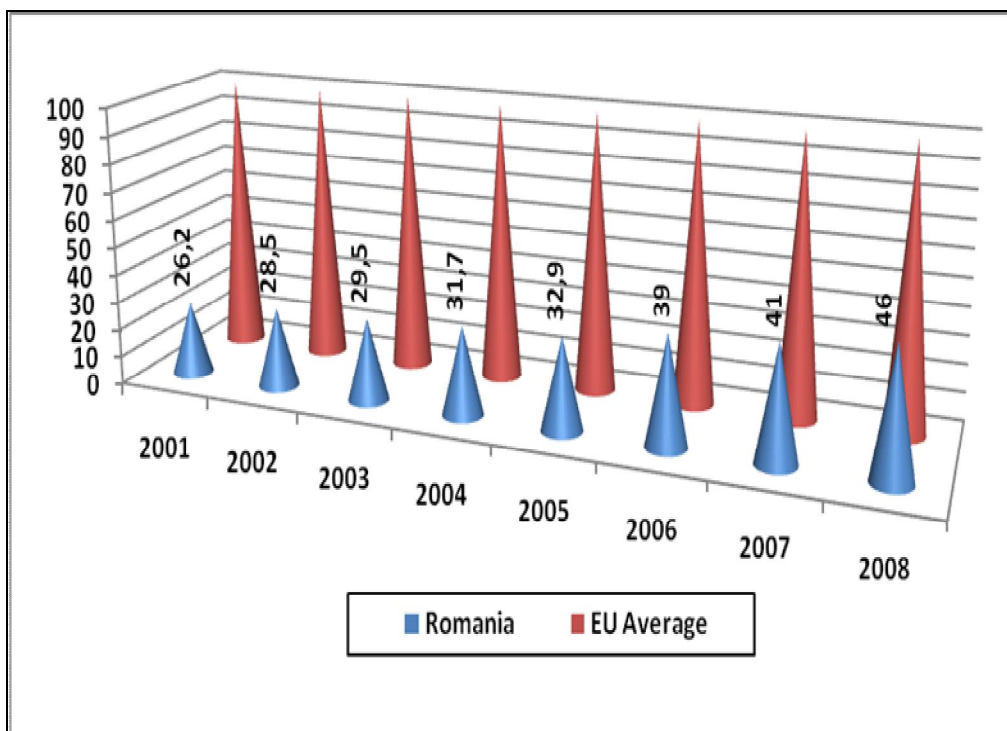


Source: Institute for World Economics in Romania, based on 2007 statistics provided by Eurostat; European Commission Directorate-General for Economic and Financial Affairs European - Economic Forecast - Autumn 2009, European Economy 10/2009.

Figure 1. Real GDP growth - differences between Romania and the EU, 2001-2009 (%)

Regarding the value of GDP per capita expressed in purchasing power parity standard, it is important to note that Romania recorded a growth trend since 2001, which caused a slow reduction of the gap with the average EU-27. However there are considerable differences between our country and other countries in the EU-27.

Thus, in 2006 the GDP / capita was 39% of EU average, in 2007 over 41% of the EU, and in 2008 to 46%, Romania being the penultimate place in the EU, ahead of Bulgaria, where the value of GDP / capita in PPP was only 40% of EU average (http://standard.money.ro/articol_25619/exclusiv_cum_arata_economia_romaniei_in_2008). In the figure below is presented more suggestive the development of GDP / capita in terms of reducing disparities between Romania and EU average.



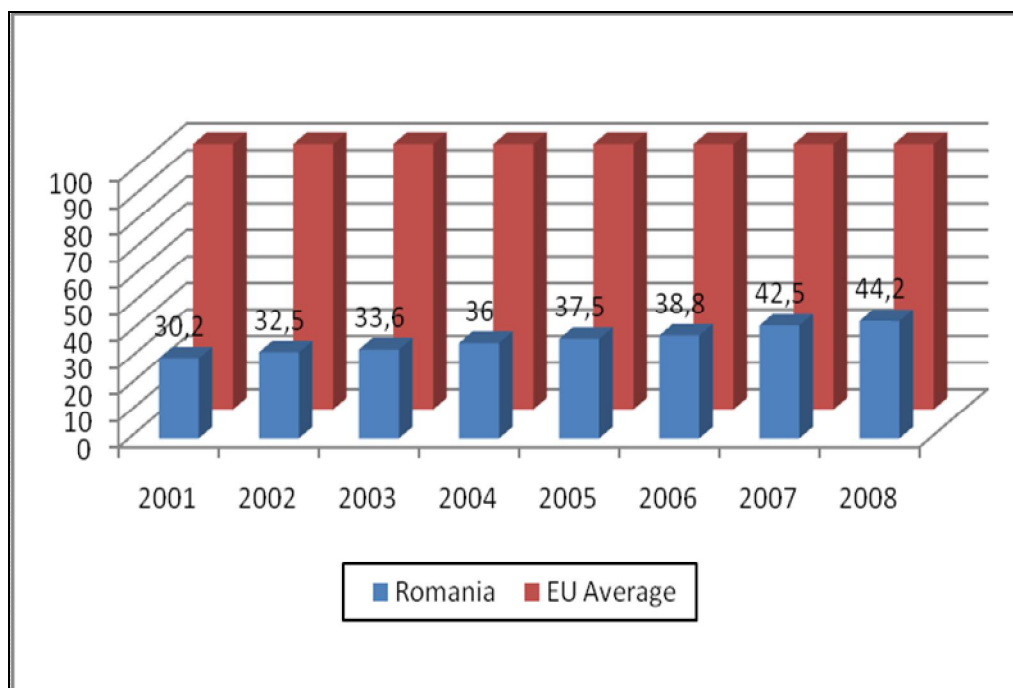
Source: Institute of World Economy Bucharest Romania, 2007, based on statistics provided by Eurostat; European Commission - Directorate - General for Economic and Financial Affairs, Economic Forecast Autumn 2008 European Economy 6/2008

Figure 2. GDP / capita - gaps between Romania and EU average 2001-2008 (%)

An important factor that contributed to higher economic growth, in Romania was the pronounced dynamics of labour productivity (figure 3). Thus, in 2005 and 2006 labour productivity growth per employee has reached the higher levels than previous years which led to the reduction of disparities towards the EU (Anghelache, 2007). Also, labour productivity growth in Romania has continued in 2007 reached 42.5% of EU average, so that in 2008 according to Eurostat estimates to reach 44.2%, which has situated our country on 26th place in EU of this indicator before Bulgaria.

Although labour productivity per employee in Romania remains a sensitive gap with EU-27 average, which within 7 years was reduced by 14.6 percentage points: so in 2008, labour productivity per employee was 44.2% of the EU average compared with 2001 when it was only 30.2%.

One of the most important and painful events of the 1990s economic crisis from Romania and other countries of Central and Eastern Europe was the inflation, which is measured by consumer price index and affect the entire population of every country that has no control it, altering at the same time the business environment and FDI flows (Diaconescu, 2003).



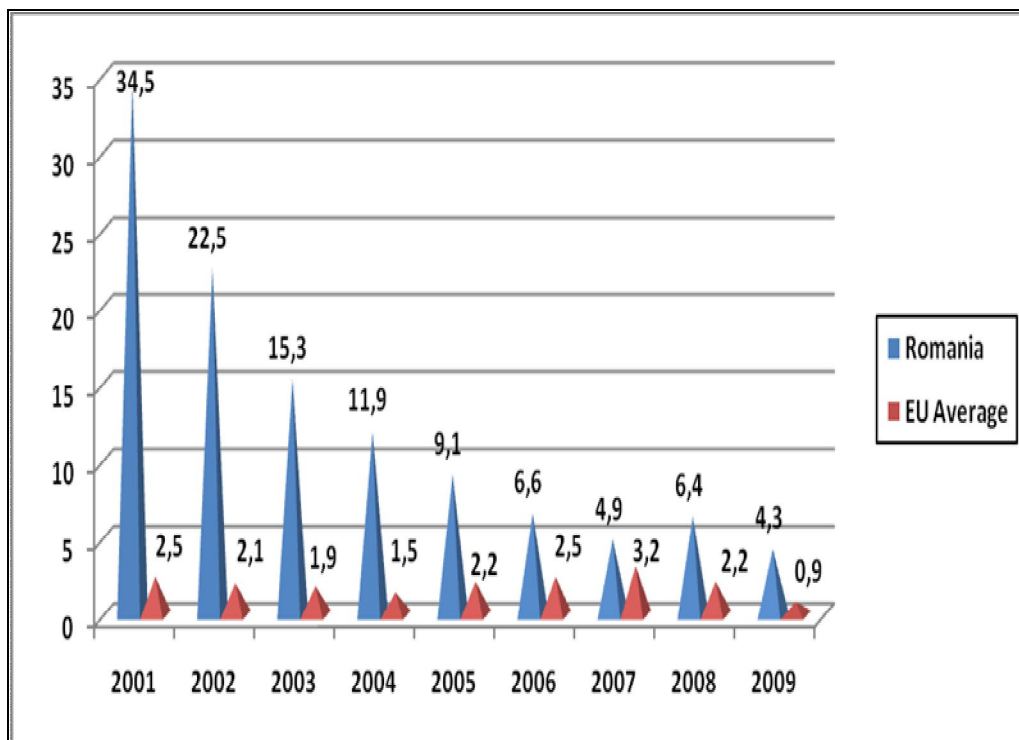
Source: *Institute of World Economy Bucharest - Romania*, based on statistics provided by Eurostat; *European Commission - Directorate General for Economic and Financial Affairs, Economic Forecast Autumn 2008, European Economy 6/2008*

Figure 3. Labour productivity per employee - gaps between Romania and EU, 2001-2008 (%)

In Romania, the inflation rate is the indicator that has marked the most accelerated approach to the average levels of EU-25 in the period 2001-2009, which was reduced from 34.5% in 2001 to around 6.4% in 2008, and in 2009, BNR estimates a level of 4.3%. Also on the inflation recorded large differences in the present period of post-accession so that in 2008 Romania with an annual inflation rate of 6.4%, was situated on fifth place in EU in according to data released by the European Statistical Office (Eurostat), as shown in Figure 4.

With regard to inflation in Romania, it is important to note that in the first year after adhesion, this indicator reached 4.9 percentage points, then in 2008, according

to European Commission forecast to reach 6.4 percentage points, and in 2009 declined to 4.3 percentage points (Ștefan, 2009). Also to be noted that although the rate of inflation in our country, recorded a downward trend throughout the period analyzed remains a significant gap between our country and the European Union, and in terms of this indicator. Thus in 2007 the inflation rate in the EU-27 was 3.2%, later in the year 2008 declined to 2.2%, and in 2009 to reach the lowest level of 0.9% as shown in Figure 4.



Source: Institute for World Economics in Romania, based on 2007 statistics provided by Eurostat; European Commission Directorate-General for Economic and Financial Affairs European - Economic Forecast - Autumn 2009, European Economy 10/2009.

Figure 4. Inflation rate - gaps between Romania and the EU 2001-2009 (%)

Therefore we can emphasize that after a period of 8 years of sustained economic growth, in years 2001-2008 global economic downturn hit full our country in 2009, when there will be a negative growth of GDP of over 7.7%. It is also important to point out that while the euro area got out of the worst recession in the last 60 years, in the third quarter of this year, registering a GDP growth of 0.4% compared with the previous quarter, however the future of our country's economy remains still uncertain (Zamfir, 2009c).

3. CONCLUSIONS

In the current context of the international economic crisis effects our country entered on the trajectory of Economic and Monetary Union integration, must reduce and then eliminate the large gaps in economically from the developed countries of the euro area (Prisecaru, 2009).

To this end, we consider it becomes imperative for Romania, to be detected, analyzed and quantified new opportunities to resume long-term growth. In my opinion, such possibilities could be shaped in several main directions:

- The adequate recovery of all economic resources available both by stopping waste in all forms, and by increasing their use. Persevering in this direction might change in favourable sense the type of economic growth achieved by our country by the increase of intensive factors sharing;
- The further restructuring of national economy in industry and territorial profile, according to criteria of economic efficiency, social and environmental by the exploiting of the current scientific and technical achievements;
- Improving of our country situation in international economic relations by developing mutually beneficial relations with capitalist countries, and recovery of position in relations with former socialist countries and developing countries, so that the account balance of foreign economic relations contribute to GDP growth;
- Increasing the efficiency of public enterprises with losses, but carrying on a useful activity through the development and implementation of programs focused on increasing productivity, reducing costs and improving quality involving the best specialists in the business management;
- The subordination of monetary, foreign exchange, pricing, tax, custom and in the field of revenue policies, in accordance with the annual increase in GDP, so that Romania might aspire to a dynamic general equilibrium macroeconomic.

Therefore, we emphasize that sustainable economic development must become the primary objective that should be done with perseverance in the long perspective. We believe that only acting in this direction, Romania has the chance to achieve the objective of integration in the Eurozone, thereby reaching an economic level near to that of developed countries in the EU.

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