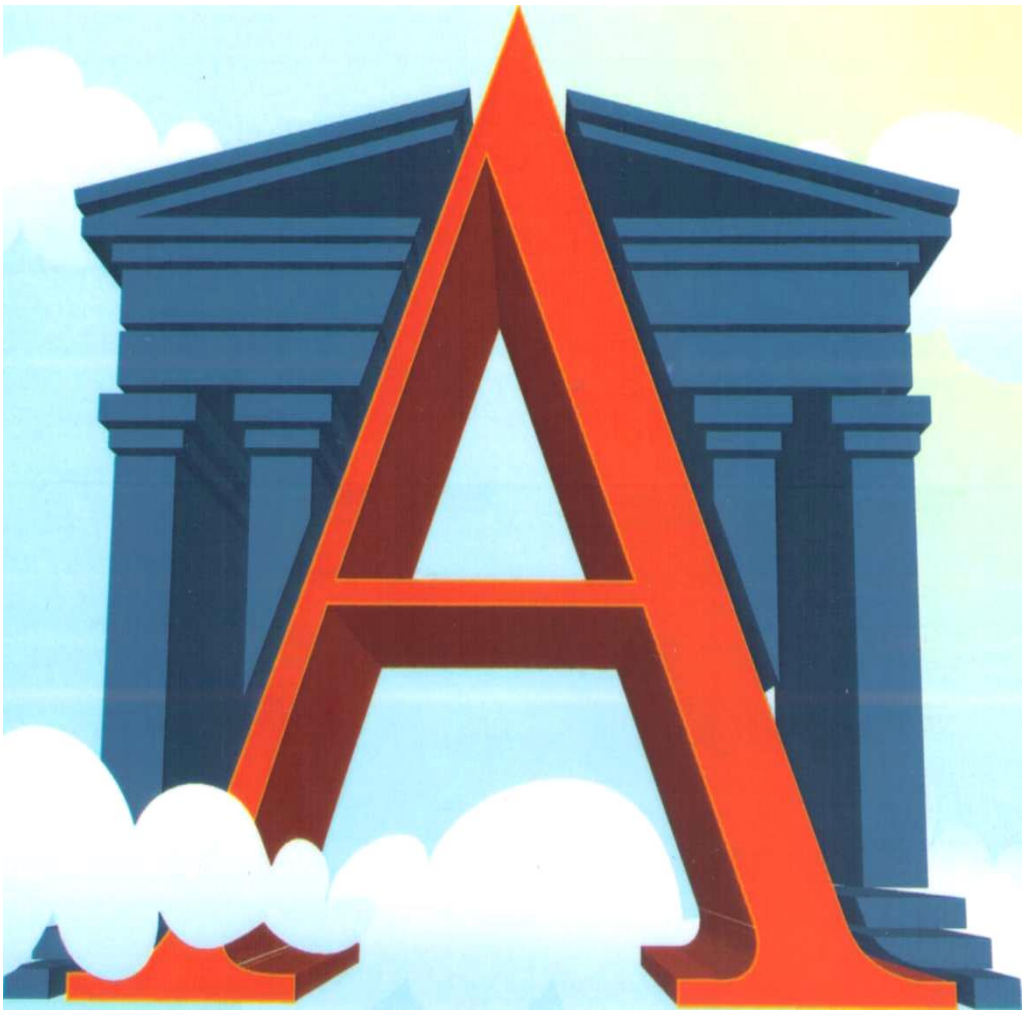
INTERNAL AUDITING & RISK MANAGEMENT

ANUL XI, Nr.2(42), June 2016



UNIVERSITATEA

ATHENAEUM

& Centrul de Excelenţă în Managementul Financiar şi Audit Intern

INTERNAL AUDITING &
RISK MANAGEMENT

**Revistă trimestrială editată de Universitatea „Athenaeum” &
Centrul de Excelenţă în Managementul Financiar şi Audit Intern**

ANUL XI, NR. 2(42), IUNIE 2016

**Quarterly journal published by the "Athenaeum" University &
Centre of Excellence in Financial Management and Internal Audit**

YEAR XI, No. 2(42), JUNE 2016

IMPRIMAT ÎN ROMÂNIA
Tipar: BREN PROD SRL

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EDITURA BREN
Str. Lucăceşti nr.12, sectorul 6 Bucureşti
Tel/Fax: 0318179384
www.editurabren.ro
e-mail: brenprod@gmail.com
ISSN 2065 – 8168 (print) **ISSN 2068 - 2077** (online)
Indexată în Bazele de date internaţionale
RePEc, INDEX-COPERNICUS, EBSCO

C O N T E N T S

The items 1-4; 8-11; 14-17; 19 and 20 were presented at the International Conference "Contemporary crisis – risks and challenge" organized by the "Athenaeum" University of Bucharest during the period 19-21 May 2016 and have been selected for publication in this issue of the journal.

COMPARATIVE ANALYSIS OF THE LABOUR MARKET IN ROMANIA AND OTHER MEMBER STATES

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Abstract

The last economic-financial crisis affected seriously labour force employment, young individuals being more vulnerable to the effects of the unstable economic cycles on the labour force market.

With respect to unemployment, youths are most vulnerable because they have less experience and the majority of temporary work contracts. The labour force market is also more competitive during times of crisis, meaning that there are more applicants for fewer jobs.

The paper presents a brief analysis of the development for some indicators on the labour market for the age segment 15 to 24 years and 25 to 64 years of age at European and national level.

Keywords: *youths, employment, unemployment rate*

JEL Classification: *E24, J6, J20, J21*

Introduction

After seven years since the outbreak of the financial and economic crisis, the world economic entered into stage of slight economic growth which continues to remain under the sign of uncertainty and of risks with origins predominantly in the financial industries. However, economic growth is still much under the values recorded in the pre-crisis period and much too slow for solving the issues generated by the crisis on the labour market. Even if economic growth sped up to a certain extent in some

advanced economies from southern Asia, Middle East and Sub-Saharan Africa, it cannot compensate at global level the marked slowdown of economic activity, in particular in Central and South-eastern Europe, CIS, Eastern Asia, South-East Asia and the Pacific, in Latin America, Caribbean and North-Africa.

These trends intensified the existing vulnerabilities on the labour market and made harder the efforts to diminish unemployment and under-employment of labour force, at least to the level before the crisis in the majority of countries. According to the forecasts of the International Monetary Fund, the slight speed up of global economic growth in the following two years is due partly to the decrease in the oil prices and to the improved financial conditions in some advanced economies. Yet, even under the conditions in which these forecasts are materialised based on current policies it is less probable that existing pressures on the labour market would diminish.

This is due also to the fact that at world level are required more than 61 million jobs for diminishing and recovering the jobs' gap triggered by the economic recession. In the time from 1991-2007, the employment rate of labour force increased by an average annual rate of 1.7%, and since the outbreak of the crisis (2007 and up to 2015), the increase in labour force employment decreased to 1.1 %. According to the data delivered by the International Labour Office as of 2016[1], unemployment will continue to increase. Unemployment at world level was of 201.3 million persons in 2015, on increase by approximately 1.2 million against the preceding year and by approximately 31 million more as compared to the year 2007. The reason resides in the necessity of creating more jobs that are new. But, according to the provisions of the International Labour Office in the following years is expected that the rate of creating new jobs will remain relatively constant, which will lead to an increase in the jobs' gap of about 80 million, in the year 2019.

The estimates about the development of unemployment at world level indicates a slight increase of this indicator for 2016 as well, and thereafter it will remain unchanged up to the year 2018, the most significant increases being forecasted for 2016 in Eastern Asia and the Middle East.

In turn, for elderly during the crisis the employment rates remained relatively stable, even for those countries that were affected severely by it. A particularity of the recent economic-financial crisis is the fact that many companies decided not to layoff the more experienced elderly. This is opposed to the trend of previous crises, when they were often times pushed

[1] *World employment and social outlook: Trends 2015*/International Labour Office. – Geneva: ILO, 2015

into early retirement. However, statistics indicate that elderly who lost their jobs during the recent crisis were faced with more difficulties in obtaining new jobs (Mayer, 2014).

The European Union despite generating 20% of the world economic output did not succeed in finding the balance between austerity and economic growth, after a decade in which public spending ran out of control and which is concluded, apparently, in a W-shaped recession. Moreover, increasingly frequently the specialised economic literature mentions the importance that the EU should have given to complex pluri- and multidisciplinary analyses with respect to the interdependence and the interaction between the field of economic policies and the social ones. This refers in particular to determining and defining the objectives regarding the developments on the economic market and, in particular, those regarding the policies addressed directly to vulnerable groups in which also the youths are included.

1. Employment and unemployment on the labour market in Romania and the European Union

While unemployment is the most pressing challenge for youths, the unemployment rates decreased in the last years. In 2015, the employment rate of the youths with ages between 15-24 years was of 33.0%, on increase by 0.9 pp against the year 2013, when the lowest level ever recorded within the EU was reached. The employment rate of those with ages between 25 and 64 years suffered a much more modest decline in the same period, from 72% in 2008 to 70.6% in 2013, but on slight increase in 2014 and 2015 when it reached 71.4%, respectively 72.1%.

Regarding **employment**, in 2015, high differences exist among the member-states of the EU (Table no. 1). Youths are much more involved on the labour market in countries such as the Netherlands (60.8%), Denmark (55.4%), Austria (51.3%), Great Britain (50.1%), and Germany (45.3%). In turn, the employment rate for individuals with ages between 25-64 years is over 75% in Sweden, Germany, Estonia, Denmark, Great Britain, the Netherlands, Lithuania, and the Czech Republic.

Table no. 1 Employment indicators for the age group 15-24 years and 25-64 years, 2015, (%)

	Employment rate		**Part-time employment**		**Temporary employment**	
	15-24 years	25-64 years	15-24 years	25-64 years	15-24 years	25-64 years
EU-28	33,0	72,1	32,2	18,4	43,5	11,2

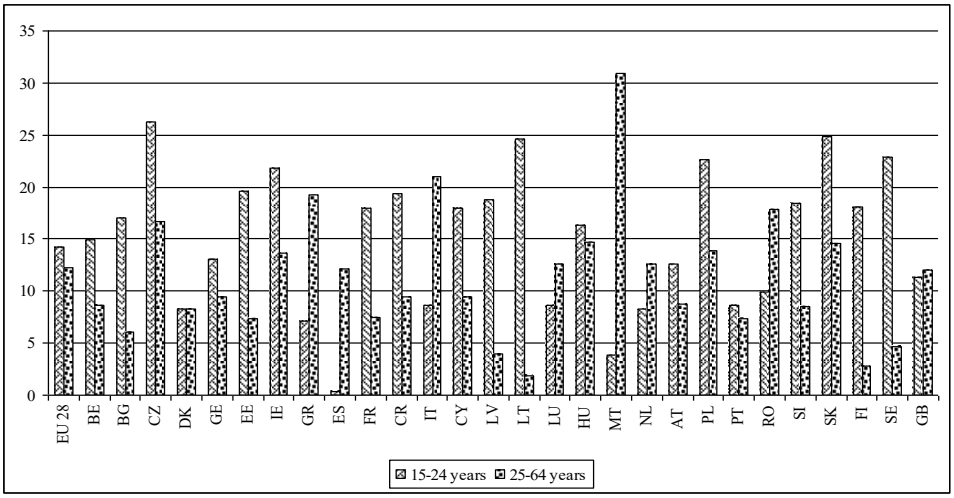
	Employment rate		**Part-time employment**		**Temporary employment**	
Belgium	23,4	70,3	27,4	24,1	36,6	6,8
Bulgaria	20,3	70,4	5,7	2,0	11,7	4,0
Czech R.	28,4	77,7	10,8	4,9	31,0	8,5
Denmark	55,4	78,0	67,0	17,2	22,7	6,0
Germany	45,3	79,4	23,6	27,1	53,6	8,4
Estonia	36,3	78,6	22,8	8,4	11,4	2,7
Ireland	28,7	70,5	44,5	20,3	32,7	6,3
Greece	13,0	57,6	23,1	8,8	33,3	10,9
Spain	17,9	64,6	37,9	14,6	70,4	22,8
France	27,8	71,8	24,8	17,8	59,6	12,6
Croatia	19,0	63,5	12,2	5,5	60,9	17,4
Italy	15,6	63,6	29,5	17,8	57,1	11,9
Cyprus	25,3	70,7	25,9	12,0	29,1	17,6
Latvia	34,5	74,4	12,3	6,8	10,9	3,1
Lithuania	28,3	76,4	11,4	7,3	6,5	1,7
Luxemburg	29,1	73,8	29,1	17,6	47,1	7,4
Hungary	25,7	71,7	6,9	5,6	24,1	10,4
Malta	45,5	68,0	23,0	13,2	16,8	5,8
The Netherlands	60,8	77,2	80,0	44,5	53,3	13,2
Austria	51,3	75,2	22,7	27,9	35,8	4,9
Poland	26,0	70,3	14,1	6,2	72,7	24,3
Portugal	22,8	71,9	22,6	9,0	67,5	18,8
Romania	***24,5***	***68,6***	***19,2***	***8,1***	***5,4***	***1,2***
Slovenia	29,6	71,4	41,3	7,8	75,5	13,8
Slovakia	23,3	70,9	11,9	5,4	29,1	9,1
Finland	40,5	74,7	41,7	10,8	41,8	11,6
Sweden	43,9	83,1	49,1	21,2	55,7	11,3
Great Britain	50,1	77,9	37,9	23,3	15,0	4,6

Data source: Eurostat statistics, (online data code: [lfsq_ergaed], [lfsq_etpga], [lfsq_eppga])

In 2015, the employment rate of youths with ages between 15-24 years at EU-28 level was of 33%, on decrease by 4.2 pp against 2007, and for the age segment 25-64 years, the year 2015 was the first post-crisis year when the employment rate increased by 0.1 percentage points.

In all Member-States the employment rate both for the age group segment 15-24 years, and for the one for the age group 25-64 years was higher for men (Figure 1).

Figure 1 Gap between the men and women employment rate for the age groups 15-24 years and 25-65 years, in the year 2015, (%)



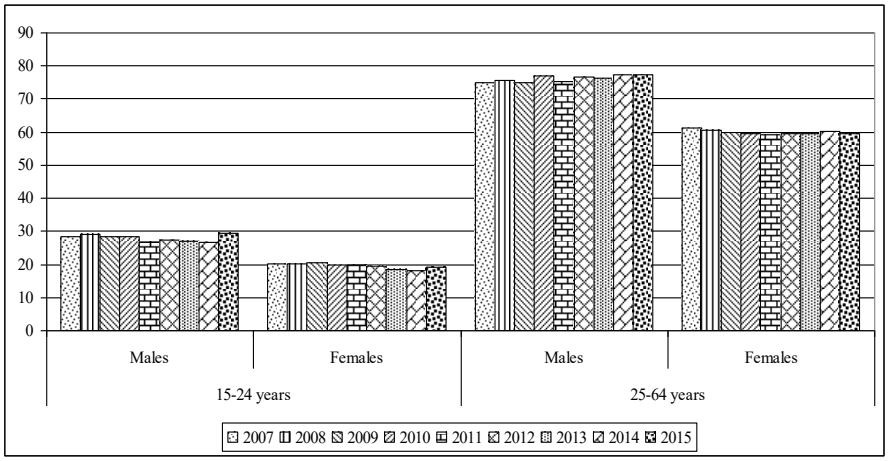
Data source: Eurostat statistics (online data code: [lfsa_ergan])

The gap of labour force employment was shown both for individuals with low education and skills level, and for those with tertiary education.

In Romania as well, the employment rate of young individuals with ages between 15-24 years diminished during the last years, the year 2015 being the first in which it reached the value from 2007 of 24.5%. For the age group 25-64 years, the employment rate varied very little in the period 2007-2015 (in average it was 68.02%).

The economic recession had as effect also the diminishment of the employment rate on genders and, in Romania, this process was more marked than the EU-28 average. Thus, in the year 2008, the gap between the employment rate for young men, and the one for women was of 8.9 pp in Romania, against 5.8 pp. in EU-28, and respectively of 10.1 pp against 3.6 pp in the year 2015 (Figure 2). For the age group between 25-64 years also, the difference in 2015 was of 17.9 pp against 12.2 pp. at EU-28.

Figure 2 Development of the employment rate for youths (15-24 years of age) in Romania, (%)



Data source: Eurostat statistics (online data code: [lfsi_emp_a])

In particular, for the age group 15-24 years and 25-29 years, who have a temporary or part-time job, this period, can be seen as an important stage towards full-employment of labour force.

In the years preceding the crisis, the share of youths who had temporary jobs increased significantly in Europe. Even if after 2008 European economies entered into recession and large-scale losses occurred with respect to jobs, still, the share of youths employed based on temporary contracts recorded slight increases in the period 2009-2015, as compared to the situation for adults. The ascending trend was maintained also in the year 2015, when 43.5% from employed youths (with ages between 15-24 years) had temporary contracts within the EU-28, as compared with 11.2% among those with ages between 25 and 64 years.

The employment of labour force based on the part-time system is less attractive for the age group 15 to 24 years, the average employment rate at EU-28 level being of 32.2% in the year 2015 (Table no. 1). On the other hand, the gap between the part-time labour force employment between young workers and elderly is not as wide as in the case of temporary contracts: 18.4 pp against 32.2 pp. The part-time employment gained more weight in countries such as the Netherlands, Denmark, Sweden, Finland, Slovenia, and Ireland, where over 40% of the employees are active on the labour market according to this system (Table no. 1).

With respect to youths insertion on the labour market, an additional pressure on the unemployment rate is expected to occur when those who

extend their period of studies because of the limited perspectives of finding a job will enter, finally, on the labour force market.

The lacking length of service, specific to the human capital in companies, the missing experience on the labour market of the youths, the higher probability to work within companies on determined periods of time, and other employment forms under precarious conditions are but few of the factors that lead to increased numbers of unemployed among youths.

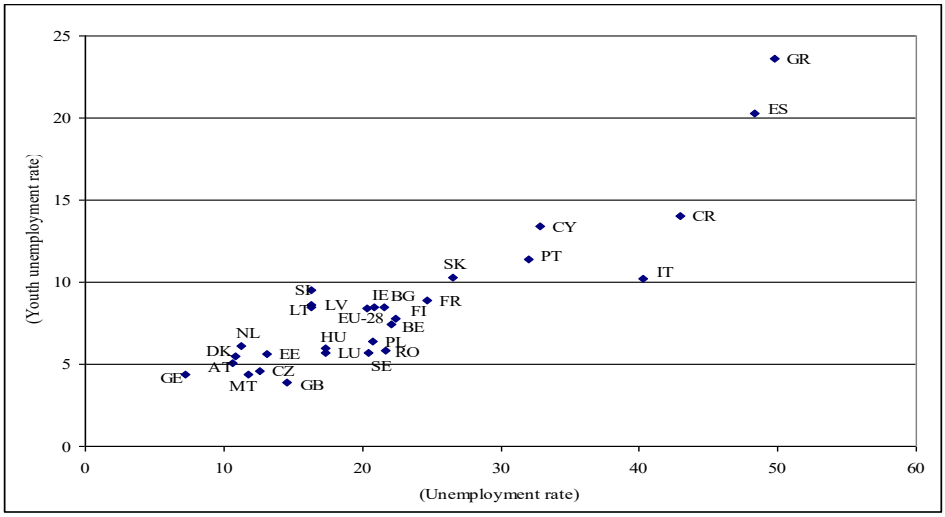
Under such circumstances, the transition from school to labour market tends to turn into a chain of temporary episodes of training, education, compulsory or military or civil service, and other activities. This takes place often in an institutional framework characterised most times by fixed entry dates outside the labour market and which do not take into account the requirements of the labour force market. To these is added also the fact that in some countries youths have less resources than elderly workers, and in others they have a strong financial attachment to the family and thus are less mobile in searching for a job.

The unemployment rate for the age segment under 25 years, at EU-28 level was of 20.4% in the year 2015, on increase by 4.9 pp against the year 2007, but on slight decrease (by 1.8 percentage points) against the year 2014. For the age group 25-64 years, the unemployment rate increased in the period 2007-2014 by 2.3 percentage points, and the diminishment in 2015 against the preceding year was of only 0.7%.

In Romania also in 2015 the unemployment rate among youths with ages between 15-24 years was of 21,7%, much over the one for the age group 25-34 years of 5,8%.

In the majority of member-states in 2015 as well, the unemployment rate among youths continued to increase as they are faced with extremely high unemployment rates. If adults registered an unemployment rate of 8.4 percents in 2015, youths faced an unemployment rate of 20.4% (Figure 3). This means that the ratio between the unemployment rate of youths and adults is of 2.43 for EU-28. This ratio was of over three in a series of countries: especially in Italy (3.95), Great Britain (3.74), Romania (3.74), Sweden (3.58), Poland (3.25), Croatia (3.07) and Luxemburg (3.04) (Figure 3). The value of this ratio in Romania places the country on the third position among the Member-States (after Luxemburg and Great Britain).

Figure 3 Unemployment rate in EU-28 countries in 2015, (%)



Data source: Eurostat statistics, (online data code: [lfsa_urgan])

In other countries, the value of this ratio is under 2: Germany (1.64), Latvia (1.72), Lithuania (1.90), the Netherlands (1.85) Slovenia (1.92), and Denmark (1.96).

The unemployment rate among youths and adults, both, recorded high differences between countries: the highest values were recorded in Greece (49.8% and 23.6%) and Spain (48.3% and 20.3%).

Unemployment among youths is also dependent on their educational level. For the age group 15-24 years, in general, the highest unemployment is recorded for youths with pre-school, primary and lower secondary education (ISCED levels 0-2). In Slovenia and Slovakia, is noticeable a higher number among youths with higher education against those with average educational levels. Romania is the only country where the differences between the weight of young unemployed with higher education and those with the ISCED levels 0-2 or 3-4 are significant. For the age group 25-64 years, in 2015, in the majority of countries, the weight of unemployed with higher education is much lower than for the unemployed with the educational levels 0-2 or 3-4.

Conclusions

To a certain extent, the national economies in Europe succeeded in recovering the losses, and reaching the levels of economic growth from the pre-crisis period. Still, the number of generated jobs is not enough for diminishing the pressures on the labour force market. This state-of-affairs is due to the increased complexity of the economic environment that underwent deep changes, including during the crisis period. Therefore, the options of many enterprises and companies being to achieve economies in

particular by implementing new technologies on a large-scale, and implicitly reducing the number of jobs and, especially, by decreasing the opportunities related to the creation of new jobs.

During the recent recession, unemployment affected in particular young individuals, irrespective of their training level. Unemployment among youths increased dramatically even among those with higher education, under the conditions in which the employment perspectives on the labour market were diminished considerably.

Even if after 2008 European economies entered into recession and large-scale losses were recorded with respect to jobs, still, the share of youths employed based on temporary contracts continued to register slight increases against the weight of those in the age segment 25 to 64 years.

The gap in part-time labour force employment between young employees and the elderly ones is not as high as in the case of temporary contracts.

In Romania as well, in the year 2015, the unemployment rate among youths with ages between 15-24 years was of 21,7%, and for the age group 25-64 years of 5,8%. The differentiation of the unemployment rate could be seen also between men and women, for both age groups, respectively 15 to 24 years of age and for the age group 25 to 64 years.

Unprecedented increases in the unemployment duration were also due to the persistence of some volatile and fragile economic conditions on the labour market in several countries.

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THE ROLE OF THE FINANCIAL AUDIT IN PREVENTING AND COMBATING MONEY LAUNDERING

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Abstract

The role of the financial audit in preventing and combating money laundering is to enhance the information credibility from the financial statement. Among the most important laws in defining and explaining the legal obligations on prevention of money laundering is the FATF guide on measures of risk, published in 2008.

The legal framework in Romania in this field was established by the Law no.656 / 2002. In Romania, the structure of the profession representation with its obligations established by the Law 656/2002 is the Body of Accountants Expert and the Chamber of Financial Auditors.

Keywords: *money laundering, financial audit and accounting*.

JEL Classification: *M 48*

Introduction

According to the specialized literature, the audit is the process carried out by individuals / legal entities, legally authorized, called auditors, which analyzes and evaluates the professional information related to a particular entity, using techniques and specific procedures to obtain evidence intended as audit evidence on which they make the audit report and develop a responsible and independent opinion. This involves calling the assessment criteria which results from the regulations unanimously recognized in the audited entity.

The accounting information system is the main source of information for auditors. Regardless of the methods and techniques used for data processing, the audit shall be directed to:

1. The reality, honesty and integrity of the information provided by accounting;
2. The legality, necessity and efficiency of the economic and financial recorded operations as well as the integrity of the institutions patrimony.

Watching these two elements, the auditor may face the following situations:

- The documents and accounting records are properly prepared and comply with the legal framework and contain only legal, real and accurate operations.
- Irregularity in the management and organization of the determined accounting by favoring the cases of bad management, tax evasion, embezzlement, distorting the results.
- Irregularity in drawing up the movement and processing of the accounting documents contain inadmissible characters, the records are not kept up to date and does not ensure compliances between accounts.

By checking the documents, one shall determine the nature of the deficiencies (shape, background) and shall impose measures to prevent and eliminate them or the punishment of those responsible.

To be able to express their views on ensuring accurate image by interpreting financial statements, the auditor must ensure that the following criteria and objectives have been met:

- The criterion of completeness and integrity of the records.

This criterion says that all operations taking place in an entity should be reflected in adequate supporting documentation and should also be recorded in accountancy without omissions and without some of them being recorded several times.

- The criterion of the records reality.

All information contained in the annual accounts must be justifiable and verifiable. All elements of patrimony should be reflected in the accounts in accordance with the physical identifiable and the revenues and expenses and also the assets and liabilities shown in the annual accounts to be real.

All the economic and financial transactions must be recorded in the corresponding accounts with respect for the correspondence of accounts established by the rules of the accounts plans. The failure of this correspondence can contribute to mask the fraud, to the distortion of the balance sheet or some of the items or indicators, such as property, stocks, expenses, results of the exercise, turnover, and tax liabilities.

Risks, frauds and possible errors specific to the financial audit

The literature reveals that always the quantity of audit evidence needed to prove a given evaluation compliance criterion is directly proportional to the risk that the auditor will issue opinions on the compliance criterion, but in reality there is a deviation from that criterion, which will be covered by the importance to users of the audit report. This risk is named the overall audit risk.

Therefore, the audit cannot provide an absolute certainty but it must be limited to an acceptably low level of overall audit risk, which means the possibility of the auditor to issue an inaccurate opinion in an audit report. In this sense, it shall be noticed the fact that the auditor's opinion will be inaccurate and may mislead its users.

As it is not practical to restore all the operations from a set of the financial statements, the auditor must accept a certain level of overall risk auditing. An audit report is misleading if: it is mistakenly said in the report that there was a lack of conformity in the assessment criteria.

For example, it is stated that the financial statements are misleading when in reality it is not such a case or it states that the leadership of the entity have not made every effort for achieving the objectives when in reality, the objectives were achieved, it is omitted the report the indication of the stretching limits of the audit and that can influence the interpretation of results.

The audit risk components

1. The inherent or essential risk represents the risk of a (significant) material deviation. The inherent risk is equivalent, in fact with the possibility that a balance or a class of financial operations could contain inaccurate information from other balances or financial transactions, with consequences of the lack of effective domestic contracts.

The inherent risk depends on the nature of the audited entity and the activity that it carries.

2. The control risk is the system of accounting and internal control risk of the audited subject, to detect shortly a deviation or untrue assertion that could be significant, either individually or when aggregated with other misstatements from other categories of operations, since the risk exists permanently due to inherent limitations of the accounting and internal control of the entity on the prevention and detection of significant errors.

The risk control errors are performed in depth at each category from the balance control or financial transaction and can record two situations:

- The auditor ascertains that the accounting and internal control system is not working effectively and efficiently, in which case the control risk is at a control level;
- The auditor identifies the accounting and the internal control system as able to effectively prevent, detect and control significant incorrect information, in which case the control risk is at a lower level.

In order to understand and assess the risk control, the auditors conduct a research on the accounting and internal control, in a form and extent that depends on the size and complexity of topics audited and the nature and structure of the accounting and internal control. Some of the procedures used for the understanding of the accounting and internal control functions directly with audit evidence for the effectiveness of the internal control, which can be considered control tests.

For example, in the business analysis of the accounting and internal control process regarding the collection of the issued invoices, the auditor obtains audit evidence about the effectiveness and efficiency of cashless settlements through investigation and observation.

The control tests include:

- the control of the documents underlying economic and financial operations, in order to obtain audit evidence regarding the compliance with the internal control evidences.
- Investigating and obtaining internal controls, where, as a result of their exercise, were not found deficiencies
- Restoring internal controls.

The non detection risk

There is the risk that a significant material deviation which is not corrected by the internal control is not detected by the auditor. It is the risk that the background procedures used by the auditor will not detect any incorrect information existing in the balances or in a financial transaction that can be materialized either individually or when aggregated with other erroneous information from other accounts or transactions.

The more the auditor makes several substantive procedures, the greater the probability for him to detect any (significant) mistake or irregularities in the audited financial statements, so the risk of non-detection is lower.

Performing the risk analysis is important because according to the audit risks, there are selected the working procedures, it can be established the extent of the procedures, tests and surveys, as well as the date of the applications succession.

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THE EXPENDITURES FOR ENVIRONEMENT PROTECTION IN ROMANIA

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Abstract:
Expenditures for environmental protection are considered a response by economic agents and public administration towards the prevention, compensation, and improvement of the state. In nationwide statistical reports, environmental protection costs represent the total amounts of investments and expenses supported by specialized manufacturers, unspecialized manufacturers, and the public administration sector. The paper shows the evolution of expenditures for environmental protection in Romania in the period 2007 – 20011, overall and by activity sectors.

Keywords: *environmental protection costs, preventive investments, internal expenses*

JEL Clasiffication: *Q52, R53*

Introduction

The way in which we produce and consume has a significant impact on the environment and creates problems such as: global warming, pollution, and the irrational use and exhaustion of natural resources.
Numerous countries encounter difficulties in the management of recycling and report that the biodiversity of their ecosystems is being damaged.
Prosperity, economic growth, and the quality of life depend on the rational consumption of available resources, on the use of non-polluting technologies, and on the individual realization of the need for sustainable growth and taking of responsibility at an organizational and administrative level.
Transforming sustainable growth from a generous concept and a well known necessity into a global reality is a long road that requires the creation

of realistic environmental protection policies and the specific methods through which they may be implemented.
Being accountable towards the planet requires honoring the UN Convention's decisions on biodiversity: the conservation of close and extended environment, tracking the impact on biodiversity, the impact of using genetic materials and the transfer of technology.
The anticipatory approach on environment issues and the creation of accountability for the environment must be realized through the development and spreading of technologies that do not degrade the environment.
Acknowledging the necessity of environmental protection must be accompanied by the managerial instruments that enable correct decision making and precise environmental cost management for economic agents and public administration. The legislation and regulations in the environmental protection field must determine these agents to invest in environmental friendly technologies. In this way, evaluating the environmental performance of technologies and product eco-efficiency becomes a necessity for all public and private organizations.
Environmental protection comprises multiple activities directed towards maintaining or restoring a clean environment, the prevention of polluting waste or noise, and the reduction of polluting substances through collecting, recycling and the treatment of waste. Cost analysis enables the evaluation of efforts made towards the prevention, reduction, and elimination of pollution resulting from the production or consumption of goods and services.

1. Indicators to highlight the effect of environmental protection policies

Three types of indicators are used in order to highlight the effect of environmental protection policies on the European production and consumption system:
-The development of typical environmental protection activities;
-The measurement of pressures on the environment;
- The actual expenditures for environmental protection derived from economic activities and more.
Expenditures for environmental protection are considered a response by economic agents and public administration towards the prevention, compensation, and improvement of the state of the environment.
The highlighting and analysis of environmental protection costs represents an important element establishing environmental policies on a macro level and the evaluation of companies' own environmental performance.
In practice, the evaluation of the environment and environment policies is difficult yet necessary for providing the cost data used in the managerial decision process.

Environmental protection expenses must be defined in such a way that the economic agent has a clear picture on the effects his own activities has on the environment.
In order to evaluate the total impact of environmental policies, environmental protection activities must be wholly identified, whether they be primary, secondary, or auxiliary activities. Services produced by auxiliary activities sustain the production of the main product, and their expenses are individualized in a small proportion.
At the moment, statistical data referring to environmental protection expenses used to analyze the impact of environmental policies are highlighted on two institutional levels: public administration and enterprise.
In nationwide statistical reports, environmental protection costs represent the total amounts of investments and expenses supported by specialized manufacturers, unspecialized manufacturers, and the public administration sector.
At an enterprise level, environmental costs aren't usually available at an accounting level, and estimating how much of the current expenses or investments are actually environmental costs is often a difficult process.
Total national expenses include: investments, current internal expenses (expenses made by the unit's employees, but excluding current external expenses), the cost of buying environmental protection services from third parties, and environmental taxes.

2. **Investments for environmental protection** include all the capital expenses tied to the protection of the environment and their scope is to collect, treat, monitor, control, reduce or prevent polluting agents or other pollution caused by the enterprises' operations.
The total investment amount is calculated by adding up:
- The necessary investment in order to evacuate the polluting substances resulted from the production process and to treat the pollution – this is called end of pipe environmental protection;
- The investment for environmental protection integrated into production

2.1. **End of pipe investments**
These include the sum of all capital expenses deriving from: methods, technologies, processes or equipment required for the removing of pollution or polluting agents after their production, the prevention of pollution spreading and the measurement of pollution levels, and the treatment and evacuation of polluting agents resulted from the enterprise's activities. These represent supplementary components to existing equipment used for collecting or extracting pollutants (filters, treatment plants) and do not

influence the production process. For this reason, they are called end of pipe environmental protection investments.

2.2. **Investments for environmental protection integrated into production (preventive investments)**

These investments are also called „clean technologies" and sum up the capital expenses made towards the adaptation or creation of new methods, technologies, processes, and equipment for the prevention or reduction of the quantity of pollutants emitted at the source.

This category of investments implies changes in production and the operating processes in order to prevent or reduce the source pollution.

There are two types of preventive investments: separately identified and integrated.

Separately identified investments include: methods, processes, technologies, and equipment exclusively used to protect the environment, their respective expenses being reported as integrated environmental protection investments.

Integrated investments include: methods, processes, technologies, and equipment that are integrated into other operational activities, which makes them harder to identify as a pollution prevention component. In this situation, only a part of the investment will be reported under environmental protection investments. This part corresponds to additional expenses related to the environmental protection objective, alongside another component that does not share the same function. In order to determine the additional expenses, technology without an environmental function is considered reference technology and the extra cost generated by the environmental function will be reported as an environmental protection investment.

B. Current expenses for environmental protection include expenses that are necessary for the operation, repair, and maintenance of installations, equipment, and machinery; expenses for the collection, treatment, monitoring and control, reduction, prevention, or elimination of pollutants or other environmental degradation caused by the units' operational activity. Costs not directly tied to the production process that serve to fund environmental services (coordination, research, waste management, water treatment etc.) are also included. Thus, current expenses include both service expenses and expenses made towards acquiring environmental services.

Defining cost is based on the accounting standards used by enterprises according to the Law of Accounting and consists of personnel, energy, materials, and research and development services' costs. These correspond to the costs of operating and running of the enterprise's own activities and are considered internal costs, while the acquisition of environmental protection services from third parties are considered external costs.

Current internal expenses include expenses made by the unit's personnel towards environmental protection. These include energy and materials usage, the maintenance of technology, personnel costs and also costs related to the general administration, education, information, management, research and development of the environment.

Current external expenses include the acquisition of environmental protection services from third parties (including studies on environmental protection, laboratory analyzes etc.), as well as environmental taxes paid according to Law.

In our country the lack of a coherent legislative framework in the field of environmental protection and the lack of material and human resources are the main problem faced by most companies, but especially SMEs, and central and local public administration.

There are dozens of environmental regulations that have to meet a company or public institution in Romania

Monitoring compliance with these regulations is difficult or even nonexistent, voluntary compliance is achieved after a few situations where we are dealing with a responsible management.

Including large companies prefer to be penalized for failure to comply with national rules of environmental protection since the savings by reducing the cost to the environment far outweigh the fines imposed.

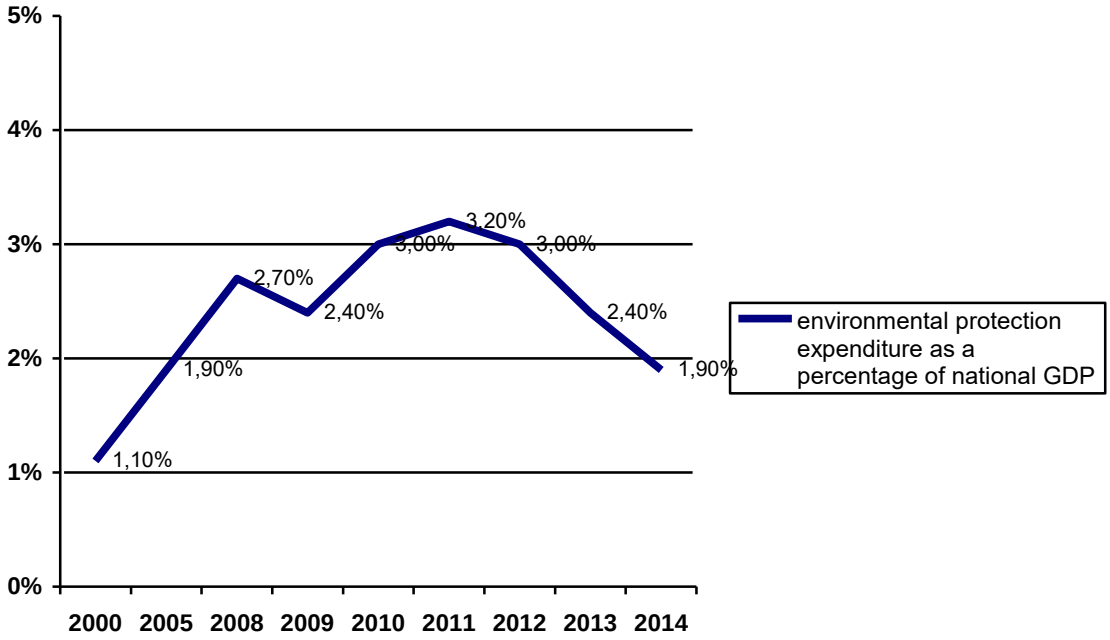

Figure 1 Evolution environmental protection expenditure as a percentage of national GDP

Source: Author's processing based on data from inssinsse.ro

In Romania, in 2014, were spent 12.6 billion Lei (2.8 billionn Euros) in investments to environmental protection, equivalent to about 1.9% of gross domestic product (GDP).
As a share of GDP, however, investments in 2014 are the lowest since 2008, the year in which, while in value were 14.3 bln. Lei represented 2.8% of GDP. Compared to 2013, investments decreased by over 19%.
In value of investments in environmental protection peak was reached in 2011, their level being 18.6 bn. Lei (3.2% of GDP). The areas biggest expenses were recorded for waste management (56.7% of the total and the equivalent of 7.1 billion. Lei), followed by expenses for water protection (24.9%, or 3.1 billion. lei) and the allocations to air protection (10.8%, 1.3 bn. lei).
-The public administration sector comprises all the institutional units that produce or fund non-commercial environmental protection services for the community.
- Unspecialized producers are units that do not have environmental protection as their primary focus, but are forced to run such activities in order to prevent environmental damage.
- Specialized producers of environmental services represent units whose primary activity is environmental protection.

Table 1 Environmental investment structure

Year	Unspecialized Producers % of Total Investments	Public Administration %	Specialized Producers %
2007	**55,4**	**23,0**	**21,6**
2008	**35,0**	**33,4**	**31,6**
2009	**40,9**	**35,0**	**24,1**
2010	**38,8**	**38,7**	**22,5**
2011	**25,9**	**46,6**	**27,5**
2012	**57,2**	**30,7**	**12,1**
2013	**73,1**	**15,7**	**11,2**
2014	**72,6**	**18,6**	**8,8**

Source: Author's processing based on data from inssinsse.ro

From Table 1 it is found that since 2011 there is an increase in the share of investments made by producers in non-specialized investment while

lowering total poder investments in public administration and those made by specialized producers.

Table 2 Environmental protection expenses by activity sectors and expense categories

- thousands of Lei at current prices

Activity sectors	Year				
		Investments	Current expenses		Total
			internal	External	
Unspecialized producers	2007	1.329.980	913.847	499.595	2.743.422
	2008	1.550.499	2.153.762	812.264	4.516.525
	2009	1.773.140	1.324.524	831.934	3.929.598
	2010	1.843.471	1.780.594	906.036	4.530.101
	2011	1.400.480	2.413.346	976.573	4.790.399
	2012	2.353.193	3. 495.240	1.205.993	7.054.426
	2013	2.864.532	3.493.001	1.517.650	7.875.183
	2014	3.089.570	1. 332.819	1.655.840	6.078.229
Specialized Producers	2007	1.048.084	5.487.074	504.196	7.039.354
	2008	1.716.516	5.637.738	973.980	8.328.234
	2009	1.046.720	5.070.253	834.181	6.951.154
	2010	1.069.905	7.104.690	1.407.088	9.581.683
	2011	1.491.591	8. 899.850	1.373.984	11.765.425
	2012	499.699	8. 597.637	1.111.629	10.208.965
	2013	438.194	6. 982.197	1.310.982	8.731.373
	2014	372.637	5. 822.854	950.486	7.145.977
Public Administration	2007	1.296.891	867.226	224.969	2.914.520
	2008	1.635.463	939.424	389.368	3.633.332
	2009	1.518.164	1.061.184	384.676	3.357.708
	2010	1.840.217	401. 608	557.059	4.293.033
	2011	2.522.208	782.129	923.137	5.367.402
	2012	1.263.309	1. 049.767	957.368	3.571.218
	2013	617.341	1. 086.219	1.074.030	2.905.379
	2014	792.469	1.020. 643	1.181.316	3.132.485

Source: Author's processing based on data from inssinsse.ro

Starting with 2012 investments in environmental protection began to drop.
This can be explained, either by closing of industrial economic units, either by their compliance with environmental requirements imposed by the laws.

Conclusion

When Romania joined the European Union, much of the industrial economic units did not fit the parameters on environmental pollution, imposed by European directives, which is why they adopted transitional

period. Operators with significant environmental impact through compliance plans assumed commits to making the necessary investments in order to comply with environmental requirements. By the end of 2014, according to the commitments in the Accession Treaty for these installations were invested in environmental protection in order to comply with best available techniques and achieve a high level of environmental protection, amounting to 69,452,480 euros.

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MODELLING ROMANIA'S POTENTIAL GDP GROWTH RATE AND OUTPUT GAP

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Abstract
In today's complex economic decision making environment, the unobservable concepts of potential GDP growth and output gap are paramount to economic policies and have a significant impact on central bank and government actions. Despite being relatively easy to grasp from a conceptual standpoint, the potential output and the output gap are quite difficult to measure and the choice between the many competing models that can be used in practice, as well as the expert opinions imposed to the models may lead to very different results and to radically different policy choices.

Apart from these issues, measuring the output gap in developing economies is further complicated by the lack of reliable statistical data and a short time horizon over which to validate complex macroeconomic relationships that are used by more sophisticated approaches (i.e., multivariate filters). For this reason we propose two straightforward methods of estimating the potential GDP and the

output gap: one based on a simple Hodrick-Prescott filter and one based on an extended Kalman filter with certain restrictions imposed to the cyclical component.

Keywords: *potential GDP, potential economic growth rate, output gap, extended Kalman filter, trend component, cyclical component*

1. LITERATURE REVIEW. CURRENT STATE OF KNOWLEDGE

In its most abstract definition, potential GDP represents the level of output consistent with the aggregate supply of the economy in the long run after cyclical (short-term) macroeconomic shocks have dissipated. Potential output is fundamental to the Phillips curve, which states the inverse relationship between inflation and unemployment. When actual GDP rises above its potential (equilibrium) level, the economy is overheated and inflationary pressures amplify; when output falls below its equilibrium level, the economy faces the risk of disinflation.

Potential GDP is defined as the level of aggregate supply that attains the optimum balance between output and price stability, given full employment (Hall and Taylor, 1991; Okun, 1962). An alternative definition of potential GDP is the level of output that is achievable given the existing capital stock and labor input if the economy were neither in expansion nor in recession. It is therefore clear that the potential GDP and the output gap are key variables for macroeconomic policies; however, employing them in the decision making process has been troublesome due to both unreliable estimation models and varying intensities of the fluctuations of other macroeconomic variables [Chagny and Dopke, 2001]. Other authors define potential GDP as the maximum output that an economy could sustain without generating inflationary pressures (De Masi, 1997).
In spite of the classical filtering techniques (e.g., the Hodrick–Prescott and Kalman filters – see Chui and Chen, 2009; De Jong and Sakarya, 2013; Hodrick and Prescott, 1997; Kalman, 1961) enjoying great popularity with practitioners and academics alike, these methods have the important limitation of ignoring fundamental macroeconomic relationships, and this is a key fact to consider in the case of emerging economies (Aguiar and Gopinath, 2004). For instance, in many countries, the monetary authorities adopt an inflation-targeting regime of monetary policy (with this also being the case in Romania), a policy stance that leads to overly restrictive policy measures during recessions. This, in turn, generates prolonged periods of

negative output gaps. If forecasting models failed to account for inflation during the period, they would produce biased estimates of the potential output and output gap. These issues can lead to inappropriate economic policies (please see the discussion in Benes et al., 2010 for an accurate depiction of the way in which errors in potential output estimation led to ineffective monetary policies in the United States in the 1970s and the 1980s). It is also compulsory to update estimates as new information on macroeconomic time series becomes available, even if the national accounts are not subject to revision themselves.

However, it should be noted that in the case of emerging economies it is quite difficult to correctly specify and validate complex economic relationships due to insufficient and unreliable data. In this context, we propose two different approaches to modelling the potential output and the output gap based on filter theory. The first model is a simple Hodrick-Prescott filter, which is often used for the purpose of evaluating the output gap, and the second is an extended Kalman filter as originally designed by Ozbek and Ozlale (2005).

2. TWO FILTERS FOR ESTIMATING THE POTENTIAL OUTPUT

The first model that we shall develop is based on the Hodrick-Prescott (HP) filter as described in Hodrick and Prescott (1997). The authors propose a simple yet intuitive decomposition of economic variables as the sum of a trend and a cyclical component:

$$y_t = g_t + c_t \qquad (1),$$

where y_t is a time series that is directly observable, g_t is the (unobservable) growth or trend component and c_t is the cyclical component. The purpose of the HP filter is to estimate the unobservable trend component g_t based on the observable noisy process y_t, i.e. to „detrend" the observable time series. While it is reasonable to believe that the robustness and the accuracy of the HP filter varies greatly among the broad range of economic variables, it must be noted that the model enjoys a huge popularity and is often the model of choice when it comes to extracting the trend component of macroeconomic variables.

The HP model is based on the idea that the growth component cannot fluctuate significantly in the short-run and that the long-run average of the

cyclical component should be very close to zero. As such, Hodrick and Prescott (1997) state the following minimization problem:

$$\min_{\{g_t\}_{t=-1}^{T}} \{\sum_{t=1}^{T} c_t^2 + \lambda \sum_{t=2}^{T-1} [(g_{t+1} - g_t) - (g_t - g_{t-1})]^2\} \quad (2),$$

in which λ is a smoothing parameter that penalizes the variations in the growth rate of the trend component. Without going too deep in the technical aspects of the model, we note that the authors propose a value of λ = 1,600 for time series with quarterly frequency[1].

Extracting the values of the trend component from the observed values of the variables is not a straightforward task, as De Jong and Sakarya (2013) note. However, it can be proven that the growth component of the HP filter is a weighted average of the observed values of the time series up to the respective moment in time:

$$\hat{g}_t = \sum_{i=1}^{t} w_i y_i \quad (3)$$

A formal proof of this theorem, as well as the derivation of the actual weights w_i is beyond the scope of this article. However, those interested may find different approaches to this problem in the original work (Hodrick and Prescott, 1980) and in several excellent studies such as McElroy (2008) and De Jong and Sakarya (2013).

Despite the HP filter's immense popularity, which is due to its simplicity and tractability, the model is not without shortcomings. The most important of these is that it is a purely statistical technique that ingores macroeconomic relationships that have been validated throughout business cycles. Another disadvantage is that the model assumes a smooth variation of the trend component and while it may be (somewhat) safe to make this assumption in the case of mature economies, it is clearly an issue with emerging economies which are greatly affected by the different stages of the business cycle. Thirdly, if a one-off permanent macroeconomic shock occurs, the model will record a shift in the growth component that does not exist (French, 2001).

Applying the HP filter to estimate the potential GDP of emerging economies generates unconvincing results, as discussed in Benes and N'Diaye (2004) and Sramkova et al. (2010). This is mainly due to the fact

[1] For the exact derivation of the value of the smoothing parameter at different frequencies please see Hodrick and Prescott (1997) or De Jong and Sakarya (2013).

that emerging economies are subject to significant idiosyncratic shocks (e.g., frequent changes of economic policies) that increase greatly the volatility of the trend (Aguiar and Gopinath, 2004). The HP filter is, of course, less likely to accurately record these shifts in the trend.

The second model that we use in this paper is the extended Kalman filter proposed by Ozbek and Ozlale (OO, 2005). Just as the HP filter, the OO model assumes that the output (Y_k) consists of a trend component (T_k) and a cyclical component (C_k):

$$Y_k = T_k + C_k \qquad (4)$$

The novelty of the OO model is the hypothesis that the trend component follows a random walk process with drift:

$$T_k = T_{k-1} + \omega_k + \varepsilon_k \qquad (5),$$

while the drift itself is generated by a random walk process:

$$\omega_k = \omega_{k-1} + \sigma_k \qquad (6)$$

The cyclical component follows a AR(2) process:

$$C_k = \alpha_{1,k} C_{k-1} + \alpha_{2,k} C_{k-2} + \delta_k \qquad (7),$$

while the parameters $a_{1,k}$ and $a_{2,k}$ also follow random walk processes:

$$\alpha_{1,k} = \alpha_{1,k-1} + \eta_k \qquad (8)$$

$$\alpha_{2,k} = \alpha_{2,k-1} + \vartheta_k \qquad (9)$$

All residuals are i.i.d. with averages of zero and constant variances.

It is inherent in the specification of the model that certain macroeconomic shocks can have a permanent effect on trend GDP, argument that is consistent with the evolution of most emerging economies in the recent economic crisis. At the same time, by allowing the coefficients of the cyclical component to vary in time (see eq. 8 and 9), Ozbek and Ozlale (2005) ensure that the inappropriate restriction of a smooth variation (i.e., such as the one in the HP filter) in the trend component is eliminated. The model is estimated using an extended Kalman filter (see Chui and Chen, 2009).

3. ESTIMATING THE POTENTIAL GDP AND THE OUTPUT GAP FOR ROMANIA

The HP and the OO filters presented in the previous section have been applied to the time series of quarterly real GDP of Romania in order to capture the trend and evaluate the output gap. The input variable spans over the Q1 2002 – Q4 2015 time horizon and is sourced from Eurostat. The models have been implemented using the WinRATS software application. The smoothing parameter in the HP filter was set to 1,600.

For the OO model, it is important to note that the augmented Dickey-Fuller test reveals the existence of a unit root in the quarterly GDP series, which justifies the option to model the trend as a random walk with drift. At the same time, the AR(2) model used for the cyclical component yields the highest values of the Schwartz and Akaike information criteria (against the alternative specifications AR(1) and random walk with drift). It is also the only specification for which the Durbin-Watson test concludes that the residuals are not autocorrelated.

The option to allow the coefficients of the cyclical component to vary in time appears to be justified from an empirical standpoint. The stability of the model is demonstrated by the fact that the absolute value of the sum of the two coefficients is always less than one (Ozbek and Ozlale, 2005).

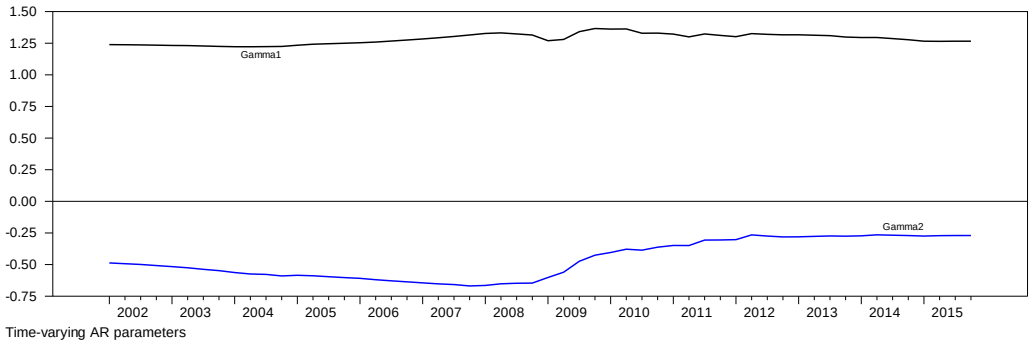

Figure 1. *The coefficients of the cyclical component in the extended Kalman filter*
Source: own calculations.

The table below summarizes the results of the two models:

%

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Gap HP	-1.4	0.0	-1.9	0.2	2.2	7.9	-1.1	-2.3	-1.9	-2.2	-0.6	0.2	1.5
Gap OO	-0.7	0.3	-1.9	-0.4	1.1	6.5	-1.5	-1.9	-1.0	-1.3	-0.1	0.0	0.4
Pot. GDP yoy (HP)	6.7	6.7	6.4	5.8	4.6	3.0	1.4	0.6	0.5	1.0	1.7	2.2	2.5
Pot. GDP yoy (OO)	7.1	7.0	6.7	6.4	5.3	3.2	0.4	-0.3	0.1	1.0	2.1	2.9	3.4
Actual GDP yoy	5.6	8.1	4.4	8.0	6.8	8.7	-7.1	-0.7	1.0	0.7	3.3	3.1	3.8

Table 1. *Estimates of potential GDP growth and output gap*
Source: own calculations. Note: Output gaps are expressed as % of potential GDP.

The Romanian economy was affected by several shocks over the 2003 – 2015 period and while these shocks have certainly reduced the economy's potential output, they have also generated significant fluctuations in output as the different phases of the business cycles unwound. It is our contention that the HP filter treats wrongly these cyclical fluctuations as changes in the trend and as such produces potential GDP estimates that are too volatile, i.e. the exact opposite of the model's assumptions. At the same time, the HP filter suggests potential GDP growth rates that are too low even after accounting for the severe impact of the crisis on the Romanian economy.

In contrast, the OO model produces estimates of the potential GDP and potential growth that appear to be more natural and smooth.

4. CONCLUSIONS

In this paper, we have attempted to apply two simple and widely used concepts to estimate Romania's potential GDP and trend growth rates. The HP filter is very popular due to its simplicity; however, it does fail to account for fundamental macroeconomic relationships and as such is not so relevant for emerging economies. In contrast, the OO model, based on an extended Kalman filter, manages to accommodate the conditionalities of

developing markets rather well and therefore provides a reliable tool to measure the output gap and potential growth rates of these economies.

This is also the case of the Romanian economy, for which the HP filter produces estimates that appear to be unusually volatile while also lacking proper economic justification. On the other hand, the OO model generates estimates that are credible from an empirical standpoint and justified if we take into account the volatility of the Romanian economy.

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ANALYSIS OF CORRELATION BETWEEN CHANGES IN HEALTH SPENDING PER CAPITA AND GROSS DOMESTIC PRODUCT ON AN INHABITANT OF ROMANIA DURING 2000-2014

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Abstract:

Currently, due to economic changes facing us, we see more and more the existence of labor market changes and the associated labor structure. This article aims that over time, the health system and beyond, are permanent changes in the status of human resources and thus held an enhancement of the role of company personnel, mainly due to increase and diversify the tertiary sector in the economies world.

The research analyzes the correlation between changes in health expenditure per capita and GDP per inhabitant of Romania in 2000-2014. The high level of requirements from increasingly diversified customer took delivery of services by competent staff, and that change has brought about a new name for the activity in question, implicitly for the person dealing with it.

Keywords: *GDP; health spending; economic growth*.

JEL Classification: *C51; E23*.

1. Introduction

In the traditional theory of the enterprise, employees were viewed through the prism of how they executed the "disciplined" certain predetermined operations, put in motion machinery and technological devices.

Thus appear the concept of "labor". What interested them was the ability to put into practice, under the rules, decisions of the leaders (Aceleanu, 2010).

The concept of "labor" designates all physical and intellectual skills which man used in the process of obtaining goods and services (Balan et al, 2012). In totalitarian regimes was made the division of labor "productive work" and creator of material goods on one side and "unproductive work" and "unproductive personnel" on the other hand, the latter being associated with the dealing with intellectual activities (Cole, 2000). Any action to improve labor directly targets the ability to work better, more (Burghelea et al, 2011). The concept of labor is in the singular designate a whole mass of people. Thus, the individual personality, needs, behavior, specific vision leaders not included in the scope (Mathis et al, 1997).

2. Econometric model definition

The statistical data that will be used to develop single factor model of health expenditure per capita according to GDP (Burghelea et al, 2014, Bălan, 2009) per inhabitant refers to the period 2000 - 2014 and are presented in Table 1.

Table 1.

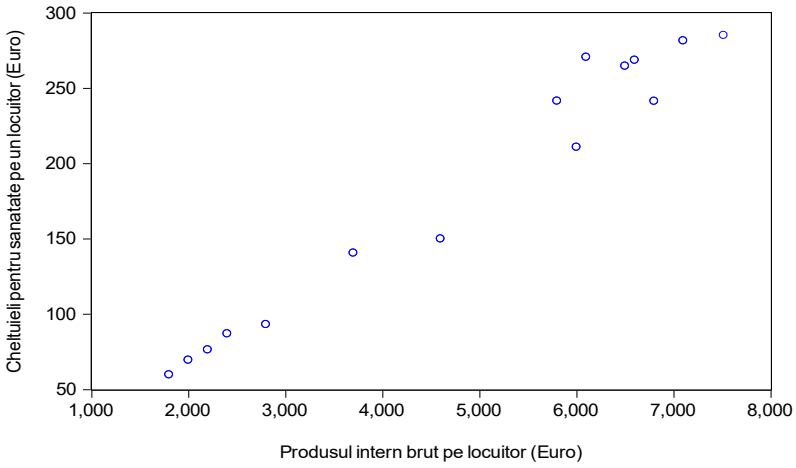
Health expenditure per capita and GDP per inhabitant in 2000-2014 (Romania)

Year	Health expenditure per capita (Euro) *y*	GDP per inhabitant (Euro) *x*
2000	59.67	1,800
2001	69.42	2,000
2002	76.25	2,200
2003	86.95	2,400
2004	93.08	2,800
2005	140.45	3,700
2006	149.94	4,600
2007	210.77	6,000
2008	241.29	6,800
2009	241.35	5,800
2010	270.48	6,100
2011	264.62	6,500
2012	268.56	6,600
2013	281.36	7,100
2014	285.00	7,516

Source: www.ec.europa.eu/eurostat

Note. Data for 2014 were extrapolated using the trend.

Both expenses for health, who as financing public revenues (Bălan et al, 2011) recorded in the state budget, and gross domestic product (Albu et al, 2005) are denominated in foreign currency, the euro. To identify the shape mathematical econometric model of health expenditure per capita by gross domestic product per inhabitant proceed to analyze graphical representation of the correlation between variables system under study (Fig. 1).



Source: own calculus

Fig. 1. Graphical representation of correlation between health expenditure per capita and GDP per inhabitant

The distributed cloud of points in the graph offers suggestive enough information on the form of the interdependence of two variables (Stanica et al, 2005). In these circumstances opting for a regression equation simple linear which has the general form of representation of actual levels: $y = a + b \cdot x + u$ where y is the endogenous variable (dependent) - health expenditure per capita, x is variable exogenous (Burghelea et al, 2015) (independent) - GDP per inhabitant and u is the residual variable.

Form mathematical model health expenditure per capita by gross domestic product per inhabitant (Balan et al, 2013) is based on estimation of parameters (coefficients) of simple linear regression equation using the method of least squares.

The resulting system of equations by the method of least squares is:

$$\begin{cases} \Sigma y = n \cdot a + b \cdot \Sigma x \\ \Sigma y \cdot x = a \cdot \Sigma x + b \cdot \Sigma x^2 \end{cases} \rightarrow$$

$$\begin{cases} 2739,190 = 15 \cdot a + 71916,00 \cdot b \\ 15680081 = 71916,00 \cdot a + 4,06\text{E}+08 \cdot b \end{cases}$$

Solving this system, we have the following estimation for parameters:

$$a = \frac{\begin{vmatrix} 2739,190 & 71916,00 \\ 15680081 & 4,06\text{E}+08 \end{vmatrix}}{\begin{vmatrix} 15 & 71916,00 \\ 71916,00 & 4,06\text{E}+08 \end{vmatrix}} = -15,85293 \qquad b = \frac{\begin{vmatrix} 15 & 2739,190 \\ 71916,00 & 15680081 \end{vmatrix}}{\begin{vmatrix} 15 & 71916,00 \\ 71916,00 & 4,06\text{E}+08 \end{vmatrix}} = 0,041395$$

Hence the model of health spending per capita by gross domestic product per inhabitant in Romania for the period 2000-2014 the following form:

$$\hat{y} = -15,85293 + 0,041395 \cdot x.$$

To obtain estimators of the parameters defining the econometric model was necessary to proceed to the calculations in Table 2.

The parameter "b" (regression coefficient b = 0.041395) provides information indicating that an increase by one independent variable (GDP per inhabitant), spending (Vidrascu, 2015) for health per capita is increased on average by 0.041395 units.

In the last column of Table 2 are exposed the figures estimated levels of health expenditure per capita by gross domestic product per inhabitant which is achieved by successive replacement of the regression equation, the corresponding values of the independent variable. There were obtained lawfulness series formalizing levels estimated statistical correlation between the variables included in the model, in the 2000-2014 period for Romania.

Table 2.

Table interim results and calculations needed for the definition of estimated expenditures for health per capita

Year	Health spending per capita (Euro) y	GDP per inhabitant (Euro) x	$y \cdot x$	x^2	Estimated levels of health spending per capita based on linear regression equation (Euro) $\hat{y} = -15,85293 + 0,041395 \cdot x$
2000	59,67	1.800	107406	3240000	58,6586
2001	69,42	2.000	138840	4000000	66,9377

2002	76,25	2.200	167750	4840000	75,2167
2003	86,95	2.400	208680	5760000	83,4958
2004	93,08	2.800	260624	7840000	100,054
2005	140,45	3.700	519665	13690000	137,310
2006	149,94	4.600	689724	21160000	174,565
2007	210,77	6.000	1264620	36000000	232,519
2008	241,29	6.800	1640772	46240000	265,635
2009	241,35	5.800	1399830	33640000	224,240
2010	270,48	6.100	1649928	37210000	236,658
2011	264,62	6.500	1720030	42250000	253,216
2012	268,56	6.600	1772496	43560000	257,356
2013	281,36	7.100	1997656	50410000	278,054
2014	285,00	7.516	2142060	56490256	295,274
Total	2739,190	71.916,00	15680081	406000000	2739,190

Source: own calculus

3. Significance of the findings and conclusions on model validation

Interpretation of results refers to the significance of representation econometric indicators on which appreciates the quality and viability of the model attestation respectively.

Uni-factorial linear econometric model of health expenditure per capita by gross domestic product per inhabitant has the following analytical form $\hat{y} = -15{,}85293 + 0{,}041395 \cdot x$, and is confirmed as a viable model as key conditions are met:

- correlation ratio has a size large enough (R = 0.983537) to obtain confirmation that there is a very strong correlation health spending per capita by gross domestic product per inhabitant. Also the size of the coefficient of determination (R^2 = 0.967346) may indicate that 96.7346% of change in health spending per capita is explained by the change in GDP per inhabitant, the difference up to 100% is the proportion of the residual component or is the influence of other factors, not included in the model;

- uni-factorial linear model for health spending per capita, in terms of correlation ratio is viable because the result is significantly different from zero with a probability of over 95% and validated, so there is a statistical correlation into real variables system studied because $F_{statistic}$ = 385.1109 has a size exceeding one important measure value of 4.67 ($F_{tabelar}$ = 4.67);

- Coefficient regression model, "b" is significantly different from zero (the null hypothesis), under "Criterion t" with a significance level of 5% below the maximum limit for rejecting the null hypothesis. In these

circumstances the independent variable (exogenous), GDP per inhabitant, has a significant influence on the level of health expenditure per capita;

- Coefficient Durbin-Watson statistic (DW = 1.054737) has a size that is not positioned within the phenomenon of non-acceptance of variants term residual autocorrelation. The conclusion is made under distribution Durbin - Watson both for materiality, q = 1% and 5%, the number of exogenous variables, k' = 1 and the number of observations, n = 15;

For a significance threshold of 1% acceptance range of non-autocorrelation hypothesis is: $d_2 = 1.070 < DW < 4-d_2 = 4-1.070 = 2.930$

It stated that the state of autocorrelation of residuals can affect the correct interpretation of the following statistical indicators:

- an estimate of the standard deviation of the equation is less than the actual value and hence the coefficient of determination and correlation ratio that are oversized. In these conditions the intensity of the interdependence of system variables is greater than in reality;
- "criterion t" used to test the significance of the estimates of the parameters of the regression equation is not fully conclusive in this case t-statistic values are overstated, which would better confirm the significance of the parameters;

- Expression relative standard error of the estimate equation $\left(\hat{V}_{y.\hat{y}} = 9{,}0613\%\right)$ that provides information model (regression equation) is viable for an estimate of forecast because it has a size that does not exceed the 10% acceptance considered restrictive;

- Statistical significance similar to that which presents the estimate of the relative standard error of the regression equation is obtained by calculating and interpreting "irregularity coefficient (inequality) of Theil" ($Th = 3{,}8275\%$). The econometric model of health expenditure per capita is certified as sustainable in terms of this indicator as "irregularity coefficient (inequality) of Theil" has a value not exceeding the limit of 5%;

- Statistical description of the series of the error term (residual) is shown graphically and by indicators: mean, median, maximum, minimum, standard deviation (standard deviation), the coefficient of asymmetry (Skewness), kurtosis-flattening (Kurtosis), the coefficient statistically Jarque-Bera (JB = 0,046283) and the related probability coefficient JB (97.7124%). This information underlying acceptance hypothesis disposition values of the error term under the law of normal distribution (test for normality of the distribution of the residual variable) because the probability associated coefficient JB is higher than the critical limit of 60%, which sustain the viability of the developed model;

- Test there is the heteroscedasticity of errors (residual variable) confirms property of homoscedasticity model health expenditure per capita by gross domestic product per inhabitant, based on two statistical criteria applied, "Criterion F" and "χ^2 Criterion" the auxiliary regression equation correlation squared residual levels of the independent variable, GDP per inhabitant. In these conditions can be made the following remarks:

- dispersion error is constant;
- application "Criterion t" for the significance of regression equation parameters is fully conclusive;
- econometric model attaches importance to all discriminatory remarks related to the residual variable.

Econometric study viability for uni-factorial linear model health spending per capita by gross domestic product per inhabitant of Romania for the period 2000-2014 can be completed by a synthetic conclusion made with full statistical certainty as favorable and practical to base macroeconomic decisions policy, given that the statistical support testing confirms this assessment, with one exception.

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NATIONAL UNEMPLOYMENT ANTE AND POST CRISIS

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Abstract:

I chose this topic because it is a topic that affects the population and lack of jobs reduces people's income and thus consumption becomes increasingly smaller. The necessity of this article is given to the evolution of the political, socio-economic background of developments in the phenomenon, based on a number of factors. The objective of this article is to present an analysis of the phenomenon in the period before the economic crisis and during the period affected by the global crisis.

Keywords: *unemployment; macroeconomic unbalance; labor market*.

JEL Classification: *E24; J21.*

1. Introduction

Over time the role of work performed, being environment favorable to the development of various ideological currents such as the classical theory, neoclassical, Marxist, Keynesian, to the contemporary theories: the theory of implicit contracts, salaries theory or reverse selection theory (Smith, 1992).

If the noblest profession in antiquity was the farmer, the constant development of new technologies has led to significant advances in the economy has created multiple new opportunities in the labor market and a

more prosperous society. Since antiquity there were early forms of employment, but labor market foundations were laid during the great industrialization, which in addition to the need for a consistent capital, require a large number of workers led and coordinated by an entrepreneur.

After the events of 1989, the Romanian company was facing one of the most acute problems, namely unemployment specific capitalist economies (Dinu et al, 2005). The phenomenon of "unemployment" appears on the labor market and studying to become increasingly more important implications for population and economy can be of the most serious (Angelescu et al, 2010). During socialism, the Romanian economy was centralized and political checked and businesses were financed from the state budget. In this regard it was promoted a policy of full employment of labor. After December 1989, unemployment has exploded due to essential changes in the Romanian economy with the transition to a market economy (Dornbusch et al., 2007).

Since the early 1990s Romania's population decreased by 3.4% (or 800,000), reaching 22.4 million in 2001). By the mid-1990s due to the deteriorating economic situation has changed people's migration to rural areas. Decreased participation in the labor force has affected especially the younger age groups and the population within the age range of 65 and above is a high and even a feature in Romania's participation in the workforce. In 1990, employment was 10.84 million people, reaching in 1999 a number of 8420000. Since 1990, total employment fell by 20%.

Both migratory flows between rural and urban areas and increase employment in agriculture suggest that it was important over the last decade. Part of the rural population, may well continue to have a job in industry and parallel to it to carry out some permanent or seasonal agricultural activities (Keynes, 1970).

There are two official sources of data regarding unemployment. A source reflects unemployed registered unemployment. The second is based on the Labor Force Survey began in 1994 and carried out in accordance with the international definition of unemployment given by the International Labor Organization. The description below of unemployment trends are based on Labor Force Survey data (Lipsey et al., 2002).

The unemployment rate dropped and stabilized at around 5.5% in mid-1990. In 2001, the unemployment rate remained at 6.5%, 6.9% for men (above the EU average of 6.6%) and 6% for women (below the EU average of 9%). Unemployment is much higher in urban areas compared to rural areas (Socol et al., 2003). In urban areas in 1996, increasing the unemployment rate is even twice as high, i.e. 8.4% compared to 3.6% rural. By 2000, unemployment rates differ higher, reaching in 2000 to 11.7% in urban areas, compared to 2.4% in rural areas (www.ec.europa.eu).

In 2002, unfortunately, debuted with a further increase in unemployment, the number of unemployed women is representative of 44%. The biggest drop was in 2003, when the unemployment rate fell to 7.6% .In 2005 the end of June, the registered unemployment rate of 5.5% .At the end of September 2006, the registered unemployment rate national level was 5%, reaching in 2000 an unemployment rate of 6.87% and in 2011 the unemployment rate was 5.12%. As in other countries, youth unemployment is higher as the adult. Long-term unemployment remains high despite the decrease in the overall level of unemployment. Long-term unemployment tends to be higher in women than in men.

2. Analysis of unemployment before the crisis

Unemployment through its effects not only affects the labor market (Burloiu, 1993), but also leads to macroeconomic imbalances. Market liberalization, including the labor market, the transition to a market economy caused unemployment explosive process.

Unemployment officially became known in Romania after the 1990 Underlying unemployment imbalances are manifest in the economy which is in the process of restructuring. After December 1989, the national economy has been in continuous decline and unemployment was determined both by demographic and economic factors. An important role was played and errors of economic policy on the implementation of economic reform (Burghelea et al., 2011). After the Revolution of 1989, Romania's population is in continual decline reaching 22400000 inhabitants in 2001.

Table 1.

Unemployment evolution during 1991-2005

Year	Unemployment at the end of the year (thousands)	Unemployment rate	ILO unemployment (thousands)	ILO unemployment rate
1991	337,4	3,0	-	-
1992	929,0	8,4	-	-
1993	1164,7	10,2	-	-
1994	1323,9	10,9	971	8,2
1995	998,4	8,9	968	8,0
1996	652,0	6,2	791	6,7
1997	816,3	9,3	706	6
1998	1025,0	10,4	732	6,3
1999	1130,3	11,8	790	6,8
2000	1007,1	10,5	821	7,1
2001	826,9	8,8	750	6,6
2002	760,6	8,4	845	8,4
2003	658,9	7,4	692	7,0

2004	557,9	6,3	680	6,8
2005	523	5,9	650	6,5

Source: Romania Statistic yearbook 1992-2004; Statistic bulletin 1997-2006, Labor survey in household (AMIGO) 1994-2005 (www.insse.ro)

If you achieve a deeper analysis of annual values in the range 1991-2005, we see that the unemployment rate has fluctuated: continuously increased in 1991-1994. Even in 1994 it was reached maximum unemployment when over 1.2 million people had no jobs. After 1994 the unemployment rate began to decline until 1996, will increase again from 1997 until 2000, and then to fall steadily, reaching 5.9% in 2005 (Mocanu, 1991).

Analyzing the dynamics of unemployment in the period 1991-2005, a number of conclusions can be drawn: the unemployment rate entries was particularly high in 1991 due to triggering of tracking the number of unemployed and granting monetary compensatory amounts; the period 1991-1994 was characterized by a growing number of people became unemployed; since 1995 unemployment starts to decline; since 1997, unemployment started to rise until 1999; Since 2000 unemployment began to decline until 2005. Compared with previous years, in 2004 the number of people entering unemployment was much lower due to layoffs of employees that have occurred as a result of restructuring and privatization various sectors.

The categories of people are unequally affected by unemployment, but most affected are young (Tindeche et al., 2014). The period required to find a new job and is reduced as long as the education level is higher, thus leading to a high rate of youth unemployment. Unemployment has affected more women than men, until 1998. Thus, over 50% of the unemployed were women.

Since the beginning of the transition, the first people who were affected by layoffs have been women. However, after 1998, the higher share among the unemployed was men. The case was the restructuring that took place in the industry. Thanks to the early retirement and discourage people after 50 years of age, men are more affected. With an unemployment rate of 21.7% in 2002, people aged 14-24 years are most affected by unemployment, according to labor force surveys, surveys that provide information on unemployment ILO. Thus, the two ILO unemployed has more than 24 years.

Among young people aged under 24, the unemployment rate is 10 times higher for the unemployed who have high school or secondary, and 8 times higher for unemployed persons with post-secondary education or higher. There are some peculiarities occupational characterizing unemployment, related fields and industries that feed stock unemployment,

as the characteristics relative to the level of training of the unemployed (Tindeche et al., 2014).

Main branch that has redundant workforce in the period after 1990 was industry. As a result, the share of employment in industry fell almost continuously from 36.9% in 1990 to 24.8% in 2003 (Ungureanu, 2001).

On the duration of unemployment, some estimates over the period 1995-1999 it lead to finding inverse relationship between that indicator and unemployment. Decrease the average duration of unemployment during 1996-1999 it can be considered only partially as a positive aspect. However, an average duration of unemployment over 12 months shows an important structural component of unemployment, the unemployed represented what can be reintegrated into activity only with difficulty and active employment policies.

Chronic phenomenon and the potential increase in number of discouraged people, leading to increased unemployment duration (Varjan, 2005). These people, although available for work, do nothing to search for a job, being convinced that they cannot fit on the labor market. They constitute a disadvantaged labor market, to which were added underemployed persons.

Table 2

Unemployment share

	Share of total ILO	**Total**	**Men**	**Women**	**15-24 years**	**25-34 years**	**35-49 years**	**Over 50**
Unemployment lenght	- over 12 month, in %	57,68	58,13	56,97	15,12	17,25	20,41	4,9
	- over 24 month, in %	35,28	34,09	37,16	7,56	9,94	14,15	3,63

Source: National Agency for Employment (ANOFM), 2004 (www.anofm.ro)

A share of 57.68% of the total unemployed persons manifests itself more strongly among men, according to Labor Force survey on households being included in long-term unemployment (over 12 months). Of the total unemployed persons were unemployed for over 12 months' people in the age category 35-49 years (20.41%). Over a third of BIM unemployed (35.28%) are unemployed for over 24 months.

Among the factors the unemployment rate change for some counties, we can mention: different rates of economic development of the area, redundancies on some industrial sites (Galati, Olt, Brasov). Thus, we see

that the unemployment rate fell sharply in the last 7 years, 2000 with an unemployment rate of 10.5%, decreasing further (2001 - 8.8%; 2002 - the 8.4%; 2003 - 7.4%, 2004 - 6.3%) reaching the unemployment rate in 2005 is 5.9%, which represents a significant decrease compared to 2000 (www.eurostat.com).

As a conclusion, we can notice the improvement of the unemployment situation in Romania over 1990-2005.

3. Unemployment analysis during 2006-2012

Unemployment increased in 2006 similar to previous years. There were layoffs of employees affected counties: Alba, Arad, Bacau, Arges, Cluj, Hunedoara, Constanta, Suceava and Bucharest. Maintain the highest rate of youth unemployment. What becomes alarming for Romania is the unemployment rate among young people was 21% in 2006, compared to unemployed people over 25 who have an unemployment rate of 6% in 2006 (www.bnr.ro).

Due to layoffs, unemployment persisted in 2007. Large layoffs were made in the construction, textile industry, machinery and equipment.

Counties that have experienced the phenomenon of unemployment, find solutions for economic recovery has been reflected in alleviating problems in terms of employment, but it can be said that the layoffs that took place in 2007 not produced imbalances in the evolution of unemployment.

Unemployment peaked in Gorj (9.5%) and in Valcea County (5.5%) minimum. In Bucharest and Northwestern regions they were recorded the lowest levels of unemployment. Thus, the unemployment rate in 2007 saw a decline and one remained low and constant as in 2004-2006.

Therefore, the year 2007 kept same trends that occurred in 2004, in terms of unemployment. In the first half of 2008, unemployment was decreasing and the end of 2008 was characterized by a sharp increase value exceeding the unemployment rate in the same month of the previous year. Activities such as agriculture and forestry, construction, led to higher unemployment due to layoffs made in these branches seasonal.

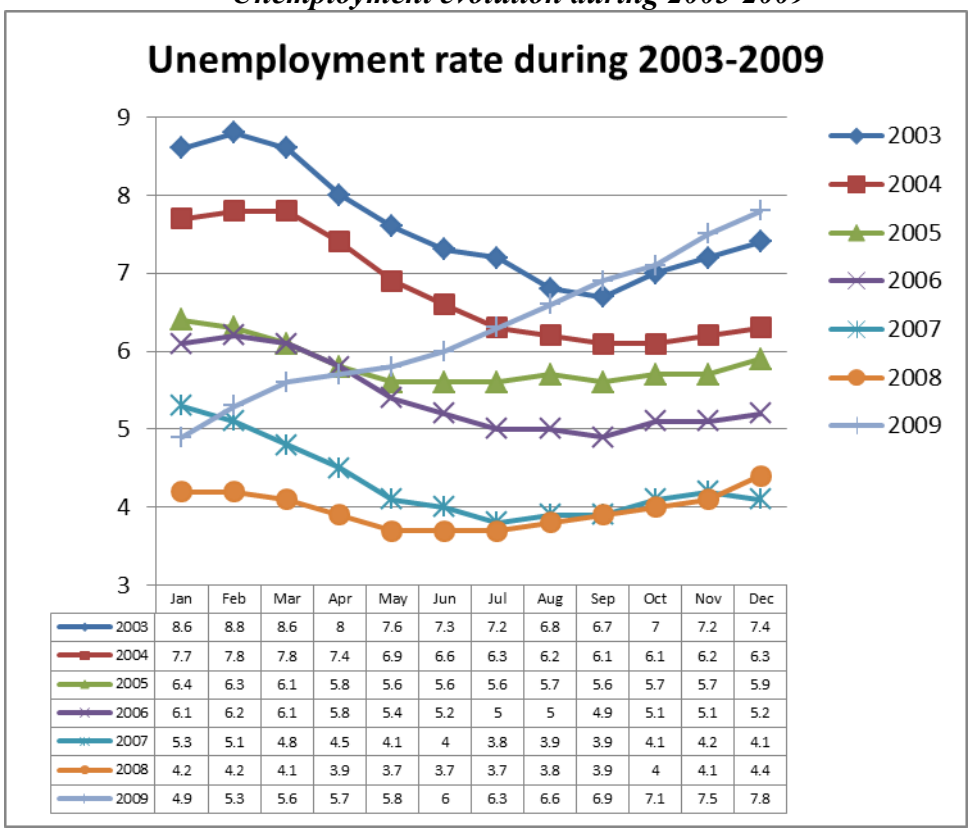
In 2008 was lower than previous years in terms of mobility Roman citizens across borders. Most unemployed remain, however, in the age groups 30-39 and 40-49. Both groups were characterized in maximum number of unemployed. Younger group age under 25 years showed significant declines until June (Balan et al., 2013).

There have been layoffs in areas such as hide tanning and finishing, construction, clothing, and other products of nonmetallic materials. In 2008

the labor market was characterized by major imbalances. Therefore, in 2008 kept the same trends that occurred in 2004, in terms of unemployment.

Unemployment in 2009 was characterized by an upward trend, so the only year of the reference period, except the year (1991), when the unemployment rate increased from month to month, as exemplified in chart below:

Unemployment evolution during 2003-2009



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2003	8.6	8.8	8.6	8	7.6	7.3	7.2	6.8	6.7	7	7.2	7.4
2004	7.7	7.8	7.8	7.4	6.9	6.6	6.3	6.2	6.1	6.1	6.2	6.3
2005	6.4	6.3	6.1	5.8	5.6	5.6	5.6	5.7	5.6	5.7	5.7	5.9
2006	6.1	6.2	6.1	5.8	5.4	5.2	5	5	4.9	5.1	5.1	5.2
2007	5.3	5.1	4.8	4.5	4.1	4	3.8	3.9	3.9	4.1	4.2	4.1
2008	4.2	4.2	4.1	3.9	3.7	3.7	3.7	3.8	3.9	4	4.1	4.4
2009	4.9	5.3	5.6	5.7	5.8	6	6.3	6.6	6.9	7.1	7.5	7.8

Source: National Agency for Employment (ANOFM) (www.ajofm.ro)

In 2009, the labor market in our country has been influenced by the financial and economic crisis manifested worldwide.

Economic and financial crisis was also felt in our country leading to increased unemployment due to layoffs in all sectors of activity (Vasile et al., 2013). During 2009, employers reported job vacancies, resulting in a reduction in their offers compared to previous years.

Within 5 working days of their vacancy, employers must provide employment agencies for all vacancies. Thus, these places have a decrease of about 50% in 2009 compared to the previous year. Long-term unemployment at the end of 2009 was 23.90% and 16.73% for young adults.

In Timis, Prahova, Galati, Arges, Brasov and Bucharest, were recorded the largest layoffs, specifically more than 5,000 people in 2009. The evolution of unemployment, layoffs they produced a series of territorial imbalances in the counties of Vaslui, Teleorman and thus Alba recorded the highest unemployment rate and the lowest rate was in the counties of Ilfov and Bucharest.

Therefore, year 2009 kept same trends that occurred in the fall of 2008, continued growth in terms of unemployment. In 2010, the labor market was influenced by the economic and financial crisis, thus registering a significant increase in unemployment. Increase in unemployment benefits, namely "technical unemployment" is a measure that has been taken by the Government in 2009 and 2010, when the unemployment rate has grown to the extent of the economic downturn manifested in the Romanian economy. Job vacancies reported by employers in 2010, registered a slight increase over 2009 jobs were created in 2010, in fields as: manufacturing of wearing apparel; activities to protect and guard; construction works; life insurance activities.

During 2010, they were given unemployed more employees from layoffs that occurred in areas such as public administration and defense, insurance, social security, land transport, transport via pipelines, construction of buildings, civil engineering.

In 2010 the counties most affected by the redundancies were: Timis, Suceava, Prahova, Hunedoara and Bucharest. Unemployment dropped in the counties of Ilfov and Bucharest.

Compared with 2010, in 2011 the unemployment rate has decreased. So in reference vacancies were recorded as: cargo manager, unskilled workers in the clothing industry, product packaging, etc.

However, decreasing the number of jobs is determined by the crisis that was maintained and reduced economic activity by the employer (Aceleanu et al., 2010). Defining for 2011 is that the percentage of unemployed was lower than the unpaid indemnity.

At the territorial level, 2011 was the year that have recorded the highest unemployment rates in the counties of Dolj and Mehedinti and Valcea County unemployment rate was the lowest.

Romanian economy global financial and economic crisis, in 2011, was felt with intensity much less than in 2010, thus knowing a significant drop in the unemployment rate. Unemployment has stabilized in 2011 at the rate of 7.3% and is still very close to the maximum of 7.5% that it has reached Romania after the recession (in the fourth quarter of 2008). In 2012, at the end of February the unemployment rate nationally was 5.27%.

4. Conclusions

Article provides a description of the phenomenon causes formation classifications based on several criteria, costs that must assume them and other theoretical issues related to unemployment. Was highlighted in part, the effects it generates unemployment existence of the Romanian economy. Since economic growth and investment are essential prerequisites to combat unemployment and increase employment, it should be noted that the national economy should be aligned with EU standards and guidelines in the field.

The Article also gave an important space on the evolution of unemployment in our country in the period before the economic crisis and during the crisis, which present relevant statistical data and a series of measures to combat unemployment and its measurement.

The last part of the research presents the phenomenon of unemployment in the South-East of Romania, separate the six counties that make up the region. This is the economic crisis and also showing the effects of unemployment on the common man. The main objective is to increase the standard of living and future prospects of the unemployed in the counties of Southeastern region of Romania.

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INTERNAL MANAGEMENT CONTROL APPROACH BY IMPLEMENTATION OF STAGES OF THE INTERNAL CONTROL MANAGEMENT SYSTEM IN PUBLIC ENTITIES

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Abstract:

The internal managerial control system of public entity, envisages the realization of three categories of permanent objectives, namely:

a) objectives on the effectiveness and efficiency of operations;

b) objectives on the reliability of internal and external information;

c) objectives relating to compliance with laws, regulations and internal policies.

Thus, designing, implementing and further developing a viable system of internal control are possible by developing and updating stages of the implementation process and development of the internal control system management in public entities.

It was approached a new aspect of the regulatory framework in internal management control by detailing the duties and responsibilities of the Monitoring Commission's of the public entities to establish and maintain internal management control system stages.

Keywords: *internal management control, internal management control system steps, objectives, the Monitoring commission, tasks, responsibilities*.

JEL Classification: *H83*

1. General Considerations on the concept of internal management control

Community legislation in internal management control consists of general principles of good practice accepted internationally and in the European Union.

How these principles translate into internal managerial control systems is country specific conditions being determined by legislative, administrative, cultural.

In the context of the general principles of good practice found in community legislation, internal control is associated with a larger sense this is seen as a management function and not as a verification operation. By exercising control, management finds the results deviations from targets, analyze the causes that determined and has corrective or preventive measures are taken.

2. Legal Framework

Necessity and internal control mandatory for public entities are regulated by Government Ordinance no. 119/1999 *looking internal control / management and preventive financial control, republished, as amended and supplemented*.

According to legal regulations, internal management control is defined as all forms of control exercised at the level of the public entity, including internal audit, established by management in accordance with its objectives and legal regulations in order to ensure management of public funds economically, efficiently and effectively; it also includes organizational structures, methods and procedures.

Despite the definitions of national and international internal control are numerous, they are not contradictory in essence, all stating that it is not a single function, but an assembly of devices implemented by those responsible at all levels of the organization for control over the operation of their activities.

In accordance with the Law no. 174/2015 *for approval* Government Emergency Ordinance no. 86/2014 *looking the establishment of reorganization measures at central government level and amending and supplementing certain acts*, the General Secretariat of Government has taken over from the Ministry of Finance work in the field of internal management control systems.

Currently, applicable the provisions Secretary General of the Government Order no. 400/2015 *approving the Internal managerial Control Code for public entities*, including the standards of internal management control of public entities and internal control systems development / management, republished. It regulates the organization, implementation,

monitoring and reporting system in public entities internal management control and internal managerial control standards.

Given a correlation of legislative and clarifications and explanations on how to implement a system of internal management control to avoid possible confusion among specialists regarding the requirements and the implementation of internal management control system it amended and supplemented the regulatory framework by Secretary General of the Government Order no. 200/2016.

The purpose of these explanations and clarifications on the implementation of internal control management system is the desire for understanding them by all levels of management and execution of the public entities.

All this is necessary given that in a modern administration Monitoring Committee, coordination and methodological guidance must demonstrate that its system of internal control management provides a guarantee regarding the execution of all activities of the entity.

In this context, in conjunction with the responsibility of the Government development and implementation of policies of internal management control systems, coordination, methodological guidance and supervision of the implementation of internal control management system in public entities was developed Secretary General of the Government Order no. 201/2016 *approving the Methodological Norms on the coordination , methodological guidance and supervision of the implementation stage of the internal management control system development of public entities*.

The Methodological Norms establish the unit both for the coordination of development and implementation of internal management control and for overseeing the implementation and development of the internal management control system in public entities, in accordance with Secretary General of the Government Order no. 400/2015, *as amended and supplemented*.

The purpose of these is the methodological norms regulating activity of internal management control system, policy through the verification activities of the reality and accuracy of reporting and methodological guidance of public entities in the implementation and development of internal management control system.

3. Stages of implementation and development of the internal management control system in public entities

Public entities in the implementation and development of internal management control system in accordance with the Secretary General of the Government Secretary General of the Government Order no. 400/2015 *approving the Internal Control Code management of public entities, as amended and supplemented*, take a series of *Stages*, namely:

1. setting goals and targets of the public entity by developing List objectives and targets.
2. setting activities and actions / operations to achieve the objectives by developing specific goals and activities List.
3. risks attaching to the actions and activities of the objectives by developing the list of objectives , activities and risks.
4. development of risk registers compartments , centralization at the entity level and analyze information about the risk management process and implementation of control measures , based on annual reports of departments, prepared by the Secretary Team of risk management at entity level.
5. establish ways to develop the internal control system by developing managerial List objectives, activities and procedures, which involves encoding anticipated formalized procedures.
6. inventory documents , information flows , processes and structures of how communication between the entity and another entity, the situation needed to implement Standard 12 - Information and communication.
7. establishing a system of monitoring their activities from the structure of objectives, based on annual reports to monitor performance indicators at the level divisions.
8. self achieving the general objectives and specific objectives and improve internal management control system, based on information about monitoring performance indicators developed by the secretary of the Monitoring Committee, the entity level.
9. developing procedures formalized the processes or activities, based on System procedure - Procedure for designing procedures, in accordance with Annex . 2 of the Secretary General of the Government Order no. 400/2015.
10. analysis staff training program for developing and implementing the internal control system within the public entity management.

At the all public entities level, internal management control system implementation *Stages* is carried out by the Monitoring Committee.

The organization and working of Monitoring Committee are the responsibility of its president and is determined by the volume and complexity of processes and activities in accordance with the legal provisions

The 10 *Stages* of implementation and development secretary of Monitoring Committee, internal management control system are developed by centralizing and collecting lists and statements from all departments of

the public entity organization chart. Internal management control system implementation process *Stages* is constantly developing and updating by:

- proposed changes to specific objectives from all departments in the organizational chart in order to update the general and specific objectives (*Stage I*)
- modifying activities and actions / operations based on job descriptions in order to update the objectives, activities and actions (*Stage II*)
- review and update risk attached to the actions and activities of the specific objectives of the roster , the List objectives, activities and risk (*Stage III*)
- centralization of risk registers from all departments to update the Registry of risks from the entity (*Stage IV*)
- development of new procedures and update existing compartments, in order to update the objectives, activities and procedures (*Stage V*)
- inventory documents , information flows , processes and structures of how communication between structures and other public entity, to update inventory situation input and output documents (*Stage VI*)
- a system for monitoring their activities by setting goals related to performance indicators or result from departments, proposed to achieve them , in order to update the situation Establishing a system of monitoring their activities from the structure of objectives (*Sage VII*)
- self-assessment on the fulfillment of performance indicators and outcome monitoring based on annual reports from departments in order to update the situation Self achieving the general objectives and specific objectives and improve management control system (*Stage VIII*)
- drafting and updating of formalized procedures or procedures and operational system for each compartment, to achieve develop and update procedures formalized situation (*Stage IX*)
- centralizing the activities of professional training in the field of internal control management system compartments to update the situation develop professional training program (*Stage X*).

Internal management control system implementation *Stages*, shown above, provides an efficient and effective control of the general management to achieve the objectives and targets of public entities.

Internal management control system drafting *Stages* helps assess the implementation status of internal management control system development, which is achieved in all departments of the organizational structure of the entity, including subordinated and / or in coordination.

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ON THE ROLE OF ECO-INNOVATION FOR A GREEN ECONOMIC GROWTH

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Abstract

In this paper we resume our research on the theoretical-conceptual issues as well as on the mechanisms and policies for increasing resource-efficiency and resource-productivity in the European Union and in Romania, as important issues of implementing the green economy. First we shall make a conceptual analysis of the eco-innovation as a superior from of technological innovation dedicated to the environmental protection. Then there are emphasized some of the main features and challenges on eco innovation in Romania. This time we also address the importance and the role of eco-innovation in sustainable economic development and the transition to a green economy. In this respect, we shall point again the positive direct correlation between eco-innovation and resource productivity revealed by recent national and international surveys as well as by own research. Conclusions and recommendations support eco-innovation as a way to promote green economic growth in Romania.

Keywords: *sustainable development; green economic growth; resource efficiency; eco-innovation; eco-innovation parks*

JEL Classification: *O44, O47, Q32*

1. Introduction

The latest developments in the global economy and society, such as the financial and economic downturn as well as the increasing environmental transformations driven by the climate change have led eventually to the development and/or the reconsidering of the sustainable development theoretical-methodological issues and concepts.

The paradigm of green economic growth presents an alternative to the conventional economic paradigm of resource exploitation and is built around a theory of growth that integrates concepts such as the sustainable

use of natural resources, including greater energy and resource efficiency and improved natural capital as drivers of growth.

We may consider that a green economy is the ultimate outcome of a sustainable economic development [Frone D.F., Frone Simona, 2015], since a green economy generates increasing prosperity while preserving the natural ecosystems that sustain our societies and our economies.

Decoupling growth from resource use and unlocking new sources of sustainable growth needs therefore coherence and integration in the policies that shape our economy and our lifestyles. A revamping of the economy to become resource-efficient is a necessary, but still not sufficient condition to achieve transition towards the green economy.

2. Conceptual background

Nowadays, sustainable development involves carrying out a green economic growth which is no longer confined to reducing pollution, but requires, among other principles and paradigms, structural changes in the processes and in manufactured products, as well as in the type and amount of resources used. This leads us to the need of a deeper analysis and understanding of the eco-innovation and eco-innovation parks, as some important concepts related to the complex changes of paradigm required by the green economy [Frone Simona, 2015]

As we switch to a more resource efficient and green economy – one in which economic growth, social equity and human development go hand-in-hand with environmental security – business and industry will be a key driving force. A green economy requires step changes in resource efficiency, investment in clean technologies, the development of alternative products, services and materials, and the ability to obtain value from unavoidable waste [UNEP, 2012].

Technological innovation could become the cornerstone of minimizing pollution and at the same time, the key to global sustainable economic development [Constantinescu A., Frone S., 2014]. Therefore, looking for a balance between aspirations towards sustainability and locally existing possibilities to implement it in practice, another concept resulted: eco-innovation.

The eco-innovation is a principle that combines economic growth, employment and sustainable development in an integrated manner as required by the Lisbon Strategy. Thus, technological innovation and eco-innovation are complementary ways to ensure sustainable economic development.

Integrating technological innovation in policy making aiming for sustainable economic development involves both integration of technological expertise and a clear understanding of the wider ramifications

that technology has in the pillars of sustainable development. Tracking the influence of technology in sustainable development base plans, enables highlighting directions that should guide the policies of green growth.

The role of innovation in developing new technologies may be perceived as an economic development based on green technology. This has not only an environmental dimension - the prominent role it plays in reducing GHG, but also a purely economic one, which directly affects key sectors such as energy (supporting exploitation of renewable resources), construction and transportation [Frone S., Constantinescu A.,2014].

In this regard, the best available technology (BAT) was developed, as an integrative concept that aims to integrate specific field measures. The Intergovernmental Panel on Climate Change (IPCC) defines BAT as the most effective and advanced system of methods and practices to prevent, limit or reduce environmental impact of pollutants that may occur in different industries. Another economically imposed concept is Best Available Technology Not Entailing Excessive Economical Costs (BATNEEC). In this respect, the European Council Directive 96/61/EC in 2006 sets emission limit values based on BAT to enrol parameters or technical measures which must rely on the best available techniques, without prescribing use of a specific technique or technology and taking into account technical characteristics of installation concerned, its geographical location and local environmental conditions, pointing out that the price of any measure and its environmental benefits should be considered in a balanced way.

All these have required by the end of 2011 the development, at European level, of an Environmental Technologies Action Plan (ETAP) which structured directions of action with specific targets and responsibilities. It is based on the belief that innovation systems enabling technologies will continue to compile the driving force of modern sustainable economic development, able to transform and extend the value of growth cycles.

Such approaches are inspired by the advent of the new theory of Industrial Ecology (IE) which subordinates economic objective to that of restoring planet resilience through a responsible behaviour of anthropogenic factor. Alignment of ecology to a key area for economic development, suggests its reorientation towards a sustainable use of resources. IE is designed to enable transformation of traditional model of industrial activity in a more comprehensive model by which regional economies can be assembled in an industrial ecosystem composition, so the residues of some companies can be used as inputs for others. In addition, industrial ecosystems can be organized around product or material supply chains and/or in defined geographical areas. The industrial ecology leaves open

development of a holistic solution that includes, besides design of integrated energy networks, recovery of their external and natural resources costs.

Technological change is not only a frontier of innovation but also a challenge on adapting existing products and processes to achieve higher levels of productivity in their local contexts. In this process, capacity of local institutions and enterprises to access technological know-how is essential for modelling their ability to provide products and services, both the kind that are essential to improve living standards and those which could promote sustainable economic growth and competitiveness.

With global resource scarcity and environmental degradation presenting growing challenges for business, along with related market and regulatory pressures, companies are facing a need to think more strategically about the sustainability of their business. According to the definition of the Competitiveness and Innovation Framework Programme of the European Union, eco-innovation is "any form of innovation aiming at significant and demonstrable progress towards the goal of sustainable development, through reducing impacts on the environment or achieving a more efficient and responsible use of natural resources, including energy" [EC COM, 2006].

Eco-innovation is any innovation that reduces the use of natural resources and decreases the release of harmful substances across the whole life-cycle. Hence eco-innovations are the introduction of any new or significantly improved product (good or service), process, organisational changes or marketing solutions that reduce the use of natural resources (including materials, energy, water, and land) and decreases the release of harmful substances across the life-cycle [EIO, 2010].

Eco-innovation covers the research and development of quality products with minor or no impact on the environment and the implementation of environmentally friendly production processes and services, moving from a linear life cycle (extract-consume waste) perspective to a closed-loop process [Wolf et al. 2012]. Eco-innovation can help transform these challenges into new market opportunities, since it is the development and application of a business model, shaped by a new business strategy, which incorporates sustainability throughout all business operations based on life cycle thinking and in cooperation with partners across the value chain [UNEP, 2014]. It entails a coordinated set of modifications or novel solutions to products (goods / services), processes, market approach and organizational structure which leads to a company's enhanced performance and competitiveness.

3. Eco-innovation and related resource-efficiency performance

It is not resource scarcity, but rather the lack of efficient management of the available resources that poses problems to sustainable development in Romania. This is one of the main statements of a recent report of the EU Eco-Innovation Observatory on the current status and prospects of Eco-innovation in Romania [EIO, 2013a]. From this report we shall mainly highlight the issues regarding the resource-efficiency performance and recommendations in Romania.

According to the *Innovation Union Scoreboard 2011* [EIO, 2013b], Romania was still a "modest innovator" with a relatively low share of innovating enterprises and decreasing business investments in R&D. Romania's R&D intensity is far below the EU average (the lowest R&D intensity in the EU - 0.47% of GDP in 2010), its sectoral R&D intensity declining relative to that of the EU.

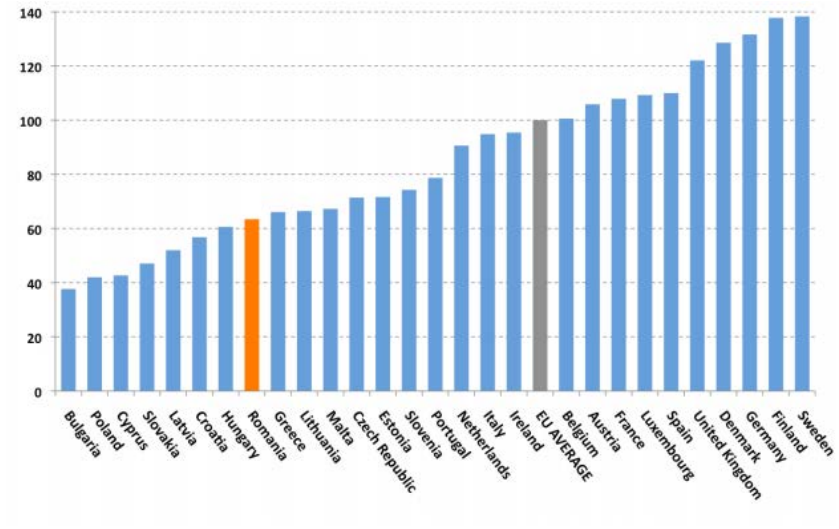
The graph in Figure 1 was based on the EU 28 Eco-innovation scoreboard (Eco-IS) for the year 2013. Eco-IS with its composite Eco-innovation index demonstrates the eco-innovation performance of a country compared with the EU average and with the EU top performers.

For instance (see Figure 1 below), Romania ranks 21st in the Eco-Innovation Scoreboard (Eco-IS), obtaining a score of 63. It is below the overall EU28 average score by 37%, and has advanced one position in the Eco-IS since 2011, from the previous rank 22. The highest ranks are obtained by Sweden and Finland with a score of around 138 each, and by Germany with a score of 132.

Eco-IS is based on 16 indicators which are aggregated into five components, for which we shall highlight the main features in Romania [EIO, 2013a]:

a) eco-innovation inputs;

Romania shows very modest inputs into the eco-innovation system, with a score of 23 out of the EU average of 100. Total green early stage investment in eco-industries was extremely low or close to zero in Romania 2010-2013 (while the EU average investments reached 12.3 USD per capita in the same period).



Source: EIO, 2013

Figure 1 EU28 Eco-innovation scoreboard 2013, composite index

b) eco-innovation activities;

Romania has a positive score in terms of eco-innovation activities, driven by the country's firms' interest in standardisation of their environmental management. The number of Romanian firms acquiring the ISO 14001 certification related to observing environmental management requirements for business reached 413.7 companies per million inhabitants in 2012, almost double the average number of firms per million inhabitants in the EU (208.3 firms per million people). Romania ranks first in this respect in the EU, followed by Spain and Sweden.

c) eco-innovation outputs;

Romania shows a moderate but below average performance in the field of eco-innovation outputs: the mean EI output index is 82. This score is however mostly explained by the relatively high performance in the field of EI media coverage, but poor scores in terms of EI patents and publications.

d) environmental (resource-efficiency) outcomes;

Romania's performance in achieving resource efficiency outcomes ***is modest to moderate, as the economy is on average 40% less resource efficient than the EU level***. Material productivity and water productivity are much lower than the EU average, while energy productivity and GHG emissions intensity approach the EU average.

Material (resource) productivity amounts to 0.7 Euro/kg in 2011, which is well below the EU average of 1.7eur/kg, while water productivity is 3.7 Euro/m³, much lower than the EU average of 12.9 Euro/m³ in 1996-2005. Energy productivity shows better prospects, with a value of 7.5 Euro/toe (93% of the EU average of 8 Euro/toe) in 2011.The GHG

emissions intensity is slightly higher in comparison to EU average, amounting to 0.5 CO2 emissions generated per unit of GDP. In contrast, the EU has a level of 0.36 CO2 emissions per unit of GDP in 2011.

e) socioeconomic outcomes

Romania's still modest eco-innovation performance translates into low socio-economic outcomes, partly mirroring the low values of EI inputs, outputs and resource efficiency outcomes. The total score reached 37% of EU average performance. Employment in eco-industries was at 0.38% of total employment in Romania in 2012. This positions Romania at 53% of the EU average level of employment in eco-industries, of 0.71% of total employment in 2012.

Thus one significant public policy challenge hereby emerges: **supporting more and making operative the business support infrastructure (e.g. business incubators, technology transfer offices, science and technology parks and clusters).**

Our research in this paper will further testify and strengthen this policy recommendation, since we highlight the importance of eco-innovation and the eco-innovation parks (EInvP) in increasing the resource efficiency (the resource productivity) in the national economies of the European countries.

Ecoinnovation parks are mainly Eco Industrial Parks optimized from an environmental point of view (e.g., piloting installations and processes that incorporate environmental technologies and services) and open for continuous improvement (e.g., collaboration with institutions of research and development).

As we show in [Frone Simona, 2015], eco-innovation and Eco-innovation parks (EInvP) are important drivers of green economic development and resource-efficiency in the EU. The main conclusion of our approach based on a regression model was that in the 16 European countries of the analysed sample there is a **positive correlation between the number of existing eco-innovation parks EInvP and the national level of resource productivity.** Besides, the importance of creating and developing eco-industrial parks, namely eco-innovation parks EInvP is not limited on their potential on increasing the resource efficiency.

In the recent International survey on Eco innovation parks, *Learning from experiences on the spatial dimension of eco-innovation* [ERA-NET ECOINNOVERA, 2014] there are also other important economic benefits**,** resulting from created synergic mechanisms in the Eco-Innovation Parks since:

- resource efficiency will be generating additive revenue for economic players, providing cost savings and reducing the market dependence of non-renewable and imported resources;

- participation in eco-innovation projects give businesses a competitive edge on the growing green market, as well as more adaptability and flexibility to regulatory changes.

4. Conclusions

This paper aims to state eco - innovation as a key concept that provides economic efficiency by saving energy and resources, in a desire to ensure efficient growth in terms of environmental assets and in peoples benefit. This can create sustainable gains for society in a long-term vision regarding issues of resource and of the environment conservation and a strong support from both the public authorities and citizens.

The focus of our paper being the role of eco-innovation in promoting a green economic growth, we shall highlight here some of the most important conclusions of the above mentioned report on this topic [EIO, 2013a]:

- The Romanian business sector can be *characterised by a short-sighted perspective on profit making*. More steps need to be taken for the private sector actors to adopt a long-term, systemic view on the impact of their business on the local environment.
- R&D activities *need to be streamlined* towards responding to environmental and societal challenges.
- The regulatory framework still *needs to evolve in order to provide incentives* for eco-innovative practices, products and services. More use of green public procurement and further demand-side policies may provide a boost to more sustainable business practices. However, steps have slowly been made towards this due to the push to comply with European regulations and also driven by civil society initiatives

Therefore, Romania's priorities in eco-innovation and green economic development include:

- the greening of production and consumption processes;
- investing in RDI activities;
- enhancing the cooperation between the public and the private sectors in tackling environmental challenges.

Although the issues of sustainability, resource-efficiency and green economy are more and more raised, acknowledged and approached by specialists, strategic documents and politicians, specific measures are expected quite urgently, especially in Romania and those parts of the European Union which are still lagging behind in sustainability performances.

Sustainable development towards a green economy cannot be achieved unless a long-term vision is progressively put into practice. As we

shall stress in future research, Eco-Innovation Parks are an example of project that requires long term planning with the consideration of eco-innovation in the different steps of the project development.

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INTERNATIONAL COOPERATION IN THE ENVIRONMENT FIELD

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Abstract

International cooperation is based on the need for the development and protection of the environment, which cannot be achieved except through the partnership of Nations of the world. Awareness of the danger of degradation, destruction of environmental elements scored both nationally and worldwide, the protection and preservation of the environment priorities.

The establishment of international cooperation in the field of environmental protection is a must, and the international law constitutes the main instrument of bilateral cooperation, regional and planetary states and international organisations in order to identify some forms and ways to contribute to the prevention of pollution and protection of the environment.

Keywords: *environmental protection, pollution, international cooperation.*

JEL Classification: *Q52, Q57*

1. Introduction

The greatest problems of the world today cannot be solved unilaterally, but in some States, due to the fact that the problems we face are of a transboundary nature, affecting several States at the same time.

A big issue that deviates on all peoples is represented by the pollution of the environment through pollution means the alteration of natural components through the presence of some foreign components, called co-pollutants, as a result of human activity that causes by their very nature, through the strength and through time as acting, harmful effects on health, creates discomfort or impedes the use of components of the environment are essential to life. (World Conference of the United Nations Organizations, 1972).

Environmental pollution has appeared once with the man, but has grown and diversified as the evolution of human society, reaching one of the important concerns of specialists in various fields of science and technology, and State Governments, of the entire population of the Earth. This because the danger posed by the increased pollution and grows unceasingly, requiring urgent measures nationally and internationally, in the spirit of ideas for combating pollution.

The problem of pollution combating and stabilization factors with impact on the environment and even the continuation in good conditions of life on the entire surface of the Earth, made the states to cooperate among themselves to resolve them. [Bran et al, 2013]

The first factor that acted in such direction was "cross-border" nature of many forms of pollution. The idea that none of the components of the environment know no borders, it was generalized through the Stockholm Declaration which States the obligation of States that through the activities carried out within the limits of its territory under their jurisdiction, not to cause damage to the environment of other States or in areas beyond any one jurisdiction.

But not only transboundary environmental pollution components has led to cooperation between States, but also the need for the adoption of joint actions for the protection of such coponente over which two or more States exercising sovereignty and jurisdiction, through the development, implementation and monitoring of appropriate regulations, together with the adoption of joint measures on technical, economic and financial.

2. Cooperation in the environment field – a brief history

"International organisations (World regional times) began to inquire into the manner of environmental protection and conservation issues relatively late, in the late ‘60s. However, since the beginning of the 20th century, a number of militants or naturiști (printers that Swiss zoologist Paul Sarasis) were concerned with, in a slow, but gradually becoming more and more significant for the establishment of permanent structures with international activities in this field ". [Duțu, 2004]

At the 8th International Congress of Zoology, in 1908 zoologist Paul Sarasin has proposed the creation of an International Commission which would constitute the framework for discussion on the protection and conservation of nature. The first provisional Committee for the universal protection of nature came from his own initiative and was reunited for the first time on 18 august 1908, in Basel, Switzerland.

The Berne Conference of 1913 brought together 19 countries and was organizing a mission large international meetings.

The First International Congress for the nature protection, desfașurat in Paris in 1923, was inciting approaches for the establishment of a permanent international structure. "Cooperation policy, economic, social, cultural, etc. between States is carried out either in conventional relationships, mainly bilateral, either in an institutional framework through the establishment of international organizations, which would serve in some different fields (General Organization) or only in one (specialized organizations)". [Țarcă, 2009]

Then followed the establishment of an International Office for nature protection in Brussels in 1928. In 1932 he organized the 2nd International Congress. Later, in 1948, the United Nations Educational, scientific and Cultural Organization has sponsored the creation of the International Union for conservation of nature and resources.

It is important that protection and stressed the preservation of the environment, at the planetary scale, has become a permanent concern for the United Nations since 1968.

The deployment of the first Conference of u.n. Environment Conference in Stockholm, capital of Sweden had as a result the adoption of a declaration containing 26 principles relating to the environment and to development, developing an Action Plan that contains 109 recommendations and resolutions. According to the latter, UNEP (United Nations Environmental Programme) organizes annually, on June 5, world environment day, considered to be the largest celebration of action beneficial to the environment. Each year a different theme is chosen for the event and a location that is unrelated to the topic in question. Concerns for the environment and advancing them from 1972 onwards. If Stockholm climate change are brought into the discussion, declarative without problem to be specifically identified and without trying to find a viable solution, in the ‘90s, things change.

International cooperation on environmental issues is not easily achieved whereas the negotiations in this area relate to the essence of the interests of each State and many times it is difficult to come to a common ground in that direction. Therefore, it appears necessary to increase urgently the role of international organizations in promoting the interests of the environment. Principle 25 of the Declaration: "States should ensure that these international organizations to play a key role in the coordinated, effective and dynamic in the preservation and improvement of the environment". [Duțu, 2007]

The existence of an adequate institutional support is necessary both for the elaboration and adoption of legal norms which govern international cooperation on the protection of the environment, and for ensuring observance of and their fulfilment.

Establishment of a collaboration and international cooperation in this domain is claimed from several points of view. Thus, humanity today is far from knowing about totut environment, current and foreseeable damage but also that remedies should be adopted. Secondly, the problem of pollution and deterioration of the quality of the environment knows no boundaries, a number of phenomena, such as decreasing class ozone, greenhouse effect, etc. affects the whole of humanity. All these require permanent and extensive studies, the collaboration of researchers from several countries and the coordination of research in question. Constant surveillance of the environment and evaluate the data obtained are operations that involve a cooperative effort at international and regional levels. These activities require a continuity in cooperation structures can be ensured only through the permanent institutions. This widget works is required to prevent damage to the environment, but also for ensuring control over application of the rules.

In close connection with the permanence and the environmental condition is evolution and enhance cunoștinţelor in the area advertisement updating of regulations adopted, their application control and continuous international cooperation institutions within the playwright. A genuine solution to the problems of the environment lies in the management of resources, in order to be effective such a discharge must take place at the international level and at all times, meaning that it cannot take place outside of international cooperation.

"All these organizations of environmental protection carried out environmental research activities, periodical exchange of information, monitoring, management of natural resources". [Bran et al, 2013]

In order to facilitate institutional cooperation at European level, the countries belonging to the European Union is firmly committed to harmonise legislation, including in the areas of environmental protection with European standards.

Cooperation will have as aim countering the deterioration of the environment and in particular: the effective control of pollution levels, the information system on the State of the environment; combating cross-border, regional and local pollution of air and water; ecological restoration; the production and use of energy in a sustainable manner, efficiently and effectively from the point of view of the environment, safety of industrial plants; classification and safe handling of chemicals; water quality, in particular transborder waters; reducing the amount of waste, recycling and disposal of their safe implementation of the Basle Convention; the environmental impact of agriculture, soil erosion and chemical pollution; protection of forests; biodiversity conservation.

"Institutional cooperation in relation to the environment is expressed especially through a network of intergovernmental international organizations". [Dutu, 2007]

These networks have a plenary Assembly that does not have regulatory powers and are discussing issues that fall within its competence and shall adopt regulations which bind the organisation and its various organs, and in some cases can have a major influence on the evolution of the law and in exceptional cases does a body which can take decisions binding on the Member States, for example , The UN Security Council, has adopted resolutions concerning the regulation of certain aspects relating to the protection of the environment, or the Economic and Social Council has a key role in international cooperation for development in this respect represents a central forum for discussion of global economic and social topics.

These structures shall be added and a number of subsidiary bodies with powers for specific aspects, they are frequently in the mode if the treaties or recommendations in this area. In this case we can talk about the UN Commission on environment and development; Council for cultural cooperation within the Council of Europe, having a character, others, such as the United Nations Environment Programme are made up of individual members of the Secretariat of the World Organisation.

The importance of awareness of the environmental dimension of our existence, and extinguishing arrangements relating to environmental protection and the implementation of sustainable development policies have determined that protecting the environment is a primary goal in both States as well as international cooperation. The main instrument for the promotion of this type of cooperation is the environmental diplomacy or ecology.

The current situation underlines the international affirmation of global governance, the world turns quickly into a social space, under the influence of economic and technological forces, and developments in a region of the world can have profound consequences on the individuals or communities from across the globe. This notion of "global governance" is defined as "a continuous process through which conflicting interests or differences can be reconciled and have and can organise joint action in this respect may include formal institutions and arrangements that can strengthen the fulfilment of such objectives as well as formal arrangements. It is a comprehensive process, dimanic and complex interactive decision". [Dinu, 2003]

In one instance, this institutional phenomenon which characterizes the international community, as it relates to the role of the United Nations system and its specialized agencies in the formulation and direction of taxation strategy, and initiating the settlement process globally.

In a narrow understanding this concept refers to a community of States presenting joint programs, which essentially concerns a common interest, different in some particular points of the state interests.

There are two types of such intergovernmental organizations depending on the voting system adopted. So are those who develop their activity according to a formal system of legal egalitarianism - one state, one vote (General meeting of U.N.O. or O.M.C) and those that operate under the weighted voting system (based on various criteria, such as, in the case of the World Bank, in relation to the contribution of donor States with power reserved by the five permanent members of the Security Council of U.N.O.). [Duțu, 2004]

In recent years the tendency manifests itself as in the case of organisations using the majority voting procedure, to prefer the use of the consensualului procedure. Some organizations provide for votes given the importance of status in terms of surface, the weighting of the demographic age contribution times.

With regard to the involvement of non-governmental organizations, the intergovernmental character of the great majority of intergovernmental organizations a limited a lot, some organisations such as the Council of Europe and the United Nations have special rules that allow non-governmental organizations to participate in meetings and to submit reports.

3. The international organizations functions relating to the environment

Despite their diversity, functions that satisfy various international bodies in the field of environmental research, mainly aimed at the exchange of information, regulation, control and management of natural resources.

Research function. Research has an important role in the work of institutionalized cooperation. Rarely is cases in which organizations carrying out their research. With regard to the field, research is required when "numerous international law studies or comparative law are preceded by drafting of texts: recommendations, guidelines, proposed laws in various countries". [Duțu, 2004]

In those situations where the research requires major assets, usually states are those that are hires to carry out programmes and the role of the organizations will be to ensure coordination of the duties assigned to it, as well as the dissemination of results.

The function of information exchange. It can be said that all international organizations dealing with environmental protection are interlocking and exchange of inform. In some cases, international institutions realize syntheses of the information received, as for example in

an existing database issues (UN Economic Commission reports for Europe) times out on all the State of the environment (UNEP annual reports).

The regulatory function. This function is exercised by international organizations and consists in the elaboration of new rules proposed for adoption by Member States. Rules adopted may be expressed in the form of recommendations, binding decisions or draft treaties on international fold regulations. These projects can follow the path to meeting international agreements which means that after their establishment by a group of experts, to be subjected to diplomatic conferences, debate and then to adopt them.

"Treaties concerning issues of environmental protection have created their own bodies in order to follow their implementation, the latter frequently being in charge of implementing regulations with the modification of the existing ones, for example the annexes to the Treaty". [Țarcă, 2009]

In this context an important role is the responsibility of drafting technical regulations, ecological standards, which may be of four types, namely: environmental quality standards, these standards fixed maximum permissible levels of pollutants into water, air and land; rules are rules, specifying the quantity of the pollutants concentrations times can be removed from a given source; rules of procedure the procedure to be followed in order to protect the environment, saying a number of specifications for example: imposing a particular type of device. In this case, the rules establish obligations of means: choosing a particular technique in order to achieve the result prescribed; product standards that define either physical or chemical proprieties of a product, whether the rules on cross-compliance, packaging, product presentation, the times specifically at toxic products.

Control function. Control of the rules laid down in this area is frequently carried out by international organizations. This can be accomplished in several ways; can vary from simple police tasks, for example, on the high seas against polluters by international patrols, as do Conference in Canberra on 20 May 1980, on the conservation of the marine fauna and flora of Antarctica, art. 25 the international system by instituting an "observation and monitoring", and until the control provided by the countries addressed international bodies designated for that purpose, reports on the implementation of international rules by the national authorities.

The function of management of natural resources. Constitute the most evolved form of international cooperation in the field of environmental protection. As examples we can mention the management system of mineral resources of the sea provided by fundurilor chapter XI of the Convention on the law of the sea, where the protection of the marine environment represents the priority functions, which must be fulfilled by the bodies

provided for in the document. The activities carried out by any international organization are set out in its constituent Treaty and Treaty of incorporation does not explicitly provided for in these skills, activities may look often and the environment. For example, the World Health Organization may consider environmental issues regarding human health, and the International Labour Organization may deal with environmental issues arising in the workplace.

4. Conclusions

Protecting the environment is essential to the quality of life of present and future generations. Throughout the world, becoming more insistent, it requires the protection of the environment, which is one of the priority concerns of the contemporary. Concerns about preservation of the environment is gaining increasing proportions. These are based on objective data and on damage caused by the environment, whose multiple solutions are directly linked to the intensification of human activities on the various spaces, sustainable development, demographic expansion.

The perception of environmental issues is also in full growth and can take many forms such as concerns for the good of the individual, aesthetic considerations, health, political, ideological and even religious environmentalism becoming, in some ways a new religion of the world.

The environmental protection authorities are obliged, pursuant to powers delegated to them, to create its own information system and establish terms and conditions allowing free access to information and public participation in environmental decisions, to supervise and control the implementation of the rules on the protection of water, air, soil and subsoil, the terrestrial and aquatic ecosystems, the regulations on pesticides and chemical fertilizers, to organise the monitoring of radioactivity to the environment, the right to develop recommendations for integrating environmental policies into sectoral policies and strategies, to impose ecological reconstruction measures, especially the power to impose penalties for non-conformity of the activities of the holders, in respect of environmental protection.

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This paper has been developed within the period of sustainabiliy of the project entitled ***"Horizon 2020 - Doctoral and Postdoctoral Studies: Promoting the National Interest through Excellence, Competitiveness and Responsibility in the Field of Romanian Fundamental and Applied Scientific Research",*** contract number POSDRU/159/1.5/S/140106. This project is co-financed by European Social Fund through Sectoral Operational Programme for Human Resources Development 2007-2013. **Investing in people!**

THE EXPORTS OF SOME CROPS FROM USA. A PANEL DATA APPROACH

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Abstract

The main objective of this paper is to determine the impact of crop productivity and price index on some crops exports (feed grains, food grains, food grains, oil crops, vegetables and fruits- cross-sections) in USA during 2000-2013. Due to the short data set available for USA, a panel data approach is chosen. There are significant differences between US states regarding the plant exports. The crop exports have increased in USA with 184.31% in 2013 compared to 2000. California is the biggest crop exporter from USA, plant exports increasing with almost 170% in 2013 with respect to 2000. The differences across crops influence the crops' exports. The estimated random-effects models showed that the prices had a higher impact than productivity on the crop exports. Moreover, the panel VAR model gave more details. In the first period, 59.51% of the variation in crops' exports is due to changes in export, while 37.92% of the variation in exports is due to changes in prices. The influence of prices on exports increases up to 5th lag. Starting with the 6th lag, the prices influence decreases slowly till a variation of 37.34% of the exports due to prices modifications. The productivity impact is quite low, the maximum being registered in the second period (3.77% of the variation in exports is due to productivity changes).

Keywords: *crop; exports; random-effects model; panel VAR model*

JEL Classification: *C14, Q12*

1. Introduction

In the context of climate changes and environmental degradation, more people are interested in the essential resources like land, water and farm inputs. The agriculture trade reflects the changes that were made in people feeding process. The trade rules of the World Trade Organization have to focus on the fining of good solutions for vulnerable aspects.

Problems like risky nature of agriculture, the exports limitations in some countries and bio-fuel policies.

The main aim of this paper is to identify some determinants of crops exports in USA. An empirical analysis is conducted to show the impact of prices and productivity on crops exports in USA econometric techniques are used to study the relationship between these variables. Indeed, there are also other factors that affect exports in USA, but this analysis takes into account only some macroeconomic variables, because of the lack of other data for USA agriculture. The database ended up to 2013, because data from 2014 are not available in official database of United States Department of agriculture. After a short literature review, the methodological background is presented. Some panel data models are estimated and the main conclusion is that prices influence the exports more than the crop productivity does.

2. Analytical background

The exchange rate and world commodity prices are standard determinants of agriculture trade in literature. In many empirical studies, like those of Shane (2008) and Huchet-Bourdon and Korinek (2011), there is appositive relationship between exports of agricultural products and the depreciation in exchange rate.

Efficient policies should be implemented to face the volatile prices and unpredictable climatic changes. In time crisis the policy makers have to take fast measures, the food price spikes from 2007/2008 and 2010/2011 being a good warning for this. Critical stock-to-use ratios from most of the grains were identified by Bobenrieth, Wright and Zeng (2013), who concluded that stocks data could become valuable to price data as vulnerability indicators to price spikes and shortages. The evaluation of climate modifications on agricultural market supposes the assessment of climate changes on land productivity. Several scenarios of climate changes were proposed by Müller and Robertson (2014) who predict a decrease of crops production with 10-38%. This potential decrease will reduce the crops exports.

In industrialized countries like USA, the government supported the agriculture through subsidies and by keeping high prices, as Benbrook (2012) showed. The means of production are modernized by the permanent flow of capital into this sector. There is a good integration of the agriculture with the other sectors of the economy. The progress in social, scientific and technological infrastructure allows an efficient adaptation to the new conditions, according to Oerke, Dehne, Schönbeck and Weber (2012). There are high natural yields in industrialized countries that increase very fast, the markets being saturated. A good agricultural policy is based on an

efficient agricultural price policy. The prices level, development and relationship of the main factors of production ensure the achievement of the long-run agricultural price policy that is oriented to high productivity realization. Within the agricultural sector, a special attention has been accorded to crops for which there is a high demand inside the producing country but also from the other states. The adoption of a new technology for herbicide-resistant crops will bring important advantages like increases in yields, economic savings and an improved weed management, according to Duke (2014). These advantages will have an important impact on crops' export. In seed sector, the rights of intellectual property have become essential in the context of consistent private investment in the crop breeding research in USA. Even if the strong rights of intellectual property encourage the seed international exchange, the exports could decrease. The effect of intellectual property rights on seed exports is estimated by Galushko (2012) for USA using Heckman selection model.

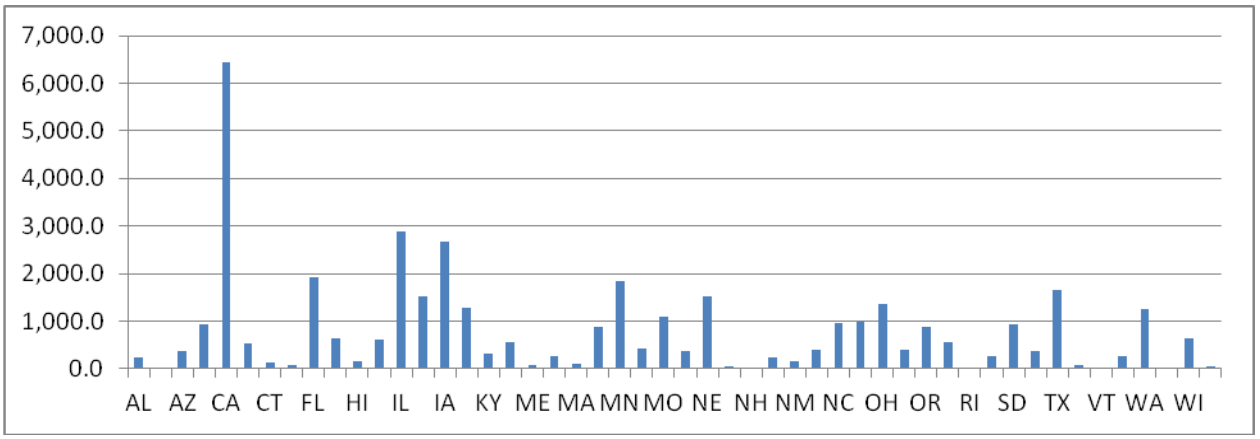
USA pretends that the Yuan's undervaluation makes the USA exports to China to diminish. Moreover, the imports from China to USA increase. Therefore, the effect of Yuan undervaluation on USA trade, demand, supply and prices was analyzed by Devadoss, Hilland, Mittelhammer and Foltz (2014) that used an error correction model. The Chinese currency devaluation generated imports of USA cotton, soybeans and mil to decline and USA imports of fruit, fruit juice and beans to increase on long and short-term.

The effect of minimum salary increase on textile market in China for USA exports of cotton was analyzed by Macdonald, Pan, Hudson and Tuan (2014) that used a nonlinear quadratic and almost perfect demand system model. According to the results of simulations, the domestic consumption of textile will increase in China and the exports will decrease. Therefore, the production of textile in other countries will grow and the clothing price will increase.

In developing countries the determinants of agricultural exports are quite different compared to industrialized countries like USA. A gravity model was proposed by Hatab, Romstad and Huo (2010) to determine the main factors that affects the agricultural exports in Egypt. Transportation costs had a negative influence on exports of goods from agriculture sector. Using the Kalman filter estimates, Ivaniuk (2014) have shown that in Ukraine the increase in agriculture export is generated by the domestic agricultural production, international food prices and the output in Russia.
The crop exports have increased in USA with 184.31% in 2013 compared to 2000. As we can see from the following graph in 2000, the highest exports of crop was registered by California State, being followed by Illinois and

Iowa. The lowest export was registered in Alaska, a predictable situation because of the clime conditions in this state.

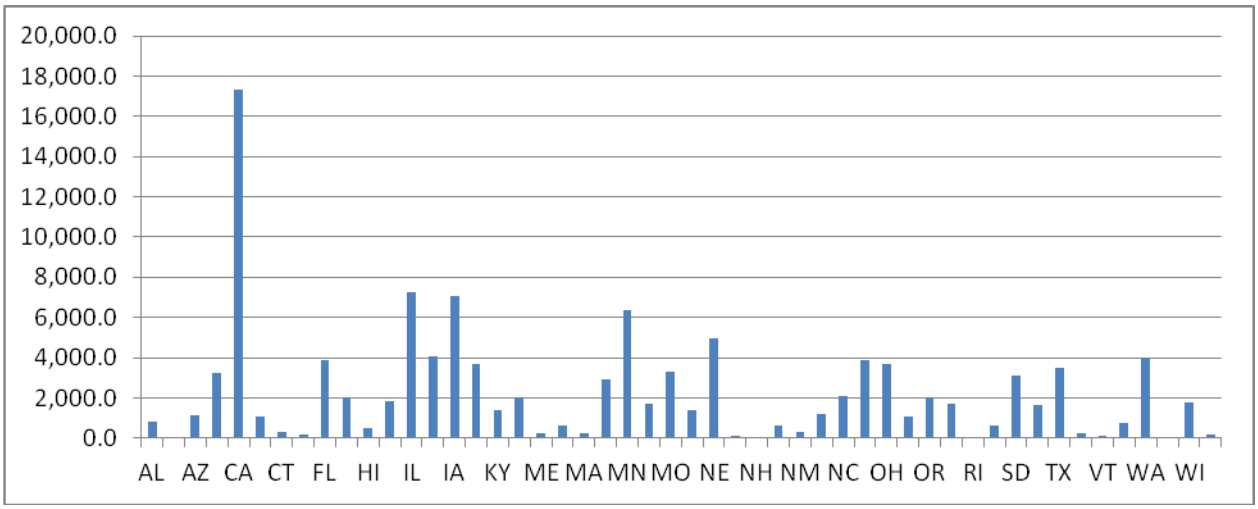
Figure 1 *The crop exports in US states in 2000*



Source: author's graph

California is the most populous state of USA and it is dependent by the success from agriculture, the climatic conditions being favorable for crops. Moreover, in this state the research in agriculture is very well developed. California's economy is dependent on trade and the technological improvements in crop production contributed to the high exports in this state. On the other hand, even if Alaska is the largest state as surface, it has many unpopulated areas. The agriculture represents a very small fraction of the Alaskan economy. The agricultural production is mainly used for consumption within the state.

Figure 2 *The crop exports in US states in 2013*



Source: author's graph

In 2013, California continued to be the biggest exporter from USA. Alaska remained the state with the lowest exports of crop production, even if the exports have grown with 98.5% in 2013 compared to 2000. On the other hand, in California the crop production exports increased with almost 170% in 2013 with respect to 2000.

3. Methodological framework

Let consider a vector of endogenous variables denoted by Y_t . The dimension is Gx1. The VAR model for this vector is:

$$Y_t = A_0(t) + A(l)Y_{t-1} + u_t, \text{ where } u_t \to iid\left(0, \sum_u \square\right) \quad (1)$$

$A(l)$- polynomial function in the lag operator
$A_0(t)$ includes the deterministic components
The standard finite order VAR with constant coefficient is based on Wold theorem and it supposes stationary, linearity and invertibility of the moving average form. Any vector Y_t has an infinite lag VAR representation. Therefore, in applications the assumption that the contribution of Y_{t-j} to Y_t is small for large j is made to have a finite VAR.
In panel VAR (PVAR) models, the variables remain interdependent and endogenous, but a second dimension (cross-sectional one) is added to the representation. There is a vector y_{it} that includes G variables for each unit,

where *i* is the index for units that might be spatial units, markets, sectors etc. (i=1,2,…,N). The representation of the panel VAR is:

$$y_{it} = A_{0i}(t) + A_i(l)Y_{t-1} + u_{it}, \text{ where}$$

$$u_t \rightarrow vector\ of\ random\ disturbances\ (Gx1\ elements) \quad (2)$$

t=1,2,…, T and i=1,2,…,N

In the case of a panel VARX model, we have:

$$y_{it} = A_{0i}(t) + A_i(l)Y_{1t-1} + F_i(l)W_t + u_{it}, \qquad u_t \rightarrow iid\left(0, \sum_u \square\right) \quad (3)$$

$u_{it} = [u_{1t}, u_{2t}, \dots, u_{Nt}]'$

j-lag (j=1,2,…,q)

$F_{i,j}$ - matrices (dimension GxM)

W_t - vector of predetermined variables (dimension Mx1) for all units

Three important characteristic should be stated for PVAR models used in financial and macroeconomic approaches:

- Dynamic interdependencies (for all units the lags of endogenous variables enter the model for the unit *i)*;
- Static interdependencies (in general, u_{it} correlate across *i*) that imply restrictions for the shocks' covariance matrix;
- Cross sectional heterogeneity (the slope, the intercept and the shocks' variance could be unit specific).

PVAR models are often used in literature to analyze the convergence and similarities between cycles in different groups of countries. These models are also employed to build leading or coincident indicators of the economic activity or to predict different macroeconomic variables like inflation or GDP, because they consider the potential cross unit spillover effect. PVAR models are frequently utilized to build average effects and to describe the unit specific differences with respect to the average.

4. Some determinants of crops exports in USA

In this study, several types of crops have been chosen: feed grains, food grains, food grains, oil crops, vegetables and fruits. For these crops, the following variables were registered in the period from 2000 to 2013 for USA: indices of productivity, price indices and agricultural exports. The mentioned crops are the cross-dimension of panel data. A panel data approach was chosen to determine the factors that influence the agricultural exports of these crops in USA. According to unit root tests, the data are not stationary and the logarithm is applied for each data set in order to ensure the stationary character of the data. The transformed variables are denoted by L1, L2 and L3 (L1 (logarithm of productivity index), L2 (logarithm of

price index) and L3 (logarithm of crop exports). More types of panel data models were proposed, but in the end two random-effects models were valid: a random-effects GLS regression and a random-effects ML regression. The individual specific effects are not correlated with the exogenous variables in the model. The use of random-effects model to explain the exports of some crops is in accordance with the expectations. Indeed, not all types of crops were considered. We select random crops, but the analysis was limited by the data existence for USA. Moreover, the differences across crops influence the crops' exports. The coefficients interpretation for random-effects model is quite tricky, because the parameters include between-unit and within-unit effects. However, the prices have a higher impact than productivity on the crop exports (Table 1). The LM test recommended the random-effects model against the OLS model.

Table no. 1 *Random-effects models for explaining crops exports*

Random-effects GLS regression				
R-sq within: 0.8822 R-sq between: 0.1832 R-sq overall: 0.6749	Coefficient	Std. error	Z	P>|z|
logarithm of productivity index	0.7422	0.2248	3.3	0.001
logarithm of price index	1.1560	0.0679	17.02	0.000
Const.	7.6132	0.0511	148.83	0.000
Random-effects ML regression				
logarithm of productivity index	0.4369	0.2059	2.12	0.034
logarithm of price index	1.2023	0.0591	20.34	0.000
Const.	7.6082	0.1080	70.43	0.000

Source: author's computations

The research continues with the estimation of a panel VAR model.

Most of the lag criteria (LR, FPE and HQ) indicated that the most suitable is a panel VAR of order 3, as we can see in Table 2.

Table no. 2 *Panel VAR lag order selection criteria*

Lag	LogL	LR	FPE	AIC	SC	HQ
0	38.47870	NA	4.15e-05	-1.576831	-1.456387	-1.531931
1	134.3800	174.7536	8.73e-07	-5.439113	-4.957336*	-5.259511
2	141.4273	11.90209	9.58e-07	-5.352326	-4.509217	-5.038023
3	163.4497	34.25701*	5.45e-07*	-5.931098	-4.726656	-5.482094*
4	169.2485	8.247174	6.47e-07	-5.788822	-4.223048	-5.205117
5	181.6544	15.98977	5.82e-07	-5.940193*	-4.013087	-5.221787

Source: author's computations

The model satisfies the stability conditions: there are no roots outside the unit circle. The polynomial roots of autoregressive process are presented in the following table (Table 3):

Table no. 3 *Roots of characteristic polynomial*

Root	Modulus
0.985765	0.985765
0.974368	0.974368
0.216718 - 0.404722i	0.459093
0.216718 + 0.404722i	0.459093
-0.121463	0.121463
0.061099	0.061099

Source: author's calculations

The panel VAR model was built for stationary data (Table 4). The new variables based on the logarithmic transformation are denoted by L1

(logarithm of productivity index), L2 (logarithm of price index) and L3 (logarithm of crop exports). The Granger causality test indicated that the exogenous variables are cause for the dependent variable (logarithm of crop exports).

Table no. 4 *The panel VAR model estimation*

	logarithm of productivity index	logarithm of price index	logarithm of crop exports
logarithm of productivity index (-1)	0.518537	-0.273898	-0.091185
logarithm of productivity index (-2)	0.056056	-0.419861	0.208268
logarithm of productivity index (-3)	-0.050226	0.553117	0.051114
logarithm of price index (-1)	0.031030	0.577907	0.032604
logarithm of price index (-2)	-0.148116	-0.037999	-0.011101
logarithm of price index (-3)	-0.090199	0.391816	-0.020305
logarithm of crop exports (-1)	-0.047381	0.510325	0.849406
logarithm of crop exports (-2)	0.194005	-0.161621	0.123526
logarithm of crop exports (-3)	-0.016015	-0.274213	0.023747
C	-0.972782	-0.524348	0.120630
R-squared	0.631428	0.876728	0.939941
Adj. R-squared	0.557713	0.852074	0.927930

Sum sq. residuals	0.260674	0.554486	0.527917
S.E. equation	0.076110	0.111004	0.108312
F-statistic	8.565862	35.56078	78.25191
Log likelihood	69.13340	48.37716	49.72750
Akaike AIC	-2.150306	-1.395533	-1.444636
Schwarz SC	-1.785336	-1.030564	-1.079667
Mean dependent	0.016353	0.223927	7.890995
S.D. dependent	0.114443	0.288613	0.403458
Determinant residual covariance (degrees of adj.)		4.91E-07	
Determinant residual covariance		2.69E-07	
Log likelihood		181.9177	
Akaike information criterion		-5.524279	
Schwarz criterion		-4.429370	

Dependent variable: L3
Granger causality test

Excluded	Chi-sq	Degrees freedom	Prob.
logarithm of productivity index	13.47325	3	0.0037
logarithm of price index	23.92067	3	0.0000
All	34.31062	6	0.0000

Source: author's computations

The residuals are homoskedastic and independent up to a lag of 12. As we can see from Table 5, the probabilities associated to the residual tests are greater than 0.05. so, for a level of significance of 5%, the errors are not auto-correlated and they are homoskedastic, the panel VAR model in this form being valid.

Table no. 5 *VAR Residual tests*

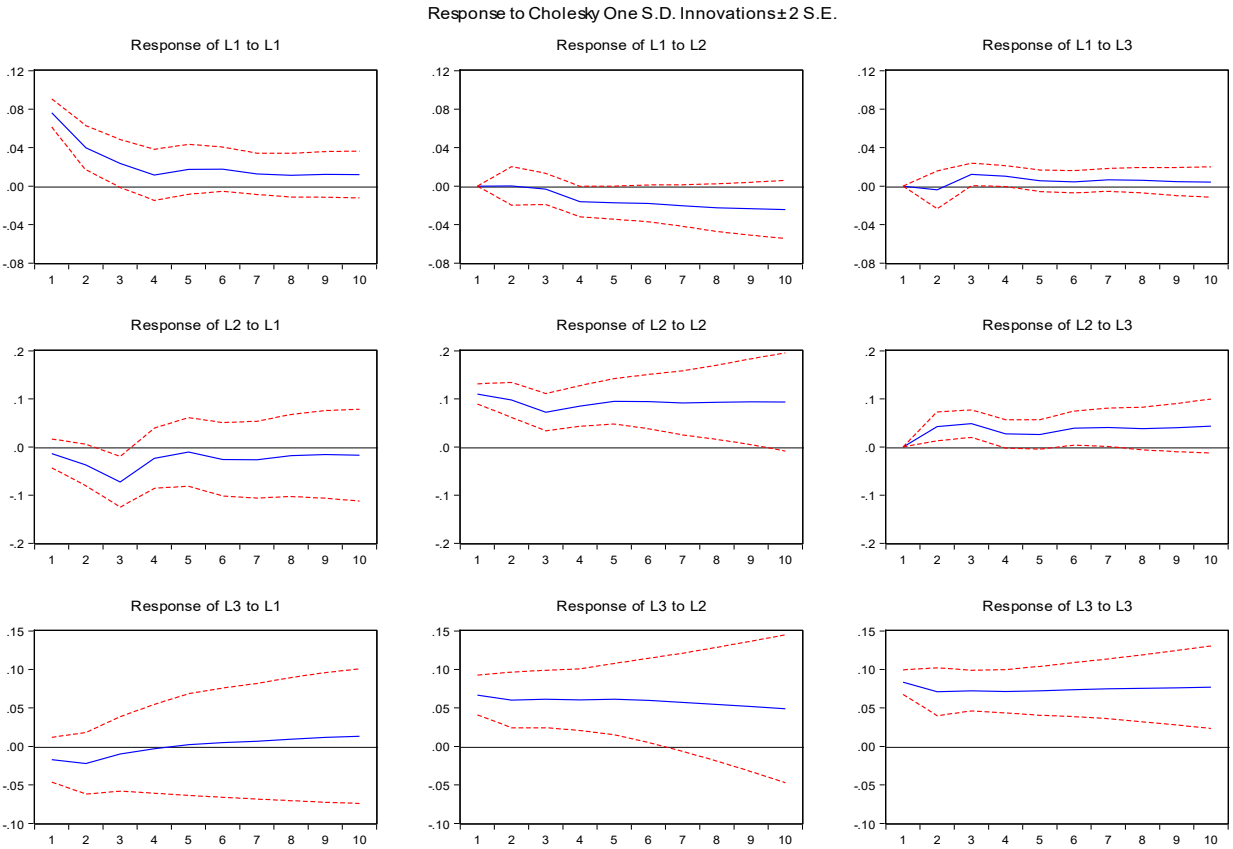
VAR Residual Serial Correlation LM Tests			VAR Residual Homoskedasticity test		
Lags	LM-Stat	Prob.	Chi-sq	Degrees	Prob.

				freedom	
1	10.61746	0.3028	117.0194	108	0.2603
2	17.59860	0.0401			
3	5.337188	0.8040			
4	11.94828	0.2162			
5	13.48270	0.1420			
6	15.85296	0.0700			
7	9.581750	0.3854			
8	8.027634	0.5314			
9	2.616985	0.9776			
10	7.934493	0.5408			
11	3.976904	0.9129			
12	6.325832	0.7069			

Source: author's computations

Starting from VAR(3) model, we analyzed the effect of a shock in one of the variable on the other one. In Figure 3, the impulse-response functions are represented.

Figure 3 *The impulse-response functions*



Source: author's graph

In the first period, 59.51% of the variation in crops' exports is due to changes in export, while 37.92% of the variation in exports is due to changes in prices. The influence of prices on exports increases up to 5th lag. Starting with the 6th lag, the prices influence decreases slowly till a variation of 37.34% of the exports due to prices modifications. The productivity impact is quite low, the maximum being registered in the second period (3.77% of the variation in exports is due to productivity changes).

Most of the variation in productivity is due to changes in this variable. Surprisingly, the impact of prices has a high influence starting with the 4th lag when the influence grows very quickly till 23.35% of variation explained by prices in the 10th lag. Starting with the 4th lag, there is a stable influence of exports around 3%, as we can see in Table 6.

Table no. 6 *Variance decomposition of the variables*

Variance Decomposition of logarithm of productivity index:				
Period	S.E.	logarithm of productivity index	logarithm of price index	logarithm of crop exports
1	0.076110	100.0000	0.000000	0.000000
2	0.086012	99.78721	0.000904	0.211886
3	0.090026	97.87762	0.116991	2.005388
4	0.092738	93.78820	3.099890	3.111911
5	0.096068	90.64023	6.127631	3.232139
6	0.099418	87.76463	9.012092	3.223274
7	0.102449	84.17147	12.39947	3.429064
8	0.105650	80.26871	16.18190	3.549388
9	0.109010	76.62868	19.85659	3.514729
10	0.112403	73.20093	23.35623	3.442843
Variance Decomposition of logarithm of price index:				
Period	S.E.	logarithm of productivity index	logarithm of price index	logarithm of crop exports
1	0.111004	1.479679	98.52032	0.000000
2	0.158411	6.330256	86.42332	7.246427
3	0.194700	18.06145	70.95088	10.98766
4	0.215545	15.92577	73.50930	10.56493
5	0.237204	13.34262	76.74955	9.907824
6	0.259561	12.12920	77.31826	10.55254
7	0.279520	11.35709	77.41451	11.22839
8	0.297545	10.37736	78.07217	11.55047
9	0.315048	9.501930	78.57050	11.92757
10	0.331929	8.827048	78.70267	12.47028
Variance Decomposition of logarithm of crop exports:				
Period	S.E.	logarithm of productivity index	logarithm of price index	logarithm of crop exports
1	0.108312	2.563191	37.91912	59.51769
2	0.144525	3.779965	38.67366	57.54637
3	0.173156	2.952223	39.49501	57.55277
4	0.196850	2.308613	40.00616	57.68523
5	0.218421	1.886517	40.35229	57.76119
6	0.238149	1.627377	40.22932	58.14330

7	0.256194	1.473086	39.75221	58.77470
8	0.272748	1.416020	39.08917	59.49481
9	0.288102	1.430840	38.28128	60.28788
10	0.302447	1.490163	37.34149	61.16834

Source: author's computations

All in all, we can state that the prices have a high impact on the selected crops' exports from USA, the productivity having a marginal influence. However, most of the variance in exports is due to the changes in this variable. Other important factors, like exchange rate might generate changes in export.

5. Conclusions

This study determines some factors that increase the crop exports in USA. In this study, several types of crops have been chosen: feed grains, food grains, food grains, oil crops, vegetables and fruits. The results of panel data approach are:

- The productivity and prices are determinant for some crops exports in USA;
- The differences between crops influence the exports;
- The influence of prices is significant higher than the productivity impact on exports;
- There are high differences between US states regarding the crop production exports determined also by extern factors like clime conditions, traditions.

In a future research it would be interesting to select more variables to develop the panel data models. A dummy variable for climate conditions that might be favorable for crop production would be necessary.

The results show the marginal contribution of productivity. Therefore, the agricultural policies in USA should more take into account the ways to increase the productivity of production factors. There are many agricultural researches regarding the use of different fertilizers to increase the production, but the orientation on quality is more important than the quantity.

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ORGANIZAŢIONAL CULTURE - FACTOR OF EFFECTIVENESS OF RISK MANAGEMENT PROCESS

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Abstract:
Risk management is a structured and continuous process in an entity that aims to identify and assess risks and deciding on responses to the opportunities and threats that affect the achievement of objectives. The management entity creates and implements risk management process and monitor its effectiveness.
Organizational culture is a set of beliefs, values that influence individual and collective performance of an organization. This is based on symbols and traditions and the essence of the organization. The role of organizational culture is to balance both at institutional level and between the organization and its external environment.
Organizational culture is a much discussed topic lately, by experts in the field, but little considered by management to managing an organization.
Effective management of risk management is assured if there is a risk appropriate organizational culture where staff at all levels and concept known risk strategy adopted within the organization and is aware that achieving organizational goals mastery of risk guarantees.

Keywords: *organizational culture, organizational factors, corporate governance, risk management, crop types.*

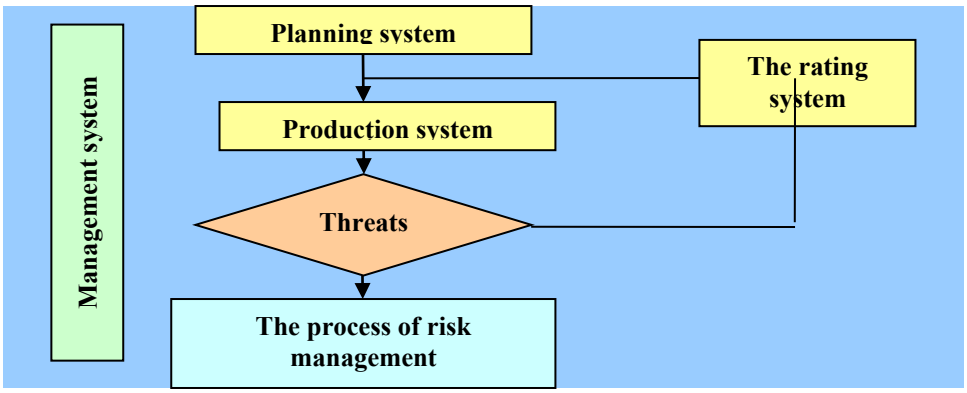
JEL Classification: *M40, M41*

Risk management

Designing and implementing a risk management process in an organization ensures adequate risk identification and assessment, and integration of measures to address the risk for uncontrolled risks sufficiently, guaranteeing objectives. Implementing risk management process within the organization allows management to focus attention on the risks affecting the objectives, protecting assets and ensuring business continuity.

However, the effectiveness of the risk management process is influenced by the economic situation of the organization, the complexity and specificity of processes deployed, organizational culture and leadership style. To implement the process of risk management organization leaders must consider: the principles of COSO on risk, strategic risks, operational, reporting and compliance of the entity to identify, evaluate and treat risks and ensure continuous monitoring of their.

Compared to the organization's management system, risk management process are as follows:



The process involves the integration of risk management activities and measures according to their nature, the combination of their risk and manages risk in a uniform manner. This ensures that management efforts are focused on risks to achieving the objectives.

Through risk management process ensures identification and risk analysis of strategic, operational, reporting and compliance affecting the objectives and identifying and implementing internal controls to mitigate risk, taking into account the level of risk and implementation costs.

The process of risk management is an effective management tool which allows it to have an overview of the risks affecting the objectives and appropriate levers in substantiating and making managerial decisions. This process, to be conducted on a permanent basis, contributes to the achievement of organizational goals.

Leadership, the organization and conduct of the process of risk management must work towards defining the concept of risk management, communication and understanding of the process by all staff, establish responsibilities in the implementation process, to identify and evaluate risks and monitor them in order to improve process.

In practice, the main activities performed on the realization of the risk management process are: setting goals, identifying specific activities

objectives, defining risk strategy, risk identification, risk assessment, control and monitoring.
A risk management process better organized and implemented enable the achievement of the objectives of growth, encourage proactive management, compliance with legal requirements, improve corporate governance, allocation and efficient use of resources, reducing losses and fraud.
To implement an effective risk management process leadership organization must ensure that there is a favorable risk culture and organizational strategy implementation risk. Risk management process must ensure that the risks are analyzed and monitored and appropriate control devices are set to uncontrolled risks or the risks emerging.
To ensure good risk management must be satisfied that each employee understands the concept and strategy on the risks and responsibilities of the incumbent in this process.

Organizational culture - the premise of an organization's performance

By organizational culture through conceptual means value system, consisting of all the ideas, values and traditions of an organization, staff behavior and character that determines the organization's activity.
While the concept of organizational culture can be associated with several generations of theories, the first generation is that of theories dealing with organizational culture as a process, the second treats culture as evolution, and the third deals with the organizational culture as a transformation of the organization. The evolution of organizational culture can be presented as follows:

- ✓ organization's approach to social organism. Identifying and defining organizational culture was performed initially by describing the organizations as social institutions habits and taboos;
- ✓ organization's approach to cultural identity. Later, after 1970 he described the concept of "corporate culture" concept equivalent to enterprise culture. The concept was justified by the need for staff organization to adapt to changes caused by the economic crisis;
- ✓ School cultural management, characterized by the appearance, after 1980, the first books on organizational culture and by its recognition and introduction as a subject in higher education.

Currently, organizational culture is seen as a concept widely used both in practice and in management theory. The skilled trying to explain and demonstrate the contribution of culture to increased organizational performance and completeness organization.
Organizational culture integrates the rules of thought, beliefs, habits, attitudes and values that exist within an organization. This rule therefore

forms of interactions, beliefs and values of corporate governance representatives and employees of the organization and interactions between employees of the organization, regardless of where they are located.
At the organizational level, organizational culture is influenced by a number of factors such as driving style, the way of making, form of organization, policies and strategies developed and implemented the level of formality or the working environment. Also, organizational culture is influenced by the aspirations and value system of the organization, knowledge and skills of staff of the interaction between the employees of the organization, goals and interests of management and employees. Management organization uses organizational culture in management decision making.
The specific components of organizational culture can be defined as follows:

- ✓ dominant values of the organization;
- ✓ accepted norms of organization members;
- ✓ philosophy underlying the policy of the organization;
- ✓ existing climate in the organization;
- ✓ how staff interact organization, both among themselves and with third parties.

A strong culture is characterized by beliefs, values and impact on staff, while a weak culture is characterized by low impact on the organization's staff. In this context we can say that in addition to the impact on organizational performance, organizţională culture has an impact on the organization's staff satisfaction.
Types of crops:

- ✓ networked culture is characterized by the fact that the organization's staff is considered as a family. This can lead to poor results or accepting personnel separation interest groups;
- ✓ culture of mercenary, is characterized by the fact that they act decisively and determined to achieve the objectives and simultaneously eliminate or marginalize employees who are not performing ;
- ✓ culture of fragmented, characterized by the fact that employees are evaluated based on the productivity and quality of their work and a lack of collegiality toward underperforming staff;
- ✓ culture of universal, is cracterizează through friendship and performance among employees and allocating a much longer TLS organization.

Analyzing these types of crops can consider that the distinction between them is given by factors such as the strategy adopted by the organization, the way of making and perceptual decisions, way to record outstanding results and analysis of the difficulties, understanding of procedures, duties

and how cultural differences accepted and implemented across the organization.

In many cases the organizational culture appeals to common thinking employees at personal values, the written or unwritten moral rules, habits or staff meetings within or outside the organization.

Identifying and understanding the elements of organizational culture ensure avoid eventual internal and external conflicts. Knowledge of organizational culture enables the consistent development of organizational strategies, by taking proper account of organizational changes and development of the organization and the foundation and making the most effective management decisions.

Developing organizational culture is influenced by the development organization. Consolidation is all the stronger as the staff feels anchored to the organization's goals and aspirations. A strong culture provides a suitable organizational environment to achieve the objectives in terms of efficiency and effectiveness and an environment conducive to solving organizational problems, helps to ensure a high level of staff satisfaction.

Organizational culture is an attribute of management who is interested in knowing this phenomenon to use it in developing effective strategies and organizational policies and effective use of personnel capacity. This is associated with a collective phenomenon, being accepted partially or fully by the staff of an organization.

Organizational culture is delimited by the following characteristics:

- ✓ is a specific working environment for the staff of an organization. In this respect, organizational culture should integrate and preserve organizational commitment of staff;
- ✓ directs staff in meeting organizational objectives. Organizational culture must persist over time, regardless of staff turnover and staff at the same time protect against external environmental threats;
- ✓ impact on organizational performance and staff satisfaction. Organizational culture is the primary means by which can be transmitted and held values, beliefs, ideas and traditions specific to an organization.

According to these characteristics, organizational culture is learned and can be adapted and transmitted from one generation to another. Mostly, organizational culture is invisible and unconscious, is a social phenomenon that exceeds multiple organizational and employee tends to be stable over time and impact on organizational performance, involving internal factors and external factors.

Internal factors that can influence organizational culture:

- ✓ corporate governance. Organizational culture is associated vision and mission of the organization. Corporate governance issues

decisions and influences the ways in which the decision is accepted and implemented;
- ✓ organization's history. The type and scope in which the organization was established convey concepts, perspectives and values;
- ✓ size organization. A small organization it is characteristic of a stable and homogeneous culture, while developed within an organization, with branches and outlets spread over large geographic areas, may occur more subcultures;
- ✓ values and conceptions. It is the most important factor in maintaining and developing organizational culture as the degree to which staff believe and adhere to the organization's values influence the nature of organizational culture and its impact on organizational performance.

External factors that influence organizational culture:
- ✓ national culture in the business of the organization, influencing organizational culture through education, thinking, religions, different ideas;
- ✓ customers relate with the organization, organizational culture influences the light size, requirements, development perspectives;
- ✓ technology differs and is experienced differently from one organization to another. This makes the organizational culture to promote performance-oriented values and norms, and change involving personnel;
- ✓ legal framework, determine the rules of organization, functioning and development of the organization. If the framework is coherent and stable, then recorded an adequate organizational culture development and stability and ensure a suitable working environment and promotes performance.

Success of any organizational changes related to how to adapt and change the organization's staff, since any organizational change affecting directly or indirectly competence, attitude or value of the employee.

Organizational culture and risk management

The influence of organizational culture on risk identification and management must be seen in relation to the allocation and supervision of capital and resources, regardless of type, with financial discipline and the market in which the organization operates and abilities, aptitudes and skills management. Managerial skills, leadership style, their preparation and cultures from which they directly influence the culture.

The organization's management is responsible for organizing and ensuring the functionality of the risk management process and the reality of the

information provided by that process, including internal control measures, which represent the final minimizing risks and maintaining them at an acceptable level.

Meanwhile, management of the organization and has a high influence on the culture. This should make known the concept of risk and risk strategy applied across the organization and creates a culture conducive to risk.

The goal of risk management is to identify risks associated objectives and to evaluate and assess the internal control system's ability to maintain risks within acceptable limits. Design and implementation of appropriate risk management process ensures: (a) the efficient and effective use of public funds; (b) change of leadership style, which in addition to measures to deal with risks, and will design and implement internal control devices for limiting the amount thereof; (c) achieve in terms of efficiency and effectiveness objectives; (d) building a sound internal control system, with appropriate control measures and functional.

Through the process of risk management can manage the risks affecting the realization processes and activities attached to an organizational objective, can assess the overall consequences and adopt measures in relation to the level of inherent risk. This process should be one consistent and convergent, integrated objectives, activities, actions and operations carried out within the organization and staff regardless of hierarchical level that is, aware of the importance of this process in order to ensure the realization of its activities.

The main feature of an effective risk management process is that it integrates risk monitoring mechanisms at the level of the functional departments of the organization and its culture, and a focus attention on the risks associated targets. By going through specific stages of this process, namely the identification, analysis and risk assessment, risk treatment, risk control, information and communication and monitoring risk, the organization shall ensure that risks are identified, assessed and treated appropriately, regardless of their level.

Organizational culture is a "way of life", a set of beliefs, universal values that influence individual and collective performance. This is based on symbols, rituals and customs.

Identify the characteristics and elements of influence of organizational culture are a challenge both for employees and for managers who have the responsibility to ensure the success of the organization in an economic and financial context changing.

Organizational culture functions as a group of elements in which an essential role organizational structure has to be organized and developed taking into account the cultural context of the country in which the

organization operates, organizational goals and work motivation. We can not speak of an effective risk management without knowing the culture.
Every organization has a culture more or less consolidated. Staff form a culture organization. The organization not only possess a culture in itself is a culture. The culture of an organization is transmitted, learn, adapt, create multiple and go beyond the individual.
Organizational culture is the essence of any organization, knowledge and enables them to identify effective adaptation to changes in internal and external environment. Its main role is to create a balance primarily within the institution, and on the other hand, a balance between the institution and the external environment.
Depending on the type of organizational culture implemented organization sets its own rules under which they operate. The important role in establishing links between elements of an organizational culture which it has management must develop an organizational culture homogenous, promote values of the organization and establish the direction of development.
Considering the above facts, we appreciate that risk management is both a component of corporate governance and a specific activity that requires professionalism and fairness and helps to improve the public entity's activities. Organizational culture is to create a uniform system of values, norms, goals, integrate personnel within the organization, to improve communication and ensure increased motivation and effectiveness in coordinating and conducting activities and objectives. In this respect, organizational culture exerts several functions, namely:

- ✓ integration of personnel within the organization and updating of the internal environment;
- ✓ staff protection from potential threats of the external environment;
- ✓ storage and transmission of values and traditions of the organization;
- ✓ integration expertise of staff and creating the framework for the development of organizational capacity;
- ✓ social integration of the organization's staff and organizational system to adapt to the changing external environment;
- ✓ to achieve organizational goals using staff based on professional skills.

A strong culture must mobilize personnel capacities, ensure achievement of organizational objectives and contribute to increasing the performance of the organization. For this management organization decides which actions and the need to delineate behaviors to achieve the objectives.

Conclusion

An organization's management activities include planning, forecasting, organization, coordination, training, evaluation and control oriented efficient and effective use of all types of resources, in order to achieve better organizational performance.

Organizational Culture creates value in an organization, requires due respect for staff, provides courage and confidence in their responsibilities and promoting the idea of each employee.

By organizational culture should be promoted innovation and learning, drawing on their experience and the experience of others who performs in the organization operates.

To understand the organizational culture must be known shareholder organization, organizational structure, the organization's infrastructure, culture of the country in which the organization operates, preparedness and staff, and values that characterize the organization. Through work organizational culture can cause profound changes in terms of perception, thought and action is part of personnel respective cultures.

In situations in which an organization can not speak of an organizational culture, there are a number of specific elements of it, because an organization can not exist without some element of an organizational culture. These elements can be defined by the values established organization dominated by the philosophy of the organization, through development rules or rules of conduct.

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THE DIGITAL REVOLUTION AND JOB POLARISATION: AN INSTITUTIONAL, ECONOMIC, AND SOCIAL ISSUE

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Abstract:

The last decades were marked by processes of in-depth changes: globalisation, the collapse of the communist systems in Central and Eastern Europe, a new post-industrial transition, and the economic and financial crisis brought along also the crisis of "sovereign debts". All these occurred on the background of rapid digitalisation, computerisation, and automation processes of the economic sectors, the highest risks being born by the labour market and the main production factor: the human factor. Thus, as opposed to the previous stages, the gap between the economic and social risks to become higher in the absence of institutional reform and changes targeted mainly at institutions with impact on the labour market. The present paper intends to present the main issues with respect to economic and social aspects relevant to the process of resuming economic growth and to ensuring the sustainability of medium- and long-term development.

Keywords: *digitalisation, institutional reform, economic growth, job polarisation, social development*

JEL Classification: *D02, E24, E69, J24, J59*

Introduction:

The last decades were marked by processes of in-depth changes regarding globalisation as result of technological progress. This world process was accompanied by the collapse of the centralised, communist systems from Central and Eastern Europe; the new post-industrial transition triggered by the diffusion of digitalisation and computerisation in all fields and sectors of activity. These processes together determined a new economic transition under full development nowadays. The triggered challenges overlapped with the effects of a financial, economic and 'sovereign debts' (actually these were more three successive crises) crisis and last, but not least, with a

crisis of the social models, in particular at European level. These crises determined, at EU-28 level, the majority of member-states to impose austerity policies and measures that were expressed in wage cuts (Romania and even more dramatic in Greece), and even restrictions in investments, associated with measures of capital repatriation. These was mainly an issue for capitals invested up to that time in the new EU member-countries, and for cuts of investments in education, health, and social services.

The new economic transition is determined on one hand by the effects and impact of the financial and economic crisis on developed and transition economies, and on the other hand by the diffusion of digitalisation, computerisation and automation in all economic sectors – from agriculture to production and services.

At the same time, the diffusion of digitalisation, computerisation, and automation in all economic sectors has allowed to enterprises, companies, and by and large to the business environment to initiate actions for resuming (slow) economic growth by sacrificing jobs. Yet, the economic advantages – savings in the production process and costs diminishment with respect to the labour force – were not compensated by generating new jobs for the ones lost as result of the financial and economic crisis and of the increasingly intensive automation. Thus, a phenomenon occurred which was already predicted by Keynes in 1933[1]: respectively, the more advanced and in-depth technological progress is achieved, the more it contributes to job destruction at a speed much higher than the capacity of the economy and of the society to generate new jobs. The implications of these changes are significant as they change requirements in the field of education, health, social services, as well.

The current post-crisis period, continues to be significantly influenced by uncertainties and frailties, the main markets sending contradictory signals of hesitant growth followed by stagnation or even diminishments, while other markets are still struggling in an incipient post-crisis period, in particular in Eastern and Southern Europe.

One source of major concern for decision factors at European level is the development on the labour market, the more so as it is determinant also for the targets of the European Social Agenda and the Europe 2020 flagship initiatives of smart, sustainable, and inclusive growth.

The reason is that in the past, technological progress was followed by periods in which the industrial sectors developed activities and obtained outcomes based on these progresses, and thus could create new jobs at a

[1] Keynes, J.M. (1933). Economic possibilities for our grandchildren (1930). *Essays in persuasion*, pp. 358–73.

relatively reasonable pace. However, nowadays, the rate of innovation and technological progress outpaces the recovery rate of the labour market. Traditionally, labour market growth was resumed about five years later than on other markets. This means that today economic growth no longer corresponds, on short- and medium-term with the recovery of the labour market as expressed in targets, like full-employment of 75% at European level according to the Europe 2020 Agenda. Practically, the labour market absorbed fully the impact and effects of the financial-economic and 'sovereign debts' crisis, as well as the ones of the swift digitalisation and automation rate. Therefore, this market becomes more selective about labour force demand: the employees are faced with the demand of satisfying new requirements about skills and competences, the type of jobs and positions to fill, and the tasks and duties to perform, etc. Secondly, it is increasingly more competitive, in particular in the case of EU where, the accession of the central and eastern European countries allowed for identifying new labour markets with high-skilled workers but cheaper in terms of labour force costs.

Therefore, a detailed analysis of the last decades is required based on a complex institutional, economic, and social approach. In this framework, levels of intervention can be identified that may contribute to resuming sustainable economic growth and to redefining the social models that are under question with respect to their own sustainability because of the crisis. None of these components will be able in the future to develop without taking into account the other two, this triangle covering multiple facets of the predominant phenomena: globalisation and digitalisation/automation on large scale.

Recent debates have underpinned that institutions are important for the main markets, and in particular for the labour market. Their impact on the labour market is translated into performances with respect to employment and to creating new opportunities for the active age population by generating new jobs, and for individual attitudes regarding the own insertion and integration on the labour market.

Moreover, reviewing and improving institutions is determinant for the good functioning of the social models proposed at European level.

1. Relevance of Institutions - Labour market and the imperatives of the knowledge-economy and society

Institutions are the expression of the contract between society and government, and their concrete expression are the various (economic, social, etc.) organisations (North, 1990). The effectiveness and efficiency of institutions is reflected in the outcomes obtained on the market to which

they refer either directly or indirectly. Institutional transparency and low corruption levels are sine qua non conditions for ensuring the continuity but also the reform capacity of institutions. Next to formal institutions, informal institutions exist and they are built around a certain culture, including the institutional culture, mentalities, and habits. The way in which coherence is achieved between formal and informal institutions, is determinant for resuming economic growth and for ensuring the harmonious development of the society in the future. This fact is self-evident in particular during periods of significant transitions and reforms triggered by events, such as changes in the political and economic system (the case for Central and Eastern Europe in the last decades). Other relevant instances are financial and economic crises of considerable magnitude (the 2008 crisis outbreak), and significant industrial transitions with effects determining the shift of the economy as a whole.

The reform of institutions was an extended topic of discussion during the last decades at global and European level, especially since globalisation and the rapid EU enlargement made clear that institutions had to meet new challenges. The crisis contributed to highlighting several failures, such as the partial neglect of the (distress) signals from the social sphere. An instance of lacking attention paid to the social component in the Lisbon Agenda 2000 is the emphasis shift on employment and flexicurity, from job security and social protection. The new economic goals omitted to a certain extent the agreement with the social goals – respectively ensuring an institutionalised platform of dialogue between economy and society.

The crisis showed that undertaken structural reforms in each of the member-states were not deep enough nor fully implemented, or finalised accordingly. Moreover, it highlighted that the failure of strategies and policies to take into account the effects of the industrial transition triggered by the technological progress had complex outcomes. Such an example is the increase in the weight of the services' sector, and its transformation in directions entering into direct competition with the industrial production and traditional services (see 3-D type production in the machine and tools building industry, even in some instances in civil constructions, etc.). At the same time, digital platforms turn increasingly more into "services' suppliers" which mediate simultaneously between two types of services (one between company and consumer, and one directly between consumer and supplier/service provider guaranteed by the respective platforms based on 'ratings'). These developments alone could account for an increase in the polarisation of jobs from the viewpoint of skills and competences, as well from the one of present and future incomes. Add to this the change of entire sectors, including social and cultural ones; the emergence of direct and indirect displays within the economy of the "internet/network of things"

(bitcoin, Uber-type apps, etc. are but the beginning) and the future, in order to be sustainable, needs to be better reviewed and planned. The new strategies and measures must start with education and develop new and creative institutional frameworks to provide for safety networks for the as smooth as possible adjustment of different generations to the new requirements on the labour market.

The foreseeable outcomes of these complex processes = lead frequently more to the idea of an actual 'economy shift' at global and European level. At EU-28 level, this situation is in full dynamic evolution process and contributing directly to increasing discrepancies, divergence and unequal competition between member-states not only on the clearly delineated lines of Euro Area and Non-Euro Area, but also between the New Member-States. Moreover, it can be noticed that this "gap" is generated on the fault lines of the post-socialist economic models built according to: (a) the Anglo-Saxon liberal model (the Washington consensus); (b) the Austro-German corporatist model; (c) some imitation attempts of the Scandinavian model. Next to analysing these models, it would be useful to examine also the higher or lower success rates in the NMS, and in the former cohesion and convergence countries in accordance with the models of the "mental geography"[1]. This would provide a better comparison basis not due to the immediate proximity, but rather according to comparable historical, institutional, and social circumstances and paths with relatively similar economic-social outcomes. Such a classification would (probably) bring closer, for instance, some of the countries from Central and Eastern Europe (Romania, Bulgaria) to those in the southern part of the continent (Greece, Spain, Italy, Portugal), while the countries of Central Europe (Poland, Czech R., Hungary) would be (possibly) closer to the Western models (Germany, Austria, the Netherlands, etc.). In this framework, these comparable features would better assist in designing the future economic and social models of the knowledge society. Such an investigation is not the objective of the present paper, and these ideas are mentioned for attempting a more comprehensive explanation regarding challenges for the labour market and human capital.

The "economy shift" is certainly occurring nowadays under the conjugated pressure of the combined action of digitalisation, automation, and demand for better, cleaner industries and services, while the nature of human factor contribution changes in terms of labour intensity. Therefore, in the superior valuing of human capital and of labour force resources appear increasingly

[1] Gibson, Heather D. (2001): Economic Transformation, Democratization and Integration into the European Union, Southern Europe in Comparative Perspective, Palgrave.

higher differences and discrepancies between supply and demand underpinned by international, European and national analyses about the risks emerging because of rapid changes in labour force supply and demand. The main issues are represented by the increasingly complex demand as it relates to dedicated and specialised high-tech fields. These activity sectors imply superior valuing of cognitive, creative, and innovative competences built on a solid background of flexibility and self-valuing capacity. The European educational systems, despite successive reforms and new standards adopted in the majority of European countries, did not reach the point of optimum equilibrium required for a consistent, sustained, constant dialogue between all interested stakeholders from the economic, business, social and cultural environment. Yet, this would allow for a more realistic evaluation of the labour force demand and supply, on short-, medium and even long-term. At the same time, the slow process of institutional adjustment to the dynamics of the real economy and of the society 'on the move' is a contributing factor, as well, if not one of the most important ones, also for education and the educational/vocational offer.

2. Jobs' Destruction and Polarisation – A Global and European Risk

The knowledge society is par excellence defined by the digital revolution. This brings about the vulnerability of entire social categories as result of the increased importance of cognitive occupations, and due to the incapacity of rapidly combining some concrete solutions for generating new jobs. This 'incapacity' is created by the environment where the (natural) attractiveness of companies to achieve savings and diminish costs based on automation is not accompanied by measures of stimulating the creation of new jobs. Therefore, the Keynesian idea was recently picked up again in a study realised by Osborne and Frey in the year 2013. The authors noticed that in the USA, as result of the recession, numerous jobs vanished and that it is improbable for these to be (re)created because of the intensive digitalisation and automation replacing labour force on certain segments. The financial and economic crisis had as effect the increase in the willingness of enterprises to resort to automation and robots for cost efficiency and achieving savings. Thus, the authors concluded that there are risks for approximately 47% from total occupations in the USA[1], while equivalent calculations realised by the Bruegel think-tank from Brussels showed that

[1] Frey, Carl Benedikt, Osborne, Michael A. (2013). The Future of Employment: How susceptible are jobs to computerization?, http://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf

the same risks vary between 47% for Sweden and Great Britain and up to 62% for Romania in the field of occupations[1].

Evidence can be found in the fact that if in the period preceding the crisis over 30 million new jobs were created (before 2008), after this year about six million jobs disappeared, unemployment continuing to record two digit shares, with a peak of 11% unemployment at EU-27(28) level in the year 2013. The issue of unemployment continued to have severe outcomes, the last statistical data indicating for August 2015 a level of the seasonal adjusted unemployment of 11.0 %, representing a relative decrease from 11.5 % in August 2014 for the Euro Area. All in all, at EU-28 level, the unemployment rate was of 9.5% in August 2015, remaining stable as compared to July 2015 and on decrease from 10.1% in August 2014[2]. These unemployment trends are comparable to the more frequently mentioned gap between the northern and western member-states, and those from southern and eastern Europe, the lowest unemployment rates being registered in Germany (4.5%), Czech R. (5.0 %) and Malta (5.1 %), and the highest in Greece (25.2 % in June 2015) and Spain (22.2 %) (Eurostat data). The same trend is shown also at global level confirming to a certain extent that the current economic recovery is not necessarily correlated also with a similar recovery of jobs' and occupations. Moreover, it underpins the relevance of some possible new reforms required at institutional level for more effectively relating and correlating labour market to the developments on markets subjected to the impact of digitalisation and automation. If the development of the unemployment rate is analysed from the viewpoint of the educational levels, it can be noticed that it reflects accurately the increasingly more marked trend of occupations' polarisation. Moreover, their evolution indicates an increased narrowing of the mid-skills segment, with lower increases for the low-skills segment and constantly higher increases for the high-skilled segment at European level, both in the member-states and in the European countries not included in the EU-28.

[1] http://bruegel.org/2014/07/the-computerisation-of-european-jobs/

[2] ec.europa.eu/eurostat/statistics-explained/index.php/Unemployment_statistics#Main_statistical_findings

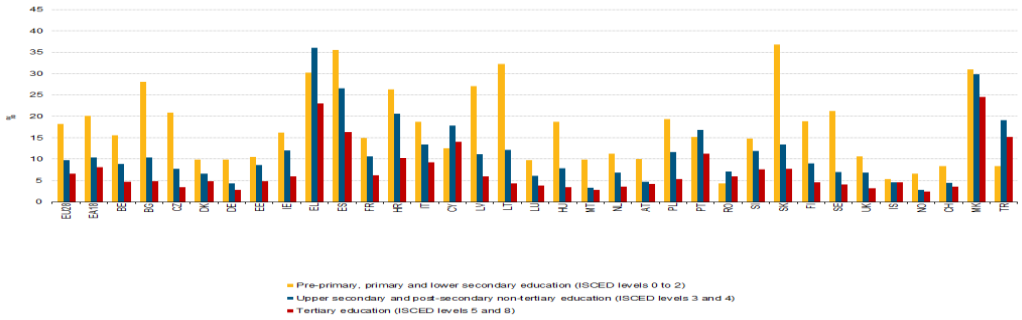

Figure 1 Unemployment rates in the EU-28 and candidate/associated countries according to educational level
Source:http://ec.europa.eu/eurostat/statistics-Unemployment_rate_by_level_of_educational_attainment%2C_2014_%28%25%29.png

One of the most important reforms, illustrated by ***Figure 1***, refers to the interplay between education and labour suggesting the possible set up of new institutions and complex innovative formulas to ensure better coordination, at formal and informal level, between already present or new institutions with impact on the labour market. This approach requires consistent and integrated policies and measures regarding the economic and social goals. It would allow including the youths that either feel tempted to abandon school in early stages, or who have already left the educational system and cannot be found on the labour market, and do not feel inclined to resume education or pursue vocational training (the so-called NEET youths). This reform is necessary, and lifelong learning is the core inflexion point for which new communication and cooperation models should be identified. The reform in view of better collaboration with the economic sector for ensuring the successful transition from school to work must include sets of legislative initiatives, policies, and measures approaching both issues identified within the educational system, and the ones identified by the main stakeholders on the markets that can create and supply jobs. These markets are those facing deficit, or those that will face deficits. For instance, the deficit in the field of health is currently of 7.2 million health workers (2013 value), and will reach an estimated 12.9 million in 2035[1], while other related fields will register also considerable deficits. Another stakeholder to be involved are communities at regional and local level as, especially as result of the crisis, they begin to be an increasingly important "player" in particular due to their ability of generating local, intra- and inter-regional innovative solutions.
Jobs' polarisation is usually expressed in terms of income, but the division according to the criteria of low-, mid- and high-skill requires also the inclusion of other criteria that would reflect developments regarding job requirements, types, quality, and continuity perspectives of the occupation

[1] http://www.who.int/mediacentre/news/releases/2013/health-workforce-shortage/en/

and not of the job as such. The classification according to the type of occupation: routine or non-routine, foreseeable automation, or not, and other such criteria might provide information about the sustainability of the job, etc. In this respect, Author attempted identifying reasons why the most affected segment is the mid-skilled. Therefore, he suggests the following classification in four major occupational categories: (1) sales; (2) office-administrative; (3) production, crafts, repairs; (4) operators, manufacturers and workers. All these categories include both routine, repetitive tasks, and non-routine, non-repetitive tasks. Yet, he notices that while the main feature of the mid-skilled segment is the one of repetitive routine activities based on regulations and procedures (easily assumed by automation and robots), there are cognitive and creative components in office and administrative activities, as well as in sales occupations. At the same time, he mentions that polarisation is heightened by the non-routine, non-repetitive activities, which in their turn can be abstract/cognitive and manual. If for the first higher-education is imperative, along with analytical and problem-solving skills, intuition, creativity and innovativeness, the manual activities are found in the field of "emotional intelligence", respectively requiring interpersonal communication skills, situational, verbal and visual adaptability. We would argue that considering the field in which these low-skilled non-routine occupations are found (home health care and related, social services, etc.), some requirements such as intuition, and swiftness are required if timely problems/situations need to be solved.[1]

Instead of conclusions

It is obvious that for remedying the worrying imbalances on the labour market displayed by increasing or (at best) stable unemployment rates, and by the destruction of jobs lacking the creation of new jobs institutional interventions are necessary. These should be directed to evaluating and updating the contractual forms that characterise the labour market, probably a first necessary step, considering the trends displayed by recent generations. Many youths tend to maximise their income opportunities by in point collaboration with start-ups and/or innovative companies and industries, and abandon increasingly more the success pattern of the past, that is employment with multinational corporations. This would imply, as well, the educational system and the cooperation of this system with the main stakeholders and reconfiguring social systems for more flexibility and easy adjustment to changes in the economic environment. This approach is necessary as the formula of in-point and limited time, even optional

[1] Author, David. "The Polarization of Job Opportunities in the U.S. Labor Market." *The Hamilton Project* and *The Center for American Progress*, April 2010, pp. 1-40.

collaborations, exceeds what traditional approaches qualify as contracts for determined periods of time, or part-time work. The collaboration with innovative creative companies, industries, and with start-ups provide to the young generations the framework for personal and professional development in a new, particularised and individualised context, ensuring the chance of the individual to maximise his/her incomes for the entire period of active life. Still, this type of economic behaviour bears also risks for the social insurance systems, in general for the taxation system and even for the individual at the time of retirement if not satisfactorily managed[1].

In this context, it is necessary to underpin the importance and relevance of innovation for the institutional and social field, fact also highlighted by the Europe 2020 Agenda. The current state-of-affairs indicates that the increased attention paid to economic growth, to competitiveness was largely detrimental to concerns in these fields. Managing a sustained dialogue between the decision factors of these two fields might ensure a favourable climate to achieving social investments, which would assist in better managing the human capital caught inevitably in the "conundrum" between the changing economy and the incapacity of the relevant institutions to reform accordingly considering the deep social effects.

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DISCRIMINATION IN THE ECONOMIC SENSE

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Abstract:

Through this article we want to analyze the phenomenon of discrimination in the labor market, both in the general case, and in particular case. Thus, action research is based on presenting a general framework of the labor market, in terms of theories of discrimination that the starting point for labor market training.

Next I wanted to highlight the main forms of discrimination existing in the labor market both in Romania and the European Union, based on studies conducted by specialized authorities such as National Council for Combating Discrimination, and the "Eurobarometer,,. I wanted to show how the Rroma are discriminated against, the elderly, and not only when seeking a job, or when they want to find a family and in other situations which we analyzed.

Keywords: *discrimination; gender differences; equal opportunities***.**

JEL Classification: *J71; J15.*

1. Introduction

The differences between whites and black people income, women and men, skilled or without skills, depend on the productivity of labor and another characteristic considered valuable in the market. Arrow's vision, are considered valuable market and other features that have nothing to do with labor productivity (Albu et al., 2005), namely: race, gender and ethnicity.

Definition of the most studied to date was that of Becker in 1957. Although many economists have made changes and have developed Becker's model, the most complete forms of the neoclassical model was made by Kenneth Arrow (Arrow, 1971).

In his study, Arrow focuses on the first features and defines discrimination linking the two groups of people, namely whites and blacks. Discrimination occurs when a trader (employer, purchaser) is willing to pay more to work only with white employees or acquire an asset from a vendor white. Arrow is convinced that discrimination has always existed, especially in terms of black workers, who have not had access only to certain jobs, which means that there is occupational segregation level and spatially. Workers of color did not have access only to certain jobs that were in some residential areas. In its analysis, Arrow considers two approaches, the rational choice and economic. The latter approach is, however, a smaller scope than the rational choice because markets are the main institution in which individuals act. In the theory of rational economic agents act effectively against the constraints of technology, preferences, beliefs, et al From the point of view of Arrow discrimination starts from the employer, the "preferences" discriminatory of some employees (especially those in positions of leadership) and therefore one can speak of a separation industry, and in this case not You can talk about a wage discrimination. However, if a worker is sometimes necessary color to work with a white employee in the same industry, will be wage discrimination between them. According to Arrow, discrimination based on tastes employee model can explain the separation between industries but not that of occupations. Also in its analysis considers the productivity differences between whites and blacks can be explained by family size, quality of education, culture, etc. Employers experience will make them to use observable feature race as a replacement for unobservable characteristics that are actually due to differences in productivity. In the model proposed by Arrow (Arrow, 1978) discriminatory preferences of employers are replaced by perceptions "on their reality" (Arrow, 1971) and are based on two assumptions: the employer does not have any concrete information on the productivity of each worker from experience; also the employer interact with two types of workers: few better prepared in terms of professional, others less training.

2. Discrimination based on age, ethnicity and gender

According to Milton Friedman discrimination made on the basis of age can be considered more special because it is not targeted a specific group of people, given that at some point in life everyone will reach the stage where you have old age (Burghelea et al., 2011).

From this point of view two categories of persons are affected by this type of discrimination: young people, i.e. newcomers in the labor market (Balan et al., 2012), and older people, aged over 50 years. Employees aged over 50 often feel quite discrimination when looking for a

job because they often link between efficiency and employee age. Such as a person gets older is no longer able to work at optimum capacity of work (Balan et al., 2011), in the sense that its productivity decreases and besides this, after 50 years the person is more prone to become ill, which would adversely affect the activity (Burghelea et al., 2014).

But apart from older people who are discriminated against, there are young people who may also be discriminated against when looking for a job since being fresh university graduates or not, have accumulated experience in a particular field (Burghelea, 2012) which is an impediment to getting a job.

The data collected in "Special Eurobarometer 296" in 2008 were processed by TNS CSOP and took into account age discrimination, but without making a distinction between discrimination and discrimination against young people older. Approximately 42% of the respondents surveyed in the EU said then that age discrimination is encountered "very frequently" and "frequently". At the opposite, 52% of respondents in EU believe that this type of discrimination is "rare" and "rarely encountered".

In Romania, only 26% of respondents consider age discrimination to be widespread, while only 4% of respondents believe that this type of discrimination is very common.

In 2009 was done "Special Eurobarometer 317", according to which 58% of EU respondents stated that that age discrimination is widespread.

Romanians opinion regarding age discrimination is approaching the European average, namely 55% of Romanian considering that this type of discrimination is widespread. Achieving a comparison between data „ Special Eurobarometer 296 " in 2008 and those of the "Special Eurobarometer 317" in 2009, it is noted that, at European level, the perception of discrimination on grounds of age as widespread increased 16% from 42% in 2008 to 58% in 2009 and 25% in Romania.

Romanians' attitudes and opinions regarding discrimination in terms of age are captured in the study conducted in 2010 by TOTEM Communication. From this point of view 2.9% of the respondents surveyed believe they have been discriminated against because of age. Also through "Social inclusion Barometer" carried out throughout 2010 found that for men aged over 40 years or under 25 years are the main impediments to finding a job in while for women, from 40 years upwards, age could be a problem. After much research was reached in 2011, concluded that the elderly are discriminated in 59%, while young people are discriminated against 19%.

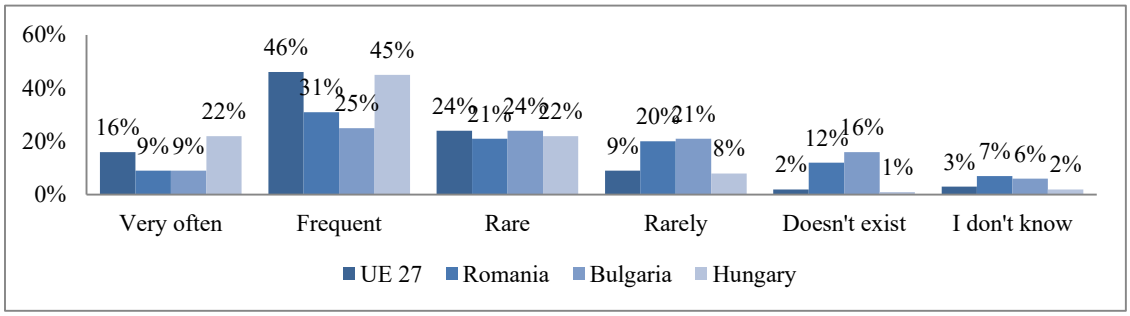
Regarding discrimination on grounds of ethnicity, the most disadvantaged members of the community are Rroma and this is due to the high level of crime that they promoted. Thus according to the study

conducted in 2008 by the National Council for Combating Discrimination, 71% of respondents stated that most Rroma violate laws, which explains the existence of discriminatory attitudes of the majority population towards this ethnic minority. A high percentage, 28% of respondents consider that Rroma should not be allowed to travel abroad, 23% believe that there should be special classes for Rroma children which can lead to segregation, while 13% say there should be no shops or pubs where Rroma should receive.

According to the data which are included in the report "Perceptions and attitudes on discrimination in Romania" conducted in 2012 by TNS CSOP shows that 61% of respondents consider that it is easier for young people under 25 to find a job compared to those aged over 55, while 28% think it is as easy for both categories to find a job.

Regarding belonging to a family, only 20% of respondents would agree that they or a family member to marry a person of Rroma ethnicity, while 28% would not agree to have a coworker an Rroma person. Social distance is formed between population and persons belonging to the Rroma are much higher than in those who belong to other nationalities or other religions.

In the European Union according to "Eurobarometer special 296" conducted by TNS CSOP in 2008, discrimination based on ethnic origin is the most common type of discrimination: 62% of interviewees stated that discrimination based on ethnic origin is "very common" and "frequency". In Romania, 40% of respondents perceive that discrimination based on ethnic origin is "very common" and "common" (fig. 1).

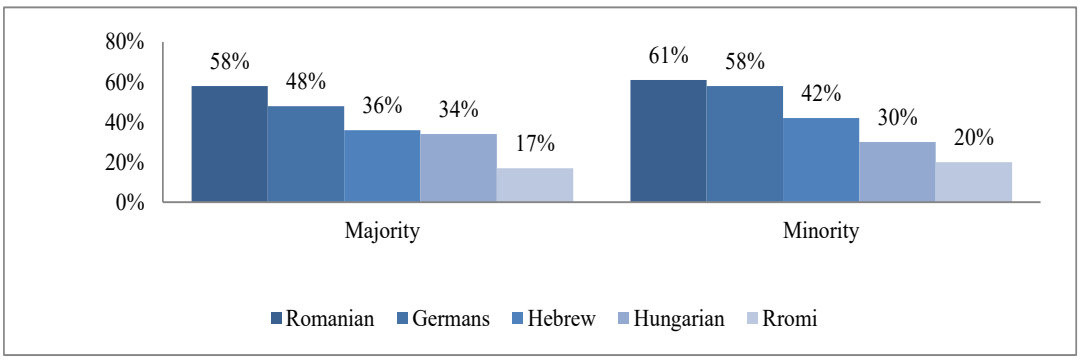


Source: author's calculus (*data from Revista Inovatia Sociala no. 1/2009 January-June)*

Fig. 1. Discrimination based on race in UE27, Romania, Bulgaria and Hungary

The study conducted by Insomar at the request of the National Council for Combating Discrimination in 2009 revealed that in excess of 58% of Rroma that is very difficult to get a job or be promoted than the general population. The proportion of persons who violate laws that Rroma grow in 2009 reaching 72% against 71% in 2008, while 48% of respondents believe that Rroma are a disgrace to Romania. The increase over the previous year is the percentage of people reporting that Rroma people should not be received in some public places such as restaurants or stores, the percentage increased from 13% to 20% in 2009.

The situation did not change even in 2010 as shown in "Research report on gender discrimination in the labor market", it was found that the labor market types of discrimination most frequently encountered on the labor market they are related to age and ethnicity. The same opinion is manifested in the study conducted by TOTEM Communication. Namely, that the Rroma are often the target of discriminatory attitudes and prejudices. The population supports rather than ethnic Germans and Hungarians Roma. Only 17% of respondents ethnic Romanian and 20% of respondents of other ethnic "they feel good" and "very good" about the Rroma, the difference up to 100% is the percentage of people who answered that they have no bad opinion "but none better" have a bad opinion" but also people who could not make statements (fig. no. 2).



Source: author's calculus (*data from Report TOTEM Communication, 2010*

Fig. 2. What is your opinion on…?

The study conducted in 2011 highlights the fact that the Rroma are discriminated in 50%, which means that Rroma people are still hard to accept population. At EU level was found according to the report "The situation of Rroma in 11 EU Member States - Survey results at a glance" conducted in 2012, that the Rroma are still the most discriminated minority.

According to the study conducted by TNS CSOP in 2012, revealed that the most discriminated social groups are represented by the Rroma, people with physical or mental disabilities and people living with HIV / AIDS.

Also all of the study conducted by TNS CSOP in 2012, showed that the Rroma are largely (32%) discriminated against in employment in a job. Also all of the study conducted by TNS CSOP in 2012 showed that the Rroma people are more difficult to employ. In 69% respondents believe that Romanians find it much easier to engage. Only 25% of respondents consider it as easy for both categories.

Currently women make up about 60% of all university graduates in the European Union, but the number of degrees in science and technology remains low. Why? Because women take fewer risks than men, but what is more important than this is that women lose quite a lot when you interrupt their careers due to pregnancy, which is one of the important factors that determines the position and earnings of women throughout their working lives. But men and interrupt their careers for women this disruption is a longer process. Both women and men are entitled to leave for child growth but in most cases, whether it is private or public, it is allocated more than women (Andronie et al., 2012).

In the EU, discrimination based on belonging to gender (male / female) is considered the rarest form of discrimination. Approximately 56% of respondents in the European Union are of the opinion that this type of discrimination occurs "rarely" in 36% and "very rare" in 20%. Also 36% of respondents in EU consider that this discrimination is “often” and “very common”, and in Romania the percentage is 25%.

The research report conducted in 2009, by the National Trade Union Bloc, the question: “Have you ever had problems because you ....?” Only 3.8% of those interviewed, has been declared problems at work because she is a woman.

Since the beginning of life were dedicated to women in household activities, though we have come a long way in the last twenty years many people still associate women with this type of activity, rather than acting in the labor market.

So women think of most often not worth investing (Burghelea et al., 2015) training and promotion and in many cases do not perceive real differences in treatment applied in the labor market (Balan et al., 2013). That may explain the answers provided by the interviewees regarding equal treatment in the workplace. Thus 68.48% of respondents believe that women and men are treated equally at work, while only 21.3% believe that there is equal treatment of the two categories.

The study conducted in 2011 highlights the fact that people are discriminated against female ratio of 27%, which is not an alarming percentage. At EU level through "Eurobarometer 75.1" in 2011, 44% of respondents would like that enterprises encourage the promotion of equality between women and men.

According to the latest study in 2012 conducted by TNS CSOP, respondents consider the 72% that those females are discriminated very little in hospitals or clinics, while only 4% of respondents believe that people females are discriminated against in employment in a job. When asked who finds a job easier, 64% of respondents claim it is as easy for both men and women.

3. Conclusions

In conclusion what should remember is that perception regarding discrimination is different each year and that in Romania in 2012 most affected by discrimination were groups of people belonging to the Rroma. These groups of people are discriminated against both in getting a job, and at school, in public places, etc.

According to the latest survey by TNS CSOP in Romania, 32% of respondents surveyed stated that representatives of the Rroma are largely discriminated against in employment in a job. Also 69% of respondents claim and that it is easier for the majority population, in our case the Romanians to obtain a job. Why would prefer not to hire them? They should because the image that they have created in their minds, but also because of the distrust that people felt when talking about Rroma representatives. This lack of confidence is based on several key factors that resulted from their improper conduct in various situations, such as: Rroma behavior abroad.

Another type of discrimination refers to gender discrimination. But this type of discrimination is widespread. Usually speaks salary difference between a man and a woman. But this difference is based on various reasons. Therefore, the difference in wages between men and women may occur because of different levels of productivity, mobility gap between women and men and the choices women make when choosing a job. Also it is desired that both women and men have equal chances for employment in any field and in any position.

In conclusion to reduce discrimination it requires understanding, opportunities and time.

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COMPETENCES AND SKILLS FOR STIMULATING PERFORMANCE PROFESSIONAL INSERTION OF YOUTHS

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Abstract

It is unanimously agreed on that technological progress exceeds as rate the possibilities of the economy and society to generate new employment opportunities for the labour force. If, in this equation we include also the rate at which education and in particular institutions dedicated to vocational/professional training can adjust their educational supply, it turns out that in the absence of some measures and policies dedicated not only to (re)skilling the working age labour force on all segments the highest difficulties are faced by the youths. Initiatives, programmes, and actions launched at European Union level or at national level have the aim of training youths in new competences, based on a new educational and vocational training model, a new model of lifelong learning, as they are all elements required for maintaining them on the labour market in the knowledge-based economy. The change speed of the knowledge-based economy has as effect the much swifter depreciation of skills. In order to meet efficiently these changes, the youths must be able to update permanently their competences.

The paper presents a brief analysis of some elements that characterise students' educational guidance and mobility, but also some competences and skills required for increasing the insertion degree of youths on the labour market and for social inclusion.

Key words: *youths, youths' insertion on labour market, competences, skills*

JEL Classification: *E24, J6, J13, J21, J23, J24*

Introduction

The issue of youths' professional insertion and social inclusion was present always on the political agendas but only in the last two decades it underwent a particular significance increase. Within the European context, from 1988 up to date specific programmes were operational such as "Youths for Europe" [1]. However, the first strategic document dedicated to youths, "The White Paper on Youths" was launched only in 2001. This document proposes the collaboration between member-states of the European Union regarding the prioritisation of some sectors, respectively participation, information, voluntary action, understanding, and learning about the youths.

For the period 2008-2018 the European action guidelines in the field of youths were reunited in the strategic document "EU Strategy for Youths – Investment and Empowering. A renewed open method of coordination to address youth challenges and opportunities" [2] aiming at the policies related to youths within the European Community in sectors such as education, labour force market insertion, social inclusion, participation to social life, entrepreneurship, etc.

The European Strategy for Youth has as essential objectives: i) access of youths to education, continuing training and labour market; ii) civic participation, social inclusion and solidarity.

The low participation of youths and vulnerable groups on the labour market was seen as one of the main challenges on short- and medium term also by the National Strategy regarding Social Protection and Social Inclusion 2015-2020.

At Romania's level, the "National Development Plan 2007-2013" (NDP) proposed by the Romanian Government ascertained the issue of youth integration on the labour market as one of the action priorities due to the alarming increase of the unemployment rate among them. The governmental document considers youth's integration on the labour market in close correlation with the capacity of the educational system to provide for relevant competences and skills adjusted to the market demands.

The impact of a generation suffering from the effects of exclusion will be felt in the political development of the society that will influence Europe in the following years.

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[1] European Commission White Paper, *A New Impetus for European Youth*, Brussels, 21.11.2001, COM(2001) 681 final, www.eur-lex.europa.eu

[2] An EU Strategy for Youth*: Investing and Empowering - A renewed open method of coordination to address youth challenges and opportunities, COM(2009)200*

1. Educational Guidance

The share of youths preparing to enter the labour market at this level is very high, more than 70% in the Czech Republic, Austria, and Slovakia. To a lesser extent, in Belgium, Germany, Italy, Luxembourg, the Netherlands, Romania, Slovenia, and Finland the highest share of total students in upper secondary education opts for vocational guidance. At the opposite pole, in Estonia, Latvia, Lithuania, Ireland, Greece, Hungary, and Portugal more than 60% of the students plan to pursue general programmes with the purpose of furthering their education. In Cyprus, more than 80% of the students are in this situation.

Youths, men and women alike, who graduated higher education training programmes, are mainly prepared to work in business and industry. At European level, 62% of the higher education graduates have studied social sciences, business and law, or technical curricula, respectively engineering, production or constructions.

The option of youths for pursuing a certain type of higher education differs from one country to the other. Thus, if at EU-27 level in 2013 most young individuals went towards social sciences, law or business, in Romania they opted mostly for higher education forms in social sciences, engineering, constructions, health, education, mathematics and computer sciences.

1.1. Students' mobility

The forum of experts regarding mobility[1], appointed by the European Commission stated: "*mobility for educational purposes should become a natural characteristic of being European and an opportunity provided to all youths in Europe*". Mobility for educational purposes is important for strengthening Europe's competitiveness, for creating a knowledge-based society and for deepening the sense of citizenship for the young generation.

The mobility among youths refers to young students in upper secondary and higher education, interns, apprentices, voluntary individuals, and participants to the vocational training programmes in or outside Europe. Statistical information regarding mobility in Europe are only partially harmonised and very often, these are provided only for tertiary education.

Thus, in 2012, the highest share of foreign students in the student population of a host country had Luxembourg, Cyprus, Austria, and Great Britain.

[1] *Employment and Social Developments in Europe 2011*, The Directorate-General for Employment, Social Affairs and Inclusion (DG EMPL), Luxembourg: Publications Office of the European Union, 2012, http://ec.europa.eu/ employment_social/

The weight of foreign students in total number of students for Romania is of 2.24 pp, and is one of the smallest shares from the EU member-states for which data are available.

Various programmes of the European Union support mobility for educational purposes within Europe. "Youth in Action" the successor of the "YOUTH" programme supports EU mobility and the education of young individuals, in particular of youths with low opportunities: each year, 100000 young individuals are involved in more than 6000 projects. 1.5 million youths and young workers have already participated to this programme. In the field of formal education, the Erasmus programme supported over 2 million students up to date.

For Romania, the new programme "Erasmus+" provides for scholarships for 120000 individuals, by 50% more than in the preceding programmes of the EU. In the year 2014, Romania received almost 52 million Euros within this programme, representing an increase by 11 pp. against the financing received in 2013 through the programmes "Youths in Action" and lifelong learning, the value of financing increasing annually up to the year 2020.

In the timeframe 2007-2013, the programme Erasmus+ , which replaced the programmes "Youth in Action" and lifelong learning, provided for scholarships for a number of about 80000 students, teachers, trainers and youth mentors in Romania.

2. Competences and skills for increasing the insertion degree of youths on the labour market and social inclusion

In the information society (based on knowledge), an important role in the life of each individual is played by key-competences, skills, knowledge or attitudes adequate, as the case may be, for each context. By acknowledging the value of these competences, valid for any individual, in 2006, the European Parliament and the European Council elaborated a defining instrument for integrating important competences in the infrastructure and strategy of each country within the European Union. This instrument is of particular importance in the process of lifelong learning[1], because on the labour market competences contribute both value added and satisfaction, labour motivation, adaptability and flexibility.

In the framework of the lifelong learning process, we define key-competences as the sum of knowledge, skills and attitudes adequate to the context, required in the personal development of labour force employment, but also for social inclusion. Key-competences prove to be an important

[1] EC Recommendation 2006/962/CE of the European Parliament and European Council from 18.12.2006 regarding key-competences for lifelong learning.

factor in labour productivity and quality, competitiveness, and employees' satisfaction and motivation.

Key-competences are required for all individuals, irrespective of age, that is:

- *youths concluding the period of compulsory education*: key-competences represent the backbone for the next life state, respectively adult life and entering on the labour market, and are also the basis for continuing education;
- *adults*: the process of developing and updating skills must continue during the entire life.

Obtaining key-competences is possible for all members of the society to an equal extent, but aims in particular disadvantaged groups from the viewpoint of the educational potential which includes individuals who are early school-leavers, disabled, long-term unemployed, migrants, etc., that is all individuals with diminished abilities. In 2008, the European Commission elaborated the report[1] that defines eight key-competences and in which are shown the skills, knowledge, and attitudes specific to each of them. The key-competences are:

- *Communication in the mother-tongue*, representing the skill of expressing and interpreting feelings, thoughts, deeds and opinions both orally and in written (listening, speaking, reading and writing) and natural linguistic communication adequate and creative in various social and cultural contexts;
- *Communication in foreign languages*, including also the skill of intercultural understanding, next to the communication skills, respectively the skill of listening, speaking, reading and writing;
- *Mathematical competence and basic competences regarding science and technology:* the mathematical competence is the capacity of using mathematical thinking for solving various actual problems of life, the emphasis being laid on activity and knowledge. The basic competences regarding science and technology refer to mastering, using, and applying knowledge and methodologies for explaining the surrounding world. These involve understanding the changes triggered by human activity and the responsibility of each individual as citizen;
- *Digital competence* triggered by the technological level of the information society and which involves obtaining basic skills regarding information and communication technology (ITC);
- *The learning to learn skill* is related to learning, to the individual's ability to pursue and organise his/her own learning processes either

[1] *Future skill needs in Europe*, Synthesis report, Cedefop, Luxembourg: Office for Official Publications of the European Communities, 2008, www.cedefop.europa.eu

individually or in groups, according to own needs, as well as the ability to be aware about methods and opportunities;

- *Social and civic competences*: represent the competences allowing to each individual to participate efficiently and constructively at the civic life (socially and professionally), respectively the individual, inter-individual, intercultural competences, and the specific behavioural ways. The participation of individuals to social and political life involves civic competences, especially knowledge about social and political concepts and structures (democracy, justice, equality, citizenship and civil rights), but also understanding codes of conduct and habits of the environments in which individuals live.
- *Initiative and entrepreneurship spirit* is the capacity of putting into practice ideas. This capacity denotes creativity, openness towards novelty, assuming risks, as well as the capacity of planning and managing ideas for achieving objectives. The individual aware of the context of his/her activity is apt to put to good use emerging opportunities. This is the background for obtaining more specialised skills for developing social or commercial activities.
- *Cultural awareness and expression* involves the cultural expression of ideas, emotions or experiences by channels such as music, theatre, literature or visual arts.

The key-competences are dependent on one another, the defining elements being creativity, initiative, critical thinking, problem solving, risk evaluation, and decision-making.

The reference framework for the education or training policies in Europe provided for by the key-competences is addressed to all decision factors providing educational and training services, to political decision makers, or to employers who must pursue that:

- basic education and training provide young individuals with key-competences at the minimum required level for the transition to adult life but also to the professional life, being at the same time also the backbone for future training;
- young disadvantaged individuals have support in the learning process so as to be able to achieve a reasonable educational potential for future insertion on the labour market;
- adults can complete their key-competences during their entire professional life, especially with respect to priority groups including individuals that require new competences;
- the specific infrastructure for continuing education and training of adults provides for measures to ensure access to education and training on the labour market and support depending on own needs and competences;

▪ links exist between policies in the field that ensure the coherence of the education and training supply for adults.

The adjustment and training skill[1] for future jobs are both essential for the European citizens so that enterprises can speed up their activity for the economic turnaround. To an equal extent, the adequate skills of the labour force are required for meeting the challenges on long-term, for competing on the world market and supporting innovation in ageing societies. Europe tends towards an economy where services and occupations in which knowledge and intensive skills are predominant. Yet, even for occupations much less demanded on the labour market, substantial work opportunities will be given when the elderly generations leave the labour market and need to be replaced. It is obvious that Europe needs to speed up investments in education and vocational training, and to encourage employers to make better use of the skills and talents of their personnel.

The need of different abilities, non-matching jobs and skills interact in complex ways.

Even though the European Union generates relatively more graduates in mathematics, sciences and technology (about 550000/year), as compared with the USA (370000) and Japan (240000), too few of them are involved in research careers. Efforts should be made by all educational system to motivate in particular young women to opt for scientific/technological disciplines in primary, secondary and higher education.

The outcomes of the recent international surveys PISA and PIAAC[2], underpin that there is a structural issue at the origins of the educational system's performance in Europe, with negative consequences both for economy, and for the entire society. An increasingly higher number of youths study within the higher education system, partially as result of national policies, and partially because they have chosen to continue studying because of the economic crisis. Nevertheless, there are too many graduates unemployed, or who are employed under their competence level, while the employers maintain they cannot identify individuals with the competences they need. Approaching these deficiencies requires corresponding policy measures and sustained and efficient investment in education and training at national level.

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[1] Skills supply and demand in Europe: medium-term forecast up to 2020, www.cedefop.europa.eu

[2] *PISA 2012: EU performance and first inferences regarding education and training policies in Europe*, www. ec.europa.eu/education/policy/.../pisa2012, and The Survey of Adult Skills *(PIAAC): Implications for education and training policies in Europe*, European Commission- Education and Training, 2013, http://ec.europa.eu/education/

Still, ensuring such investment is difficult under the conditions in which public resources are limited because in many member states diminishments take place currently with respect to the budgets allotted to education.

Another issue highlighted by the PIAAC survey refers to quality inconsistencies of education throughout the European Union territory. For instance, it was noticed that graduates of upper secondary education from certain member-states obtain the same outcomes, and even sometimes better than higher education graduates from other countries. In addition, nowadays, Europe faces a serious issue regarding the lacking correlation of competences, an issue that in several ways was aggravated by the economic crisis. The current situation of young individuals on the labour market and their difficulties in making the transition from school to professional life originate, especially, from the fact that formal education did not provide them with enough relevant competences. Several young individuals graduating school have low competence levels, and begin their professional life in the same way, that is a considerable handicap; this, in turn, makes it more difficult for them to recover later in life the probable existing gaps.

As compared with educational programmes that are developed entirely by teaching staff and applied in school, learning on the job helps young individuals in developing technical competences regarding modern methods of production and some non-technical competences, as well, such as teamwork, communication and negotiating by experiences in the real life. This enhances professional insertion capacity and applies both to young individuals pursuing vocational training, and to those that pursue a more markedly academic path.

For working young individuals, insufficient competences are those limiting them the capacity of professional insertion and, thus, contribute to structural and long-term unemployment. To these deficiencies is added also the fact that some of the member-states are faced with the issue of brain drain and that the most performing graduates and best skilled individuals make use of their competences elsewhere, the investments in these young people being thus inefficient.

The OECD programme for the international evaluation of students (PISA) is used in analysing the achievement stage of one of the reference objectives of the European cooperation programme in the field of education and vocational training (ET2020). This programme provides that by the year 2020 the weight of individuals aged 15 years with a low level of alphabetisation in reading, mathematics and sciences should be less than 15%. PISA 2012, the fifth round of the survey, with special emphasis on mathematic performance and PISA 2010 with emphasis on reading have highlighted progresses obtained in these fields but, because of the slow pace

of improvements, it is necessary that member-states continue their efforts in view of eliminating poor outcomes in education.

Conclusions

Starting with the programme "Youth for Europe" up to "Youth in Action" or "Youth on the Move" at EU level were launched and financed a series of programmes with the purpose of combining concrete actions of the member-states with the ones of the European Union pursuing to improve the situation of young labour force employment. To this context is circumscribed also the programme "Youth Guarantee" financed by the European Social Fund and which should be a component of employment policies in the member-states.

The mobility of youths on the labour market is another issue that is found on the agendas of the European Commission and of the enabled bodies of the member-states. Mobility with educational purposes is supported by the European Union through various programmes and initiatives so that youths can strengthen their future capacity of professional insertion and accumulate new professional competences. One of the most known programmes launched with this end is the *Erasmus programme*. The efficiency of this programme had as outcome, by the end of 2013 the launching of its new version: Erasmus Plus with a total budget of 14.7 billion euro for the period 2014-2020.

In Romania, only by the end of 2001 was made the first attempt of strategic planning in the field of youth as the "National Action Plan for Youth – Romania (PNAT-R) was elaborated.

The national strategy in the youth policy field for 2015-2020 adopted in January 2015 has as general objective the professional insertion of youth. The strategy is built around the following pillars: employment and entrepreneurship, formal, non-formal education and culture, transition from education to employment and correlations between systems, youths and ITC use, culture, health, sports and recreation.

Increasing the responsibility of youths by creating favourable conditions in which they can develop their skills, work and participate actively to the development of the society are all essential for sustainable economic and social development. Nevertheless, youth insertion on the labour market represents a huge challenge for the governments of many countries.

The increase in the insertion degree of youths on the labour market in the information society can be achieved by endowing them with the so-called key-competences (skills, knowledge, or adequate attitudes, as the case may be, for each context). Another complementary way is, as well, by adopting additional measures that would be efficient on short term and sustainable on long-term (measures for stimulating employment on labour market of the

youths; social protection measures required by the youths, and measures for improving youths' opportunities on the labour market).

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A BETTER MANAGEMENT OF DATA FOR FLEXIBLE ECONOMIC APPLICATIONS

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Abstract:

The paper presents the usage of data stored in different type of collections, like in memory databases. These types of databases offer faster responses, a better usage of memory and permits to the applications to be flexible and robust. For large volume of data, in memory databases permits fast responses in queries and for complex applications the aggregation of different information's required in reports and data analyses. A major benefit is that queries can be made to the necessary columns, analytical queries usually refers to a limited number of columns in a table. Using in Memory Database System has some advantage such as query only the necessary columns, sharing values intervals, compressing repetitive information, processing single instruction for a more values, conditions converted into filters, speed processing algorithms, and makes the applications more flexible and robust.

Keywords: *Framework, In Memory Database System, queries, open-source components, SQL, UML diagram, Web Applications.*

1. Introduction

Systems Database In-Memory are recommended when using complex applications, for which the large volumes of data in a relatively short period of time, the information will be aggregated by running reports of various types. IM purpose of the database is to meet the time requirements of the business, helping managers to make quick decisions in the context of any economic changes occur in the ear their field.

In theory, the choice of a particular system of in-memory databases should be made taking into account many factors, and not a decision that can only take one person. The manager should consult with IT specialists in order to find the best variant for their business purposes. The applications form in memory database already used by a particular company, whether

this company is unique or part of a group. Changing the core business application used is not very often, she often being required by the parent companies, for ease of data integration [2], [5].

2. The characteristics of data used in applications

A database column for each attribute of the transaction keeps a separate structure columns. This database is ideal for testing to quickly extract the necessary information that, when selected few columns, but poor when DML operations. If inserting or deleting a transaction, the entire structure columnar is changed. Until now, users were forced to choose between the format or the other, either send online processing efficiency, either analytical performance.
In Memory Database combines the best features of both formats, allowing information to be populated simultaneously in both types of memory. The new architecture dual-format memory not duplicates requirements. In-Memory format have adjusted the size of objects to be stored in the memory. The cache has been optimized to operate with a smaller capacity than the size of the database. Basically this dual-format architecture waits to increase by more than 20% memory requirements as a whole. It believes it is still a small price to performance that will be obtained [1], [4].

With this approach on the new type of memory, we found one copy of the table into memory, so no additional costs or timing problems. The database will still keep consistency transactions in respect of specific row or column format, as will retain the consistency between tables and indexes. The optimization process will direct the format column analytical applications and related operations to be processed transactions online to another format. This provides outstanding performance and data consistency for all workload without any modification of applications. In-Memory Database (IM) architecture uses the column. Aria IM is a static area in the SGA (System Global Area), whose size is controlled by parameter INMEMORY_SIZE. IM is the current size of the area visible in V $ SGA. Being a static area, any modification of this parameter will not take effect unless the court restarts. Nor it is controlled by AMM (Automatic Memory Management). The minimum size should be 100MB IM. IM area is divided into two areas:

- 1MB area used for storing the current column populated formatted data in memory;
- A 64K area used to store metadata about objects that are populated in IM database;

IM must be populated with data columns that are most important in terms of performance. If required lower performance, this translates into lower costs with components storage or flash disk. However, if a database is sufficiently low, all of its table's columns may be incorporated into the IM. This can be done by adding INMEMORY attribute tables and materialized view sites. However, if this attribute is available at 'tablespace', all new tables and materialized view sites will be available for storage in the columns default IM [3], [4].

Memory IM columns are populated by a set of processes running "in the background" (background), called "Worker Processes". The database is fully accessible during these processes are running. However, on the basis of pure IM date, it can't be accessed until populating all data in the memory, leading to significant availability problems. As the area called 'tablespace' disk is made of several extensions, IM and columns are made of several units IMCU (In-Memory Compression Units). Each "worker process' allocate its units and populates the corresponding data subset.

- Data is not sorted or ordered in a certain way while populating - is the order in which they appear in another format type.

- IM objects are populated in columns or in a prioritized list immediately after opening the database or after they are scanned for the first time. The order in which they are populated is controlled by key command PRIORITY.

Order prioritization has 7 levels, the default is NONE, and an object is populated only after it is scanned first. All items related to a certain level of prioritization must be populated before you start populating the objects with a lower level. Stocking order can be replaced if an object is scanned without priority, triggering its popular IM columns. Although almost all items are eligible to be populated in IM columns, there are a few restrictions:

- a user-owned objects that are stored in SYS 'SYSTEM or SYSAUX tablespace' sites;
- an indexed tables;
- a clustered tables ('clustered');
- a time LOB types ('large object bytes').

Also, smaller items are not populated 64KB memory, as they are considered lost in space unnecessarily. It is envisaged that the blocks IM space is partitioned into subspaces 1MB.

In general, compression is considered a mechanism to save space available. IM populated memory data are compressed using a new set of algorithms, which not only saves space but also bring improved performance. The mechanism allows queries to be executed directly on columns tablets. This means that all scanning and filtering operations will

be performed on smaller data volumes. Information is decompressed only when you need it in this way [2], [6].

- By default, the data is compressed using QUERY FOR HIGH option, targeting the best performing queries.
- Option FOR CAPACITY applies additional compression technique over QUERY FOR compression. This can have a significant impact on performance, as each entry must be decompressed before they can be applied to the WHERE clause.
- Option FOR CAPACITY apply a compression algorithm and sophisticated, but with some drawbacks to decompression.

Changing compression clause of a column with the ALTER TABLE command will determine restocking column with any other available data. Compression ratio between 2X and 20X may vary, depending on the option chosen, the type of date and contents of the table. Technical compression used may be different, even partitions in a single table or in different columns. For example, some columns can be optimized for faster scanning and others to save space. It can also be used to estimate a utility compression rate. The estimate is based on a sample of table data.

An analytical query usually refers only to some columns in a table. When data is populated in IM columns, they are automatically compressed, which means that data scanning and filtering is done on a smaller volume of data. In addition, database scanning IM is only necessary columns interrogation covered WHERE clause. By indexing IM is possible and the greatest reduction of data accessed. Indexing are automatically created and maintained in all columns IM base. The information is later found by the filter in SQL statements. History indexing procedure takes minimum and maximum values for each column in a memory IMCU (In-Memory Compression Units). Index column referenced in the WHERE clause is sought IMCU, being compared with the minimum and maximum values stored in the repository indexes. If it is found, scanning IMCU avoided that area.

For data that are not required to be scanned in columns IM procedure is used SIMD (Single Instruction Processing Multiple Data values) → instead of being evaluated data for each entry in the column, the procedure allows a data set to a column to be evaluated with a single CPU instruction. IM columnar storage format used was specially designed to maximize the number of entries that can be uploaded and evaluated in a single statement. The procedure SIMD lets you scan a billion times per second [1], [5].

For example, considering ORDERS_SALES table, we want to find total sales for the value cda_id 1000 column. The table was fully populated in a column IM. Polling begins scanning only column. The first 8 values are

loaded into the SIMD register and compared with the 1000, a single CPU instruction. The number of values to be coated varies depending on the type of data and the compressed memory used. Execution plan shows a new set of keys 'In Memory', indicating that the table displayed in the order line has been marked IN MEMORY. To confirm whether the column was used IM, use session-level statistics using performance view sites such as V $ MYSTAT V and V $ SESSTAT $ STATNAME. All statistics related to IM columns beginning with "IM". For example, "IM scan rows" → counting rows processed by scanning in-memory.

SQL statements linking multiple tables can be processed very efficiently IM architecture, using the advantage Bloom filters. A Bloom filter is a link between the tables converts a filter which can be applied as part of a larger scanning a table. It is effective to apply IM columnar format using SIMD processing. When two tables are linked, making it less usually is scanned and rows that match the WHERE clause are used to create an in-memory table stored in the PGA (Process Global Area). During creation table, a Bloom filter is also created. After applying the WHERE clause and the second table, the rows results will be compared with those before. If no match is found, then the rows will be downloaded.

Bloom filters are easy to find on the drawing: will appear in two places - the creation and application. Also, it can be created more Bloom filters with a single scan.

Example:

```
SELECT SUM(do.price * do.discount) income
FROM detailorders do, calendar c
WHERE do.data_cda = c.data
        AND do.discount BEETWEEN 9 AND 58
        AND c.data >= '01-JAN-2016';
```

The first step is actually running a full scan line 4 of table → Calendar. Bloom Filter (: BF0000) is created immediately after scanning is complete this table (line 3), and is applied as part of the scan IM DETAILORDERS table (lines 5 and 6).

Line 2 (HASH JOIN) occurs because it is possible that the filter applied to return a fake. Order confirms that all rows returned scan fit connecting condition.

The conditions used to create Bloom filter can be viewed with 'SYS_OP_BLOOM_FILTER'.

Analytical queries and filters require more than simple links. They require complex aggregations and summarizing. The process of optimization is divided into two phases.

Step 1:

1. Query tables needed to start scanning.
2. A new structure is created based on the results of these scans;
3. This structure is used to create an additional structure called In-Memory Accumulator. It is a multidimensional matrix created in PGA (Process Global Area) and to aggregate or group data when scanning table with aggregate data, rather than do later.
4. At the end of the first phase, temporary tables are created to keep the columns referenced in the SELECT statement.

Step 2:

5. The second part of the execution plan starts scanning table with aggregated data and application key vectors: for every entry in this table, corresponding connecting condition, the sales value will be added relating nearest cell In-Memory Accumulator. If the value already exists in that cell, the two values will be added together and the result is added to the cell.
6. Finally, the results table large temporary tables are added back (created as part of the scan size tables).

Columns can I improve the performance of all types of queries radical but very few databases are 'read only' - available only for reading. To be truly effective, columns IM should allow both massive data load and processing online transactions.

Bulk upload of data (bulk data) appear in data warehousing environments. Charging them is the following: the information entered is decomposed into smaller parts, each resulting part is converted to type once used, then built a columnar type structure to that date. These structures are used to form blocks of data and built-index keys. The new formatted blocks are written directly into the database [4], [6].

This method involves charging a COMMIT at the end; otherwise the data is not loaded. If something happens during the operation, the whole procedure will be canceled. Charging will be made in the above segment data blocks created with the index marking maximum number of data blocks used to date by an object or segment. Once charging is complete, the index is amended to include new blocks created. The new data will be visible to other SQL operations.

Before this step, IM columns have no reference whatsoever about any change in the database. Once surgery was completed, allowing referral differences IM columns of data, BYTES_NOT_POPULATED column in the view v $ IM_SEGMENTS. If the object has specified priority level, then the columns will be automatically populated in IM. Otherwise, next time

will be questioned, the process running in the background will trigger IM populate columns (the idea that there is free space in these columns).
It is recommended that large data tables to be partitioned. Null partition of the benefits is the ability to upload data quickly and with minimal impact on users. There is a natural move data when the partitions, but is updated a data dictionary.
Steps:

1- Creating an external file tables;
2- Using CTAS order to create a no partitioned tables, temporary;
3- Setting of the INMEMORY;
4- Populate the temporary table column architecture IM;
5- Changing table and changing a partition with temporary table;

Data modification operations (Data Manipulation Language DML operations) are executed in a row "buffer cache" in the same way they would be executed if there were no in-memory database. If the object that runs DML operations is populated in IM columns, the changes are reflected here as they arise. Memory "buffer cache" and the IM maintain consistency by using in-memory transactions Transaction Manager. All the logs are on the base table as before; no need any IM logging and columns.

For each IMCU (In-Memory Compression Units) columns IM, it is created and maintained a log of the transaction. When an order amending of a row in an object that is populated in IM columns then all entries that are marked as old IMCU and a copy of the new version is added to the log. IMCU original entries are not immediately replaced, to provide and maintain consistency in reading data compression. Any transaction executed on this object columns IM, started before the advent of DML changes should look at the original entries. Read columns IM consistency is managed using SCNs (System Change Numbers).
When a query is executed with a new SCN on an object, read all the entries for columns IMCU (In-Memory Compression Units), except old entries. They will be found either in the transaction log or in the table of "buffer cache".

The more entries there IMCU old (In-Memory Compression Units), the smoother will be scanned to. It is therefore recommended when restocking IMCU reach a threshold of aging. This threshold is determined by heuristic aging and takes into account the frequency with which it is accessed IMCU and the number of old ROWS of it. Obviously, more frequent restocking is needed for when IMCU is accessed frequently or has a high percentage of old times. Restocking is an operation executive processes running in the background. Information is available at all times and any changes that occur on occasions during restocking IMCU are automatically recorded [1], [5].

In addition to the standard algorithm restocking there and another algorithm that erases the old entries using a low-priority background process (IMCO In-Memory Coordinator). This process runs very often, minutes, and check if you have made any restocking. For example, attribute INMEMORY just amended clause priority for a new object. IMCO will also check if there are old entries in columns IM. If it finds something will trigger background processes to repopulate. Restocking frequency is limited by the parameter INMEMORY_TRICKLE_REPOPULATE_SERVERS_PERCENT. This parameter controls the maximum percentage of time that the background process may attend such restocking. If too many such processes are running is affected central processing unit (CPU).

Trying to maintain consistency in columns IM transactions varies according to: the rate of change, selected in-memory compression for a table, rows modified location, any type of operation that occurs on the database. Rows modified and are co-locate in the same block will incur a charge lower than the rows that are scattered randomly break. Examples of occasions co-locate in the same block are new rows inserted, the database that will group together or loaded data in a single operation. For tables that have a high rate of change is commended MEMCOMPRESS FOR DML procedure. Where possible it is recommended the use partitioning to locate the changes in a table. For example, partition can be used to locate information in a table by date, so most changes will be limited to information stored in the latest partition.

3. The usage of IM data in applications

Create a table or initialization attribute In Memory IN MEMORY:
a) Create a table in the In-Memory:

```
CREATE TABLE customers
(customer_name VARCHAR2(250),
fiscal_code  NUMBER,
country VARCHAR2(30)
)
INMEMORY;
```

b) Initialize IN MEMORY attribute to the desired tables from database classic:

ALTER TABLE customers INMEMRORY;

In Memory Populating effective zone occurs when the table is accessed first. As a result, initialization, you run a query on the table and then check the view v $ IM_SEGMENTS:

SELECT count(customer_name) FROM client GROUP BY client_id;

SELECT owner, segment, populate_status FROM v$im_segments;

All table columns or its partitions inherit the attributes In Memory.
After a few seconds of creating the table, will start a process that runs in the background, which will create a new record in a table Dictionary.

EXEC for('SELECT

ts#,file#,block#,obj#,dataobj#,ulevel,sublevel,ilevel,flags,best

sortcol,

tinsize,ctinsize,toutsize,cmpsize,uncmpsize,mtime,spare1,spar

e2,spare3,spare4 FROM compression$');

Verify this information refer to the table defined previously by running the command:

EXEC for ('SELECT object_name, object_type, owner from

dba_objects

WHERE data_object_id = 7548');

a) Removing a table in the IM is via the command:
ALTER TABLE customers NO INMMEMORY;

b) If it is desired that a particular column in a table to populate the in-memory, use the following command:

ALTER TABLE customers INMEMORY NO INMEMORY (customer_id);

In Memory Database System benefits:

- Query only the necessary columns → analytical queries usually refers to a limited number of columns in a table. IM databases minimizes labor and increase performance by accessing only those columns needed query and process them without having to uncompressed them;

- Sharing values intervals → Logic tables is to be divided into sections and minimum and maximum values of each column is maintained for each section of the table. This allows queries to skip those sections that contain values outside the range of the query necessary data;

- Compressing repetitive information → some columns have values that are repeated. For example, a column that stores each geographic region sales transactions will have the same information several times. In-Memory System efficiency is based on this information repetitive compression and query optimization processes so as to execute only once for each unique value in the column IM;

- Processing single instruction for a more values → microprocessors time SIMD processing multiple values in a single CPU cycle;

- Conditions converted into filters → due columnar format; IM links between tables are transformed into filters applied during data stairs;

- Speed processing algorithms used in aggregation IM systems allow high speed running analytical queries and reports that aggregate large volumes of data. Thus reach a rate of one billion transactions per second per CPU core. Analyzes that lasted hours or days before up to complete, now ends in a few seconds.

- Elimination of indexes → eliminating the need for indexes has eliminated the time spent optimization. Users are no longer limited to the number of queries you can launch.

- Isolation of analytical reports made to avoid overloading → OLTP processing analytical reports, by running them on different clusters.

- Data selection → IM system does not require that the entire database to be replicated in the IM. Users can choose only certain tables or partitions to be included in the IM. Not requiring outstanding performance data can be stored on disks, generating lower costs by storing them.

- no restrictions on database size → because queries can be run for any data, regardless of area or storage (memory, flash disk), IM system can be used with databases of any size.

- improving fault tolerance in the IM → data storage is replicated to multiple nodes of a cluster. If a node becomes inoperative, queries can use duplicate data from other nodes.

- improved performance, effortlessly updating databases → classical IM systems can be done without the user losing functionality or application to fear that there will be compatibility between the two databases. It is not necessary migration of applications, rewriting or redrawing.

- Easy deployment and management;

- Lower costs → possibility of reducing the storage space;

- Improved productivity because users do not have to wait long before running a report; database administrators spend less time on maintenance / optimization systems.

3. Conclusions

A good management of data implies the usage of flexible indicators that can be found in a different type of database such as In Database Memory System. This type of database makes a good usage of memory and offers faster responses for queries, but also it is possible to use SQL commands [1], [4]. In Memory Database System have benefits such as query only the necessary columns, sharing values intervals, compressing repetitive information, processing single instruction for a more values, speed processing algorithms used in aggregation IM systems allow high speed running analytical queries and reports that aggregate large volumes of data, elimination of indexes, isolation of analytical reports made to avoid overloading, data selection, no restrictions on database size, improved performance, effortlessly updating databases [2], [3]. Other advantages of using these types of data in enterprise applications are: easy deployment and management, lower costs and the possibility of reducing the storage space, but also improves productivity by reducing the running time of a report or query.

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THE RELATIONSHIP BETWEEN FOREIGN DIRECT INVESTMENT AND ECONOMIC GROWTH IN BULGARIA, ROMANIA AND CROATIA DURING THE RECENT ECONOMIC CRISIS[1]

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Abstract

The main aim of this research was to identify the relationship between economic growth and foreign direct investment (FDI) inflows during the recent global crisis in the last three countries that entered European Union (EU): Bulgaria, Romania and Croatia. The Bayesian regression models were used for this short period and the results indicated that during 2008-2015, in Bulgaria and Romania the increase in real GDP rate attracted more FDI, but these FDI did not generate economic growth. On the other hand, even if higher GDP attracted more FDI, in Croatia, FDI was an engine of economic growth since 2008.

Keywords: *FDI, economic growth, Bayesian models, crisis*

JEL Classification: *C51, C53*

1. Introduction

There are many studies that analyzed the relationship between FDI and economic growth in the context of sustainable development. The economic development is one of the pillars of sustainable development and for ensuring economic growth the government decision factors try to attract more FDI. The type of relationship between economic growth and FDI depends on the conditions in each country. There are empirical evidences that show that FDI did not really ensured economic growth.

This relationship between the two variables is analyzed in this study for Bulgaria, Romania and Croatia, that recently entered EU during the

[1] This article is dedicated to the 150th anniversary of the Romanian Academy.

recent economic crisis. It is an unstable period and it is important to analyze it in order to anticipate the foreign investors' behaviour in such periods.

The article continues with the presentation of a literature review and an empirical application is proposed for the three countries using Bayesian models. The last part of the study summarized the main conclusions.

2. Related literature

In general, it is considered that foreign direct investments are an engine of economic growth. FDI have the ability to influence the causes of economic growth: human resources, domestic investment and technological progress. Empirical Perspectives analyzed also inverse relationship between foreign direct investments and economic growth: in economies with rapid economic growth was also observed an increase in FDI because of the increased attractiveness of that economy to foreign investors. Several studies have been conducted in the literature regarding the relationship between FDI and economic growth: studies that have revealed that FDI positively affects economic growth through productivity, technology transfer and employment growth: Soto (2000), Alfaro et al. (2001), Liu et al. (2002), Hansen and Rand (2004), Nath (2005), and Somwaru Makki (2005); studies that have revealed that FDI is positively impacted by economic growth due to conditions in the host country: Bloomstrom et al (1994), De Mello (1997), Borensztein et al (1998), Bengo and Sanchez Robles (2003), Basu et al. (2003).

After 90's, several studies have appeared about the determinants of economic growth, given that the former communist countries still managed to attract greater FDI flows.

The country's efforts to attract FDI are made, according to Caves (1996), because of the potential positive effects on the states hosts economy level (reduce unemployment, access to foreign markets, optimal allocation of resources, stimulating trade, higher productivity, improving management skills , technology transfer, know how). It was created an attractive climate to potential investors, as given the positive effects of FDI (superior training of human resources, increasing competitiveness in the business environment, technology transfer). Most studies in the literature of the past 20 years have analyzed the effects of FDI on the host economy, but also the relationship of FDI inflows-economic growth only if the host country. In the neoclassical model it is considered that FDI is a factor of economic growth because it increases the volume of investments and their efficiency. In the endogenously model, FDI determines economic growth as the developed technologies are applied in the host country, as it is indicated by Borensztein et al. (1998).

Blomstrom (1994) finds that FDI have positive effects on economic growth, because they are related with the income levels. Under a certain amount of income, these positive effects are canceled. Only countries with a certain level of income have capacity to absorb new technologies and only they can have benefits from the positive effects of FDI. The quality of human resources greatly influences the ability to absorb new technologies. Quality employment has a big influence on how new technologies are mostly absorbed.

Markusen et al. (1999) studied the effects of FDI on domestic companies in their secondary sector. Foreign investors increased demand for domestic intermediate goods, which determines the integration of local firms in the intermediate goods sector. In this way, the prices are reduced and final goods manufacturers gain advantages.

Lipsey (2002) does not negate the positive effects of FDI on economic growth but indicates that there is still not a stable link between economic growth and size of FDI stock. The causality link between the two variables has been studied also by Chowdhury and Mavrotas (2005) for three emerging economy countries (Malaysia, Chile and Thailand). In Chile economic growth is attracting FDI. In contrast, in the other two countries relationship is bidirectional (FDI generates economic growth but consistent economic growth also attract more FDI). So there are specificities of each economy in influencing attracting FDI.

Although FDI positively affects growth of the host country, Bengoa and Sanchez-Robles (2003) found that there are necessary also liberalized market, economic stability and human capital prepared, so the positive impact of FDI to maintain long-term. The same idea is reinforced by Alfaro (2003), who considers that host countries need quite developed financial markets.

Studies in the literature provide conflicting results that cannot be generalized. Therefore, the assumption that FDI has a positive impact on economic growth is checked only for some specific countries or regions.

In Romania, Romania's business environment requires economic freedom, but also an acceptable tax for companies, including those affecting foreign investment. Must be provided suitable conditions to attract more foreign investors: protection against unlawful expropriation, non-discrimination, fair and equitable immediate appeal to international arbitration, the existence of an attractive fiscal environment in Romania. In recent decades, worldwide, countries have tried to create a climate favorable to foreign investors, these efforts being essential conditions for attracting as many possible foreign investors.

ISD provides economic development after market principles. For developing countries, such as Romania, FDI strengthens the economy and

integrate it into the global economy. By upgrading local economy as a result of FDI through the use of modern technology and equipment more efficient by raising quality standards that switch to a new type of economic growth. FDI efficiency is conditioned by their quality, but also by the beneficiary sectors. It was established that FDI is the most important factor that determines economic growth in countries like Malaysia, China, South Korea and Hong Kong.

Following the model of the international literature, and for Romania in special, it has studied the impact of foreign investments entrance on economic growth, but also on the economy as a whole. Some Romanian authors analyzed these topics, but the results are not relevant. The causes of irrelevance are multiple: the selected variables are not the most suitable; time series used have a small length and are not suitable for the development of traditional econometric models, as observed by Vintila and Zaharia (2012), the analysis is only descriptive Andrei (2012). From this perspective, Romanian literature has many poor points of view. Therefore it is considered that the issue deserves to be examined, especially to highlight the link between FDI and economic growth during the recent economic crisis. The data series are having in this case small length but it is useful utilisation of Bayesian econometric techniques that solves this problem.

Some studies for Romania emphasize the powerful effect of FDI on the economic environment. For example, Ulian et al. (2014) obtained that FDI had a strong positive impact on economic growth in Romania and Moldova in the period 2006-2012 based on a simple linear regression. Nistor (2012) showed that in the regions of Romania there is a positive correlation between GDP per inhabitant and FDI stocks. In the Northeast region, there is the smallest stock of FDI, and the lowest GDP per inhabitant. Based on other methods, Roman and Padureanu (2011) achieved a positive effect of FDI on economic growth in Romania. The authors used a neoclassical model with production function Cobb-Douglas type. Pelinescu and Radulescu (2009) showed that FDI had a positive and quite weak impact on economic growth during the first quarter: first quarter 2000- first quarter 2009. There are also indirect effects of FDI on GDP, such as higher labor productivity.

The growth rate of GDP is an indicator of the potential of a market. For foreign investors in the transition countries of Central and Eastern Europe, the growth rate of GDP is an important milestone, as observed by many authors, including Tondel (2001), Garibaldi et al. (2001), Addison and Heshmati (2003), Busse and Hefeker (2007), Dang (2009), Bock and Tuschke (2010). In Romania, the empirical evidence shows a weak influence on FDI growth. In studies for other countries, GDP has proved to be an important factor for attraction of FDI, as obtained Garibaldi et al.

(2002), Bevan and Estrin (2000), Globerman and Shapiro (2002), Bevan et al. (2004), Bénassy-Quéré et al. (2007), Bellak et al. (2007), Olofsdotter and Hansson (2010). Talking about Romania, Ludosean (2012) built a VAR model, getting on base of Granger causality test that FDI does not generate economic growth. On the other hand, the author has shown that a higher economic growth attract more foreign investors in Romania. The same conclusions about the relationship between FDI and GDP were obtained by Carp and Popa (2013) for Romania. Based on a VAR model for the period 1990-2011, authors obtained that GDP is the factor who determines FDI flows in Bulgaria and Romania.

Based on a simple linear regression model, Moraru (2013) explained the GDP based on FDI in 2003-2011. However, time series is very small and the result should be regarded with a big reserve.

3. Empirical relationship between FDI and economic growth

In this study, the relationship between real GDP rate and foreign direct investment (FDI) inflows (% of GDP) is analyzed for the three new members of European Union (Bulgaria, Romania and Croatia). Romania and Bulgaria entered EU in 2007, while Croatia is member of EU since 2013. The host countries are interested in attracting FDI, because these investments might bring economic growth, which is essential in the context of sustainable development. On the other hand, there are some countries for which the increase in GDP will attract more FDI. The specific causality between the two variables depends on the conditions in each country. Our objective is to check if all the analyzed countries have the same type of causality, knowing that these are the last countries that entered in EU. The type of relationship between economic growth and FDI was analyzed only in since the beginning of the crisis (since 2008) until 2015. The short set of data makes unsuitable the models of Frequentist Econometrics. Therefore, some linear Bayesian regression models were estimated for each country over the period 2008-2015. The effects of global crisis were met in these countries since 2009. The estimation algorithm for Bayesian models is Random-walk Metropolis-Hasting, the estimations being made in Stata 14. The prior distributions for coefficients are normal of average 0 and variance 1. A normal likelihood function is considered of variance equalled to 1. A number of 12 500 MCMC iterations is considered and 2 500 iterations for burn-in. We have self-conjugated prior, the posterior distribution being also normal. The variables will be denoted with growth and FDI.

Table 1. A linear Bayesian model for explaining real GDP rate in Bulgaria

Growth	Mean	Standard deviation	Equal-tailed (95% confidence interval)	
FDI	-0.0131336	0.1383948	-2.006748	1.947571
Constant	-0.0297814	0.3502097	-1.95248	1.939772

In Bulgaria, the FDI had a negative impact on economic growth during the analyzed period. An increase in FDI inflows (as % from GDP) with one percentage point determined a decrease in real GDP rate with 0.013 percentage points. It is a low impact of FDI on economic growth, but it is clearly stated that FDI was not an engine of economic growth in Bulgaria during the crisis period.

Table 2. A linear Bayesian model for explaining FDI (% of GDP) in Bulgaria

FDI	Mean	Standard deviation	Equal-tailed (95% confidence interval)	
Growth	1.070142	0.1383948	0.804351	1.34888
Constant	4.235378	0.3502097	3.549533	4.91267

In Bulgaria, the GDP increase had a positive impact on FDI during 2008-2015. An increase in real GDP rate with one percent increased, in average, the FDI with 1.07 percentage points.

Table 3. A linear Bayesian model for explaining real GDP rate in Romania

Growth	Mean	Standard deviation	Equal-tailed (95% confidence interval)	
FDI	-0.022353	1.031667	-1.977393	2.011686
constant	-0.0015886	1.04477	-2.058073	1.983908

In Romania, like in Bulgaria, it seems that the increase in FDI inflows did not positively affected economic growth. Real GDP rate decreased with 0.02 percentage points when FDI inflows increased with one percentage points during 2008-2015.

Table 4. A linear Bayesian model for explaining FDI (% of GDP) in Romania

FDI	Mean	Standard deviation	Equal-tailed (95% confidence interval)

growth	0.1950518	0.0874561	0.0212291	0.3599137
constant	1.966591	0.3717643	1.2389919	2.704845

For Romania, the increase in real GDP rate positively influenced the FDI attraction during the crisis. When the real FDP rate increased with one percentage point, the FDI as percent from GDP increased with 0.19 percentage points.

Table 5. A linear Bayesian model for explaining real GDP rate in Croatia

growth	Mean	Standard deviation	Equal-tailed (95% confidence interval)	
FDI	0.1424588	0.1336955	-0.1250861	0.3993892
Constant	-1.663491	0.6209098	-2.876039	-0.4375972

In Croatia, FDI inflows had a positive impact on economic growth in crisis period since 2008. The real GDP rate increased with 0.14 percentage points when FDI inflows as percentage from GDP grew with one percentage point.

Table 6. A linear Bayesian model for explaining FDI (% of GDP) in Croatia

FDI	Mean	Standard deviation	Equal-tailed (95% confidence interval)	
growth	0.0202954	0.9848089	-2.027121	1.936545
Constant	0.017228	0.9937951	-1.916654	2.009962

On the other hand, it seems that a higher GDP attracted more FDI in Croatia. The FDI inflows grew with 0.02 percentage points when real GDP rate increased with one percentage point.

4. Conclusions

The empirical relationship between economic growth and FDI has been previously studied in various researches, but a special attention was not attributed to this relation in the period of recent crisis. Therefore, this study brings as novelty the analysis of the relationship between FDI and real GDP rate since the recent crisis beginning in 2008 for the last entered members of EU.

The results indicated that in Bulgaria and Romania the increase in GDP attracts more FDI. So, the foreign investors are interested in investing in these host-countries when economic growth is registered during economic crisis. On the other hand, for these countries during the economic crisis, FDI did not generated economic growth. A different situation was observed in Croatia who entered EU in 2013. The increase in GDP attracted

more investors here, but the FDI increase was an engine of economic growth. Indeed, this successful objective followed by Croatia contributed to the country's receiving in the EU.

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ENVIRONMENTAL MANAGEMENT AND COMPANIES' SUSTAINABLE DEVELOPMENT

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Abstract

Since the beginning of 2008 the world faced multiple crises (fuel, food and financial). As a reaction to the negative effects of economic development on the environment, but also because of the multiple crises, the international community began to seek solutions to support a sustainable economy and society. One of the solutions is the implementation of the environmental management.
The present paper presents the core concepts regarding the environmental management and the organization benefits by implementing the environmental management systems, benefits which have a direct influence upon the companies sustainable development of the.

Keywords: *sustainable development, environmental management, environmental management systems.*

JEL classification: *Q00, Q01, Q56.*

1. Introduction

Ecological threats at the global level put under question existence of humanity. Humanity is currently facing an extraordinary pressure generated by the resource exhaustion, temperatures increasing, extreme weather, glaciers melting, sea-level rise, death of coral reefs, the disappearance of the species, of forests, erosion, soil degradation of pastures, extending desserts, excessive urbanization, waste management, phenomena with direct repercussions on management of all economic organizations [Soros, 2002].

In the current context, the economic, social and environmental challenges deeply transform our world. In the next decade they will put increasingly more questioning the current patterns of production, consumption, business and use of natural resources and common goods; the

imperative of democracy will be basic human needs and ensure the health of the planet, the supreme global asset

Globalization of ecological effects it is obvious, pollution knows no boundaries. The example of atmosphere pollution globally clearly shows that any attempt of a state to keep the environment clean, is doomed to failure if other states are also not prepared to make an effort in this regard. It is important to emphasize that not only globalization have impact on the environment, but also the environment has an impact on the rhythm, direction and quality of globalization. Both the domestic and foreign literature and research converge to a negative effect of business globalization and internationalization of companies on the environment. In regard with the globalization of ecological effects, Peter Drucker in - a work published in 1999 said that the emergence of transnational ecology is the greatest novelty in the world economy [Druker, 1999]

In essence, concern for environmental issues took as its starting point the awareness of the gravity phenomena and environmental protection need. The 70 years is a milestone in this regard, through the emergence of environmental policies. The development of Agenda 21 [UN, 1992] is the cornerstone of environmental management, the first official framework which encourages governments and other bodies to develop environmental management.

Since the beginning of 2008 the world faced multiple crises (fuel, food and financial). As a reaction to the negative effects of economic development on the environment, but also because of the financial crisis, the international community began to seek solutions to support a sustainable economy and society. The original concept of sustainable development was completed with the requirement to reduce adverse environmental impacts in order to obtain more goods and services with less consumption of natural capital, i.e. eco-efficiency and design processes that do not produce any waste, i.e. eco – effectiveness. Promotion of the eco-efficiency and eco-effectiveness led to the emergence of a new type of economy - Green Economy (also called sustainable economy). This involves reconfiguring businesses and infrastructure to achieve a better return on capital investments natural, human and economic, while reducing emissions of greenhouse gas emissions, extracting and using fewer natural resources, creating less waste and reducing social disparities. A green economy is one that results in improved human wellbeing and social equity, while significantly reducing environmental risks and ecological deficit; is a model of economic development or an economy based on sustainable development.

Today, a decade later, the world is facing environmental pressures and therefore new challenges on a scale, speed and interdependence that are unprecedented. Although environmental issues of local, regional and global

are old enough, experts say that "contemporary forms of environmental degradation are more global than ever in human history and involve the most significant set of risks and threats to human life". [Held, 2004]

Considering all the mentioned above aspects, it is clear that firms operating at national and international markets, will not survive competitiveness without effective management and strict control of the organization's environmental issues.

2. Environmental management

Environmental management is the management of those activities of an organization that have or may have an effect the environment. Any activity an organization has or may have effects upon the environment: consumption of natural resources (water, energy and non-renewable raw materials), emissions of pollutants (solid, liquid, gaseous), waste production, etc. The objective is to preserve natural resources, limiting emissions and risks for the environment and ensuring occupational safety. These interactions, direct or indirect, shall be exercised at all stages of the provided product or services life cycle, especially during the production process and so the management have to take into account:

- extraction, processing and transport of raw materials;
- production;
- product distribution;
- utilization of the product;
- product end of life.

An important part of the environmental management is the environmental management system. According to the UN definition, environmental management systems (EMS) are a tool for identifying, resolving, correction and control of environmental activities in an organization that can be implemented in different ways from one entity correlated with specific conditions. It is a flexible tool that can be implemented in organizations of any size, sector or area of activity.

EMS is "that aspect of an organization's overall management structure that addresses the immediate and long-term impact of its products, services, and processes on the environment" [Hemenway, 1995]. An environment management system has as main objective to help a company with:

- identifying and controlling the environmental aspects, the impacts and the relevant risks within the organization;
- meeting the objectives and targets of the environmental policy, including the compliance with environmental legislation;

- defining a set of basic principles in order to guide future activities targeting the environmental responsibilities;
- establishing increases in the company's environmental performance, based on a cost-benefit balance;
- determining the resources necessary to achieve goals;
- defining the responsibilities, the authority and the procedures to ensure the involvement of each employee of the company in order to reduce the negative environmental impacts;
- implementing an efficient system of communication within the company and ensuring the staff training.

Environmental management systems can be designed and certified using two different standards, complementary to each other: the international standard ISO 14001 and EMAS.

The need to introduce environmental certification systems occurred in the early 90s and was inspired by the success of quality assurance systems in the 80s, which helped improve production and increase competitiveness of organizations. At European level, through the introduction of the Fifth Environmental Action Program of the European Union in the period 1993 – 2000, it were set out innovative principles able to create an impact not only on how to set the new environmental legislation, but also on the communication with the public. Of these, those that have created environmental certification schemes, respond to demands for:

- Establish non-conflict relationships with companies, asking them a voluntary behavior oriented to environmental protection;
- Activating public participation, identifying effective environment training and information tools.

In the first case, it was intended to create conditions for enterprises to strengthen their competitiveness in the market, not only by offering products at low cost, but also technologies, production processes and products compatible with environmental protection. In the second case it was intended to promote and develop the society involvement in decision-making on environmental protection and public health, increasing awareness of the social partners on the role and contribution they can give to positively influence sustainable development.

These principles have resulted in two systems of environmental certification: EMAS and Ecolabel governed by EC Regulations. Both regulations (recently modified as part of measures for sustainable production and consumption, adopted at Community level) and have set the objective of promoting economic development in harmony with the environment, for this purpose, aiming to:

- influence the direct liability of producers goods and services, as protagonists of environmental conditions improvement;
- establish of a systematic informing process of the stakeholders (government, citizens, consumers, NGOs, etc.) regarding the achieved improvements or the improvements under the implementation;
- introduce elements of vision for organizations with exemplary environmental practices.

The first five years of implementing the EMAS and Ecolabel Regulations in Europe demonstrated their strong value as a means of prevention, environmental improvement and communication, so that the EU's Sixth Action Program (2001-2006) invited the Member States to develop strategies for integrating voluntary instruments available (EMAS, ECOLABEL, ISO 14001 etc) with new tools such as:

– Green public procurements, for the spreading of the "green" procurement policy;

– Environmental labeling to improve environmental information between companies and to consumers;

– Lifecycle assessment studies as a systematic basis for knowing the environmental impact of products and services throughout their lifecycle.

In 2013 the EU has adopted the 7th Environment Action Programme which will guide EU policy action on environment and climate for the next seven years. 7th Environment Action Programme has set the following priority objectives [EU, 2013]:

- to protect, conserve and enhance the Union’s natural capital;to turn the Union into a resource-efficient, green and competitive low-carbon economy;
- to safeguard the Union’s citizens from environment-related pressures and risks to health and well-being;
- to maximize the benefits of Union environment legislation by improving implementation;
- to improve the knowledge and evidence base for Union environment policy;
- to secure investment for environment and climate policy and address environmental externalities;
- to improve environmental integration and policy coherence;
- to enhance the sustainability of the Union’s cities;to increase the Union’s effectiveness in addressing international environmental and climate-related challenges

Beside the EMAS, other widespread environmental standard is ISO 14001, officially published in September 1996 [Alberti et al., 2000], which provides guidance for the development of performance on the systematization of environmental management.

ISO 14001 is based on three principles: pollution prevention, continuous improvement and voluntary [Bansal & Hunter, 2003]. ISO 14001 aims to create sustainable improvements in participating companies' practices by implementing and integrating appropriate environmental management tools. After publication, several empirical studies have indicated that the implementation of a system of environmental management helps companies to reduce inputs, use of raw materials and operational security [Chavan, 2005] which resulting in operational benefits, substantial managerial and competitive adopter organizations [Corbett and Klassen, 2006].

3. Benefits of the EMS implementing

By implementing an EMS the organizations can achieve a perfect monitoring of environmental legislation, with greater legal certainty and providing evidence of compliance with laws and regulations in force. The most important potential benefits of an environmental management system are:

- demonstrating to customers the appropriate care, diligence and accountability in the management of environmental issues;
- saving raw materials and energy;
- improving the organization image through the environmental certification image. Environmental certification image effect that does not necessarily translate into an increase in sales, but contribute to improving the image. One study regarding ISO 14000 points out that 96% of the certified companies were heavily promoted outside after certification;
- obtaining facilities from banks in terms of access to credit. In this regard, many banks launched banking products dedicated support of environmental certification, which helps companies reduce the risks and challenges of a increasingly competitive market, which rewards companies that are able to anticipate future requirements and convert risks opportunities.
- providing continuous monitoring of compliance with legislation and this can lead to a facilitation of relations with public authorities, materialized in the possibility of granting incentives, simplifying the licensing process, simplification of inspections and self-certification forms of recognition.
- granting additional scores within some European and regional funding schemes for organizations with an environmental management system. •
- providing incentives for insurance premiums. In fact, insurance companies assess their client's positive certification, ensuring greater

availability of useful information for an accurate determination of conditions for the conclusion policies, and guarantee the continuous monitoring of the environmental impact of activities

Regarding the internal benefits it can be distinguished benefits related by optimizing of the use of resources and benefits viewed as costs or avoided costs, if it is adopted an eco- compatible behavior, in particular: – costs for non -compliance with regulations, fines, penalties, insurance costs, legal costs and legal procedures:

–costs associated with accidental events : damage restoration , transfers;

–costs associated with relations with suppliers whose services management causes problems (waste , water , etc.).

–costs associated with the lack of damages preventing to persons outside the city (damages for bodily injury or property damage , insurance costs).

A study conducted by DEFRA, UK Environment Ministry, in 2011, showed the following 10 basic benefits of the proper implementation of environmental management systems and periodic evaluation of performance in environmental management:

1) 53% of companies made a clear link between environmental performances and increase their sales, some reporting increases of up to 15% in sales as a direct consequence of better environmental performance;

2) 42% of companies have benefited from better positioning in the market as a direct result of improved environmental performance;

3) 51% of companies recorded substantial savings in resource use, energy consumption and water, in direct correlation with the adoption of voluntary environmental management initiatives;

4) 65% of companies reported a better image in relationship with customers and the general public;

5) 75% of companies reported that a better environmental performance have helped them in attracting new customers or to qualify for new business opportunities;

6) 65% of companies reported direct financial savings from the first year, following the establishment of appropriate targets and indicators relevant environmental performance;

7) 55% of companies have improved their situation towards compliance with environmental legislation, and 84% have substantially reduced the number of legal situations of non-compliance;

8) 98% of companies have substantially improved ability to prevent and tackle emergencies with environmental impact;

9) 35% of companies have been helped by the voluntary initiatives to improve environmental performance in pass more easily through the economic crisis;

10) 79% of companies reported a substantial reduction in footprint emissions of greenhouse gases since the first year they have set a target in this regard, and the average reduction in the second year was 59% higher than in the first year.

4. Conclusions

There are many reasons why an organization should take a strategic approach to improving its environmental performance. By implementing environmental management systems the organizations can obtain a series of benefits, which has an direct effect upon the sustainable development of the company: increase leadership involvement and engagement of employees, improve company reputation and the confidence of stakeholders through strategic communication, achieve strategic business aims by incorporating environmental issues into business management, provide a competitive and financial advantage through improved efficiencies and reduced costs, encourage better environmental performance of suppliers by integrating them into the organization's business systems.

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This paper has been developed within the period of sustainability of the project entitled ***"Horizon 2020 - Doctoral and Postdoctoral Studies: Promoting the National Interest through Excellence, Competitiveness and Responsibility in the Field of Romanian Fundamental and Applied Scientific Research",*** contract number POSDRU/159/1.5/S/140106. This project is co-financed by European Social Fund through Sectoral Operational Programme for Human Resources Development 2007-2013. **Investing in people!**

INTELLECTUAL CAPITAL, AN INTANGIBLE ITEM NOT REFLECTED IN THE FINANCIAL STATEMENTS OF THE ORGANIZATIONAL STRUCTURE

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Abstract:

Intellectual capital, intangible assets and knowledge creation are strongly connected concepts of knowledge management phenomenon, which until now were considered to be parallel. This controversy has triggered various approaches rather vague definitions for knowledge management.

In the contemporary society enterprises, knowledge is a new category of resources, more complex, giving rise to impediments to the assessment, however, making a comparison with other categories of resources, knowledge is much more efficient. This has a strong impact on all categories of resources triggering changes in quantitative, qualitative and structural.

The roots of the concept of intellectual capital are very deep.

The human factor, qualified labor force and its rational use are the vital elements of adaptation to the effects of the transformation of science into direct production force the pace and scale of economic development and better use of natural resources [7].

Key words: *Intellectual capital, financial situation, the knowledge society, principles, importance.*

JEL Classification: *O15, M41, Q01, M31*.

1. The definition, the content and the importance of the intellectual capital

The multitude of definitions and approaches of this concept on the one hand shows their importance, but also the difficulty to express something as "untouchable".

This concept was associated with a dynamic system of intangible resources and activities that underlie the sustainable competitive advantage of organizations.

For the first time, the economist John Kenneth Galbraith developed the term intellectual capital in 1969, while Peter Drucker spoke about knowledge workers.

Intellectual capital is a vague concept, somewhat confusing, often difficult to identify and assess its boundaries are not well defined, and interact more often with the term human capital. *"It is intellectual material that consists of knowledge, information, intellectual property, experience that can be used to create wealth"* [10]. It represents everything that each employee knows a company and can be used in the idea of developing its competitive capacity. In accounting, often it is confused with intangibles, even if this is only a part of it [11].

2. The major components of intellectual capital

Through an overview we could expose the major components of intellectual capital to Table 1.

Tabel no. 1 *The intellectual capital and it`s major components*

<table>
<tr><th>Potential asset value</th><th colspan="2">Intangible value</th></tr>
<tr><th>Human Capital</th><th colspan="2">Intellectual activity</th></tr>
<tr><td rowspan="2">- Experience
- Know-how
- Abilities
- Creativity</td><td>- Programmes
- Inventions
- Data base</td><td>- Metodologii
- Documents
- Drawings, designs</td></tr>
<tr><td colspan="2">Intellectual property
- Patents, copyrights
- Trademarks, trade secrets</td></tr>
</table>

Source: Anghel, 2008, page 76

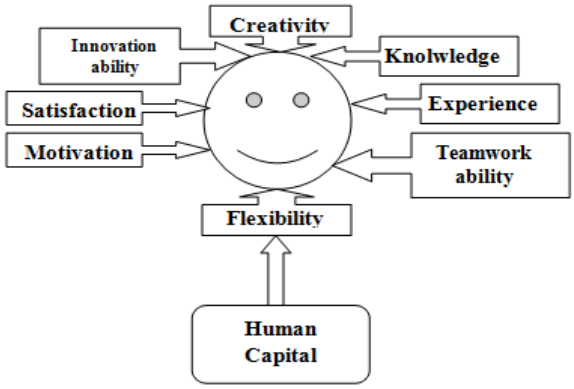
From the studies in the composition of the intellectual capital are highlighted the following potential value knowledge: customer list; benefit from contracts; intellectual contribution of employees and management processes. Given by it`s purpose the intellectual capital can be structured *in human capital*, *relational capital* and *structural-organizational*.

Human capital structure shown in Figure 1, exposure records identify certain specific indices of human capital *(see table no. 2.)*.

In some specialized books is the idea that stated, intellectual capital can be considered an abstract concept, but the economy is defined as *"an*

estimate of a person's ability to generate income through labor". It can be considered the starting point when we want a company's success.

Summarizing we could mention that in any economic entity, the intellectual capital consists of **human capital** *(know-how of its employees)* and **structural capital** *(organization and intellectual property).*



Source: Personal processing

Figure 1. *Representing human capital structure*

Bontis *(1998)* defines intangible resources as factors other than financial assets and physical processes that contribute to generating value of a company and its control [1]. Constitute a collection of resources related intangible flows.

Tabel no. 2. *Evidence of human capital indices*

Human capital indices	Caracteristics
Composition of employees	Strategic management Qualities employees Learning ability of employees Employee training efficiency The ability of employees to participate in policy and conduct of business management Training the best technicians and managers
The employees' attitude	Identification of corporate values Satisfaction The rate of turnover per employee The average age of employees
The employees' creativity	The genius of employees Revenue generated by the brilliant ideas of employees

Source: Yazdi, Chenari, 2013, page 4183

Intellectual capital is considered a source *("hidden" - rather than being capitalized)* of intangible assets, which does not appear often in the balance [5]. It is knowledge or science that can be converted into profit or benefit [6]. Corporate members represent all knowledge and translating this knowledge into practice through trademarks, patents and other brands [9].

3. Exposure of the ten principles on the management of intellectual capital raised by Thomas Stewart *(1997)* [10]

The 10 principles formulated by Thomas Stewart (1997), with direct reference to the management of intellectual capital can be listed as [10], [8]*:*

P1: Any economic entity has no property rights and no human capital on the relationship, but they can handle and can achieve added value through use.

P2: For any economic entity to be able to create and develop human capital, it should support teamwork, collective learning and socialization form.

P3: Mainly, the *"wealth"* of any organization is based on the skills and abilities of employees. Human capital can be managed and developed if the company identifies its permanent skilled staff and investing in it, so as not to be forced to make capital expenditure for other employees.

P4: Structural capital is one of the components of intellectual capital that is more manageable, but should be pursued as the constituents of interest to customers.

P5: Vision *"accumulate knowledge in case"* should be changed *to "must have information that our customers need and to provide timely"*.

P6: Information and knowledge are the ones who should replace physical and financial assets expensive.

P7: Knowledge creates innovative solutions in areas where ir were offered solutions template there can yield high profits.

P8: Any economic entity should reconsider its field of activity in which it operates in the idea of identifying crucial information.

P9: Managers should focus on the flow of information within the company.

P10: Together, human capital, structural and relational create permanent value. In this context, separate investments in people, systems or clients become insufficient.

4. Case Study on intellectual capital as intangible item not reflected in the financial statements of organizational structures

Intellectual capital is considered the most valuable asset and reflects the value of any enterprise. The value of *"intangible"* gives a company the opportunity to be different to the competitors, and proper management of

intellectual capital can allow any company to eliminate opponents. In order to withstand the economic competition with the development of knowledge-based economy, there was the need to have an enterprise-wide intellectual capital. The latter exchanged between half and two thirds of the market value corporate both sides *"old"* and *"new economy"* of the enterprise [2].

At the european companies there are large differences in the measurement and presentation of intangible assets. According to some studies, it was observed that in the past decade in Northern Europe have made considerable progress in the production of information and intellectual capital reporting, which prompted many companies to realize the need for such action.

However, management and reporting of intellectual capital is very different and unique for each company separately. Because there is no universally valid pattern, each company should develop its own system for managing and reporting.

The reason underlying the use of such approaches is to further ensure the comparability of results with those of other companies, like financial statements *(traditional)*. Even if at first the process will be a fairly problematic, want to change the current situation where information about intangibles are poor, being based conceptualizations incomplete and heterogeneous situation where there will be information homogeneous, reliable, verifiable and comparable on the determinants of intangibles in the value of companies [11].

The impediment recognition of their value in a uniform accounting system at european or global level currently stands difficulty in presenting consolidated financial statements. Although participants in economic life is the desire to create a uniform accounting system, the comparability of the information at any time, now this is impossible [3].

Because is not highlighted separately in the financial statements, as well as other elements economic situation is reflected in the form of intellectual capital report. *It has three parts:*

a. Company vision;

b. A summary of intangible resources and activities;

c. The indicator system.

As a practical example will make a small opinion poll on the impact indicators related components of intellectual capital *(human capital, structural capital and relational capital)*. The subjects of the research are represented by 36 undergraduate teachers, specialized in several areas *(economic, technological, events, artistic, sports, natural sciences, computer science, art education, visual education or music, etc.)* from a school particularly in Bucharest. *Dissemination of research results is centralized in Tables 3, 4 and 5 as follows:*

Following the analysis of the three categories of indicators shown we can appreciate the fact that 32 of the teachers undergraduate research subject considers the human capital indicators that have a particular impact competence are represented by people and improve these skills. In this context, staff stability indicator represents the lowest impact.

Tabel no. 3. *The analysis of the impact of human capital indicators*

HUMAN CAPITAL INDICATORS	The analysis of the impact			
	VERY GOOD	GOOD	SUFFICIENT	INSUFFICIENT
Jurisdiction people	32	4	-	-
Improving skills	32	2	2	-
Staff stability	27	8	1	
Improving the ability of individuals and groups	30	6	-	

Source: Data processed by author

As regards structural capital, assessing the degree of impact is observed to be very interesting, opinions are divided *(see table no. 4)*.

Relational capital on the preferences of research subjects are subjected customer loyalty and market proximity. The unanimous vote by 36 respondents customer base for granted. One person believes that suppliers are an insufficient indicator for relational capital appreciation *(see table no. 5)*.

Tabel no. 4. *The analysis of the impact of structural capital indicators*

STRUCTURAL CAPITAL INDICATORS	The analysis of the impact			
	VERY GOOD	GOOD	SUFFICIENT	INSUFFICIENT
ITC penetration	30	4	2	-
Production technology	22	8	4	2
Philosophy and Business Process	24	8	2	2
The organizational structure	29	4	3	-
Intellectual	32	2	2	-

property				

Source: Data processed by author

Tabel 1.5. *The analysis of the impact of relational capital indicators*

RELATIONAL CAPITAL INDICATORS	The analysis of the impact			
	VERY GOOD	GOOD	SUFFICIENT	INSUFFICIENT
Customer base	36	-	-	-
Customer loyalty	30	3	3	-
Near the market	28	6	2	-
Sales effectiveness	22	8	6	-
Providers	18	10	7	1
Networking with other market players	26	4	6	-

Source: Data processed by author

5. Conclusions

Intellectual capital facilitates in anticipation of possible developments related to the company's balance sheet following years of operation, providing its competitive advantages. Thus, it can be considered a critical resource for obtaining competitive advantage, real durable.

Currently, both nationally and internationally, human capital component simultaneous intellectual capital and human capital, is one of the most valuable assets is considered *"a fortune hidden" (not reflected separately in the accounts)*. To ensure economic growth, that increase competitiveness and employment, its development becomes one of the biggest advantages.

The most profitable investment a company remains committed staff *(human capital, skills and qualifications of employees)*.

Analysis of the impact indicators of the three categories of intellectual capital (human, structural and relational) achieved through the 36 teachers of pre-subject research, reflects the form and amount of benefit that intellectual capital can provide economic entities, namely: economic growth, market value or the value of the company's internal or sustainable development. They believe that if human capital is the most relevant indicator of people power, along with improving these skills.

Structural capital has a particular impact on intellectual property, while relational capital are most relevant customer base, followed by customer loyalty and market penetration.

Vision approach to research development of intangible assets and intellectual capital, which generated multiple convergences and that had to do with certain limitations, is and will remain quite large and very complex.

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ACKNOWLEDGMENT
This paper has been financially supported within the project entitled ***„SOCERT. Knowledge society, dynamism through research”,*** contract number POSDRU/159/1.5/S/132406. This project is co-financed by European Social Fund through Sectoral Operational Programme for Human Resources Development 2007-2013. **Investing in people!**”

CORPORATE GOVERNANCE AND EXTERNAL AUDITORS: HIGH AUDITING QUALITY

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Abstract:

In the last decades, many companies are collapsed besides related frauds are more highlighted around the world. That affects the credibility of the financial and operational reports, which is supposedly supported by good governance practices. That stirs a number of regulatory institutions to present several codes that strengthen transparency and disclosures requirements in the financial reports and in the light of that the audit quality and governance standards practices are concerned by academicians and researches, therefore, the evidence of the practices of corporate governance and audit quality is presented in developed economies and they becomes a significant need nowadays. The article presents a guideline to investigate the relationship between audit quality and corporate governance.

Keywords: *Corporate Governance, External Auditing, High auditing quality, Agency problems*

JEL Classification: *M4, M2. M1*

1. Introduction

Corporate governance is considered as developments' key of the capital market, and due to the World Bank report; improving Corporate Governance in Emerging Markets (2011), good practices of corporate governance decease the frauds in the emerging markets and that reduces the capital cost, in addition, manages the developments of the capital markets. Due to Adeyemi and Temitope (2010); the weakness of governance codes is likely the factor that is blamed for the failure of corporate governance. Besides that, there is a debate that is important and considerable nowadays, which presents the need for governance practices (McConmy & Bujaki;

2000), besides, setting guideline that strengthen governance practices (Cadbury; 1992). Accordingly, the integrity of the international financial markets are highly concerned (Millstein; 1999). The board of directors affects the quality of the financial reports that are an important impact for investors (Levitt; 2000) and that decreases the adverse of earnings management and financial reports (Beasley; 1996 & Dechow, et al, 1996, McMullen; 1996). In addition, the external auditors have their roles over all in order to improve the credibility of financial reports (Mautz and Sharaf; 1961; Wallace; 1980). The auditing quality is based on the auditing profession throughout standards that ensures independency and transparency (Blue Ribbon Committee; 1999). Due to that, the relationship between governance practices and high quality reports is highlighted by plenty of researchers especially in the United States of America (McMullen; 1996 & Abbott, et al; 2000).

Therefore, successful auditors never lose observation over the importance of continuously developing and estimating the structure of corporate governances, also the decision of a certain company to adopt governance mechanisms is influenced by fundamental characteristics due to the activities of that company. Still, the main function of corporate governance is to ensure the high quality of financial reports (Cohen, Wright & Krishnamoorthy; 2004); and in order to achieve that the audit committee oversees the process and procedures of financial reports in the light of integrity and credibility of the reports. In the light of Deloitte Report (2013), the audit committee is considered as "a key fulcrum of any company", thereby determining the efficiency of this committee is assuming strongly important.

2. The role of external and internal auditors in corporate governance:

Corporate governance is that mechanisms and procedures applied by companies in order to reduce the transaction and agency costs. That means; the idea of corporate governance becomes from the separation between two functions; management and ownership. Auditors enroll importantly as ears and eyes of shareholders besides other stakeholders in order to instill the trustable level in the financial markets through auditing quality. In the case of ENRON scandal was due to auditors certainly Arthur Andersen and the later analyses reached a conclusion that external investors misled about the income statement of the company. In the light of that, the failure was in the protection set for investors and shareholders that were included in Generally Accepted Accounting Principles and Statements on Auditing Standards besides Generally Accepted Auditing Standards. Individuals in Enron studied that set in order to serve their benefits; accordingly, they bolstered

the balance sheet with inflated assets and hiding liabilities. That could be achieved without the Auditor; David B. Duncans. The external auditors of Andersen were close personally to certain some partners in ENRON and that broke an essential principle called independence.

Corporate governance has its role in solving agency problems and balance between the interests of stakeholders; maximizing the company value in the light of social and environmental responsibilities. Due to that, a good measure that may contribute to the efforts of corporate governance is the involvement of external auditors; Act Sarbanes Oxley, also, these auditors should minimize the monitoring costs through facilitating situation whereby executives are motivated to be held accountable. Hereby, the internal cost is defined as these process influenced by the board of directors and executives besides other factors, these process serves the auditing objectives that include auditing quality. Due to that, the relationship among the weakness points of internal auditing and the audit committee is an important subject for investigating, thus, the auditing committee does not only play a role to assure the quality of financial reports also assures accountability and in the meantime, that serves the governance mechanisms.

3. High auditing quality and corporate governance

The trust in financial reports is sustained by the high quality of auditing services that increase the financing possibility (Lin & Liu; 2009), in addition, the high quality of auditing services is related to the lower cost of capital (Pittman & Fortin; 2004). In the light of that, these services are significant for these companies that look to increase the financial capital, and due to previous researches, the auditing quality is strongly related to companies complexity and corporate governance (Hay et al; 2006). An important mechanism of corporate governance is auditing that plays in certifying the financial information (Coffee; 2002), also, governance perspectives include better control in order to reduce the need for high auditing quality (Hay et al; 2006).

Due to that, the relationship between high auditing quality and corporate governance can be shaped by two perspectives; the first perspective; a better control will reduce the need for high auditing quality, the second perspective; strengthening governance mechanism “control” will strengthen the efficiency of auditing and due to that the auditing quality will be increased. That means; the different role between the internal auditor and the external auditor should be highlighted separately since the quality of auditing reports is strongly related to the governance mechanisms,

accordingly, auditing mechanisms of corporate governance are significantly important (Mersland & Strom; 2009).

Basically, reducing the agency conflicts and false information among stakeholders is a significant object of external financial reports (Healy & Palepu; 2001 and Hope et al; 2008), and that is related to the reports' quality, thus, the main concern of auditing is to reflect a high quality of financial reports (Boone et al; 2010). In 2009, Liu and Lin assumed that high auditing quality will be effected only when the agency costs are reduced , due to that, the auditing quality has different dimensions (Lin & Wang; 2010). Governance mechanisms can be divided into two important parts: the internal part focuses on monitoring governance activities and create stakeholder value, also it includes independent directors, audit committee, management, internal controls and internal audit, the external part focuses on monitoring the company's activities and ensures the interests of internal stakeholders, and this part includes; financial markets, state and federal law and regulations, and shareholders proposals. After all, the company's size must not be ignored since it is considered as an important factor that affects the auditing quality. Therefore, the size of companies will decide if the quality of internal auditing is acceptable and if there is a need for an external auditor and here, the need for big auditing companies is issued as a key solution for high auditing quality. The relationship between the company's size and auditing quality is tested by Colbert and O'Keefe in 1995, and Dies and Giroux in 1992 to ensure the negative relationship among them. Furthermore, the independence of auditors as one of governance perspective is to ensure the auditing quality; therefore, an independent auditing committee ensures the independence of external and internal auditors through being free from managerial influences in order to encourage them to be transparent on the all issues before reach an advanced level. In the light of that, assuring that financial reports are free-bias is significantly related to the qualifications of auditors and that means, the auditing value is related to the external stakeholders who examine the quality of financial reports. Due to the statistic study that done by Hajha and Jahntigh in 2013 to test the relationship between the directors' independence and auditing the quality; there is a positive relationship presented in the following table:

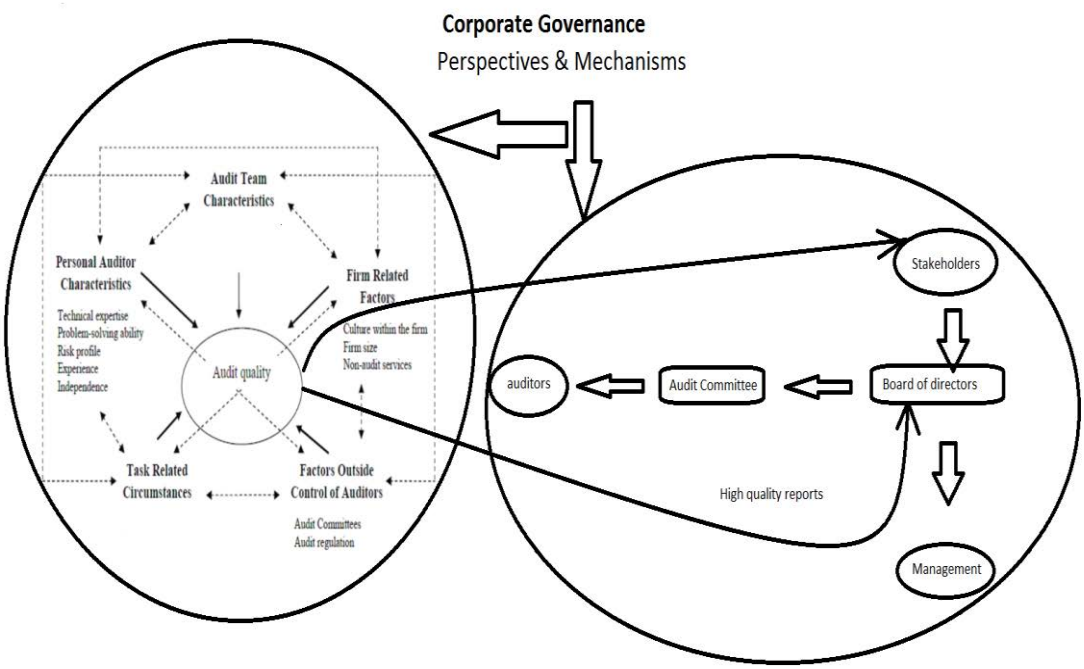
RESULTS OF REGRESSION BETWEEN BOARD INDEPENDENCE AND AUDIT QUALITY

The significance level -With	Statistics t	Coefficient	Variable name	Symbol	Type variable
_	_	_	Quality Audit	Y	Dependent variable
000/0	024/11	544/103	Alpha	α	Constant
000/0	300/6	*5065/0	Asnqlal board	X1	Variables Independent
092/0	686/1-	311/0-	Financial Leverage		Variables *Control*
621/0	726/17	*126/22	Company Size		
_	_	703/1	Camera Watson		
000/0	_	163/51	Statistics F		
_	_	57/0	The correlation coefficient	R	
_	_	32/0	The coefficient of determination	R Square	
_	_	32/0	The coefficient of determination Adjusted	Adjusted R Square	

This table shows that the variables of BOD and financial leverage is p-value <5%, which has a significantly related to the auditing quality, besides, constant quantity of company's size on auditing quality is variable like other factors; that proofs the relationship between the size and the need for external auditor.

4. Conclusion

The need for auditing is a result of the agency theory and later the conflicts among the interests of stakeholders, and after the financial crisis, this need is strongly highlighted. In addition, the perspectives of corporate governance always assure independence of directors and auditors, in the meantime, the audit committee plays a significant role to report to the directors and shareholders, and the external auditors should confirm these reports for stakeholders in order to sustain the confidence in the financial reports. In the light of that, the relationship between high audit quality and corporate governance is an integrated relationship. The governance mechanisms ensure high auditing quality but theses relationship can take different shapes; strengthening control and that reduce the external auditing cost or assuring the independence of external auditors.



Relationship between Corporate Governance and Audit Quality

Resource: Author and Hardies & Breesch & Branson (2011)

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A GLIMPSE INTO THE OFFSHORE WORLD AFTER "PANAMA PAPERS"

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Abstract:
In the light of the latest leak of offshore documents, Panama Papers, the purpose of this article is to analyse a set of data made available, that reveals important information on the offshore world and the mechanisms by which it functions. There are identified the main business structures and tax benefits that are offered under the Panamanian legislation, as well as that of other offshore jurisdictions that are being used in the construction of tax planning schemes aimed at obtaining important tax benefits. The results of the analysis present interesting findings regarding the offshore financial services industry, the intermediaries involved in the structuring of tax planning schemes and the most commonly used offshore jurisdictions in tax structuring plans.

Keywords: *Panama Papers, Offshore industry, Tax planning, Business structure*

JEL Classification: *H 87, K 34*

INTRODUCTION

Following the "LuxLeaks" project (ICIJ, 2014) from 5 November 2014, which looked into the tax affairs of multinational companies, the "Panama Papers" project (ICIJ, 2016) offered a glimpse into the offshore world, which brought forward new information on the tax planning schemes and tax advantages made available through a network of jurisdictions. A prime notice on this offshore - data release project was that the tax planning arrangements were lawful and no breach of law was encountered. All the business structures: offshore companies, foundations and trusts were legitimately set up based on local legislations and the tax advantages obtained were supported by the local fiscal codes.

Although there is no generally accepted definition of an offshore jurisdiction, a compilation of reports and analyses performed by

international organizations, such as the OECD, IMF, FSF, etc. present these jurisdictions as states and/or territories which have developed important financial industries due to the tax advantages presented and which offer services to non-residents (natural or juridical persons) with the aim of reducing their total tax burden (OECD, 1998; IMF, 2000; FSF 2000)

Yet, concerns regarding the erosion of national tax bases caused by the artificial shift of profits have led to the latest OECD's project "Base Erosion, Profit Shifting (BEPS)" which focuses on multinational companies' taxation, with the aim to target tax avoidance and to ensure that taxes are paid where the economic activities take place (OECD, 2013b). Harmful tax measures are targeted under Project's Action 5, by means of improving transparency and requiring substantial activity (OECD, 2015). The measure is also supported by the European Union through the Action Plan "Fiscalis 2020" that addresses aggressive tax planning through a number of measures that need to be considered: a coherent Union law in the field of taxation, enhanced administrative cooperation and capacity of tax authorities (The European Parliament and The Council, 2013).

This paper aims to analyse a set of data extracted following the release of Panama Papers project in order to reflect on the internal mechanisms that function in an offshore jurisdiction and the connections that are established with other states in the construction of the tax planning arrangements. The paper presents the particularities of the Panamanian business and tax legislation as well as that of other offshore jurisdictions closely linked in the tax planning structuring schemes, as revealed by the report. A set of graphics are explained in connection to the tax rationale of the offshore service providers. The results of the analysis present a set of interesting aspects which link offshore jurisdictions, tax advantages and intermediaries that design tax planning solutions.

The first part of this paper presents the literature review in the area of tax planning and tax avoidance, a topic of concern brought at a worldwide level. The second part presents the methodology of this research, where there are presented the particularities of the Panamanian tax and business laws and that of other offshore jurisdictions closely linked in respect of tax planning arrangements. This section also presents a set of graphics extracted from the Panama Papers Project which are interpreted in the light of the tax planning arrangements. The third part of this paper presents a summary of the main results obtained, followed by conclusions.

1. LITERATURE REVIEW

The Organization for Economic Cooperation and Development (OECD) recognizes taxation as one of the main components of profitability,

hence having the potential to influence the decision on the location and the mean of investment (OECD, 2013a).

Taxation was given the attribute of a motivating factor in corporate decisions (Lanis and Richardson, 2012) and aspects related to financial options, organizational forms, restructuring decisions, payout policies, etc are strongly influenced by taxes (Desai and Dharmapala, 2006).

Taxation may be considered a cost for the company and in this respect the managers strive to run their business in the most cost effective manner (ACCA, 2014). In this context, the managers may be tempted to consider tax planning schemes aimed at diminishing the level of taxation.

Tax planning may be considered as comprising of all activities designed to produce a tax benefit (Wahab and Holland, 2012). In this respect, if tax is seen as a cost for the company, managers will try to minimize it to the extent it is legally and socially acceptable (Garbarino, 2011). Besides tax planning benefits translated in reduced tax liability, there are also considered the costs associated to tax planning activities. Therefore, tax planning activities may increase the after tax profits, yet they involve actual and potential costs that may diminish the benefits they provide (Wahab and Holland, 2012; Garbarino, 2011). The actual costs may consist in the fees or salaries paid to tax consultants, while the potential costs may be reputational costs or those that may arise in cases where the tax strategy would be challenged by the tax administration (Wahab and Holland, 2012).

Corporate tax strategies may also be classified as aggressive or responsible. On one hand, aggressive tax planning may be defined as a corporate effort to minimize tax liability by all the possible legal means. On the other hand, responsible tax planning is the strategy that complies with the intention of the law and does not try to exploit all legal possibilities to diminish tax (Hardeck and Hertl, 2014).

Considering tax as a motivating factor in many corporate decisions, managerial actions designed solely to minimize tax liability through aggressive tax planning are becoming a reality of the corporate global environment (Lanis and Richardson, 2012; Desai and Dharmapala 2009).

A distinction in terms of the “letter of law” and the “spirit of law” is translated in two different concepts: tax avoidance and tax evasion (Hasseldine and Morris, 2013). Although both actions imply reducing the tax burden, tax evasion is an illegal activity, while tax avoidance is legal (Freire-Serén and Martí, 2013).

Lately, tax avoidance has entered public attention and considered socially unacceptable (Frank Mueller, 2015). An emphasis has been placed on the need for the multinational companies to pay the fair share of tax where the economic activities are conducted.

Corporate tax avoidance is a critical aspect on the international political agenda as the tax related affairs of prominent multinational companies have raised hostility from civil society and non-governmental organizations. Hence, the need for action on behalf of the policy makers is critical (Jones and Temouri, 2016).

2. METHODOLOGY

In the light of the new tax related project into the offshore world, "Panama Papers", this study aims to perform an analysis on a set of data that looks into the offshore tax systems and the relations between them in the construction of tax planning schemes. First, we consider the tax and business legislation of Panama and then we perform an analysis on a set of graphs that explain the network of intermediaries and other jurisdictions involved in the equation of the tax planning schemes, according to the information released in the "Panama Papers" Project.

2.1. Panamanian tax system and business structures

In spite of a corporate tax rate of 25%, Panama has in place a territorial tax system under which both residents and non-residents are taxed only on the income sourced from Panama. Revenue that is sourced from another jurisdiction is not subject to taxation in Panama (Deloitte Panama, 2016). This system represents a key tax advantage for non-residents that establish companies in Panama and derive income from activities conducted outside this state.

Companies that are resident in Panama for tax purposes must withhold tax on the distribution of dividends at the following rates: 10% for dividends that arise from activities conducted on the territory of Panama and 5% for dividends that arise from activities conducted outside Panama or repatriated. Also, withholding tax apply to interests and royalties paid to non-residents at a rate of 12.5%. Capital gains are taxed at a rate of 10% (Deloitte Panama, 2016).

Tax incentives, translated into lower tax rates apply as well to the investments that are made in Panama. The Howard Special Economic Area provide for a special tax regime that apply to offshore activities and other transactions between companies within this area (Deloitte Panama, 2016).

Therefore, a prime tax advantage offered by Panama is the territorial tax system, where the income of resident companies sourced from abroad is tax exempt.

A company is resident in Panama if it is incorporated under the law of Panama, or if it is centrally managed and controlled from Panama. The

main types of companies are: the corporation, the limited liability company, the general partnership and limited partnership (Deloitte Panama, 2016).

It can be noticed that the business law of Panama does not provide for offshore company incorporation, but instead the territorial tax system in place brings similar tax advantages, by means of foreign income being exempted from tax.

2.2. An explanation to the data sourced from the "Panama Papers"

Within this subsection we focus on a set of data extracted from the "Panama Papers" Project with the aim to find an explanation on aspects related to the functioning of an offshore mechanism. The data was presented in the "Panama Papers" documents and they related to the activities conducted by the legal services provider Mossack Fonseca for its clients. A number of aspects presented reveal on the mechanisms being used in the offshore business sector.

There have been selected three key areas in order to be analysed: the company incorporation evolution during 2005-2015; the most prominent countries where intermediaries operate and the most popular tax havens that have been used in the tax planning schemes.

- *Company incorporation evolution between 2005 and 2015*

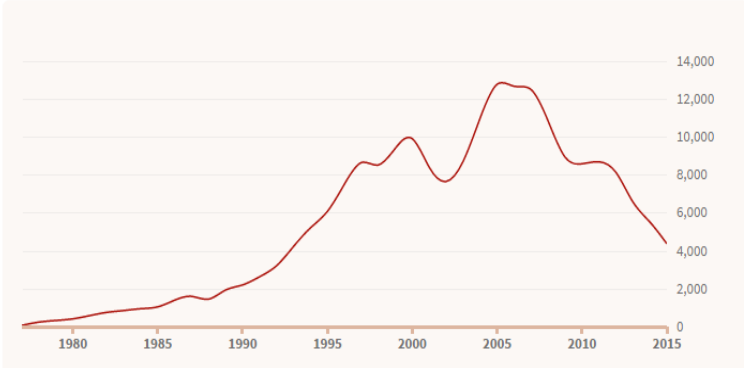
Figure 1 presents the evolution of the Panamanian companies incorporated by the legal services provider Mossack Fonseca since 1977.

The evolution of the Panamanian company incorporation process is being analysed during a time span of 10 years: the peak of company incorporation in 2005, a steep decline between 2008 and 2009, stagnation between 2009 and 2012 and a further decline until 2015.

While in 2005, the number of company incorporations reached the peak of 13.287, a significant decline of 15.5% in the number of companies incorporated was registered between 2007 and 2008, with a further decrease of 21.49% between 2008 and 2009. This decline may be associated with the global financial crises which has propelled destabilization of businesses in this area as well.

Stagnation was registered between 2009 and 2012, where on average the number of companies incorporated was 8566. This period was followed by a further decline of 48.40% in the number of companies incorporated between 2012 and 2015.

Figure 1. Offshore companies incorporated by Mossack Fonseca since 1977



Source: (ICIJ, 2016)

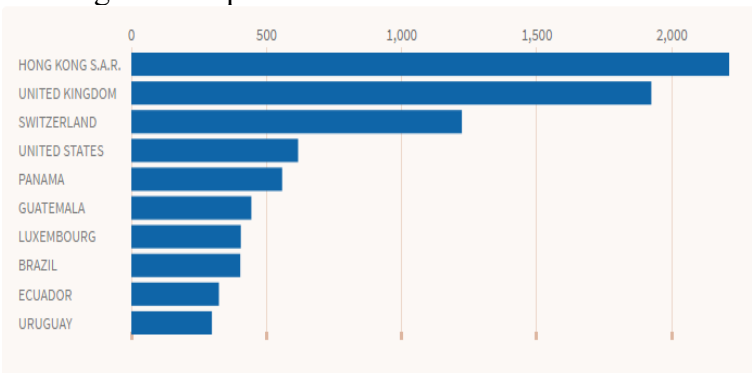
The constant decrease in the number of companies incorporated by Panamanian legal services provider Mossack Fonseca starting in 2008 and continued until 2015 may be attributed to the effects of the financial crises.

Records also indicate on the short life span of offshore companies that stay active for a limited number of years.

- *The locations where the intermediaries operate*

The design of the tax planning schemes are not created in isolation to other jurisdictions but, as revealed in the Mossack Fonseca's documents, there is a wide network of intermediaries that have their roles in the structuring of tax efficient schemes. Figure 2 presents the main locations where the intermediaries operate.

Figure 2. Top ten locations of the intermediaries



Source: (ICIJ, 2016)

From the jurisdictions presented in Figure 2 as locations with active intermediaries, we can identify in the first four positions, three leading global financial centres: Hong Kong, London (United Kingdom) and New

York (United States), according to the Global Financial Centres Index 19. Geneva (Switzerland) and Luxembourg remain leading financial centres in Europe (Z/Yen Group, 2016).

Three of these jurisdictions, Hong Kong, Switzerland and Luxembourg present interesting particularities in terms of tax systems, characterized by numerous tax advantages.

Hong Kong has a territorial tax system, where tax is levied only on the income sourced from Hong Kong. The general tax rate applied on profit is 16.5%, while the income generated outside Hong Kong is tax exempt. Also, there is no withholding tax on dividend and interest distribution from a Hong Kong company (Deloitte Hong Kong, 2016).

Switzerland has in place a global tax system, yet profits derived from foreign branches are tax exempt. The effective income tax rate ranges between 12%-24% (which encompass both the federal tax and cantonal tax), depending on the canton where the company is registered. Important tax incentives are granted to holding companies and to mixed companies.

The holding company regime provides for a full exemption on cantonal taxes. The main statutory purpose of a Swiss holding company has to be the holding of participations and it should not conduct any business or trade in Switzerland.

Mixed companies with predominantly foreign business activities (at least 80% of the total gross income is foreign-sourced and at least 80% of expenses are incurred abroad) enjoy a special tax regime. The effective tax rate applied to a mixed company ranges between 9% and 11%, including federal tax (Deloitte Switzerland, 2016).

Luxembourg provides for tax incentives in respect of dividends and capital gains received by a qualifying entity from a qualifying shareholding. In order to be tax exempted the qualifying entity must hold the participation, directly or indirectly, for an uninterrupted period of at least 12 months and it must account for at least 10% or to have been purchased for a price of at least EUR 1,2 million.

The Luxembourg tax system does not impose withholding tax on interests and royalties, as well as on the dividends paid to a qualifying entity under the EU parent-subsidiary directive (Deloitte Luxembourg, 2016).

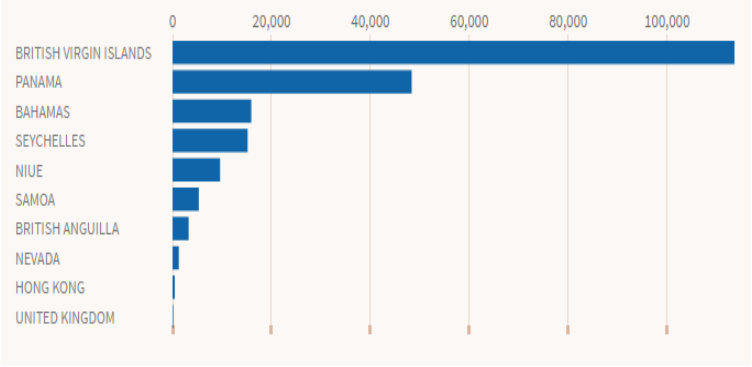
It can be observed that the top intermediaries are major international financial centres, as well as locations that present important tax advantages which may be included in tax planning schemes.

- *Offshore jurisdictions used in tax planning schemes*

The construction of tax planning structures involves a network of tax efficient systems offered by a number of offshore jurisdictions. As

presented in Figure 3, the British Virgin Islands is the most frequently used jurisdiction in the tax planning schemes. Tax advantages presented by Bahamas, Seychelles, Niue and Samoa are used at a lesser extent.

Figure 3. Top offshore jurisdictions used in tax planning schemes



Source: (ICIJ, 2016)

All these listed offshore jurisdictions present their particularities in respect of their tax systems and business structures that raise a number of advantages.

The British Virgin Islands and The Bahamas distinguish in the offshore landscape by means of a general zero-rate income tax regime applicable to both natural and juridical persons. This represents a key advantage that has been exploited in the tax structuring schemes (Deloitte BVI, 2016; Deloitte Bahamas, 2015).

Seychelles is a representative offshore financial centre in the Indian Ocean. The corporate tax rate is 25% on the first SCR 1 million (approximately EUR 66.626) and 33% on the reminder (Seychelles Revenue Commission, 2016). Yet, the Seychelles IBC Act provides for the incorporation of the classic offshore company, the International Business Company which is not subject to any tax as long as it conducts activities outside Seychelles. An IBC shall not carry any business activities or own properties in Seychelles. This type of company is the most commonly used vehicle for obtaining tax exemption facilities (Seychelles IBC Act, 2014).

Located in the Pacific Ocean, Samoa has in place the International Companies Act, which provides the framework for incorporation of the International Company (Samoa IC Act, 2009). While prohibited from conducting any kind of business in Samoa, the income generated by the International company from abroad benefits for total tax exemption (SIFA, 2016). Niue, on the other hand does not provide any tax exemption facility, as in 2006 its offshore legislation was repelled (OECD Niue, 2016).

The tax facilities offered by the British Virgin Islands explain the predominant use of this jurisdiction in the tax planning schemes developed by the Panamanian legal services provider Mossack Fonseca, while being revealed a practice which may be a custom in the offshore world.

3. RESULTS

The data analysed in the second section of the paper is extracted from the "Panama Papers" documents and it presents information related to the activities of the Panamanian offshore service provider Mossack Fonseca. The information obtained is extrapolated to the offshore sector, given the fact that the mechanisms used in achieving tax efficient structures may follow similar patterns in the offshore world.

Following the analysis presented in the second section of the paper, we may conclude on a set of aspects which relate, by extension, to the tax planning practices from the offshore industry.

First it can be noticed a severe decline in the number of offshore companies' incorporations starting from 2008, which may be explained by the propelled effects of the financial crises. Therefore, it may be concluded that besides the short life span of an offshore company, the number of new companies incorporated has diminished substantially in the past eight years.

A second aspect identified relates to the locations of the intermediaries involved in tax structuring. Within the first four positions of the ranking, three locations are recognized as leading global financial centres: Hong Kong, London (United Kingdom) and New York (United States). Geneva (Switzerland) and Luxembourg, two leading European financial centres, are also locations with active intermediaries in the tax planning structuring. This may indicate on the fact that the tax planning schemes are not constructed in isolation, being limited to only one jurisdiction, but they are constructed using a wide network of tax systems.

The third aspect reflected upon was the construction of tax planning arrangements which involved a network of tax efficient structures offered by a number of offshore jurisdictions. The British Virgin Islands is the most frequently used jurisdiction in the tax planning schemes. Also, tax advantages presented by the Bahamas and Seychelles are considered in the tax structuring process.

The set of aspects focused upon reveals some facts regarding the offshore industry in terms of the network of intermediaries and other offshore locations being included in the tax planning schemes.

CONCLUSIONS

The "Panama Papers" project offers a glimpse into the offshore world by revealing a panorama of mechanisms and functions that are used in the construction of the tax planning structures. Starting with the analysis of data related to the Panamanian offshore service provider Mossack Fonseca, we reached an understanding of the framework in which the offshore industry functions. With a territorial tax system in place, Panama presents substantial tax incentives to the companies that conduct business activities abroad. In addition, the number of intermediaries located in leading financial centres creates a vast network of both clients and options for the structuring of tax efficient schemes. Also, the structures are complemented and/or completed by tax advantages offered by other offshore jurisdictions. In this respect, the British Virgin Islands is the most frequently used jurisdiction in tax planning arrangements.

The results obtained following the analysis of the newly released set of data presented under the "Panama Papers" project emphasize on some key aspects that characterize the functioning of the offshore centres and their tax structuring schemes. The understanding of the offshore industries' mechanisms may lead to the creation of policies and action plans that are to target different areas of concerns being currently raised in the international context of tax competition and tax avoidance.

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THE REMUNERATION OF THE PUBLIC SECTOR PERSONNEL THESES AND ANALYSIS POSSIBLE SOLUTIONS

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Abstract

This study aims to achieve an overall analysis of the personnel who work in the public authorities, in general, and in the administrative ones, in particular. In the context that the life and economy in Romania, as well as in other states, pass through a complex, difficult situation, in which the crisis' effects are prolonged in time, there is no doubt that the future situation of the states must consider both the economic side, the development of the economic sectors able to create added value, to fully exploit their potential and the human resources, the professional and moral quality of those who work within public authorities and institutions of the state in general and, especially, our analysis will cover the personnel salaries in the public sector, the errors that were made in this area and the consequences produced.

Keywords: *public administration, state, financial resources, human resources, development, quality, solutions, professionalization, public authorities, public institutions, personnel.*

I. General considerations

Over 25 years ago, Romania abandoned the totalitarian regime, and by immeasurable human improvement actions, that have amazed in those days, the world, has embarked on the road of building a democratic state.

The road was definitely more difficult than the audacious vision of those who committed the revolutionary act from December 22, 1989. He was full of ups and countless downs, of decisions which proved negative and some of them even harmful on medium and long term. We do not intend to analyze them now. We remember as a milestone, the 1st January 2007[1], when Romania became a full member of the European Union, which represented, as can be appreciated in the whole doctrine and not only, the public life as a whole in our country, and beyond its borders, along with crucial significance for the Romanian people and state's destiny[2]. The quoted author opines that "*Romania's accession to the European Union drew inevitable changes at all levels of national government aimed to ensure our ability to manage EU affairs and all their complexity*."

Another milestone is the adoption of the Lisbon Treaty on 13 December 2007, entered into force on 1 December 2009, which also was assessed to be *"the most important event that took place in the European Union in 2009, having consequences for international, universal and regional, European security[3]"*.

The membership in the European Union has been acquired following a road through which Romania tried to align to all requirements imposed on legal, institutional and economic level. Such a quality is not however the end, the conclusion of some efforts. The real integration is a complete, lasting process, in which our country still has to solve some problems and continue to be under the control factors and we exemplify the longstanding Mechanism of Cooperation and Verification (MCV)[4] set for Romania and Bulgaria, by which, only these two countries of the 28 states included today in European Union, continue to be monitored and subject to periodic reports in which are summarized the progress made by our country in justice and fight against corruption, which is a real rod faced also by other countries, but who have chosen other procedures to counter it and receive another treatment from the European Union.

The existence of such a mechanism and especially, the extension of its maintenance, in our opinion, affects in a significant extent, the image of our country and how it is perceived and, why not, treated, compared to other Member States.

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[1] MCV is a process of regular inspection of the progress that Romania and Bulgaria have in terms of judicial system reform, corruption and organized crime

[2] S**tefan Deaconu** – *Tratat de aderare la Uniunea Europeana, Prezentare generala* in Curierul Juridic nr. 4/2005, pp.7-13

[3] **Augustin Fuerea** – *Tratatul de la Lisabona,* semnat la 13 decembrie 2007, intrat în vigoare la 1 decembrie 2009, in Revista de Drept Public nr. 4/2009, p. 62

[4] MCV is a process of regular inspection of the progress that Romania and Bulgaria have in terms of judicial system reform, corruption and organized crime.

Therefore, we consider in the meaning in which the authorities of the two countries should make efforts on the governmental level, to require rethinking the decision to create the MCV and giving up to this instrument of surveillance and control that places us, we must have the dignity to recognize it, in a position of inferiority to other Member States. And we welcome, from this perspective, some of the positions taken in this spirit that have been expressed by some officials of Romania.

In such a context it is obvious that the way in which we meet expectations, how do we integrate in the legal, institutional and judicial system, the spirit and the letter of all categories of decisions, regardless their legal nature, taken by European bodies, depends substantially from those working in state authorities and institutions, for their moral and professional quality.

II. Human resources, categories, status

Within the authorities and public institutions operates more categories of personnel in terms of their legal status. They can be identified as follows:

- **personnel** with has the status of employees or contractual personnel, which is subject to the labor law provisions, in the center of which is located the Labour Code[1];
- **civil servants** whose general status is regulated by Law no. 188/1999[2], which has undergone many changes and additions;
- **civil servants** who are subject to special statutes[3]
- officials from **central** or **local** level, whose status is found enshrined, in part, in the Constitution for certain categories (eg parlamentarians, Government members), or in different laws with organic character[4].

III. Elements of the legal status

All these categories are, what we call the title of this study, **"human resources" of the state and territorial administrative units,** or more succinctly expressed, **"the human resources in the public sector".**

[1] Approved by Law no. 53/2003, republished in the Official Gazette of Romania, Part I no. 345 of 18 May 2011.
[2] Republished in the Official Gazette of Romania, Part I no. 365 of 29 May 2007.
[3] Such as policemen whose status is regulated by Law no. 360/2002 on the Statute of policeman, published in the Official Gazette of Romania, Part I no. 440 of June 24, 2002.
[4] Example: Law no. 96/2006 on the Statute of Deputies and Senators, republished in the Official Gazette of Romania, Part I no. 49 of January 22, 2016.

Between the categories of personnel who work in the public sector there are both elements that differentiate them and commonalities in terms of their legal status.

Regarding **the differences,** their source is found mainly in their own **legal status of each category.** They can be expressed in the thesis that, the contractual personnel has a legal status that is mainly **negotiated,** the rights and obligations being established through negotiation that occurs between **employer and employee,** whose limits are set out by the Constitution and by law. For example, the negotiation may not concern the duration of the day and working week, leading to the upper limits set by law[1].

Thus, the working day is on average 8 hours a day and "the maximum legal duration of the working time may not exceed 48 hours per week, including overtime. As an exception, the working hours including overtime, may be extended beyond 48 hours per week, with the condition that the average working hours, calculated over a reference period of 3 calendar months, to not exceed 48 hours per week[2] ". These rules apply to employees and also to civil servants.

As regards the civil servants, whether they obey the general law, represented by Law no. 188/1999, or the special laws regulating special statutes, have as distinctive feature that their status is predetermined by the legislator, the statutory regime being of the essence of each public office, general, specific or special. Identifying public function is given by the fact that its holder is invested with the exercise of public powers, the activities that materializes these prerogatives being, in turn, expressly and exhaustively provided by law[3].

One of the elements that connect all staff in the public sector is that **their remuneration is established by law, being included in the state budget law** and governed by a unitary pay law for the budget personnel.

Moreover, the expression **"budgetary personnel"** used in the legislation, **supports** this common state denominator of those working in the public sector, with the consequence of exclusion from negotiation of the component elements of salary, in its fixed or variable part.

In practice of the last 10 years and above, there were procedures that have departed from this principle, which were identified in the control activity of a public authority, and we consider the Romanian Court of Accounts, as the supreme body for the control of the legality of public spending. Among its frequent findings are found substantial amounts of

[1] According to Article 1, para. (3) of the Constitution *"the normal daily work is,on average, no more than 8 hours "*

[2] **Andrei Popescu** în I. Moraru, E.S. Tanasescu (coord.) – Constitutia Romaniei. Comentariu pe articole, Editura CH Bock, Bucuresti, 2008, p.380

[3] By Article 2 para. (3) of Law no. 188/1999.

money granted unlawfully for wages, which attracts their treatment **as damages and ordering the entity subject to the specific activity of the Court of Accounts to order measures to recover them.** Such a situation was caused by **an acute lack of concern, from the legislature and government to solve, in a legal way, this issue.**

They preferred **surrogate solutions** instead of those leading to the creation of a coherent legal framework, clear and sustainable in terms of state possibilities to ensure the effective payment.

We call **"surrogate solutions"** both in the practice until 2009, of adopting annually special regulations, laws or ordinances of the Government, on wages of different categories of budgetary personnel and the one after 2009 when, formally, there were adopted **"unitary laws"** on personnel wages in the public sector, but they have not been applied[1] or amended before entering into force. All these have created a mess which severely damaged the public budget, put in a position to not support the amount of wages established by other means, such as contracts or collective agreements, court orders or administrative measures adopted by different public authorities (local council or county council). It was necessary to adopt normative acts that staggered the payment of various salary rights[2], or where applicable, to exempt those forced to pay, illegal salary rights granted to the obligation to return them[3]. Not least, we signal also the adopting of some increase regulations and the adoption of certain categories, of which the dignitaries exercise important state positions[4].

[1] Example: Law no. 284/28 December 2010 on the unitary remuneration of personnel paid from public funds, published in the Official Gazette of Romania, Part I no. 877/28 December 2010, which even today is not applied.

[2] Example: The Government Emergency Ordinance no. 71/2009 concerning the payment of sums mentioned in writs of execution having as object granting of public sector personnel with salary rights, published in the Official Gazette of Romania, Part I no. 416 of 18 June 2009.

[3] Example: Law no. 84/2012 on certain measures relating to the wages of the personnel paid from public funds, published in the Official Gazette of Romania, Part I no. 401 of 15 June 2012; Law no. 124/2014 on some measures relating to the wages of the personnel paid from public funds, published in the Official Gazette of Romania, Part I no. 700 of 24 September 2014.

[4] See the Government Emergency Ordinance no.14/2015 amending the Government Emergency Ordinance no. 83/2014 regarding the salaries of the personnel paid from public funds in 2015 and other measures in public spending, published in the Official Gazette of Romania, Part I no. 506 of 8 July 2015 by which wages were increased for the most major functions: President of Romania, Presidents of the Chambers, President of the Romanian Court of Accounts

IV. Conclusions. Possible solutions

All of this demonstrates, firstly, **the mess that exists in the remuneration of public sector employees** and which requires, in the future, to be removed.

Secondly, demonstrates **the serious misunderstanding lacking of responsibility of the fact that salary is an essential element of the work, regardless of title under which it is performed**, that influences the life of **"provider"** employee, civil servant or dignitary, **the results of his work**, **the overall situation of public authority or institution** in which operates the personnel concerned and ultimately, **the lives of citizens,** as a whole, as beneficiaries of public services. It generates also harmful phenomena for society, such as corruption, because it is easily understood and demonstrated that, **insufficient salary incomes obtained legally arises the need to identify other forms of purchasing them, which may be to the limit of the law illegal or contrary to it.**

Remuneration is a key issue because it influences the attitude that the personnel in the public sector have in relation to individuals or legal entities, in their quality of beneficiaries of public services, in which are involved. At the Romanian society there is a general state of discontent, about how people are treated in their relations with public authorities, with civil servants in the sense of the legal term that includes all classes, civil servants, dignitaries and contractual personnel.

Not lastly, it should be noted the huge imbalances between personnel from various public institutions. There are not rare situations where persons exercising identical or similar functions receive salaries fundamentally different, sometimes double or triple to one another.

Recently it has been adopted an emergency ordinance [1] on the remuneration of the personnel that does nothing more than a "patchwork" that not only does not solve the problem, but violates the fundamental theories of law, such as the theory of rights aquired, creating more damage than good, more dissatisfaction than benefits, exacerbating the general state of dissatisfaction.

Therefore, we believe firmly in the direction of an end to this state of mess regarding the wages in the public sector and to adopt the law on the unitary pay.

[1] It's about the Government Emergency Ordinance no.20/2016 amending and supplementing the Government Emergency Ordinance no. 57/2015 regarding the salaries of the personnel paid from public funds in 2016, the extension of some deadlines and also fiscal measures and amending and supplementing certain normative acts, published in the Official Gazette of Romania, Part I, no. 434 of June 9, 2016

HIGHLIGHTING THE ECONOMIC AND FINANCIAL LOSSES IN ECOSYSTEMS, WITH SPECIAL REFERENCE TO THE FOREST ECOSYSTEMS OF THE BARGAU MOUNTAINS

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Abstract:

At the moment, the disruptions (mainly negative ones) in the social &economic systems have fewer short-term solutions, and the medium and long-term ones disregard the greater sustainable development at micro, meso and macrolevels.

The economic and financial losses registered in such eco-systems, affected by disruptions of their stability and integrity, lead, in most cases, to major climate changes, especially at regional level and in the local zones, with unexpected, diverse and sometimes irreversible implications for the ecological environment. A quantifiable value for such losses, which are both quantitative and qualitative, in a specific case (the losses in terms of Norway spruce, Picea abies, forests affected by biotic and abiotic factors in the Bargau Mountains) may provide new approach methods.

This is the view which interests us: the economic and financial losses may be quantifiable in terms of effects of the disruptions caused, a 'snowball' effect, with larger damages (losses) in the adjacent zones or downstream of the Bargau Mountains (a situation that can be generalised).

Forest ecosystems are affected quantitatively by several destabilizing factors, in particular due to the action of wind and snow and the quality of the wounds caused by the large game, by way of a decrease in the wood (bears, deer). Three of the four ecosystems are located in the Management Units (working circle)II Iliuta from the Tihuta-Colibita RA Forest District, in the sub-divisions: 75 C and 662 B, for which research has been conducted on the 60 year-old-ecosystem, and 363 D, where the ecosystem is 120 years old.

Keywords: *economic losses, eco-systems, disturbance, climate changes, 'snowball', cause, effects.*

JEL Classification: *Q01, P51, Q15*

1. Introduction

At the moment, the problems of the disruptions (especially negative ones) in the economic and social systems have fewer and fewer short-term solutions, and the medium and long-term ones disregard, to a greater extent, sustainable development at macro, meso and microeconomic level.

For a sensible management of forest ecosystems of conifers, particularly spruce, affected by abiotic and biotic disruptive factors, over time, research has been conducted, both worldwide and nationally, resulting in outcome presenting the quantitative and qualitative quantification of economic and financial losses, in the natural stands from the natural conifer range, published in the relevant journals. There have been fewer attempts to quantify these disruptions based on value because they are rather hard to quantify in terms of value, especially as regards the side effects occurring in such ecosystems in their production area and the areas adjacent to such phenomena. Forest ecosystems must be viewed, in economic and financial terms, as dissipative systems, where entropy plays a fundamental role in the organisation of the systems, sometimes irreversibly changing them. We have the following paradox: the better we organise the economic and social system, the more disorganised the biological systems (ecosystems) become.

Although "coniferous species are in better and more stable health condition than deciduous species, as the climate conditions have significant influence, and the water deficit and thermal excess are far more common in regions where the deciduous species are clustered" (Badea Ov., Neagu St., 2007), they are more vulnerable to destabilising factors (particularly felling caused by wind and snow) due to the more austere climate conditions and the more unstable rooting system. This imbalance occurs especially in forest ecosystems with conifers, mostly spruce, around the age of 60, as a result of not performing maintenance works (cleaning and thinning) in a timely manner, leading to the creation of stands with a slenderness ratio greater than 1, with full consistency. The wounds caused to the tree trunks by the large game: the Carpathian deer (*Cervus elaphus*) and the bear (*Ursus arctos*), are entry routes for the spores of various fungi that cause red rot in conifers. The attacks of *Ipidae* also cause major disruptions in the forest ecosystems and soil erosion by reducing the anti-erosion and hydrological role causes long-term disruptions. L. von Bertalanffy (1956) defines the system "as a complex of elements that are in constant interaction with one another" (Milescu, I., 1994, page 13). The systems consist of a set of elements that are in constant interaction, forming a whole, the properties of which are superior to or other, in terms of quality, than the sum of the components, which are defined as subsystems.

An ecosystem is, by definition, "the unity between the living community (biota) inhabiting a given territory and that territory, defined based on topographic and climatic homogeneity and administrative criteria, the biotope" (Ionescu Al, Sahleanu V. and Bindiu C., 1989, page 73).

As the human society has evolved, social and economic systems have also developed, culminating in massive technological development, recording countless errors, sometime seven genuine environmental disasters for mankind. It is worth mentioning, in the economic systems theory, that "maintaining the steady state of economic systems (more generally social ones) accelerates the increase of environmental entropy" (Dinga, E., page 62).

Thus, if "the wood offered for sale comes from accidental products, then the slope of demand increases because the residual value of each meter bought decreases more than in the case of a normal supply since the operating expenses per unit of product are higher" (Dragoi M., 2000, page 39).

When quantified in terms of value, such losses, both the quantitative and the qualitative ones, in a specific case (the losses in the spruce stands affected by biotic and abiotic factors in the Bargau Mountains) may provide new approaches to the problem. The resulting wood is poor quality and low in quantity since tree harvesting is done before the usability age, as established by forestry work plans. The resulting disruptions cause a 'snowball' effect, with greater damage (losses) in the areas adjacent to or downstream of the Bargau Mountains and are a direct consequence of the "artificialization of forests" (Giurgiu V. 1978, page 265) and the situation can be generalised.

2. The site of the research and the research methods

The research has been conducted in four ecosystems (stands) under the same steady conditions (biotope) and with the same vegetation (biota), deconstructed, and selected as representative samples, in which the spruce is prevalent, within the Tihuta-Colibita R.A. Forest District managing a large part of the private forests in the Bargau Mountains.

Photo1. Forest system affected by destabilising factors (forest management unit 75C)
Photo2. Degraded ecosystem (forest management unit 662B)
Photo: Eng. Valentin Lupsan

Of these, two are 60 years old (young stands), and one of them, for comparison purposes, is 120 years old (mature and usable) and they are affected, both quantitatively and qualitatively, by biotic and abiotic factors, especially felling caused by wind and snow and wounds caused by the large game by way of the wood quality decline (bears, deer). In preparing this study, in order to meet the targets set by the theme, the following research methods have been employed: observation, experiment and synthesis.

The following table presents the forest management units (sub-plots) in which the research took place, with their main biometric and steady characteristics, according to the plan of the production unit **II Iliuta**, with in the Tihuta-Colibita Forest District.

Table 1

Experimental area in the representative stands of the Bargau Mountains

No.	Forest District	Production Unit (P.U.)	Forest manag. unit (f.u.)	Area off.u. (ha)	Inventoried area (ha)	Current age (years)	Production class	Type of post	Type of forest	Proposed treatment
1	Tihuta-Colibita R.A Forest District	II Iliuta	75 C	3.00	3.00	60	2	3333*	1311**	Progressive cutting (alignment)
2		II Iliuta	363 D	2.09	1.00	120	1	3333	1311	Progressive cutting (alignment)
3		II Iliuta	662 B	13.59	1.40	60	1	3333	1311	Progressive cutting (alignment)

* *Mountainous; mixture P_h (high productivity), large brown soil, with Asperula-Dentaria;*
*** Normal mixture of conifers with beech and Mull(s) flora*

In these stands, full inventory has been taken, as they are stands which fall within the category of first regeneration emergency, in terms of the forestry regulations in force. The result of the full inventory of the stands to be exploited has materialised in the distribution, by diameter categories and quality classes and representative heights, for trees with a diameter close to dgM (average central diameter of the base area) for each species making up the stand in the calculation of the APV (the technical and economic document calculating the volume by species and assortments of the wood material resulting from the inventory), the prices are set for each species and assortment separately and are the basic element in the organisation of timber auctions for the economic agents exploiting the timber.

3. Intermediate results

The proper management and accurate assessment of the forest resources despite the on going and alarming decrease of forest-covered areas involves a harmonisation of the exploitation and use of the wood obtained with the environmental requirements of forest ecosystems, without disturbing their biological activity too much, as they work based on the principle of self-preservation of the dynamic balance, by ensuring their integrity and continuity for future generations, in accordance with the principle of sustainable forest management. The first two stands from the forest management units: 662B, 75C fall within the category of regeneration emergency 11.The stand in the forest management unit 363D is past its technical usability age, and has been included in the category of regeneration emergency 21.

Table 2
Base data for calculating the timber volume of the experimental areas

No.	No. of f.u. (forest manag. unit)	Species	Diameters (cm)		Heights (m)		Age (years)	Average tree volume (m^3)	No. of trees	Increase	APV no.
			dt	dcg	ht	hc					
1	662B	MO (spruce)	30.3	30.2	28.5	28.5	60	0.800	225	0	4161
2	75C	MO	34.8	31.2	26.3	25.4	60	0.590	656	0	3765
		BR (fir)	40.8	38.9	24.8	24.4	65	0.860	102	0	

		FA (beech)	40.0	41.8	23.0	23.4	65	0.450	138	0	
		PAM	20.0	19.3	15.6	15.4	60	0.120	43	0	
		ULM (elm)	19.0	17.7	16.3	15.9	60	0.170	6	0	
3	363D	MO	43.5	43.3	30.6	30.5	120	1.370	57	0	4177
		BR	48.3	48.2	30.7	30.6	120	2.000	31	0	
		FA	50.8	50.4	29.8	29.7	120	2.290	34	0	

The decrease in the consistency (density) of the stand is mainly due to the felling caused by wind and snow in 2011 (evenly spread across the entire area), in the stands from the forest management units: 662B and 75C, where restoration environmental reconstruction works have been proposed, by way of the progressive alignment cutting, followed by a forestation and caring for the area of seed spruce installed.

The forest ecosystem at the forest management unit :363D is a stand past its technical usability age, where mass felling has been reported, due to wind and snow, grouped across a 1.4 ha portion of the 13.59 ha of the entire subplot (forest management unit). The tendency of succession of the spruce species to the detriment of the beech may be noticed.

Having processed the data using the APV calculation software, the volume of timber per experimental area (portion) has been obtained, and the results are quantified in the following table.

The economic losses are assessed in relation to the reference state, i.e. the reference age, which, for the prevalent species, the spruce, in the natural range, is the technical usability and, for the one outside the natural range, is the absolute usability. Neither one is justified economically.

Table 3

Wood volume in the experimental areas (portions) by dimensional and primary assortments

No.	No. of f. u. (forest unit)	Species	Volume of dimensional sorting (m^3)						Volume of primary sorting (m^3)						Value (RON)
			G1	G2	G3	M1	M2	M3	Thin wood	Work wood	Bark	Fire wood		Gross	
												Total	From branches		
1	662 B	MO	5	74	33	29	8	0	3	152	17	10	7	179	28489.00
Total			**5**	**74**	**33**	**29**	**8**	**0**	**3**	**152**	**17**	**10**	**7**	**179**	**28489.0**

															0
2	75C	MO	29	147	61	59	21	0	10	327	36	26	16	389	66 74 0.0 0
		BR	29	26	8	7	3	0	1	74	8	6	5	88	18 27 4.0 0
		FA	5	5	0	2	2	2	1	17	1	44	4	62	41 93. 00
		PAM	0	0	0	0	1	1	1	3	0	2	1	5	31 5.0 0
		ULM	0		0	0	0	0	1	0	0	0	0	1	33. 00
Total			**63**	**178**	**69**	**68**	**27**	**3**	**14**	**422**	**45**	**78**	**26**	**545**	**89 55 5.0 0**
3	363D	MO	29	22	6	5	2	0	0	64	6	8	3	78	13 63 5.0 0
		BR	35	12	3	2	0	0	0	52	5	5	4	62	12 32 7.0 0
		FA	9	7	0	1	0	0	0	17	1	60	4	78	49 68. 00
Total			**73**	**41**	**9**	**8**	**2**	**0**	**0**	**133**	**12**	**73**	**11**	**218**	**30 93 0.0 0**

In the economic and financial logic, any income which arises faster than originally planned is welcome, because the present value is greater. If one does not take into account the discount rate, one only uses the increase losses and an average price of wood is applied to these.

In order to stress the economic and financial losses over a period of planning (10 years), one has taken into account the volume of the stands by species, production classes, consistency, at the age of 50, for the stand in the forest management unit: 662B, 75C, for the forest management unit 363D,the reference age being 110 years, by using the calculation methodology below.

The calculation of the "central diameter of the base area (dgM) is a median calculated in relation to the base area" (Giurgiu V., 1979, page 174):

$$dgM = dM + C\frac{\left(\frac{G}{2} - SM\right)}{gn} \quad , \tag{1}$$

where:

dgM–the central diameter of the base area;
dM–the lower limit of therange for the diameter category including G/2;
C–the size of the diameter category (2cm);
G–the total base area;
SM–the accumulated base area up to the range of the diameter category including G/2;
gn –the base area of the diameter category including G/2.

The *corrected average height (hgMc)* is calculated using the following formula (Giurgiu V., 1979, page 195):

$$hgMc = \left(1.36 - 0.36\frac{d}{dgM}\right)h \quad (2),$$

where*: d – the average arithmetic diameter of the trees inventoried by species;*
h – the average height of the trees inventoried by species.

After calculating dgM for the trees with diameters close to it, 10 to 15 heights are measured for each tree species inventoried. For the spruce species, 15 heights were measured for each experimental area separately, and, for the other species, 10 heights were measured for each species.

The base area of the stand is obtained by adding up the multiple base areas by categories of diameters (ni, gi):

$$G = n1\frac{\pi}{4}di^2 + n2\frac{\pi}{4} + \cdots +, nk\frac{\pi}{4}dk^2 = \sum di^2 ni = \sum nigi$$
(3)

The calculation of the average tree volume is obtained using the equation proposed by Giurgiu and implemented in the APV calculation software, based on the relation below:

$$\log v = bo + b1logd + b2log^2\ d + b3logh + \ b4log^2\ h4$$
(4)

And the equation coefficients were determined using the method of the smallest squares for each individual species.

In order to determine the working wood volume and break it down by primary and dimensional assortments, the sorting tables are applied to the stands on the main forest species inventoried. The application of these

tables requires knowing the following data: the total volume of the stand, the average diameter of the base area (dg) and the proportion of the work trees (first quality class).

The establishment of the number of work trees by equalling the trees in classes II, III and IV is performed by multiplying the number of trees in the corresponding quality classes by the related equivalence ratios for such classes for:

- Conifers:

$$N = NI + 0.94NII + 0.81NII + 0.17\ NIV \quad (5)$$

- Deciduous trees:

$$N = NI + 0.81NII + 0.57\ NII + 0.17NIV \quad (6)$$

, where:

NI...NIV is the number of trees in classes I to IV after the inventory

The tree quality is estimated "through a careful visual analysis, by monitoring the shape of the trunk and any potential defects that may result in the downgrading of the working wood or of the trees from a quality class to another one, due to the size and position on the trunk of the defective portion" (Decei, 1986 quoted by Iosif Leahu 1994, page 269).

Next, the sorting tables are applied for the stands based on the average diameter, by applying the following formula:

$$Vs = Vpi\ P \quad (7)$$

where:

Vs – the volume of the assortment;

V – the total volume;

Pi–the sorting index expressed as percentages, for assortment i;

P – the percentage of work trees.

For the volume of the branches, the formula is simplified, i.e.:

$$Vc = VpPcr \quad (8)$$

The volume of the fuel wood (Vf) shall result by deducting, from the total volume (V), the volume of the working wood (V1), plus the volume of the bark (Vco) and the branches (Vcr), hence:

$$Vf = V-(V1+Vco+Vcr) \quad (9)$$

Moreover, before sorting, for trees fallen due to wind and snow, one should consider the application of the downgrading and loss indices (technical regulations for assessing the timber intended for use, 1986, p. 53, 80, 82) accounting for 2% and 1%, respectively, out of the total volume. For a correct application of these indices, along with the inventory of the trees, one shall record data on the height where the break has occurred. To that effect, an average height of the break has been calculated as an average of the heights by diameter categories. The following stages of work are required: an inventory of the trees and a quality classification. For broken trees, one shall put down the indicator 'broken', as well as the height of the break; the measurement of the heights (2-3) of the trees in each diameter category for both whole trees, and broken trees and the calculation of the total volume and the volume by assortments.

In these stands, from the production tables, one has taken the volume by species and production classes, at the current age (60 years for the three aforementioned experimental areas and 120 years for the experimental area at the forest management unit 363D) from the paper *Biometria arborilor si arboretelor din Romania, 1972* (Biometrics of Trees and Stands in Romania, 1972) and, considering that the consistency of the stands has remained the same as the original one, disregarding the accidental product cutting executed over the 10 years (which has significantly reduced the consistency to 0.2, 0.3, causing the studied stands to fall within the category of regeneration emergency 1). Based on the difference between the volume that should have existed at the present time (the time of the latest cutting) estimated in theory and the original volume of 10 years ago, the periodic current increase in volume has been determined. By dividing the regular current increase by the number of years in the period (10 years), one obtains the periodic average increase in volume per year. By dividing the periodic average increase in volume by the area of the stand, one obtains the annual average increase in volume.

The calculations for determining the losses of value due to the increase losses have been performed for each individual experimental area.

For the portion from the forest management unit 662B, the calculations have been performed as follows:

- From the production tables, for the 60-year-old 1st production class spruce stand with full consistency (1.0), per hectare, the main production volume is 772 m^3 and, at 50 years of age, the main production volume under the same conditions should have been 671 m^3;

- The current composition of the stand is 10MO; the current consistency of the stand is 0.2 and the consistency 10 years ago was 0.8, according to the description by plots in the previous plan;
- The injuries are concentrated across an area of 1.4haout of the 13.59ha of the forest management unit. The volume of timber at the age of 50 shall be calculated using the following formula:

$$Vsp = VtxPxkxSpr \quad (10)$$

where:

Vsp–the volume for each species, at that age, participating in the make-up of the stand;

P – the share of participation of the species in the make-up of the stand;

k – the consistency (density of the stand);

Spr – the area of the stand.

By applying the formula in this case: $V_{initialMO.50}$ =6710x1.0x 0.8x1.4=751.52m^3 (for facilitating the calculations for the volumes, rounded values shall be used).

Thus, V_{MO50} =752m^3 and it represents the total (initial) spruce stand volume at the age of 50.

$$V_{estimated\ MO60}=772x1.0x\ 0.8x1.4m^3,\ V_{MO.60}=865\ m^3$$

The hypothetical estimated volume, when keeping the 0.8 consistency and adding periodic increases, at the age of 60,for the studied spruce stand ($V_{estimated\ MO60}$),is the volume that would have been obtained without the disruptive factors (felling due to wind and snow and injuries caused by the large game, insect attacks etc.).

The periodic current increase in volume (Ccp) is obtained as the balance between the volume of the spruce stand at the age of 60 and the volume of the spruce stand at the age of 50, as follows:

$$C_{CP}=V_{MO60}-V_{MO50}, \quad (11)$$

$$C_{CPMO} = 865-752 =113\ m^3$$

By dividing the periodic current increase in volume by the number of years in the period (10 years), one obtains the periodic average increase (Cmp) in a year, according to this formula:

$$\mathbf{Cmp} = \frac{\mathbf{CCP}}{N}, \quad (12)$$

where: *N –the number of years in the period.*

For this case, C_{mpMO}=113/10=11.3m^3/year. Based on the difference between the estimated spruce stand volume $V_{estimated\ MO60}$ (865 m^3) and the existing volume at the time of the exploitation $V_{existing\ MO60}$ in the stand (179 m^3 according to the APV) after extracting the volume from the accidental cutting (cuts not planned in the plan, which occur due to the interaction between the stand and the destabilizing factors), an extracted theoretical volume ($V_{extracted}$) results, over the course of the 10 years, of 686 m^3. Due to the fact that the accidental product cutting occurred in 2010, four years after the development of this APV (project evaluation report – in Romanian 'Act de Punere in Valoare'), the stand only loses the periodic average increase over those four years (11.3m^3/year x 4 years= 45 m^3). In relation to the area of the portion, the losses in volume per hectare are: 45 m^3/1.4ha = 32.14 m^3/ha^{-1} (m^3/year/ha). The difference between the theoretical extracted volume ($V_{extracted}$) in the stand by accidental cuts and C_{mp}in four years is the actual volume used from the accidental cutting in 2010.

Knowing the total amount, in RON, of the gross volume of wood from the forest management unit 662B and the volume to be harvested according to APV, the following values result:

28489 RON/179 m^3=159.156 lei/$m^3$of wood.

By multiplying the average price of a cubic meter of spruce wood by the increase losses in the spruce stand during the extraction of the accidental products up to the stand inventory and preparation of the APV, the following loss in value results:

45 m^3x 159.156 RON/$m^3$of wood = 7162.02 RON.

By relating the loss in value to the area in hectares of the experimental area, the following results:

7162.02 RON/1.4ha, with a loss in value of 5115.73 RON/ha.

Figure 1 shows the values of the economic and financial losses due to the disruptive factors at the forest management unit 662B.

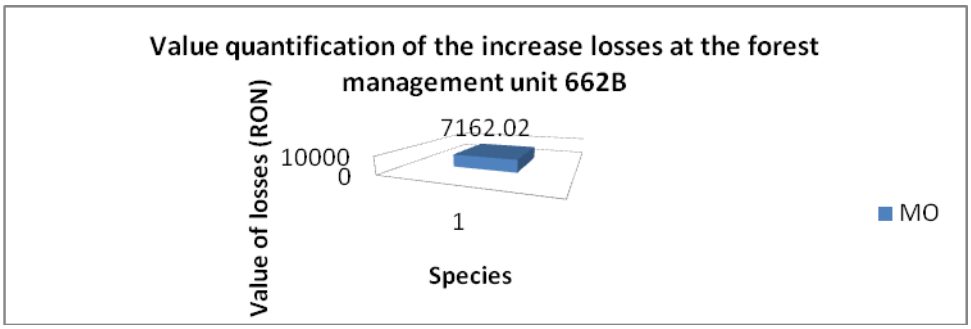

Fig.1. Value quantification of the increase losses for the spruce species at the forest management unit662B

At the experimental area of the forest management unit 75C, the stand has the following characteristics:

- The current composition of the stand is 8MO 1BR 1FA;
- The current consistency is 0.3 and, 10 years ago, it was 0.8;
- The injuries from the biotic and abiotic factors are scattered across the entire area of the forest management unit.

Using the same economic calculation algorithm, for the experimental area (portion) of the forest management unit 75C, we obtain as follows:

- By using the formula (10) for the spruce species, the following values result:

$V_{initialMO.50}$ =536x 0.8x0.8x3.0=1029 m^3

$V_{estimated\ MO60}$=627x 0.8x0.8x3.0 =1204m^3, $V_{estimated\ MO60}$ = 1204 m^3

- For thefir species, we have the following values:

$V_{initial\ BR.50}$ =430x 0.1x0.8x3.0=103 m^3

$V_{estimated\ BR\ 60}$ =532x 0.1x0.8 x3.0 m=128 m^3, $V_{estimated\ BR60}$ = 128 m^3

- For the beech species, we have the following values:

$V_{initial\ FA.50}$ = 335x 0.1x0.8x3.0=80 m^3

$V_{estimated\ FA\ 60}$ = 401x 0.1x0.8 x3.0 m=96 m^3, $V_{estimated\ FA60}$ = 96 m^3

- By applying the formula (11), one obtains:

C_{CPMO} =1204-1029 =175m^3

C_{CPBR} =128-103=25m^3

C_{CPFA} =96-80=16m^3

- By applying the formula (12) for each component species of the forest management unit 75C, one obtains:

$C_{mp\ MO}$ =175/10 =17.5m^3/year
$C_{mp\ BR}$ =25/10 =2.5m^3/year
$C_{mp\ FA}$ =16/10 =1.6m^3/year.

Based on the difference between the estimated volume of spruce species $V_{estimated\ MO60}$ (1204 m^3)and the existing volume at the time of the exploitation $V_{existing\ MO60}$ in the stand (389 m^3 according to the APV), after extracting the volume from the accidental cutting, a theoretical extracted volume ($V_{extracted}$) results, over the course of 10 years, of 815 m^3.

For the fir species $V_{estimated\ BR60}$ (128 m^3) and the existing volume at the time of the exploitation $V_{BR\ existing\ BR60}$ in the stand (88 m^3 according to the APV) after extracting the volume from the accidental cutting, a theoretical extracted volume ($V_{extracted}$) results, over the course of 10 years, of 40 m^3.

For the beech species, based on the $V_{estimated\ BR60}$(96 m^3) and the existing volume at the time of the exploitation $V_{FA\ ULM\ PAM\ existing\ BR60}$ in the stand (68 m^3 according to the APV) after extracting the volume from the accidental cutting, a theoretical extracted volume ($V_{extracted}$) results, over the course of 10 years, of 28 m^3.

The difference between the theoretical extracted volume ($V_{extracted}$) in the stand by accidental cutting and C_{mp} for three years, for all three species represented in the stand, especially spruce as the main species, represents the actual volume used from the accidental product cutting in 2011:

- For the spruce species: 815-(17.5m^3/year x3 years)=815-53=762m^3;
- For the fir species: 128-(2.5m^3/year x 3 years)=128-8=120m^3;
- For the beech species: 96-(1.6m^3/year x 3 years)=96-5=91m^3.

The following table presents the increase losses for all the species making up the stand (where the majority species is the spruce) and their value quantification.

Table 4
Value quantification of the increase losses for the forest management unit 75C

No.	Species	Average periodic increase	Average annual increase	Unit price per	Value of losses (RON)	
					Per	Total

		losses (m^3/year) Rounded values	**losses (m^3/year ha^{-1})**	**species (RON)**	hectare	
1	MO – spruce	53	17.5	171.568	3002.440	9093.104
2	BR – fir	8	2.5	207.659	519.147	1661.272
3	FA – beech	5	1.6	66.779	106.846	333.895
Total stand		66	-	-	3628.433	11088.271

Figure 2 presents the values of the economic and financial losses due to the disruptive factors at the forest management unit 75C.

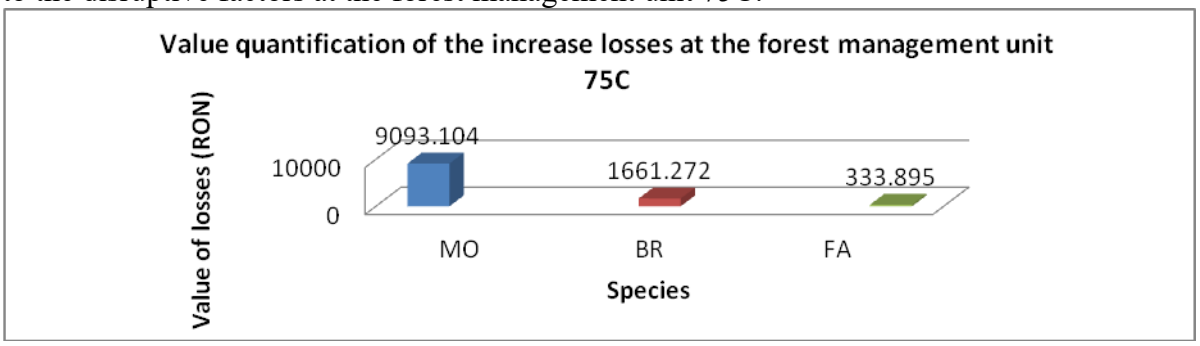

Fig.2. Value quantification of the increase losses per species at the forest management unit 75C

The volume of 973m^3 from accidental product cutting was used in 2011.

In terms of value, the increase losses for the entire stand at the forest management unit 75C,for a period of three years, is 12.38% of the amount of the wood exploited via the latest cutting according to the APV.

By using the same economic calculation algorithm for the experimental area (portion) at the forest management unit 363D, we obtain:

- By using the formula (10) for:
  - The spruce species, the following values result:
    $V_{initialMO.50}$ =859x 0.5x0.7x1.0=301m^3
    $V_{estimated\ MO60}$ = 877x 0.5x0.7x1.0 =307m^3, $V_{estimated\ MO60}$ = 307m^3
  - The fir species,the following values result:
    $V_{initial\ BR.50}$ = 810x 0.3x0.7x1.0=170 m^3

$V_{estimated\ BR\ 60}$ = 833x 0.3x0.7 x1.0 m = 175m^3, $V_{estimated\ BR60}$ = 175m^3

- The beech species, the following values result:

$V_{initial\ FA.50}$ = 625x 0.2x0.7x1.0=87 m^3

$V_{estimated\ FA\ 60}$ = 652x 0.2x0.7 x1.0 m=91 m^3, $V_{estimated\ FA60}$ = 91m^3.

- By using the formula (11), one obtains:

C_{CPMO} = 307-301 = 6m^3

C_{CPBR} = 175-170 = 5m^3

C_{CPFA} = 91-87 = 4m^3.

- By using the formula (12) for each component species at the forest management unit 75C, one obtains:

$C_{mp\ MO}$ = 6/10 = 0.6m^3/year

$C_{mp\ BR}$ = 5/10 = 0.5m^3/year

$C_{mp\ FA}$ = 4/10 = 0.4m^3/year.

Based on the difference between the estimated volume of spruce species $V_{estimated\ MO60}$ (307m^3)and the existing volume at the time of the exploitation $V_{existing\ MO60}$ in the stand (78m^3 according to the APV) after extracting the volume from the accidental cutting, a theoretical extracted volume ($V_{extracted}$) results, over the course of 10 years, of 229m^3.

For the fir species $V_{estimated\ BR60}$ (175 m^3) and the existing volume at the time of the exploitation $V_{BR\ existing\ BR60}$ in the stand (62 m^3 according to the APV) after extracting the volume from the accidental cutting, a theoretical extracted volume ($V_{extracted}$) results, over the course of 10 years, of 113 m^3.

For the beech species $V_{estimated\ BR60}$ (91 m^3) and the existing volume at the time of the exploitation $V_{FA\ existing\ BR60}$ in the stand (78m^3 according to the APV) after extracting the volume from the accidental cutting, a theoretical extracted volume ($V_{extracted}$) results, over the course of 10 years, of 13 m^3.

The difference between the theoretical extracted volume ($V_{extracted}$) in the stand by accidental cutting and C_{mp} for three years for all three species represented in the stand, especially spruce as the main species, represents the actual volume used from the accidental product cutting in 2011:

- For the spruce species: 307-(0.6m^3/year x3 years)=307-2=762 m^3;
- For the fir species: 175-(0.5m^3/year x 3 years)=175-2=173 m^3;

- For the beech species: 91-(0.4m^3/year x 3 years)=91-1=90m^3.

The following table presents the increase losses for all the species making up the stand (where the majority species is the spruce) and their value quantification.

Table 5
Value quantification of the increase losses for the forest management unit 363D

No.	Species	Average periodic increase losses (m^3/year) Rounded values	Average annual increase losses (m^3/year ha^{-1})	Unit price per species (RON)	Value of losses (RON)	
					Per hectare	Total
1	MO – spruce	2	0.6	174.808	104.885	349.616
2	BR – fir	2	0.5	198.822	99.411	397.644
3	FA – beech	1	0.4	63.692	25.477	63.692
Total stand		4	-	-	229.773	810.952

In terms of value, the increase losses for the entire stand at the forest management unit 363D, for a period of three years, is 2.62% of the amount of the wood exploited via the latest cutting, according to the APV. This shows that, with the aging of the stands, the increases are lower and, therefore, the losses due to the increases are lower, becoming almost non-existent for a stand past its technical usability age. Figure 4 shows the economic and financial losses due to the disruptive factors at the forest management unit 363D.

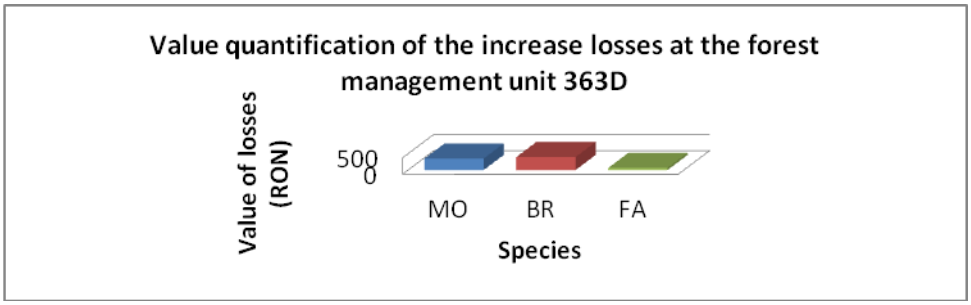

Fig.4. Value quantification of the increase losses per species at the forest management unit 363D

4. Interpretation of the results and final conclusions

The interference between the economic & financial, the economic& social and the biological systems has, in most cases, led to major changes within the biological systems (ecosystems), economically quantifiable in terms of value as losses, i.e. as deviations from a normal structure.

Economically speaking, everything that does not correspond to a normal state of dynamic balance between these triggering factors shall be recorded as losses.

When transposing the situation in the case of forest systems, the increase losses due to the action of negative disruptive factors, such as high-intensity wind, snow, leads to disturbances in the chain, in the specific environment of forest systems. Thus, the quantitative and qualitative wood depreciation has a negative local impact on the economic-financial and social systems in the area. Since wood is a commodity, when it depreciates, under the influence of disruptive abiotic and biotic factors, it can no longer be stored, the same as for any unaffected systems. It must be used as soon as possible since a greater depreciation of its quality over time leads to growing economic and environmental losses.

The impact on the forest environment has direct local implications, as well as indirect implications that are difficult or sometimes impossible to quantify in terms of money. The degradation of the forest systems has major effects on the anti-erosion and hydrological system, leading to floods in the surrounding areas, as well as climate changes because there is no longer the balance created in the natural biological systems where there are no disruptive factors. Once the forest systems are affected, their recovery sometimes involves very high costs, and a long recovery.

The analysis of the three stands considered in the study shows that the increase losses are higher in the young stands (they are frequent around the age of 60 since the increases are also more active in this period) and are lower in the stands past their usability age (the forest management unit 363D).

The forest systems influence evapotranspiration, reduce leaks and a forest ecosystem affected by disruptive factors can no longer optimally fulfil its hydrological role because some of the rainfall is no longer retained, the snow no longer melts slowly and the litter is carried away by the rainfall water, especially for the high water on the slopes and, hence, local erosion appears and, in the downstream surrounding areas, floods occur and cover the culture land with mud and clog the reservoirs (in this case, the Colibita reservoir). The affected stands can no longer counteract the action of the strong winds as they are exposed to degradation at all times, up to the occurrence of the mass windfalls.

The economic and financial losses that are hard to quantify in terms of value are those that influence the climate of the zone: the forest ability to store carbon and produce oxygen, to neutralize pollutants, to enrich the air with negative ions, anti-microbial substances (phytoncides).

The treatments applied to the studied stands (the forest management units 662B, 75C and 363D) are progressive ones, for alignment, since there are natural seed tree areas already installed, as reforestation for a percentage of the area of the unit and the caring for the new cultures are required.

Furthermore, the losses recorded in such stands are not only the quantifiable ones that can be assessed in economic and financial terms; but also the environmental ones, which are much harder, and sometimes impossible to quantify in economic and financial terms, which lead to major climate changes, the so-called 'snowball' effect, in the areas affected by the disruptive factors and, implicitly, in the adjacent areas located downstream. Besides the loss of timber, there is a series of extra costs for forest regeneration in these stands, where the ecological environment of the forest is affected. A deconstructed forest can no longer optimally fulfil its hydrological and anti-erosion role.

The biodiversity and ecosystems are also under pressure. The solution is to invest in innovation right now, to support a green economy – an economy in harmony with the natural environment, in order to minimise the effect of the climate changes as much as possible.

As one can see, the greater frequency of the disruptions due to the negative action of the biotic and abiotic factors is recorded in the higher productivity locations, the stands subjected to the research being superior in terms of productivity (production classes I and II), and the increase losses due to the disruptive factors are much greater in the case of the two 60-year-old stands.

All in all, the negative influence of biotic and abiotic factors has increased in light of the increasing artificialization of forest ecosystems due to the creation of monocultures of spruce, by plantations, at the expense of the more stable natural regeneration, in which the proportion of the natural species is much better directed by the laws of nature. For the future, the creation of mixed and far more environmentally stable and economically productive stands, with local genetic material, is in order.

"This work was supported by the project "Interdisciplinary excellence in doctoral scientific research in Romania – EXCELLENTIA" co-funded from the European Social Fund through the Human Resources Development Operational Programme 2007 – 2013, contract no. POSDRU/187/1.5/S/155425."

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BRIEF CONSIDERATIONS ON MEAL VOUCHERS, HOLIDAYS, GIFTVOUCHERS AND NURSERIES, DURING THE CURRENT CRISIS

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Abstract:
At the beginning of the sixth decade of the last century, in France, were created meal vouchers which have since spread to other European countries in order to encourage operators to contribute financially to better nutrition for employees in order to increase productivity and to improve the health of the population.
Subsequently, the meal vouchers model was also taken by the public institutions, during which it was created the necessary legislative framework for issuing them, and later on, on the same criteria, have also been issued holiday vouchers, giftware and nursery vouchers.
In our country, was first created the legislative framework for providing meal vouchers in 1998, gift vouchers and nurseries in 2006, and the legislation granting holiday vouchers was adopted in 2009.

Keyword: *meal voucher, holiday voucher, giftware, nursery voucher*

JEL Classification: *K19, K31*

Regarding the meal vouchers, these are vouchers printed on paper or issued electronically similar to the bank's cards and used as payment instruments for the payment of the meal provided by the employer or for the purchase of food directly by the employees.

Unlike currency, the meal vouchers are irreplaceable value papers and are the creation of the French state in the six decade of the last century, then adopted by other states.

The main reason of the emergence of meal vouchers was to encourage employers to contribute financially to a better employee's

nutrition in order to increase productivity and improve the overall health of the population.

In Romania, the legal framework of meal vouchers is regulated by the Law 142/1998, as amended successively, most recently by the Law no. 291/2013 and it represents an extra-wage benefit, deductible and exempt from taxes for both the employee and employer, resembling to a personal allowance for food.

In accordance with the second article of the aforementioned normative act, the issue of the meal vouchers on paper or electronic form can only be done by authorized units of the Ministry of Finance or by the employers who have organized cafeteria-restaurant or buffets.

In order to be valid in accordance with the second article of the same law, any meal ticket issued in paper form must bear the number under which it was issued and the name and address of the issuer, the face value of the ticket, the period of validity, the interdiction to be used for purchase cigarettes and alcoholic beverages, space for the name and surname of the employee who is entitled to use the ticket, the space reserved for the entry stamp application and date.

Regarding meal tickets issued in an electronic format, according to Article 5 of the same law, it is imperative that they contain the name and address of the issuer, validity, interdiction to be used to purchase cigarettes and alcohol, and the name and surname of the employee entitled to use the instrument of payment. These data must be printed on the electronic voucher or otherwise must be stored in it.

In order to be protected against attempts of forgery, the paper meal tickets should contain security features such as different graphics elements, thermal or fluorescent ink, etc. and in electronic format must contain specific security features.

The paper food vouchers can be distributed by the employer in the last decade of the current month for the following month; according to the number of working days for which the distribution is made, but only if the issuer has paid in full by bank transfer.

When it comes to the electronically food vouchers, they are powered by the issuer in the last decade of each month for the following month, only with the nominal value corresponding to the number of working days in the month for which the transfer is made, but only if the employer made the full payment by bank transfer to their value.

With regard to the meal vouchers, we must mention that regardless the way they were issued, they may be settled by the issuer entities with which they have signed contracts, only by bank transfer.

At the same time, the meal vouchers, regardless of the support they were issued, can only be used for the payment of the meal or to purchase

food only in catering, food stores, canteens restaurant and cafeterias that the issuing units have concluded contracts for the provision of their services.

Likewise, we mention that regarding the meal vouchers on paper, they are considered fully utilized, even if the value for the products purchased or table paid is lower than their nominal value, while those issued in electronic format are used for the settlement of products purchased only until their value.

In other words, if the goods purchased or paid for meals with meal vouchers on paper is lower than the value of meal vouchers, do not entitle their holder to claim the rest in cash.

Regarding the electronically food vouchers, they can be used only to pay the value of meals or food, being excluded the possibility to be used for cash withdraw. The regulation is imperative and clear from paragraph 7 of art. 2 of law [1].

As far as we are concerned we believe that without this express provision, it would have been the same conclusion and result from a contrary interpretation of the provisions of paragraph 6 of the same article.

In our opinion, the Law no. 291/2013 does not expressly provide that the food vouchers are to be used exclusively on national territory but by the reference to the reasons considered by the legislature to create the legal framework for issuing them, we feel that the food vouchers can only be used on national territory.

However, the question is whether employees of the executive management of multinational or transnational are summoned, by the operative management of the home entity where they conduct its business, for analysis or short stages of training outside the national territory, could use the vouchers outside the country.

As far as we are concerned we believe that under current regulations, the meal vouchers issued in Romania can be used exclusively on national territory.

Our opinion is based on the fact that on the one hand are issued in national currency, on the other hand, the fact that issuers[2] - *other than units with canteens and restaurant buffets* - even if they are operators with headquarters in states European Union, have contracts for meal vouchers issued in Romania only with providers from the national territory.

[1] Law no. 142/1998, with its subsequent amendments

[2] By way of example here are: Edenred Romania for *"Ticket Restaurant",* Chèque Dèjeuner, for those with the same name, *Sodexo* for *"Gusto Pass",* Ascendi, Inc. for the called *"Tichet de masa"* and Cuget Liber Poligraf;

However, we do not exclude the possibility that in a less distant future the meal vouchers could acquire a tool of international payment character if their issuers - other than units with canteen and restaurant buffets - would have stated in the service contracts agreements with the providers from other states, that they will accept meal tickets issued in the EEA territory, and the site payment currency conversion to be made by the issuer.

At the beginning of the year 2016 it has been submitted to the Romanian Senate, as a first notified Chamber, the Chamber of Deputies as a decisional forum, a bill that provides for BIO vouchers, which allow employees only to purchase unprocessed foods, including from markets.

Under the provisions of the bill, these vouchers cannot have a share of more than 25% of the number of the vouchers per month, and the nominal value of such ticket is with 20% higher than the nominal value of regular meal vouchers.

According to the explanatory memorandum, employees will be forced in this way to eat healthy.

Also, according to the bill, BIO vouchers can be used only for the purchase of unprocessed food products, including food markets, as well as foods that are labeled as BIO.

Regarding the **holiday vouchers**, we mention that these are issued based on the GEO no. 8/2009, published in M.O. 110 / 24.02.2009, as amended by Ordinance no. 8/2014 adopted with amendments by the Law no. 173/2015.

According to that legislation, in order to recover and maintain the working capacity of employees, employers may grant vouchers called *holiday vouchers*.

In accordance with the first article of the mentioned regulation[1], the holiday vouchers are granted in the limit of the amounts for this purpose in the state budget or the budgets of local entities and within the budget for this purpose in the budget of revenues and expenditures for other employers.

As in the case of the meal vouchers, the holiday vouchers can be issued both in paper and electronic form of card. However, regardless the form they are, the holiday vouchers are issued only by the units authorized by the Ministry of Finance.

According to the second article of the enactment, the paper holiday vouchers are valid only if they have the unit's serial number and if they include the following: **a)** the issuer and its identification data; **b)** the nominal value of the holiday voucher; **c)** the employer and its identification data; **d)** the name and personal identification code of the employee who is

[1] EDG no. 8/2009 with its subsequent amendments

entitled to use it; **e)** the space for the registration of the period when it was used and the application of the affiliated unit stamp; **f)** the prohibition for the affiliated unit to pay the difference in money between the value of the holiday voucher and the package of services to their users; **g)** the duration of the holiday voucher; **h)** the prohibition of the use the holiday voucher in places other than the affiliated units; **i)** visual identity elements of Romania's tourism brand.

Simultaneously, according to the second paragraph of the second article[1], the electronically holiday vouchers are valid only if the entries letter a), c), d), g), h) and i) from the previous paragraph are inscribed upon it or otherwise stored in its memory.

In other way, we must mention that the electronically holiday vouchers cannot be used to withdraw cash from ATMs.

Holiday vouchers are an alternative to holiday bonuses granted by employers, which they also replace, according to the mentions of the enactment, and their value is tax deductible and exempt, for both the employee and employer. However, the maximum commission that can be charged from the employer and the tourist facilities affiliated with the issuer of the holiday vouchers cannot in aggregate exceed 1% of the holiday ticket value and the travel agent commissions as an affiliated unit may not exceed 10% of the value of the touristic package.

The employees can buy with the vacation vouchers complete packages from tourist units within Romania, such as travel agencies, hotels, spa treatment units or leisure or pensions approved by the National Authority for Tourism.

However, if the purchased tourist packages value exceeds the holiday vouchers value granted by the employer, the difference shall be covered from the own funds of the employee.

Regarding the **gift and nurseries vouchers**, the legal framework for the issuance and granting them is established by the Law no. 193/2006, with the latest changes brought by the GEO no. 121/2011.

According to this regulation, gift vouchers and childcare is given by the economic operators, public institutions, co-operative and other legal entities and individuals who hire staff based on an individual employment contract.

In the same vein we argue that the gift vouchers are used in marketing campaigns for market research, protocol, or for advertising, publicity or social expenses.

Also, the nursery tickets is given on request of a parent or guardian or person to which children have been entrusted to the care and education

[1] EDG no. 8/2009 with its subsequent amendments

on the basis of the family book, from funds provided entirely by the employer until the child reaches the age of three years old .

In accordance with the second paragraph from the 4th article of the enactment[1], childcare vouchers are granted within the budgetary provisions for both public sector entities and other categories of employers.

In the same time, the third paragraph from the 4th article of the law[2], childcare vouchers are granted only to employees who do not receive parental leave and allowance for raising children up to 2 years, or up to 3 years for those with disabilities.

It is important to note that the value of the nurseries vouchers may be added to the state allowance for children and to the incentives for resuming work by the employee, provided the Government Emergency Ordinance no. 148/2005 on support to families for raising children.

As with meal and holiday vouchers, the gift vouchers as well as the nursery vouchers are issued by specialized units in the covered authorized the Ministry of Finance.

In accordance with the 7th article of Law no. 193/2006 as amended, the value of a nursery ticket or gift voucher is 10 (ten) lei or a multiple of ten, but cannot exceed the amount of fifty (50) lei, while the nominal value of nursery vouchers which may be granted monthly for each dependent child is 300 (three hundred) lei and can be indexed quarterly with the inflation index communicated by the National Statistics Institute.

Nursery tickets may only be used for paying the taxes to the nursery where the child is enrolled and if the monthly cost to that breeding and education is below the nominal amount paid monthly, beneficiaries are not entitled to receive the remainder in cash.

According to the 6th article of the enactment, or the nursery gift vouchers are only valid if they have the registered serial number of the issuing unit, and have listed at least the following elements: **a)** the name and address of the issuer; **b)** the nominal value of the voucher; **c)** the period of validity; **d)** space for the registration of surnames and forenames of the employee who is entitled to use the childcare voucher; **e)** space for recordkeeping and enforcement unit stamp.

As with the meal and holiday vouchers, the gift and nursery vouchers are tax deductible, and the settlement between the employer and the issuing unit and between the latter and the educational unit or shops are solely done by bank transfer.

[1] Law no. 193/2006, with its subsequent amendments
[2] Idem

As it can be seen, the enactment regulating for gift and childcare vouchers does not provide for the issuance of these categories other form than then paper vouchers.

As far as we are concerned, we believe that although their legal status is similar to that of meal vouchers or holiday, apparently nothing precludes the possibility of issuing these vouchers in an electronic form card. However we consider that in order to be issued in electronic form the gift or nursery vouchers, it should be amended the Law no. 193/2006 as amended, to establish another way of *making mention of the registration date and the stamping from the unit where the voucher was used.*

Conclusion

In conclusion, regardless of the method to grant any of the categories of vouchers mentioned above, these are incentives provided by the employer both for restoring the employee's ability of work and also supporting employees' families during a minor children growth up to age two or three years old and it may be granted cumulatively.

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Law no. 142/1998, with its subsequent amendments
EDG no. 8/2009 with its subsequent amendments
Law no. 193/2006, with its subsequent amendments

THE ROLE OF ACCOUNTING INFORMATION SYSTEMS IN MAKING INVESTMENT DECISIONS

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Abstract:
The Accounting Information Systems is necessary for the business organizations managers to take as a basis for their making decisions.
The role of the accounting information is to assist in the selection of investment opportunities that can achieve the maximum profitability in the long run.
The analysis presented in the present paper is based on predictions that help the decision makers in choosing among available alternative investment opportunities.

Keywords: *accounting information systems, investment decisions*

JEL Classification: *M16, M41*

Introduction

The Accounting Information Systems and their resulting data in administrative decisions have occupied the forefront of the accounting periodicals in the recent years. This is justified by the fact this data highlights the efforts exerted in its preparation, which makes it necessary for the business organizations managers to take as a basis for their making decisions.
The role of the accounting information in administrative decisions is limited to helping the decisions makers to predict the value of the variables of the decision models which they follow.
On the other hand, the role of the accounting information varies in making investment decisions related to the acquisition of long-term assets as a result of the fact that the capital available for investment is a limited economic resource, which requires the use of an analytical performance tool to assist

in the selection of investment opportunities that can achieve the maximum profitability in the long run.
This tool is represented in the capital budgets that involve many tools such as the payment period, the average return on investment, the net present value and the internal rate of return.
In the light of the different elements of these tools, the role of the accounting information is different in each of them.

The Research Problem:
The role of the accounting Information Systems and their resulting data in making administrative decisions have occupied the forefront of the accounting periodicals. This concern has, in the recent years, been justified by highlighting the efforts exerted in the preparation of the data on which the business organizations managers base their decisions.
These managers pay special attention to the investment decisions related to the acquisition of the long-term assets due to its far-reaching effects on the operations of these organizations. Thus, the making of these investment decisions involves the use of the capital budgets as an analytical tool ensuring the selection of investment opportunities that can achieve the maximum profitability in the long run.
The importance of the investment decisions raises a question about the role of the accounting information in making these decisions and the different extent of this role from that of the other administrative decisions. The objective of this research is to investigate the various aspects of this question.

Accounting Information Systems:
The activities of business organizations that involve the collection, compilation, tabulation and distribution of data are considered information systems where information is defined as the knowledge extracted from the analysis of the data generated by these systems. In this regard, there must be a differentiation between the formal and informal systems of information.
The formal systems are the sources of information illustrated in the organizational structures of the business organizations, while the informal systems are the sources of information that are not shown by these structures.
The responsibility for the design of accounting information systems lies with the accountants as system analysts who identify the decision makers' needs of the data and the design of the data elements that increase the potential benefit to be used in making decisions about the cost of the data preparation and distribution.

The manual accounting systems were the sole source of information in the business organizations. There were other activities such as marketing and production which contained informal devices that collected and distributed the data special to each operation; thus the main function of the accounting information systems was to summarize the data coming from the informal devices for the completion of the data needs of administrative decisions makers.

In the light of that the fact that most of the situations that generate the accounting data are the transactions, this data was mostly of a financial nature and was chronologically entered.

However, with the development in the use of electronic computers and the expansion in the application of the analytical quantitative methods in dealing with the administrative problems, there have appeared many of the formal information sub-systems which provide the accounting information systems with the data inputs and distribute the data to the activities of other departments.

As a result, the managers of business organizations have become in direct contact with the sub-systems to obtain their needs of data of various activities.

In other words non-accounting data with varying degrees of appropriateness for the administrative decisions have become available for the managers of business organizations.

In this field, the American Accountants' Association has proposed appropriateness as a key criterion for assessing the accounting data.

For the accounting data to be characterized with appropriateness, its impact or expected impact must be its involving alternatives in the situations of making decisions.

For the purpose of this research appropriateness is identified by the relative benefit of the data in predicting the value of the variables in the decision models which the decision-makers rely on in making their administrative decisions.

Elements of Administrative Decisions Analysis:

Egery, Gedeky and Nabet proposes an analysis of the theory by the relationship between the accounting data and the process of decision making.

This basis of this analysis is that this process involves three main components:

A) The Decision Inputs

B) The Decision Outputs

C) The Decision Model.

The decision inputs are the factors upon which the decision makers base their decision-making. These are the decisions made by the managers of the business organizations. The decision model is represented in the relationship between the decision and the combination of its inputs.
In this regard, the analysis differentiates between the main and the alternative inputs of the decision. The main inputs denote those inputs on which the decision makers would like to base their making of administrative decisions. The alternative inputs indicate the inputs they actually take as a basis for their decision-making as long as they reflect the main input. The decision makers often use the alternative inputs to facilitate the decision-making process, especially when the cost of obtaining main inputs is high.

The Role of the Accounting Information in the Administrative Decisions

As highlighted by the above analysis of the elements of administrative decisions, the accounting information is only one input of these decisions. In the light of the fact that one of the main purposes of the preparation and distribution of the accounting data is to help decision-makers to predict the value of the variables of the decision models on which they rely because such prediction of the value of the variables is the cornerstone in the decision-making .The role of accounting information systems is limited to producing data of economic nature upon which the decision-makers predict the value of the variables in the decision models that they adopt.

In trying to identify the administrative decision-makers' needs of appropriate data, the accountants face the problem identifying the decision models they rely on, the variables these models involve as well as the weight given to them. In the light of the influence of the decision makers' objectives, awareness and previous experiences on the selection of their decision models Bever, Kennelly and Arc argue that this identification of the decision models exceeds the scope of the present human capacity.
Hence, the accountants, in their attempt to identify the needs of the decision-makers of appropriate data, resort to proposing action models for the decision-makers. Through the analysis of these proposed models they can derive the data set which is relatively more appropriate. This method is called the task analysis method which is criticized for being subjective in its dealing with the problem of identifying the needs of the decision makers of the appropriate accounting data.
In the light of this, some accountants proposed providing the decision makers with a variety of detailed data that allow them to determine the decisions they make and the selection of the appropriate data. However, this alternative method is not free from criticism of the task analysis where there

is a need for setting a standard by which the accountants can determine what data must be supplied for decision makers in business organizations.

The Nature of the Investment Decisions:

The capital available for investment is a source whose cost represents the minimum return on investment. Despite the inadequate return of some investments to cover their costs, the expected profitability of such investments sometimes increases their cost, which requires the use of an analytical tool to assist in the selection of the investment opportunities that can achieve the maximum profit in the long run. This analytical tool is represented in the capital budget.

This analysis of investment opportunities is based on the use of its associated cash flows where these flows are divided into outflows and inflows. The outflows are represented in the cash payments while the inflows include the cash resulting from the increased volume of activity or from the cost savings. Additional cash investments in the elements of the working capital are regarded a part of the cash outflow. Also, the amount of cash generated by the sale of these investments at the end of their productive life is a part of the cash inflow.

The Role of Accounting Information in Investment Decisions

The analysis of the investment opportunities indicates the methods used in the evaluation of these opportunities. This analysis is based on predictions that help the decision makers in choosing among available alternative investment opportunities. The most common methods used in the analysis of the investment opportunities are as follows:

First: The Payback Period Method:

This method refers to the length of time taken by the cash inflows to cover the cash outflows. The implicit assumption here is that the investment whose inflows cover its outflows in a faster and better way than the ones that take longer time.

This method is in common use due to its easiness especially for the investments that yield a fast return of cash, in addition to its being used as an indicator of the degree of investment risks.

However, this method is criticized for its negligence of the time factor for the money and profitability achieved after the payback period as well as the value of investments as scrap at the end of its life productivity. As a result of calculating the payback period by dividing the cash outflow of the investment by the annual cash inflow in case of equal flows, or by the average cash inflow in case of their being unequal. The role of the accounting information under this method is restricted to helping the

prediction of both the investment outflows as well as the annual cash flows from the investment returns.

Secondly: The Inverted of the repayment period Method:
The inverted of the repayment period is calculated by dividing the interior annual cash flow to the exterior cash flow for investment.
As in the way of repayment period, the auditing information rule in this way is to help with the prediction of all exterior cash checks for investment and the upcoming flows.

Thirdly: the average of return on investment Method
The average of annual return is in the annual net profit after the tax that the investment achieves by subtracting the investment depreciation burden from its net annual interior flow, although the discount of investment depreciation burden maybe good for the valuation of the audited net profit after achieving it as like this discount could be questionable for the prediction of the future benefits for investment. The average of return is often calculated on investment by dividing the annual net profit the resulted from the original investment cash that includes everything related to having the long term and rolling assets and initial costs to activate the sales, and the other elements that the original investment requires them as neglecting any of them may cause misleading results.
And there is alternative way to calculate the return average on investment by dividing the annual return average after the tax on investment average instead of just dividing on the original investment, and according to that the investment average is calculated by adding the account of investment as a scrap at the end of its productive life to the account of the original investment that is in published data in the leverage posts, so it is often pointed to it with the accounting way. And this way distinguishes that it is easy to follow the expenses parts that are related to it as it is provided in accounting books.
However, there is something not good at it and that is neglecting the part of time to money as two different investments may have the same return average despite the difference of timing in cash flow of each other .and there is no doubt that observance of time for money will lead to prefer the investment that occurs cash flows much more in the first years of its life.

Fourthly: the current net value method:
The current net value for investment refers to the difference between the current value due to its interior flows and the current value of its exterior cash flows .and it is calculated by discounting the cash flows that are related to investment by using discount rate like the likely average of capital cost

which is the base rate to the return of investment, and the using of the likely average of capital cost is justified as the variety of financing sources of business organizations takes into account, and the difference of the cost of each of it, at this issue, these sources can be classified basically in the perfect shares, high ones and bonds.

The perfect shares cost is calculated by dividing the mentioned annual coupon in this shares to the market value of the share and the normal shares cost is also calculated by dividing the predicted coupon to the market value of the share. But the likely average of the capital cost is calculated by adding the multiplication the ratio of each and every financing source in the cost of each of it.

And beneath the way of current net value, the use of the current value index for investment that is calculated by dividing the current value of interior cash flows to the current value of its exterior flows. And this proof is useful to arrange invest mental opportunities alternatives according to its profit prefacing to test the alternative which achieves maximum profit at the long term .and the current net value is distinguished that it takes into account the value of time for money but there is something not good at it that may lead to misleading results if it is used in analyzing investment opportunities with various productive life, as the alternative that accomplishes the highest current net value maybe its life long enough to the limit that another alternative prefer its productive life shorter despite its least profit. Also if investment become in analysis situation on various exterior cash flows as investment that achieves the highest current net value maybe not necessarily be the best investment alternative especially if this investment has huge exterior cash flows. from all of that we can summarize that the parts that each and every source of finance and its likely average depend on it and also the interior and exterior cash flows for each alternative of investment opportunities and its current net value that are documented to the data which the auditing system provides it.

Fifthly: The interior return Method:

The rate of the interior return indicates to the rate which in it, the current value of incoming cash flows equals to its exterior cash flow. In another meaning, the interior rate of return of investment at this rate that the current net value becomes zero in it. Though the likely average cost of capital flow does not interfere in the calculation procedures of the interior rate of return to any of invest mental opportunities, but the resulted interior rate of return to the likely average of capital cost due to evaluating the investment opportunities. As the interior rate of return is more than the likely average of capital cost means the profit of invest mental opportunities, on contrary if the interior rate become less than the likely average of capital cost.

The interior return method is distinguished by taking into account the value of time for money. but there is something not good at it and that what it does by making implicit assumptions to re-invest the investment opportunities net profit at the same rate of the profit of this opportunities, while the way of the current net value assumes to re-invest the profits on the base of the likely average of capital cost. A lot of accountants think that the second assumption is more approachable to the fact.

Results and Recommendations

First: Results:

1. Accounting information is considered one of the inputs for the administrative decisions and its role is confined to helping the decision-makers to predict the value of the decision variables models that they rely on in connection with the preference/trade-off between economic alternative uses of limited resources.
2. While the accountants face the problem of identifying the needs of makers of administrative decisions of appropriate accounting data which they would take to identify the mechanism of decision models they rely on, the variables those models involve and the weight of each of them. This matter gets increasingly complicated as a result of the choice being influenced by the decision-makers objectives, awareness and previous experiences. The factors vary between individuals. Some accountants have the view that identifying the models which the decisions makers rely on are beyond the present human scope of capacity.
3. Investment decision making which is related to the acquisition of long-term assets involve using the tool of capital budgets as an analytical tool that helps in the selection of investment opportunities that can achieve the maximum profitability in the long run. The analysis of investment opportunities is based on the use of the associated cash flows which is divided into outflows and inflows. The outflows are mainly related to the acquisition of these assets, while the inflows mainly include the flows resulting from the increased volume of the activity or from the cost savings flows.
4. The preference/trade-off between the investment opportunities is based on the use of several methods of payback period, the inverted payment period, the inverted payback period, the average return on investment, the net present value and the internal rate of return, which is different in each case in the role of the accounting information.

Second: Recommendations

1. It is necessary to use the average return on investment method which is based on the accounting data published in the financial statements, the rest of the analysis methods are based on the use of cash flows. In the method of the payback period as well as in the inverted payment period, the role of the accounting information is confined to helping to predict the cash outflows and the cash inflows associated with each of the investment opportunities.
2. The role of the accounting information in the method of the net present value is confined to assisting in the calculation of the net present value of each of the investment opportunities. Such calculation is based on using the weighted average cost of capital which takes into account the multiplicity of the funding sources in business organizations and the differences in the cost of each of them. In this regard, the cost of both sources of funding and the weighted average cost of capital are considered accounting information.
3. The method of the internal rate of return where the present value of outflows for each of the investment opportunities are equal, the weighted average cost of capital, which represents the minimum return on investment is not included in the calculation of the internal rate of return, despite comparing it with the rate of internal rate of return in the process of preference between the alternative investment opportunities.

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AUDITUL INTERN ŞI MANAGEMENTUL RISCULUI

ISSN 2065-8168 (print)
ISSN 2068-2077 (online)