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I. NEWS IN ACCOUNTING

IMPROVEMENT OF LIFE INSURANCE-RELATED ACCOUNTING OPERATIONS WITHIN THE NEW ECONOMY

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Abstract

This paper outlines the life insurance-related accounting operations, in consideration to the harmonization of the Romanian legislation with the International Financial Reporting Standards.

The main accounting operations specific to the life insurance sector include: accounting of revenues and expenses derived from life insurance operations (recording the premiums written, recording the payment of insurance premiums, termination of insurance policy, recording the compensation expenses), accounting of operations related to the setting up and using the technical reserves for life insurance (general principles, accounting of premium reserves, accounting of loss reserve, accounting of the reserve for benefits and discounts, accounting of mathematical reserve, accounting of other life insurance-related technical reserves).

Key-words: *revenues and expenses, life insurance, technical reserves for life insurance, reported/not reported loss reserve, reserve for benefits and discounts, mathematical reserve*

JEL Classification: D31, G00

Introduction

In the new economy, the life insurance sector has undergone a series of considerable changes, especially after the introduction of insurance products that provide not only protection against the death risk, but also saving and investment possibilities.

The insured risk in these types of insurances is represented by the death of the policy holder written in the insurance policy, irrespective of the cause triggering the event. Furthermore, additional clauses can be added to these policies: death and permanent disability caused by accident; hospitalization caused by accident or disease; temporary disability caused by accident or disease; surgery following an accident or disease; burns and fractures; severe medical conditions; payment of insurance premiums by insurer in case of permanent 1st degree disability.

The main types of life insurance available on the insurance market are: temporary life insurance; insurance for a rent study and a dowry plan, mixed life insurance and Unit Linked life insurance.

We shall continue with an overview of the main accounting operations specific to the life insurance sector. Some synthetic accounts are used both for the general insurances and life insurances, whereas the two insurance categories are divided in the 2nd degree synthetic accounts and no further description of these accounts shall be made. For example, account 401 'Transactions in relation with insurance premiums'. Since the accounts of the life insurances must be kept separately from those of the general insurances, the account 401 'Transactions in relation with insurance premiums' shall be divided into two accounts as follows: *4011* 'Transactions in relation with insurance premiums for *life insurances'* and *4012* 'Transactions in relation with insurance premiums for *general insurances'*.

I. ***Accounting of REVENUES FROM AND EXPENSES with life insurance operations***

A. **Recording the premiums written**

a. *Recording the revenues from life insurances in the current period according to the insurance policy.*

Two accounts shall be used for this operation: account 4011 'Transactions in relation with insurance premiums for life insurances' and account 701 'Revenues from gross premiums written related to direct life insurances'.

Account 701 ' Revenues from gross premiums written related to direct life insurances'

✓This account is used to keep record of the revenues from gross premiums written concerning life insurances related to direct insurances.

The following accounting formula shall apply:

4011 'Transactions in relation with insurance premiums for life insurances'	=	701 'Revenues from gross premiums written related to direct life insurances'	– amounts falling due X*

* According to the applicable legal provisions, the amounts X can be:

⇒ for life insurances where the duration of the insurance contract is less or equal to 1 year, the gross premium written shall represent the value of the paid and payable gross premiums related to the insurance contract;

⇒ for life insurances where the duration of the insurance contract is longer than 1 year, the gross premium written shall be determined as follows:

a) in case of life insurance contracts with single premium, the gross premium written shall represent the value of the single gross premium related to the insurance contract;

b) in case of life insurance contracts where the policy holder pays the insurance premium by instalments, the gross premium written shall represent the value of the paid and of the payable gross premiums due within one calendar year according to the insurance contract;

c) in case of investment-related life insurances, the gross premium written shall represent the overdue gross premium.

b. *At the end of the reporting period, the credit balance of the account 701 'Revenues from gross premiums written related to direct life insurances' shall be transferred to the account 121 'Profit or loss'.*

The following accounting formula shall apply:

701 'Revenues from gross premiums written related to direct life insurances'	=	121 'Profit or loss'	– balance of account 701

B. **Recording the payment of insurance premiums**

The following accounts shall be used for this operation: account 4041 'Transactions in relation with life insurance brokers', account 4011 'Transactions in relation with life insurance premiums', account 54711 'Petty cash in lei related to life insurances' and account 54411 'Cash at bank in lei related to life insurances'.

54711 'Petty cash in lei related to life insurances' or 54411 'Cash at bank in lei related to life insurances'	=	4041 'Transactions in relation with life insurance brokers'	– paid amount
4041 'Transactions in relation with life insurance brokers'	=	4011 'Transactions in relation with life insurance premiums'	– the amount collected by brokers and distributed per policy

Note:

As for the outstanding premiums, they shall be reflected in the debit balance of the account 4011 'Transactions in relation with life insurance premiums' and shall be release as they are paid.

C. **Termination of insurance policies**

The following accounts shall be used for this operation: account 4021 'Cancelled premiums and premiums to be paid back related to life insurances', account 4011 'Transactions in relation with life insurance premiums', account 54711 'Petty cash in lei related to life insurances', account 54411 'Cash at bank in lei related to life insurances' and account 7081 'Cancelled gross premiums written related to life insurances'.

The termination of the insurance policy shall lead to the cancellation of the insurance premiums written relating to the terminating period and this operation shall be reflected in the accounting records as follows:

– Recording the cancellation of the gross premium written

7081 ‘Cancelled gross premiums written related to life insurances’	=	4021 ‘Cancelled premiums and premiums to be paid back related to life insurances’	– value of cancelled gross premiums written

4021 ‘Cancelled premiums and premiums to be paid back related to life insurances’	=	4011 ‘Transactions in relation with life insurance premiums’	–	value of cancelled outstanding premiums

and:

4021 ‘Cancelled premiums and premiums to be paid back related to life insurances’	=	54711 ‘Petty cash in lei related to life insurances” or 54411 ‘Cash at bank in lei related to life insurances’	– value of insurance premiums cancelled and paid back

D. **Recording the compensation expenses**

a. *Recording the amounts paid cash at the company’s office representing insurance compensations*:

6011 Expenses with losses and payments for direct life insurances’	=	54711 ‘Petty cash in lei related to life insurances’	– value of amounts paid

Account 601 ‘Expenses with losses and payments for direct life insurances’

⇒ This account is used for recording the expenses with losses, annuities, buyback and other expenses with losses and payments for direct life insurances.

b. *Recording the amounts paid by bank transfer and representing insurance compensation*:

6011 ‘Expenses with losses and payments for direct life insurances’	=	54411 ‘Cash at bank in lei related to life insurances’	–value of amounts paid

c. **At the end of the reporting period, the balance of the account 6011 ‘Expenses with losses and payments for direct life insurances’ shall be transferred to the result of the reporting period:**

121 ‘Profit or loss’	=	6011 ‘Expenses with losses and payments for direct life insurances’	– balance of account 601

II. ***Accounting of operations concerning the set up and use of TECHNICAL RESERVES for life insurances***

*The **technical reserves** for life insurances represent estimates of future payments to be made for risks occurring in the future.*

According to the law, the insurer performing a **life insurance** activity has the obligation to set up and maintain the following technical reserves (*Order no. 113131 of November 6, 2006 concerning the application of the Norms concerning the technical reserves for life insurances, assets admitted to cover them and the distribution of the assets admitted to cover the gross technical reserves, as subsequently amended and completed*):

A) premium reserve;

B) loss reserve;

− reported loss reserve;

− not reported loss reserve.

C) reserve for benefits and discounts;

D) mathematical reserve;

E) other life insurance-related technical reserves.

The insurance companies performing a life insurance activity have to set up technical reserves, including mathematical reserves, to an extent that enables them to fulfil all their obligations, according to the insurance contracts.

The value of the technical reserved shall be determined according to the following principles:

A. General principles

The value of the technical reserves for life insurance shall be carefully calculated based upon a prospective actuarial assessment, taking into account all future obligations determined by the insurance terms for each existing insurance contract, including:

a) all guaranteed benefits, including the guaranteed buyback values;

b) bonuses to which the insured persons, the additional insured persons or the beneficiaries are already entitled, either jointly or individually, irrespective of the bonus type –acquired, declared or distributed;

c) all options available to the insured persons, the additional insured persons or the beneficiaries according to the terms of contract;

d) expenses, including fees, from which the value of the future outstanding premiums shall be deducted.

An additional technical reserve shall be calculated if the present or predictable return on the assets of the insurer performing a life insurance activity is insufficient for the proper fulfilment of the obligations concerning the interest rate to be paid to the insured persons.

The value of the technical reserve can also be determined based upon a retrospective method, provided that it can be demonstrated that the technical reserves thus resulted are not less than the reserves that would have resulted based upon a prudent prospective calculation or provided that a prospective method cannot be applied for the type of contract in question.

A prudent assessment is not an assessment 'according to the best estimate', but it includes an adequate margin for the negative variation of the factors with relevant influence.

The assessment method used for the technical reserves should not only be a prudent one, but it should also consider the assessment method used for the assets covering the technical reserves in question.

The technical reserves shall be calculated separately for each contract. Nevertheless, adequate generalizations or approximations are allowed, provided that they produce approximately the same results as the individual calculations. The principal of separate calculation does not impede the setting up of additional reserves for general risks that are not individualized.

If the buyback value of an insurance contract is guaranteed, the value of the mathematical reserves for that particular insurance contract shall be continuously maintained at least at the level of the guaranteed value.

B. The applied interest rate shall be selected in a prudent manner, considering the following aspects:

✓ if the life insurance contracts provide for a guaranteed interest rate, it can vary depending on the contract currency, provided that it does not exceed 60% of the interest rate of the bonds issued by the State whose currency is the same with the contract currency. Furthermore, the guaranteed interest rate shall be maximum 3.5% for the newly closed insurance contracts, issued in lei, and maximum 2.5% for the newly closed insurance contracts, issued in Euro. These provisions shall not apply to the following types of insurance contracts:

- life insurances and annuities related to investment funds;
- single premium insurance contracts for a period of up to 8 years;
- insurance contracts without share in benefits and annuity contracts without buyback value;
- setting up a maximum interest rate does not imply that the insurer shall be forced to use such a high rate.

In the last two cases mentioned, the following aspects can be considered when selecting a prudent interest rate: the currency in which the contract and the assets held at the time are expressed and if the company's assets are assessed at their current value the anticipated return on future assets.

The applied interest rate cannot exceed the forecasted return on assets, also considering an adequate deduction.

C. The statistical elements included in the assessment and distribution of expenses shall be selected in a prudent manner, considering the assumed obligations, the type of insurance policy, the administrative costs and the fees estimated to be paid.

D. For the contracts with a share in the investment result, the method used for calculating the technical reserves can take into account either implicitly or explicitly all types of future bonuses, considering both the future projections and the current method of bonus allocation.

E. The assessment of the future expenses can be made implicitly, using for example the future value of the net premiums of management fees. Nevertheless, the implicit or explicit general assessment has to be higher or equal to a prudent estimate of the future relevant expenses.

F. The method applied for calculating the technical reserves shall not change from one year to the next due to arbitrary changes made in the method or basis of calculation and shall allow for the adequate identification of benefit allocation.

A. **Accounting of premium reserves**

The **premium reserve** shall be calculated separately for each insurance contract and the sum of the results thus obtained shall represent the overall premium reserve.

The **premium reserve** shall be calculated on a monthly basis by adding up the shares of gross premiums written related to the remaining periods of the insurance contracts, so that the difference between the volume of the gross premiums written and this reserve reflects the gross premiums allocated for the share of risks expired at the calculation date.

The premium reserves for life insurances shall be reflected using the following accounts: account 318 "Premium reserve relating to life insurances" and account 618 "Expenses with the premium reserve relating to life insurances".

Set-up of premium reserve:

6181 'Expenses with the premium reserve relating to direct life insurances'	=	3181 'Premium reserve relating to direct life insurances'	– collected amount

Decrease of premium reserve:

3181 'Premium reserve relating to direct life insurances'	=	6181 'Expenses with the premium reserve relating to direct life insurances'	– amount by which the reserve has decreased

B. **Accounting of loss reserve**

The **loss reserve** shall be set up and updated on a monthly basis based upon the insurer's estimates of the reported losses, so that the reserve thus set up is sufficient for covering the payment of all these losses. It shall be set up for the losses reported and pending settlement and it shall be calculated for each insurance contract for which the occurrence of the insured event has been notified, starting from the predictable expenses to be made in the future for the settlement of these losses. The value of the loss reserve to be set up shall be obtained by adding up the values of the loss reserve calculated for each life insurance contract. The insurers have the obligation to prepare and maintain a distinct record of all reported losses, enabling the Insurance Supervisory Commission to control at any given time the extent and the method used for setting up the loss reserve. Should the insurance benefit be paid in the form of annuities, the loss reserve shall be calculated based upon actuarial methods (*Order no. 113131 of November 6, 2006 concerning the application of the Norms concerning the technical reserves for life insurances, assets admitted to cover them and the distribution of the assets admitted to cover the gross technical reserves*).

The loss reserve shall be set up and recorded in the accounting records **separately** for reported and not reported losses and **distinctly** for general insurances and life insurances.

Unless the insurer's internal regulations provide otherwise, the not reported loss reserve shall be set up and adjusted at least at the end of the financial year based upon the insurer's estimates, the statistical data or the actuarial calculations for the losses incurred but still not reported.

In case of life insurances the value of the loss reserves shall be equal to the amount payable to the beneficiaries, to which the expenses for covering the losses shall be added. The value of these reserves shall include both the reported loss reserve and the not reported loss reserve.

The following accounts shall be used for recording the loss reserves in the accounting records:

Account 626 'Expenses with the loss reserve related to life insurances'

This account is used to record the set-up, the increase or decrease of the loss reserve related to the life insurances concerning direct life insurances and the approvals for reinsurance.

Account 326 'Loss reserve concerning life insurances'

This account is used to record the situation of the reported and not reported loss reserve related to the life insurances concerning direct life insurances and the approvals for reinsurance, set up according to the legal provisions in force.

Set-up of reported loss reserve:

62611 'Expenses with the reported loss reserve concerning direct life insurances'	=	32611 'Reported loss reserves concerning direct life insurances'	– collected amount

Set-up of not reported loss reserve:

62621 'Expenses with the not reported loss reserve concerning direct life insurances'	=	32621 'Not reported loss reserves concerning direct life insurances'	– collected amount

Decrease of the reported loss reserve:

32611 'Reported loss reserves concerning direct life insurances'	=	62611 'Expenses with the reported loss reserve concerning direct life insurances'	– amount by which the reserve has decreased

Decrease of the not reported loss reserve:

32621 ‘Not reported loss reserves concerning direct life insurances’	=	62621 ‘Expenses with the not reported loss reserve concerning direct life insurances’	– amount by which the reserve has decreased

C. **Accounting of the reserve for benefits and discounts**

The reserve for benefits and discounts shall be calculated for the life insurance contracts which provide for the right of the insured person to participate in the benefits obtained from using the mathematical reserve according to the contractual obligations. Furthermore, the reserve for benefits and discounts shall be set up for the life insurance contracts which provide for premium discounts for contract renewals and/or for premium reimbursements in case the insured persons have a share in the insurers’ profit.

The following accounts shall be used for recording the reserve for benefits and discounts in the accounting records:

Account 312 ‘Reserve for the share in benefits and discounts concerning life insurances.’

This account is used to record the situation of the reserve for the share in benefits and discounts concerning direct life insurances and the approvals for reinsurance, set up according to the legal provisions in force.

Account 612 ‘Expenses with the reserve for the share in benefits and discounts concerning life insurances’

This account is used to record the set-up, the increase or decrease or the cancellation of the reserve for the share in benefits and discounts concerning direct insurances and the approvals for reinsurance.

The account 612 ‘Expenses with the reserve for the share in benefits and discounts concerning life insurances’ is divided into:

⇒ 6121 ‘Expenses with the reserve for the share in benefits and discounts concerning direct insurances’;

⇒ 6122 ‘Expenses with the reserve for the share in benefits and discounts concerning the approvals for reinsurance’.

The recording in the accounting records shall be made as follows:

6121 ‘Expenses with the reserve for the share in benefits and discounts concerning direct insurances’	=	3121 ‘Reserve for the share in benefits and discounts concerning direct life insurances’	– collected amount

D. **Accounting of the mathematical reserve**

The ***mathematical reserve*** *represents the actuarial value of the insurer’s financial obligations after deducting the actuarial value of the financial obligations of the insured person.*

The mathematical reserve shall be set up according to the legal provisions in force.

Any negative mathematical reserve shall be reported and recorded as equal to zero.

This reserve shall be calculated separately for each life insurance contract. The calculation shall be performed by an actuary or by another expert in this field based upon the recognized actuarial methods.

The following accounts shall be used for the accounting of the mathematical reserve: account 611 'Expenses with the mathematical reserve' and account 311 'Mathematical reserves'.

Account 611 'Expenses with the mathematical reserve'

This account is used to record the set-up, the increase or decrease or the cancellation of the mathematical reserve concerning direct insurances and the approvals for reinsurance.

The account 611 'Expenses with the mathematical reserve' is divided into the following accounts:

⇒ 6111 'Expenses with the mathematical reserve concerning direct insurances';

⇒ 6112 'Expenses with the mathematical reserve concerning approvals for reinsurance'.

Account 311 'Mathematical reserves'

This account is used to record the situation of the mathematical reserve concerning direct life insurances and the approvals for reinsurance, set up according to the legal provisions in force.

The account 311 'Mathematical reserves' is divided into the following accounts:

⇒ 3111 'Mathematical reserves concerning direct insurances';

⇒ 3112 'Mathematical reserves concerning approvals for reinsurance'.

Set-up of the mathematical reserve:

6111 'Expenses with the mathematical reserve concerning direct life insurances'	=	3111 'Mathematical reserves concerning direct life insurances'	– collected amount

Decrease of the mathematical reserve:

3111 'Mathematical reserves concerning direct insurances'	=	6111 'Expenses with the mathematical reserve concerning direct life insurances'	– amount by which the reserve has decreased

E. **Accounting of other technical reserves related to life insurances**

Account 313 'Other technical reserves related to life insurances'

This account is used to record the situation of other technical reserves concerning life insurances related to direct insurances and the approvals for reinsurance, set up according to the legal provisions in force.

The account 313 ‘Other technical reserves related to life insurances’ is divided into the following accounts:

⇒ 3131 ‘Other technical reserves related to direct insurances’;

⇒ 3132 ‘Other technical reserves related to the approvals for reinsurance’;

⇒ 3133 ‘Reserves for premiums not allocated’.

Account 613 ‘Expenses with other technical reserves related to life insurances’

This account is used to record the set-up, the increase or decrease or the cancellation of other technical reserves related to life insurances concerning direct insurances and the approvals for reinsurance.

The account 613 ‘Expenses with other technical reserves related to life insurances’ is divided into the following accounts:

⇒ 6131 ‘Expenses with other technical reserves related to direct insurances’;

⇒ 6132 ‘Expenses with other technical reserves related to the approvals for reinsurance’;

⇒ 6133 ‘Expenses with reserves for premiums not allocated’.

Set-up of other technical reserves:

6131 ’Expenses with other technical reserves related to direct insurances’	=	3131 ‘Other technical reserves related to direct insurances’	– collected amount

Decrease of other technical reserves:

3131 ‘Other technical reserves related to direct life insurances’	=	6131 ’Expenses with other technical reserves related to direct life insurances’	– amount by which the reserve has decreased

Conclusions

In the new economy, the insurance companies carrying out life insurance activities have to inform the public, at their request, on the principles and methods applied for calculating the technical reserves, including the reserves for benefits and discounts.

The value of the technical reserves must enable the insurer at any given time to fulfil his obligations according to the insurance contracts.

The technical reserves shall be inventoried and assessed at the end of each reporting period.

The methods applied for the assessment of technical reserves adopted by the company (*prorata temporis*, statistical methods etc.) shall remain the same during the entire financial year as well as from one year to the next.

In the new economy, the technical reserves shall be set up and distinctly indicated for the general insurance activities and for the life insurance activities (*Law no. 32 of 2000*).

The decrease or the cancellation of the technical reserves shall be made by crediting the corresponding expense accounts.

Should an insurance contract be cancelled or terminated, the insurer shall also perform the accounting operations of cancelling the technical reserves related to the respective contract.

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THE ACCOUNTING LAW AND THE GLOBALISATION ERA

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Abstract

The accounting law appeared as a new procedure together with the globalisation period and the knowledge economy. The accounting information relevance for company patrimony approach is both an economic theoretical issue and an accounting law one. Apart from the norms regarding significance breakeven and economic axiom, contractual aspects are also important. The most precise, organized and significant data can be obtained only from accounting. In this way, managers and administrators would like to get information ignoring the real capacity of accounting as much as possible. For this kind of situations, it is the accounting law that puts things into light.

Key-words: *accountancy law, globalization, patrimony, costs, IAS/IFRS*

JEL Classification: K10, M41

1. **Accounting in the globalisation era. The accounting law from theory to practice**

The leap to the globalisation era is impossible without notable progress in the generalisation of certain rules and norms accepted by the accountants in different countries. Among these norms, principles and conventions, we currently have the International Accounting Standards (IAS), the International Financial Reporting Standards (IFRS) and other similar regulations. Their form, rate and expansion ampleness shall be analysed by the administrators, managers and owners in order to see the rate at which their business can be developed at a global level without the discomfort of the different accounting systems. Strictly methodologically, the International Accounting Standards and the other similar regulations are the *international accounting law*, this being another argument in recognising the accounting law as a distinct and evolved branch of law.

2. **The contemporary knowledge-based economy and the accounting law**

Through the accounting law, the calculation of costs and the managerial accounting have an increasingly important role in pursuing the observance of the *honest commercial practice* regulations. Without such regulations, the commerce expansion, especially the international one, is impossible. Ultimately, the most effective control instruments upon the relation between the cost and the acquisition

cost can be found in the accounting of the economic agents. The accounting arguments are based on numbers having documents as fundament. Therefore, the evaluations have a strict character and the deviation degree from the legal frame can be numerically appreciated. The usage of the accounting instrument in supervising the different market behaviour is part of the accounting law. Those documents "produced" by accountants that can legally be evidences in the competition protection relations shall be chosen. Not any accounting document – and not any accounting information – can enter the evidence system in litigations concerning the competition protection. In the contemporary economy, the accounting law shall be the legal base for selecting the accounting documents or information in such cases.

The management of the patrimony and its specific activities, such as the stock-taking provide rich study materials for the accounting law. The procedure aspects concerning the actual development of the stock-taking, the stages, the situations when it is compulsory, the capitalization of the stock-taking results and the effects of the different concrete situations generated by this activity are moments when the accounting law intervenes. Certain chapters from it, such as the revaluation of the patrimony are in direct connection to the law branches. The business law nowadays cannot exist without the legislation regarding the revaluation.

The elaboration of accounting policies by companies within the current international accounting law determine a set of juridical relations that cannot be clarified otherwise than by the accounting law. The internal organism, meant to propose, and the decision organ will simultaneously be submitted to the commercial law.

The budget method is more and more part of the management organism of the modern patrimonial entities. The accounting law will mainly bring under regulation the budget elaboration, their transmission and distribution, maybe their inclusion in the performance and remuneration indicator system. Interferences with the labour law and the commercial law occur at this stage. The emergence of a complex institution cannot alter the specific features of each of the law branches intervening in the budgetary procedure.

3. The accounting procedures and their integration in the general procedure system of the modern enterprise

The procedure aspects – by their nature – belong to law branches more than to accounting ones. The follow-up of the accounting procedures and their integration in the general procedure system of the modern enterprise can only be part of the accounting law in its position of branch with a deep interdisciplinary character.

One component of the contemporary accounting law is the functionality of the professional organisms. The relations between them and the public authorities or other civil organisations, the relations of the professional organisms with their members or with the representatives of the chosen organs, including the own technical personnel, are elements belonging to the interest sphere of this new law

branch to which the jurists together with the economists must sometimes give solutions. In order to do so, they will know the functionality particularities of the different organism types, also by relation to the international practice in similar situations.

The inclusion of the accounting expertise in the trial means in different actions (civil, commercial, criminal etc.) rise the problem of interpretation (by the judge) of the conclusions registered by experts. Beyond the technical character of the expertise, the instance will appeal to norms of accounting law for establishing the right verdict.

One of the duties of *the Human resources* department is the elaboration of the job descriptions. In the case of the persons occupying leading positions or with attributions in the financial-accounting sector, this labour law document will lead to accounting law.

The role of the jurists must not be forgotten; since the beginning of the 21st century they have been *members of the local*, national and universal community. A new type of fraud is more frequent and for this reason it is natural to develop a law branch that should study the basic juridical relations. Instantly, the interest for this activity that can produce bigger financial disaster than we can imagine, emerges. In Eastern Europe, and especially in Romania, the population has been used to the dissimulation of this fraud type. We can say that the criminal law and the state's coercion force have reached the limit of the juridical relations regulated by the accounting law due to the privileged position of the guilty ones in this field.

The patrimony of the owners association, one of the most nationally expanded social organisation collective structures, is defended by the *accounting and civil law norms*. Most of the people live in a collective system and are included in this organisation system. The last years have registered numerous unauthorized inventories from the administration personnel of these entities, with direct effect on the personal income of the members. These frauds mean breach of the accounting law.

The activity within the collectivity includes the participation to the debate of current problems from fields of general interest. Such a field is sports nowadays. In Romania, there have been intense disputes within certain clubs or between different personalities. The analysis of the clubs' leaders activity, the debates regarding the organisation and formation of the professional football clubs as joint-stock companies and the manner of distribution of the veto right are only some examples drawing attention upon the difficulties the accounting law is approaching.

Within the interdependencies created between the older branches of law and the accounting law we find the definition of the entities; accounting is organised at their level. The notions of legal person, subsidiary, branch, work point are taken by the accounting law and the accounting from the classic law system. Without these exogenously defined categories, the accounting and the accounting law would not have the necessary fundamental guiding marks.

4. **The generalisation of the application of international accounting standards in the contemporary business environment**

In the contemporary economy the major differences are in the accounting system of the states based on the common law tradition, where we include the USA and England, and also in the systems based on the Code law tradition, where we include France, Germany, and all the other states that have adopted the coded judicial regulations. At present, when globally examining the components of the accounting systems from the USA and England, France, Germany we notice either important differences, or minor ones.

When referring only to taxing the income from the businesses organised in enterprises, we must mention:

– the different way of calculation and book-keeping of the taxes upon the incoming income in France, Germany resides in the quite different fiscal regulations;

– another example regards the building of reserves.

In both of the quoted countries there are regulations; the patrimonial units have the right to constitute a legal reserve by taking benefits within a percentage (normally, of 5%). It is also provisioned that such an operation can be continued for many years, until it reaches approximately 10% of the capital (10% of the stock capital in France, 10% of the nominal value of the stock capital in Germany). These benefit takings do not reflect in costs, as they are exempt from the tax additional to the profit. It is useful to highlight that the accounting rules adopted in Japan were initially moulded in compliance with the German accounting as consequence of an association on many levels between these states in the first half of the 20th century. Recently, we can notice an American influence in the accounting field and this leads to a generalisation of the US-GAAP system.

In spite of the American influence that manifested itself especially in the field of public accounting, the Japanese accounting and the financial relations continue to be in line with the European accounting model. There have been provided statutory dispositions that have aimed at diminishing the benefits, in the sense of an amortization with the legal provisions in the US or UK-GAAP. Caution is one of the most important principles in accounting.

Analogous, the states in Central and South America that have been under Spanish and Portuguese influence have similar accounting rules to the ones effective in the European states.

Although there were certain specific differences in the field of accounting in the above-mentioned states, the conventions, principles and rules of the book-keeping are universally applicable and the fiscal differences are mostly attenuated. The necessity for the thoroughness of the harmonisation of the fiscal situations system leads to a generalisation of the I.A.S.C standards. Especially the IAS 1-41 standards can and must become benchmarks.

The internationalisation of the financial markets and the deeper development of the multinational societies are objective factors leading to a complex organisation in the field of accounting and especially with references to the financial situations.

The multinational companies have become a reality in the business world. Especially in the last quarter of the 20th century, they have assumed a predominant role in the various market segments and have stimulated many activities in the national economies of various countries.

5. **The accounting is dependent on the economic system it belongs to**

Accounting is a component of the economic sciences and at the same time a powerful technique lately improved in order to be useful to people and persons as much as possible. Accounting is anchored in the economy based on knowledge. The political economy provides the basic conceptual "infrastructure" to the accounting and the other economic disciplines. The accounting – although having a great functional autonomy – will still be dependent on the type of economic system it belongs to. In the globalisation era we meet for and against anti-globalisation opinions and arguments. Therefore, there will be points of view that will tie accounting to this tendency or that will highlight its development in the isolationist national context. Some economists will study the possibility of adaptation of the accounting to the great challenges of the transparent business from any place of the Earth in order for the world's great business to be stimulated. Others will notice errors or elements of inherent incompatibility between the international accounting environment and the national economic realities.

Conclusions

Accounting plays an important role in the management of the modern patrimonial entities. This contribution can be seen on many levels.

In the modern management system *the budgets* are frequently used for the programming, supervising and control of the activity, as well as for the establishment of certain easily measurable parameters. Data from accounting are mainly used in the foundation, elaboration and follow-up of the budgets. The main "referential" for the budget indicators is the financial and managerial accounting of the patrimonial entity.

Sometimes, there are patrimonial *evaluations* and re-evaluations in the current activity of the modern enterprise or of the activity developed. Accounting is used for these as well, besides other sources.

The cost management is one concept of the modern management. In order to calculate the costs of the patrimonial entity, most of the data is taken from the financial accounting field. The calculation itself is part of the managerial accounting activity.

The development of the patrimonial entities, as well as the supplementary financial resource attraction from the banking system or from the capital market mean the elaboration of certain *feasibility studies* or *business plans*. A lot of information found only in the accounting field is needed for these future activity orientation documents.

The manager's or administrator's dashboard is another leadership instrument proposed by the contemporary business science. Within this dashboard, a lot of the information comes from accounting. Some are registered as such, others are elaborated. Accounting remains a significant provider of such information.

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EFFICACY OF INTERNAL CONTROL AND CONTROLLING BUSINESS RISKS

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Abstract

Companies can gain additional efficiency in designing and implementing or assessing internal control by focusing on only those financial reporting objectives directly applicable to the company's activities and circumstances, taking a risk based approach to internal control. It is important for any organization to have reliable financial data for internal decision-making purpose. Financial information is often useful in many internal decisions such as product or service pricing. This is why the most important function of the controller is to create and maintain the corporate financial control system. Today's corporation operates in an increasingly complex environment and the controller's role is to advice the management of current or future problems of the business environment or to prevent the fraud.

Key-words: *internal control, business risks, control framework, efficacy of internal control*

JEL Classification: H83, M41, M42

Introduction

The purpose of this paper is a survey on what an internal control means. Internal control cannot ensure by itself the achievement of its general objectives; internal control consists of five interrelated components: control environment, risk assessment, control activities, information and communication, and monitoring. According to INTOSAI, the control environment sets the tone of an organization, influencing the control consciousness of its staff. Thus, internal control is not an event or circumstance, but a series of actions that permeate an entity's activities, that occur throughout an entity's operations on an ongoing basis, and that are pervasive and inherent in the way the management runs the organization.

This research is important because the internal control could prevent fraud. There are many studies and articles on this subject, but the fraud became more complex than ever and the government witnesses soaring levels of business fraud.

The aim of this paper is to present that an effective internal control system can provide only reasonable assurance to management about the achievement of an entity's objectives or its survival. Internal control can give management information about the entity's progress (or lack of it) toward achievement of the objectives; an effective system of internal control reduces the probability of not achieving the objectives. This paper is related to other papers that presented similar concepts and methods of internal control.

Literature review

The paper has based its conclusions on the researches of the following persons:

Jagannathan, M. (1996), *Internal Control Mechanisms and Forced CEO Turnover: An Empirical Investigation,* who presented his final conclusions in this PhD dissertation at Virginia Polytechnic Institute and State University. Jagannathan empirically examines the efficacy of internal control mechanisms by analyzing 94 forced turnovers of chief executive officers (CEOs).

Dunn, J. (1996) in *Auditing, Theory and Practice*, presented the professional guidance of the auditor's responsibilities for the detection of fraud. Thus, auditors might have to develop their work based on the internal control.

COSO (2006), *Internal Control over Financial Reporting. Guidance for Smaller Public Companies*, is an important study to understand internal control. Thus, the characteristics of smaller companies provide significant challenges for cost-effective internal control. "Among the challenges are: obtaining sufficient resources to achieve adequate segregation of duties; management's ability to dominate activities, with significant opportunities for management override of control; recruiting individuals with requisite financial reporting and other expertise to serve effectively on the board of directors and audit committee; recruiting and retaining personnel with sufficient experience and skill in accounting and financial reporting; taking management attention from running the business in order to provide sufficient focus on accounting and financial reporting".

KPMG (1999), *Internal Control: A Practical Guide*, Service Point is presenting an internal guide for internal control. KPMG recommends that all directors, including the nonexecutive directors, ensure that they are satisfied that the Board's statement on internal control provides meaningful high-level information that enables shareholders to evaluate how the principles of good governance have been applied.

Internal control

Jagannathan empirically examines the efficacy of internal control mechanisms by analyzing 94 forced turnovers of chief executive officers (CEOs); poorly performing managers are removed faster in firms that have a larger percentage of independent outside directors on their board, that have higher equity ownership by the non-CEO directors and lower equity ownership by the CEO, and that separate the positions of CEO and chairperson. "The separation of ownership and control that characterizes the modern corporation creates potential conflicts of interests between managers and shareholders. The corporate governance system that helps resolve such conflicts consists of the internal control system, the external market for corporate control, and the discipline of the product and factor markets." (Jagannathan, M., 1996).

Jagannathan quantifies the association between the probability that a CEO will be replaced before significant declines in performance and these board characteristics by estimating a logistic regression, and investigates changes in internal corporate governance characteristics following turnover to determine

whether crisis-response firms institute more significant changes in internal governance. Jagannathan examines the changes in compensation structure and in pay-to-performance sensitivity, following CEO turnover, for the forced turnover sample and for a control sample of normal turnover, and examines the changes in market-adjusted operating performance following CEO turnover. Jagannathan analyzes the pre-turnover board characteristics of the crisis-response and non-crisis-response subsamples of firms, compares the changes in these board characteristics following turnover, documents changes in CEO compensation structure and pay-performance sensitivity pre-to-post turnover (the changes in performance around CEO turnover are estimated and related to the changes in board characteristics and compensation structures). "The board of directors of a corporation is the primary force within the organization for motivating and monitoring managerial decisions. They are responsible for designing incentives that motivate managers to make decisions consistent with firm value maximization, supervising managerial actions, evaluating managerial performance, and removing poorly-performing managers." (Jagannathan, M., 1996). Boards of directors are reluctant to remove poorly performing top managers. "While the observed negative relationship between firm performance and the probability of managerial turnover and significant improvements in operating performance subsequent to forced turnover suggest that boards of directors are effective monitors of management, the small probability of CEO turnover in even the most poorly performing firms and the degree of external control activity that surrounds forced turnover suggest that they are weak monitors at best." (Jagannathan, M., 1996)

Jagannathan remarks that outside directors (especially if they are truly independent) are better monitors of management than are inside directors. "Managerial ownership creates two opposing forces in governing managerial behaviour:

(1) a larger fractional ownership by management ensures a greater alignment of managers' and shareholder's interests, as management's higher stakes in their firms mean that they bear more of the wealth consequences of their actions. This 'convergence of interests' hypothesis suggests that larger managerial stakes will be associated with higher firm value;

(2) the 'managerial entrenchment' hypothesis suggests that higher firm ownership by management increases their ability to pursue non-firm-value maximizing decisions that improve their own wealth and job security without fear of reprisal." (Jagannathan, M., 1996)

Jagannathan contends that, in theory, the CEO of a corporation is endowed with the power to make investment decisions, while the board of directors (led by the chairperson) is responsible for monitoring the CEO by setting goals, designing appropriate compensation packages, and evaluating managerial performance. "Agency theory suggests that tying managers' compensation to stock performance will increase managers' incentives to make decisions that are consistent with maximizing firm value. […] The agency argument implies that effective boards will design compensation contracts that align a large portion of managerial earnings with improvements in share value." (Jagannathan, M., 1996)

COSO states that the characteristics of smaller companies provide significant challenges for cost-effective internal control. “Among the challenges are: obtaining sufficient resources to achieve adequate segregation of duties; management’s ability to dominate activities, with significant opportunities for management override of control; recruiting individuals with requisite financial reporting and other expertise to serve effectively on the board of directors and audit committee; recruiting and retaining personnel with sufficient experience and skill in accounting and financial reporting; taking management attention from running the business in order to provide sufficient focus on accounting and financial reporting; maintaining appropriate control over computer information systems with limited technical resources.” (COSO, 2006)

Companies can gain additional efficiency in designing and implementing or assessing internal control “by focusing on only those financial reporting objectives directly applicable to the company’s activities and circumstances, taking a risk based approach to internal control, right sizing documentation, viewing internal control as an integrated process, and considering the totality of internal control.” (COSO, 2006)

COSO says that management will review to determine whether its documentation is appropriate to support its assertion. “When management asserts to regulators, shareholders or other third parties on the design and operating effectiveness of internal control over financial reporting, management accepts a higher level of personal risk and typically will require documentation of major processes within the accounting systems and important control activities to support its assertions. […] In considering the amount of documentation needed, the nature and extent of the documentation may be influenced by the company’s regulatory requirements. This does not necessarily mean that documentation will or should be more formal, but it does mean that there needs to be evidence that the controls are designed and working properly.” (COSO, 2006)

COSO writes that determining whether a company’s internal control over financial reporting is effective involves a judgment. “Internal control has five components that work together to prevent or detect and correct material misstatements of financial reports. When the five components are present and functioning to the extent that management has reasonable assurance that financial statements are being prepared reliably, internal control can be deemed effective. While each component must be present and functioning, this does not mean, however, that each component should function identically or even at the same level in every company. Some trade-offs may exist between components. Accordingly, effective internal control does not necessarily mean a ‘gold standard’ of control is built into every process. A deficiency in one component might be mitigated by other controls in that component or by controls in another component strong enough such that the totality of control is sufficient to reduce the risk of misstatement to an acceptable level.” (COSO, 2006)

Curtis and Borthick contend that many accounting firms have changed the way their auditors evaluate internal control; instead of preparing flowcharts documenting transaction flows, they only document the controls that have a

bearing on specific financial statement assertions. As Curtis and Borthick put it, this shift in documentation marks a change in the structure of the internal control evaluation task from transaction flow to control objective. This case presents documentation organized by control objective for internal control of a company's purchasing cycle (the case includes discussion and objective format questions and is relatively short, which means it can be used as an in-class or out-of-class exercise or an in-class testing or assessment device on internal control evaluation). (Curtis, M.B., Faye Borthick, A., 1999)

USGAO notes that federal policymakers and program managers are seeking ways to improve accountability. "As programs change and as agencies strive to improve operational processes and implement new technological developments, management must continually assess and evaluate its internal control to assure that the control activities being used are effective and updated when necessary." (USGAO, 1999)

According to USGAO, internal control is an integral component of an organization's management that provides reasonable assurance that the following objectives are being achieved: effectiveness and efficiency of operations, reliability of financial reporting and compliance with applicable laws and regulations. Internal control is a continuous built-in component of operations, is affected by people, and provides reasonable assurance (not absolute assurance). USGAO argues that the five standards for internal control are: control environment, risk assessment, control activities, information and communications, and monitoring. USGAO reasons that these standards define the minimum level of quality acceptable for internal control in government and provide the basis against which internal control is to be evaluated. "These standards apply to all aspects of an agency's operations: programmatic, financial, and compliance. However, they are not intended to limit or interfere with duly granted authority related to developing legislation, rule-making or other discretionary policy-making in an agency. These standards provide a general framework. In implementing these standards, management is responsible for developing the detailed policies, procedures, and practices to fit their agency's operations and to ensure that they are built into and an integral part of operations." (USGAO, 1999)

USGAO contends that management and employees should establish and maintain an environment throughout the organization that sets a positive and supportive attitude toward internal control and conscientious management; internal control should provide for an assessment of the risks the agency faces from both external and internal sources; internal control activities help ensure that management's directives are carried out (the control activities should be effective and efficient in accomplishing the agency's control objectives. USGAO provides several examples of control activities: top level reviews of actual performance; reviews by management at the functional or activity level; management of human capital; controls over information processing; physical control over vulnerable assets; establishment and review of performance measures and indicators; segregation of duties; proper execution of transactions and events; accurate and timely recording of transactions and events; access restrictions to and accountability for resources and records; appropriate documentation of transactions and internal control.

USGAO says that information should be recorded and communicated to management and others within the entity who need it and in a form and within a time frame that enables them to carry out their internal control and other responsibilities; internal control monitoring should assess the quality of performance over time and ensure that the findings of audits and other reviews are promptly resolved. USGAO writes that rapid advances in information technology have highlighted the need for updated internal control guidance related to modern computer systems. Internal/management control helps government program managers achieve desired results through effective stewardship of public resources. "Internal control is not one event, but a series of actions and activities that occur throughout an entity's operations and on an ongoing basis. Internal control should be recognized as an integral part of each system that management uses to regulate and guide its operations rather than as a separate system within an agency. In this sense, internal control is management control that is built into the entity as a part of its infrastructure to help managers run the entity and achieve their aims on an ongoing basis." (USGAO, 1999)

USGAO asserts that risk assessment is the identification and analysis of relevant risks associated with achieving the objectives, "such as those defined in strategic and annual performance plans developed under the Government Performance and Results Act, and forming a basis for determining how risks should be managed. Management needs to comprehensively identify risks and should consider all significant interactions between the entity and other parties as well as internal factors at both the entity wide and activity level. Risk identification methods may include qualitative and quantitative ranking activities, management conferences, forecasting and strategic planning, and consideration of findings from audits and other assessments." (USGAO, 1999)

USGAO maintains that management should track major agency achievements and compare these to the plans, goals, and objectives established under the Government Performance and Results Act; managers need to compare actual performance to planned or expected results throughout the organization and analyze significant differences. "Management should ensure that skill needs are continually assessed and that the organization is able to obtain a workforce that has the required skills that match those necessary to achieve organizational goals. Training should be aimed at developing and retaining employee skill levels to meet changing organizational needs. Qualified and continuous supervision should be provided to ensure that internal control objectives are achieved. Performance evaluation and feedback, supplemented by an effective reward system, should be designed to help employees understand the connection between their performance and the organization's success. As a part of its human capital planning, management should also consider how best to retain valuable employees, plan for their eventual succession, and ensure continuity of needed skills and abilities." (USGAO, 1999)

KPMG recommends that the focus should be on developing and implementing an embedded process; this may mean not being in a position to comply fully in year one. KPMG recommends that for most organizations the

formulation of a Risk Committee would be beneficial and appropriate (it is important that Audit Committees do not become overburdened and deflected from their already significant obligations). KPMG recommends that the organization adopt/devise a control framework as a standard against which to assess the effectiveness of its system of internal controls.

KPMG recommends that all directors, including the nonexecutive directors, ensure that they are satisfied that the Board's statement on internal control provides meaningful high-level information that enables shareholders to evaluate how the principles of good governance have been applied. KPMG recommends that the Board ensure that internal audit is in a position to provide the Board with much of the assurance it requires regarding the effectiveness of the system of internal control (it should not only assess the "parts", but also the "corporate glue" holding the parts together.

KPMG recommends that material joint ventures and associates should, as far as possible, be dealt with as part of the group for the purposes of applying the Turnbull guidance; even some of the largest groups have recognized that even though they may believe they have all the necessary controls in place, they are not in a position to state so with certainty, or that all components that contribute to the system of internal control are adequately codified. "Internal control is one of the principal means by which risk is managed. Other devices used to manage risk include the transfer of risk to third parties, sharing risks, contingency planning and the withdrawal from unacceptably risky activities. Of course, companies can accept risk too. Getting the balance right is the essence of successful business – to knowingly take risk, rather than be unwittingly exposed to it."(KPMG, 1999)

According to KPMG, the advantages of embracing Turnbull may include: exploitation of business opportunities earlier, increased likelihood of achieving business objectives, increased market capitalization, more effective use of management time, lower cost of capital, fewer unforecast threats to the business, more effective management of change, and clearer strategy setting.

KPMG notes that an internal control system encompasses the policies, processes, tasks, behaviours and other aspects of a company that, taken together: facilitate its effective and efficient operation by enabling it to respond appropriately to significant business, operational, financial, compliance and other risks to achieving the company's objectives, help ensure the quality of internal and external reporting (this requires the maintenance of proper records and processes that generate a flow of timely, relevant and reliable information from within and outside the organization), and help ensure compliance with applicable laws and regulations, and also internal policies with respect to the conduct of business.

KPMG contends that the costs of control must be balanced against the benefits, including the risks it is designed to manage; the system of control must include procedures for reporting immediately to appropriate levels of management any significant control failings or weaknesses that are identified together with details of corrective action being undertaken; control can help minimize the occurrence of errors and breakdowns but cannot provide absolute assurance that they will not occur; the system of control should be embedded in the operations of the company and form part of its culture.

KPMG argues that linking the identification of key business risks to the company's strategic business objectives may be part of the normal financial calendar supporting the strategic planning and budgeting process (it will be important to ensure this process is sufficiently balanced in its appraisal of the financial and non-financial risks). KPMG states that an effective risk assessment process addresses both financial risks (such as credit, market and liquidity risk) and non-financial risks (such as operational, legal and environmental risk); the process should include an evaluation of the risks to determine which are controllable by the company and which are not. "The board should identify controls appropriate to maintain the key business risks within the defined risk tolerance levels set by the Board, bearing cost/benefit considerations in mind, or review the process by which this is done and endorse the conclusions. The Board should also be satisfied that suitable individuals have a clear responsibility for maintaining dynamic risk identification and assessment process and related internal controls. The Board may not know the fine detail of how all risks that could lead to a material loss are controlled but should be satisfied that proper control policies, procedures and activities have been established to support their control objectives. The design of controls should be based on generally accepted control criteria which have been approved by the Board for this purpose and include both preventative and detective controls." (KPMG, 1999)

KPMG reasons that although internal audit should maintain independence from management, they can perform more than just a monitoring role. "In many companies they also act as facilitators and internal advisors to management on effective means of controlling business risks. Internal audit arrangements naturally vary, but they have the potential to play a central role within the monitoring process. […] Responsibility for reviewing and concluding on the effectiveness of internal control rests with the Board. However, the external auditors are likely to have helpful knowledge and access to specialist consultants with expertise in specific aspects of risk management and control evaluation. Such procedures are outwitting the scope of the statutory audit, but could be provided as part of a separate engagement." (KPMG, 1999)

Conclusions

The reports from management and/or others qualified to prepare them in accordance with agreed procedures should provide a balanced assessment of the significant risks and the effectiveness of the system of internal control in the area covered. "The Board's annual assessment should consider issues dealt with in the reports it has reviewed during the year together with additional information necessary to ensure the Board has taken account of all significant aspects of internal control for the company's accounting period and the period up to the date of approval of the annual report and accounts. This suggests that the Board must, at least, update its annual assessment directly before the annual report and accounts are approved." (KPMG, 1999)

KPMG remarks that disclosure goes beyond internal financial account; emphasis is on how the Board has reviewed the process for identifying, evaluating and managing the company's key risks rather than a description of key controls in place. The Board may wish to provide additional information in the annual report and accounts to assist the understanding of the company's risk management process and system of internal control. KPMG argues that the disclosures go beyond internal financial control (many of the disclosure requirements do not refer directly to control at all, but to risk); the disclosures are, in the main, concerned with how the Board has reviewed the effectiveness of the system of internal control; no opinion on the effectiveness of the system of internal control is required; additional disclosures are no longer required in respect of weaknesses in internal financial control that have resulted in material losses, contingencies or uncertainties which require disclosure in the financial statements or in the auditors' report. "Companies in the habit of providing shareholders with meaningful governance disclosures should have few problems with the new disclosures. However, those companies who traditionally take a minimalist approach should not see the new requirements as an opportunity to disclose virtually nothing about their risk management process and system of internal control. Such an approach neither encourages high standards of corporate behaviour nor provides shareholders with a meaningful insight into how the Board has maintained a sound system of internal control to safeguard their investment and the company's assets. Indeed, the guidance encourages Boards to provide additional information in the annual report and accounts to assist understanding of the company's risk management processes and system of internal control." (KPMG, 1999)

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II. **ECONOMIC THEORY**

THE OBJECT OF THE ASSESSMENT – PART OF THE TEACHERS' EVALUATION

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Abstract

The present paper is part of an ample research on a teacher assessment model in the pre university education system. The purpose was to establish the theoretical aspects of the assessment object taken into consideration. Thus, I have presented and described the assessment object, which involves the teacher's performance, the content and the result of the teacher's activity, which is materialized in the pupil's knowledge

Key-words: *assessment, teacher, object of the evaluation, competences, attitudinal aspects*

JEL Classification: I20

Introduction

The present paper is part of an ample research on a teacher assessment model in the pre university education system. The purpose was to establish the theoretical aspects of the assessment object taken into consideration. Thus, we presented and described the assessment object, which comprises the teacher's performance, the content of the taught subject and the result of the teacher's activity, a result materialized in the students' competences. The work presents the main ideas concerning the assessment object; there is a long way up to the establishment of the object concept content; there were also a sum of theories and research directions in this field. We note that any position, point of view and personal opinion of the researchers and trends in pedagogy represented a contribution.

Literature review

The object of the assessment was studied by many authors, but for the relevance of our paper, we mention the most representative ones. Thus: H. Bernard [2] and L.A. Branskamp brought the aspects included in the teachers' evaluation in high education as a new element [3, p. 65-70].

J.G. Donald stressed the criteria for university teaching [5, p. 74-88].

K.A. Feldman remarked the link between student ratings of specific instructional dimensions and student achievement as a part of a correct evaluation [6, p. 583-645].

P.W. Musgrave analyzed the teacher as an object of the system of learning sociology [13, p. 136-140].

Therefore, being studied and improved by each and every of the outstanding researchers which brought new points of view, the assessment object comprises the following three major and representative components which shall be presented below: *the teacher's performance*, *the content of the taught school subject* and *the result of the teacher's activity, a result materialized in the students' competences*.

The assessment object

a. The specific literature deals with the teacher's performance. There are a lot of studies and authors who tried to identify the efficiency factors of this process. Thus, Hildebrand in 1971, Kulik and Mckeachie in 1975, Feldman in 1976, Centra in 1979, Marsh in 1981, [15, p. 71; 7, p. 14] asked the students to list the characteristics of the best teachers. The obtained results were grouped in the following categories: the capacity of analysis/synthesis, the course organization/ clarity and the interaction between teacher/student, the teacher's dynamism and enthusiasm.

b. The content of the taught school subject is another aspect connected to the quality of the teacher's activity. Research was conducted by L.A. Braskamp [4, p. 45-54], G. French-Lazovic [7, p. 73-89], and other pedagogues. Their studies focused on two aspects of the content evaluation: the course planning and the subject knowledge. The obtained efficiency and evaluation criteria factors are the following: for the course planning: objectivity, content, teaching methods, evaluation means, bibliography; for the subject knowledge – the subject content and the bibliography. The evaluation criteria for the course planning concretized into: clarity, precision, pertinence and coherence. The evaluation criteria for the subject knowledge were: exactness and elucidation.

In order to transmit proper knowledge, the teachers must have a deep knowledge of the school subject and show intellectual mobility, in order to help students create "cognitive maps" and operate connections among different ideas.

Shulman [17, p. 4-14] introduced the collocation *the pedagogical content knowledge.* Thus, the teachers have to master two types of knowledge:

* of the content, named also the profound knowledge of the subject;
* of the curricular development.

The content knowledge is very important and it refers to the teaching process, including the most useful ways of representing and transmitting the content to be taught as well as the ways of transmitting efficiently the specific concepts of a lesson or of a subject.

Following the same line of pedagogical view and developing it, Glatthorn is another specialist who underlines the representation of the ideas using new analogies or metaphors. This is called the new comprehension, within which the pedagogical acts are carefully thought and reasonable; the teacher gains a new type of the comprehension of the scopes, the taught subjects, the students and the pedagogical mechanism generally speaking. Other researchers stress the idea that the didactic process in conformity with the audience supposes the understanding of

the difference which could take place because of the different cultural profile, personal experiences, the cultivation of the native intelligence in different ways.

c. The result of the teacher's activity, seen in the students' performances is the third aspect of the teacher's evaluation. There were studies conducted by G. Leinhard [9, p. 165-179]. He identifies the teachers' efficiency by taking into account the annual success during at least three years of study.

Another specialist who analyzed this aspect is E. Ropo, [16, p. 18-27]. He remarks a series of doubts referring to G. Leinhard theory: good teachers can receive weak groups of students; the efficiency can be influenced by the students' anxiety during the examinations, the tests can have drawbacks, the teachers can offer help during the examinations and so on. There are also other shortcomings: the teacher is not the only person responsible for what the students learn. The skills, the motivation, the interests of the students are also important factors which contribute to the teaching process. The efficiency tests at the class level are considered to be inefficient and tend to support the skills at lower levels. Another difficulty in the usage of the progress realized by students as a criterion is that we cannot exclude totally the concurrent or initial influences of different factors not related to the teacher.

Detailed analyses of the teacher – student interactions were conducted by many specialists. In their study, M. Miclea and D. Oprea [11] present the following factors which reflect the quality of the teacher's activity: the courses preparation and organization, the knowledge of the taught subject, communicative abilities, passion for the taught subject, availability and the relations with the students, the quality of the students' examinations.

V. Pavelcu [14, p. 14] thinks we can affirm without doubt, that by controlling the students' level of knowledge, the teacher controls his own didactic methods.

C. Platon [15, p. 73-76] considers that the phenomenon of teachers' evaluation is more complex and subtle, going beyond what one can notice during the class activity. Thus, the author speaks about the concept of competence. She identifies four variables of it. The model includes four areas:

- the area of the academic knowledge (initial training);
- the area of specialized knowledge (psycho-pedagogical training);
- the area of the specific abilities (specific to the pre university/university system of learning);
- the area of the personal characteristics (proper to each and every teacher).

The area of the academic knowledge determines the amplitude of the initial academic training and identifies the space for the required knowledge to each and every teacher. The importance of mastering the taught school object is a basic condition for the professional competence. This area is a statistic variable that can be quantified.

The area of the specialized knowledge is also a statistic variable measured by the institution.

Unlike the two above-mentioned areas, where we can meet variations at the variable level, the area of the specific abilities is stable. These abilities have to be demonstrated by any teacher.

The last area refers to attitudes and personal qualities. This field requires individual investigations.

The teacher's competence, summed up by the four areas can be defined as the ownership of a repertoire of knowledge, abilities and professional attitudes considered to be necessary for an efficient activity.

V. Belous [1, p. 99] also makes references to the concept of competence, defining it as the ability or capacity of fulfilling the purposes of the education. The teacher's competence within the educational actions means the ability of his behaviour in a specific way in a pedagogical situation. Thus, the competence represents the possible behaviour, while the performance shows the real behaviour.

N. Mitrofan [12, 1988] presents in detail the teacher's competences. He says that the competence is conditioned by information. The teacher's behaviour is reduced to a dimension, such as the normative activity. That is why this type of behaviour refers exactly to: the purpose of the minded action, the time of the action, the place of the action, the concrete means of action, the obtained performance of the students.

Being under the influences of all these competences, the teacher can be characterized by a so called "pedagogical style", a fairly constant way of working with the students, depending on his personality, his culture, passion, gained experience, different pedagogical situations.

Another interesting observation is made by M.F. Leconte-Beauport [8, p. 3-6]. He discusses the attitudinal aspect, which is usually marginalized. It is shown that there are many factors leading to this marginalization: the confusion in understanding the affective objectives, the opinions conditioning the individual attitudes, the lack of the obvious difference between the cognitive and the affective aspects.

Within the educative relation, the three aspects – knowledge, abilities and attitudes – are in a permanent interaction. Knowledge has a determinant role and gives a specific power to the abilities and attitudes. The abilities represent a concretization of the knowledge and attitudes. The attitudes personalize, give a sense to the knowledge and abilities and transform them. So, for an accurate evaluation of the teacher's activity, we have to take into consideration all the three mentioned aspects.

P. Lisievici [10, p. 242-248] speaks about the correlation of the initial training with the further professional evolution. The forming of the teacher seems to be characterized by the diversity and the incongruence of the professional competences which must be developed on one hand and by the ambiguity of the roles, on the other hand.

This situation makes the option between the principle positions regarding the teacher's training more difficult. The option can be situated between two extreme variants:

a) the initial complete and sufficient training, seen as covering all the professional career;

b) the professional training consisting of a "first aid kit", useful for the first professional years; further professional programs and specific assistance bring the necessary corrections.

Conclusions

All the presented points of view suggest the following action directions:

− the conception of the initial training as a first stage in a process of continuous forming; also taking into consideration the professional development; the chance of opportunities for professional development, courses for professional improvement, programs for the training improvement, finalized with certified documents;

− the idea of linking the initial training with the practice, not in the sense of learning a theory which can be further applied, but mainly as an option for the preponderancy of the courses centred on problems;

− the participation of some active teachers to the initial training of the teachers. It is interesting to note that these teachers have a special status, as they shall spend a great part of their working time in school and other part in the forming institution;

− the usage of a strategy based on the competence development. This orientation in the initial teacher training seems to have appeared as a reaction against the exclusive theoretic training, which is remote from the classes realities and at the same time less relevant for the future teachers' needs.

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USEFUL CRISES

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Abstract

The autumn of 2008 has produced, starting from the American and European mortgage credits crisis, the most powerful and deep financial, monetary and economic crisis, which last phases the most advanced states of the planet seemed to be experienced in the first half of 2009. As anything that happened in the life of humans, the economic crises have not only bad, negative sides, but they also have good, positive sides.

Key-words*: financial, monetary and economic crisis, fraud*

JEL Classification: G01, E20, E60

"The rhythm" of the "most powerful woldwide economic ...crisis"

If there were to be a coordination of the financial and monetary crisis from the second part of 2008 – or maybe that this coordination existed –, it could not have been so perfect on both sides of the Atlantic.

In October 2008, the "financial experts" warned that "the US economy must face the most serious economic recession in the last 26 years". Fed officials and the ones of the US Department for the Treasury had foreseen an economic downturn, yet they didn't expect it will happen so fast; the economic downturn resulted in: losing the consumers' trust, decrease in the number of real estate projects, reduced retail sales, low industrial production. Frederic Mishkin, a former Fed Governor stated: "The economic environment was much more affected than we had anticipated in the last few weeks (from October). Another "guru", Alan Blinder, former Vice-president of Fed, *predicted that the United States of America would face a more serious economic recession than the one from 2001 or the one which took place between 1990 and 1991*. "The authorities must take the necessary steps to avoid repeating the 1982 experience" Mishkin said. Several experts estimate an increase in the unemployment rate from 6.1% in October 2008 to 8%. Fed officials opiate that it can reach 7.5%, a value recorded in 1992. "We're facing the most serious post-war economic recession" said Larry Meyer, President of Macroeconomic Advisers and former Governor of Federal Reserve. "We're heading in the right direction. The Europeans follow the same path, which is very important. However, we don't know if it is enough until the results are visible on the market" added Mishkin.

On 5 December 2008, at the end of the bilateral Strategic Economic Dialogue, China and the US agreed to unblock 20 billion dollars to unfreeze the and support global trade (the US granted 12 billion dollars, while China's contribution amounted to 8 billion). They also agreed that the American and Chinese export and import banks supported the developing countries importers.

„The fraud of the century" was committed by American Bernard Madoff, using a Ponzi scheme. Aged 70, Madoff faced 11 charges for causing a 50 billion dollars damage to important figures from the United States. He was arrested on 11 December 2008. He paid the 10 million dollars bail and faced home detention until March 2009. Madoff pleaded guilty, aware of the fact that he could serve 150 years of imprisonment.

The ILO protection shield

1.5 billion employees worldwide – a quarter of the world's population, in other words, the entire active population – are facing hard times. The recession will result in increased unemployment rates. In 2009 20 million people more will lose their jobs, compared to the previous year. Also, "millions of people *had better be prepared*" for wage cuts. These gloomy perspectives have been made public and are included in the first global report on wages, elaborated by the ILO in November 2008.

According to the ILO experts, "human resource specialists", a decrease in the economic activity by 1% results in 1.5% wage cuts. However, they cannot accurately predict the extent to which this model is applicable in the current recession. Still they warn on a decreasing general consumption which will deepen the recession and delay the economic recovery.

ILO's first global report on wages reads that men are better paid than women by approximately 10 to 30%. ILO supports the introduction of the minimum wages/economy as an initiative to eliminate income gaps.

The European Union economic recovery plan

On 26 November 2008, the European Commission presented the EU Economic Recovery Plan amounting to 200 billion dollars which covers: granting an advance from the structural funds, tax exemptions, securities and state grants. The Plan does not only focus on short term solutions to help the EU Member States face the recession, but also to long term solutions contributing to the post-crisis development. The following aspects are encouraged: energy saving, large-scale usage of renewable energy, fiscal incentives for accomplishing the afore-mentioned objectives, such as VAT relief on the "green" products and services in constructions field or reduced VAT for "intensive work" services; the beneficiaries are small repair shops, barber and hairdresser's shops, as well as housekeeping and assistance firms. In point of the energy saving measures, the European Commission grants direct or indirect subventions for the purchase of environmentally-friendly vehicles or to stimulate energetically efficient constructions.

The Commission will help the Member States to develop and implement great infrastructure projects. Here also the Commission proposed a fiscal stimulus, namely the reduction of the SIC payed by the employers that offer employment to

the unskilled workers or funds for professional retraining programs. The Member States will have to elaborate operational programs having as main target the unskilled workers or the vulnerable categories of the population.

The business environment is the main beneficiary of the Economic Recovery Plan. The firms and companies as well as the public authorities must advance projects. The European Investment Bank supplimented its financial package for loans granted to the SMEs from 10 billion to 15 billion euros yearly, meaning 30 billion for a 6 years period, covered by ERP. The European Commission also anounced the grant of 1,5 billion euros for re-teehnologizing the small European companies and their transformation into "green companies"; the foundation of such a company will take only 3 days, with zero expences. The generic purpose of ERP is attracting the investors, a thing that will lead to keeping or creating working places, and also the grant of same taxing adjustments that can lead to an increase of the public and individual comsumption.

State grants

A report of the European Commission from November 2008 underlines that the Member States use to a great extent the possibilities provided by the EU rules on state grants, as revised. In 2007, the EU Member States allotted 80% of the grants intended for various objectives, compared to approximately 50% in mid 90, increasing the research and development funds and the environmental protection – focused grants. Facing the actual financial and economic crisis, the coordonated action of the EU Member States and the Commission ensured the rapid mobilization of the mechanismes supporting the financial sector, according to the EU norms regarding the public assistance. The European commissioner for competition, Neelie Kroes noted: I appreciate the effort of the Member States regarding the directing of the public assistance. Compared to the '90, when 50% of the public assistance was directed to the horizontal objectives, the current 80% shows a positive evalution. In case of an economic decline, the grant of public assistance is even more important.

In the last 25 years, the total state grants level allotted by the EU Member States has decreased from 2% of the GDP in the '80, to approximately 0.5% in 2007. Stressing the Member States trend to focus on horizontal objectives, the statistics indicate though that, on the financial crisis background, in 2008, the restructuring grants were on the increase in some Member States. The Member States and Commission's coordinated approach enabled the rapid implementation of proper support mechanisms in order to cope with the financial and economic crisis, in compliance with EU rules on state grants. The special situation of the markets and the great number of received notifications constitutes a significant challenge of the Commission that has to rapidly solve these cases, making sure at the same time that the measures are proportional and undiscriminating for the companies. As a consequence of a food cooperation with the Member States, and also of the rapid implementation of the unitary measures, the Commission succeeded to answer the notifications and to take decisions in no time, sometimes in less than 24 hours.

Following the reforms implemented through 2005 Action Plan on state grants, more and more assistance measures are now exempted from the Commission's ex-ante control, either by means of the minimise regulation or of the General Block Exemption Regulation, GBER). In 2007, before GBER, the block exempted assistance measures represented 65% of the total number of measures, compared to 40% in 2002, although this aspect is not yet reflected the same way in points of expenses – 13% of the state grants were allotted by block exemption in 2007 (compared to just 6% in 2006). Now, GBER makes easier the granting, by the EU Member States, of the right type of assistance and loosens the access to financing, especially for the SMEs, allowing a more eficient approach of the actual financial and economic crisis.

The statistics also indicate the progress made in point of recovering the illegal and incompatible grants. At the end of June 2008, there were 47 recovering decisions waiting to be executed, compared to 93 at the end of 2004. More than that, 7,1 billion euros have been recovered, and 2,4 billion euros representing interests. This thing means that almost 90% of the total value of the illegal and inconsistent assistance has been efficiently recovered by their beneficiaries by the end of June 2008, compare to 25% by the end of 2004. The Commission considers that ensuring the implementation of the legislation regarding the public assistance by the national court is important for the general system of controling the public assistance.

Accepting the 3% budgetary deficit

At the beginning of December 2008, the European Commissioner for Monetary Affairs, Joaquin Almunia, mentioned in a press conference the Member States budgetary deficit limits in 2009, accepted by the European Commission – a few figures above 3% for a year, under severe economic growth decrease conditions. "I won't give a particular answer for one country, because we have to analyse the economic situation of each Member State", he said. The Commissioner emphasized that "all deficits exceeding 3% are excessive unless meeting the following conditions – the economy of the respective country undergoes a dramatic decline, this situation is temporary – not more than one year; the budgetary deficit value remains nearly 3%.

When asked whether the budgetary deficit may reach 4%, the Commissioner replied that the Member States should send the convergence plans (for the states outside the Euro Zone) or the stability plans (for the Euro Zone states) covering the financial packages, the facilities granted and the budget expenses.

The Ecofin Council consisting of the ministers of finance of the EU Member States, convened on 4 November 2008, adopted a 10 page document focused on the improvement of the international financial system initiated by the EU French Presidency. An extraordinary European Council was convened on 7 November 2007 by the French President, Nicolas Sarkozy, to set the European position at the G20 reunion in Washington from 15 November 2008.

The institutions covered are the International Monetary Fund and World Bank. It is crystal clear that the European Union aims at the financial system improvement, while the United States of America, the leader of world economy,

focuses on its consolidation. The current financial system established at Bretton Woods[1], in 1944, requires fond "adjustments". The International Monetary Fund will improve its governance and financial capacity. It is amazing though the reaction of the main industrialized states of the world which, at the end of 2008, implemented a massive state interventionism strategy to adjust the financial and banking system.

Scepticism deepens the crisis

Theoretically, the current recession seems to be the post World War II longest crisis. The first signs of economic recovery emerged at the end of 2009 and development may reach a normal level in 2010, according to Blue Chip Economic Indicators, a survey highlighting in January 2009 the opinions of 52 economists within important financial firms and companies. Most interviewed people saw the end of the third trimester of 2009 as the end of the recession, marking thus the longest recession period after the Second World War.

What would have been the situation if the interviewed persons had been more optimistic and believed that the recession would be over at the end of the first semester of 2009? Such positive perspectives would have induced a positive economic and financial trend. Economy an finances are, more than we can imagine, the algebraic total of all the individual operations quantified or not by the strategis, the sum of the individual options of the consumers trapped in the web of the respective transformations. There's a different thing between the negative algebraic sum and the positive one. The actual development depends on the successful economic stimulation measures in progress or to be adopted by the respective government. We mention that such measures – essentially positive – cannot be adopted by negative people! We add to all these the faith of recovery, common to all the citizens of a certain state.

How do you explain the fact that the economic recovery appears if it is induced – subjective – to all the citizens. Study the survey and observe that the recovery is induced by real or made-up information, communicated or suggested. What is the general basis of the human thinking and action? The perception of the reality. On what is based this perception? On representations, but also on own/induces sensations. But what beats all creations is the fact that in the "informational society", in the "Knowledge society", the representations and sensations are induced, not produced. The common citizen needs a certain safety, but he cannot obtain it by his own.

According to the Eurobarometer survey conducted in spring 2009[2], the Europeans are deeply concerned about the economic crisis effects. This worldwide concern affects the economy at all levels on short and long-term. 58% of the

[1] The Bretton Woods system sets the rules of currency and trade relations between the world states and is the first example of totally negotiated monetrary order, meant to govern the monetary relations between nations

[2] Claudia Pârvoiu, Eurobarometer: 58% of the European citizens are negative on the economic crisis www.EurActiv.ro, 21 April 2009.

European citizens feel insecure, while 56% are concerned about their future. In Romania, the negative people percentage reaches 79. At personal level, the negative perspective affects Greece (89%), Hungary (86%) and Lithuania (77%). The lowest values were recorded in Denmark (15%), Finland (27%) and Holland (28%).

At the EU level, 90% of the respondents believe that the financial crisis consequences are important for the European economy. The highest values were recorded in Greece (99%), Belgium and Slovakia (96%). The lowest, yet high values were recorded in Portugal (81%), Romania, Poland, Italy and Bulgaria (86%). The Europeans are in favour of the crisis-fighting coordinated actions. Only 44% considered that the Member States reacted at national level and 39% believed that the Member States took a coordinated approach. On the other hand, 61% think that they would enjoy a higher protection level, if the Member States adopted a coordinated approach. Great Britain (41%), followed by Romania (36%), Denmark and Austria (33%) are in favour of the national decision-making. With respect to the most efficient body to fight the crisis, 17% of the European citizens are confident in the EU authorities, while only 14% trust the national governments. Most of them (25%) choose the G8 authority and only 15% see the United States of America as the most suitable power to fight the crisis. The opinions vary from country to country. Great Britain (65), Sweden (8%) and Denmark (9%) have the least confidence in the European Union, unlike Greece (28%), Cyprus (27%) and Poland (26%) who sees the European Union to be best capable to fight the crisis.

Conclusions

The attempts to adjust to the economic, social, political and cultural realities, the "protection shield" and the recovery strategies including the state grants are meant to diminish the direct effects of the economic crises which generate other types of crises. Mankind is still not ready to adjust to the ever-changing challenges. Scepticism must be replaced by optimism.

The state, through its institutions and strategies must help the citizens understand the positive aspects of a crisis. The state must induce its citizens the idea that a crisis "removes" the useless parts of an ailing body, allowing it to regenerate. A new educational and spiritual model, at individual and collective is represented by the people rapidly adjusting to the permanent challenges, irrespective of the economic and social development stage.

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THE BUSINESS FROM A MACRO-SOCIAL PERSPECTIVE

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Abstract

Every human activity aims at a specific purpose, and way to achieve that goal or misses it shows us how well or how badly that activity is taken place. Sternberg describes the teleopathique like any activity that distorts its intrinsic purpose or pursuing other improper purposes, either aiming to be correct, but with inadequate resources. The medical purpose, for example, is life and patient health. The medical practice becomes teleopathique if, we say, the doctor wants to enrich themselves at the expense of patients (improper purpose) or if they try to cure a patient through a risky surgery, when there is possibility of treatment by the natural methods or by administration of drugs (inadequate resources).

Key-words*: business ethics, shareholders*

JEL Classification: M10

Introduction

The basic idea of the *business ethics* specialists that approach the business from a large perspective is that all members of the society have different material needs, which must be satisfied by the economic system, through production activities, services, distribution, etc. As people need food there is agriculture and alimentary industry, because people need clothing there is textile industry and because people need houses we have the construction industry etc. Businesses are not the only possible way in which the material needs can be satisfied. They were inescapable with the rise of capitalism, at least until now, and they were seen as the most efficient solution to support a rapid and constant economic growth (though not without crises and difficult periods), an increase of the economic efficiency, of the quality and variety of the products and services, a relative or absolute decline in prices, etc.

Literature Review

Laura L. Nash, *Good Intentions Aside. A Manager Guide to Resolving Ethical Problems*, Harvard Business School Press, 1993 [2 pag 58]

Laura L. Nash, analysing the approaching phenomena in my theme like wanting to overturn words by words from Sternberg thesis, that business *purpose* is to maximize for a long-term the owner value, the *way* being to satisfy the social

needs, Nash says that "the main purpose of business is creating and delivering value, on a voluntary or democratic controlled market. However, the market is (and buyers through the law) duty to ensure that businesses to receive a fair income in exchange for the value provided. Thus, the profit is the *result* of the other initial conditions, rather than the first condition of affairs, and the efficiency is a component rather than the definition the supplied value".

Paper content

It is essential that *the society does not exist for the profit of the businessmen, but businesses exist to satisfy the social needs.*

Seeing the things from the perspective of a single commercial enterprise, one can live with the illusion that there is a market, an available capital, an amount of suppliers and competitors out of which a person or a group can draw more or less profit; the secret is to do what needs to be done. A particular firm or company may say: we exist and function due to the initiative of the capital holders, our shareholders, our managers' competence and the hard work and self-denial of our employees; we are in the *business* because we strive to provide products or services better than our competitors, because we are effective and fair. Therefore, our success in business is only the result of our work, of our intelligence and correctness, starting with the gatekeepers and drivers and ending with the management board.

Referring to the economic relations at a macro-social level, we can see something different, namely that without the population's consumption needs, business would not exist. The fact that one *company* or another is doing well or not, depending on management and conjecture, is understandable. But the fact that there are companies is another thing and, at this level of analysis, the relationship between business and society changes radically: the purpose for *a* company is, indeed, as Sternberg says, to obtain a larger profit for its owners; the purpose or, better said, the social-economic function of the *companies* as competitive market system is not the entrepreneurs' profit, but the satisfaction in the best conditions of the social needs of the consumers, among which we must list not only the consumption needs but also the need of a job, a livelihood, the need to live in an unpolluted natural environment or the need of the vital public services such as education, health, justice, etc. An old tale says that the bird imagines that it would fly much easier if it would not meet the air resistance, not knowing that in the vacuum it would collapse to the ground. Although they should be more intelligent than birds, some business people (fortunately not all) think and behave as though the need to take into account the claims and interests of the *stakeholders* represents an inconvenient is the business, which they accept with the thought that pleasing them would draw profit for themselves eventually. They should consider more deeply the fact that in the absence of such hateable groups of consumers, employees, suppliers or ordinary inhabitants of the cities where they have established their firms, these firms would not have activity and would collapse like the birds in a vacuum.

The entire dispute takes place over the *reasons* on which these debts and moral responsibilities are based and by which they legitimise. For many people the thought that they are properly treated only for interest is simply unacceptable.

The emblematic treatment of the business from the macro-social perspective is offered by the American author Laura Nash, in her study *Good Intentions Aside. A Manager's Guide to Resolving Ethical Problems* (1993). In response to a teleological treatment offered by Sternberg, Nash proposes a "consensual" or "contractual"[1] business ethics, built on the idea that the capitalist system is based on a social *voluntary* contract between the public and businesses, which commit themselves to carry out certain duties mutually beneficial.

In an attempt to overturn word-by-word Sternberg's thesis, according to which the business's *purpose* is to maximize the owner's value for the long-term, the *means* being the satisfaction of social needs, Nash says that "the main purpose of business is creating and delivering value, on a voluntary or democratic controlled market. However, the market has (through the buyers and the law) the duty to ensure that businesses receive a fair income in exchange for the value provided. Thus, the profit is the *result* of the other initial conditions, rather than the first condition of affairs, and the efficiency is a component rather than the definition of the supplied value"[2].

No wonder that Laura Nash also rejects the rational interest, as in practice, this theory does not stimulate the moral condition, or the anticipated economic efficiency. The ethical models of the rational interest are not designed to fundament a firm's long-term growth anymore, but have been perverted into a justification of the deeply selfish attitude, which Nash calls "survival ethic": each for himself and everything is permitted for firm survival.

Very well illustrating the idea that her disagreement with the rational interest ethics concerns not its practical consequences, but the reasons underlying, Laura Nash says that the enlightened self-interest model is "theoretically correct and attitudinally incorrect". Even though in theory it is recommended to consider the interests of others, as the reason to assume the social responsibility is *only* the self-interest, a fundamentally selfish attitude of the businessmen is cultivated; and as long-term consequences of the management decisions are often difficult to assess, Nash thinks, the businessmen prefer to consider only the immediate consequences of their decisions, invoking mostly severe constraints and market competition, which make them ignore the interest of other groups, since it does not compromise obviously, the interests. Also, the selfishness leads to the perception of the moral rules as some unpleasant constraints imposed by the external factors and observed not by inner conviction, but for the company's fear of adverse consequences caused by their non-observance. Against this background, the business ethics tends to be reduced at law observance, with all the practical disadvantages of such behaviour.

The enlightened selfishness is counterproductive, says Nash. The exclusive interest for the balance sheets – the often *bottom line* – narrows the management mind and the imagination, ignoring the dynamic consumer needs and preferences. Those who seek only their own product, their piece of the market and the profit maximization narrow their perspective. Any negative market reaction does not give

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[1] In original, *covenant ethic.*

[2] Laura L. Nash, *Good Intentions Aside. A Manager's Guide to Resolving Ethical Problems*, Harvard Business School Press, 1993, p. 58.

a signal of the consumer needs, but supplies the technical obsession to lower production costs, therefore, to reach mediocrity, lack of imagination, fear of innovation, the *status quo*.

In the same spirit, Nash continues with all sorts of imprecations against those who practice the rational interest: when one is right, one is given the theoretical correctness, but is imputed the immoral reasons, also suggested that the theory does not work in practice, hence the conclusion, repeated endlessly: the reasons are bad and their practical application, most often fail, leading to ethically poor results and also economically inefficient ones. Sensing the abuse of hypothetical speculation, looking on what *might* happen to those who conduct their business practicing the rational interest, Nash uses a factual, disputable argument: the practice shows that companies that promote a high ethical standard have better economic results than those who pursue only the profit maximization. Besides the fact that the affirmation is not based on a rigorous statistic, but only a few convenient examples, Laura Nash's assessment is inconsistent, because nothing is known about the *motivation* behind these high ethical standards, they may very well be self-imposed by these companies in terms of rational interest.

Holding the antithetical symmetry against Sternberg until the end, Nash is very clear and precise in stating the basic principles of her theory, but begins to take defensive positions, with results that are often confusing and inconsistent, as she examines the practical consequences of the principles she had joined. In Sternberg's case, after the sharp assertion of the profit maximization as the defining purpose of the business, the following step is the milder withdrawal, in the light of the rational arguments' interest: yes, the profit maximization is above all (if we want to do business, not charity work) – but even long-term profit maximization requires careful consideration of the interests of those on which the smooth running of business depends; therefore, the "basic decency" and the "distributive justice" are quite briefly and with many uncertainties recommended.

Nash is going backwards. She begins by enunciating the principle according to which the purpose of the business is to satisfy the social needs, the profit is an award deserved by those considering consumer satisfaction above all, fairness to employees, suppliers and creditors. She begins to have difficulties when she must admit – without enthusiasm – that a business must still be profitable. As responsible and committed to the public as possible, businessmen are not social workers, their mission is to make some substantial gains from activities they carry. Henceforth, Nash begins to make compromises one after another; giving the businessmen the right to assume the responsibilities as far as this does not put in danger the company and its prospects for further development. Yes, first of all comes the concern for the public and stakeholders (if we want to get some businessmen with a high standard of ethical responsibility) – but only to the extent that our humanitarian momentum does not endanger the economic success. Just as confusing as the "basic decency" Sternberg is talking about, a "consensual" or "contractual" business ethics is recommended, whose stake is a balance between the interests of the public and the proper businessmen reward for their products and their services.

It is a view that we fully share indicating that we expand the sense of the profit and the meaning of the ideas of morality, human development and prestige in society.

Table 1

The business antithesis from microeconomic and macro-social perspective

Business	**Objectives**	**Responsibility**	**Stakeholders – managers reports**
Elaine Sternberg, from the microeconomic perspective	Maximizing the profit.	Managers are responsible only to shareholders. Businesses should take into account the interests of employees, customers, etc., because it is in their interest to do so, but the owners are the only ones to whom managers must answer, because of a very simple reason: it is *their* business.	Owners and their interests come first; Customer satisfaction is only a "way" to achieve the purpose of any business-profits. The right of the main categories of stakeholders to reclaim a small control over the business is rejected.
Laura Nash, from the macro-social perspective	Satisfaction of the social needs, the profit is a deserved reward.	Care and responsibility towards the public and stakeholders. Businessmen have the right to assume the responsibilities as far as this does not danger the company and its prospects for the further development.	Satisfaction of the consumer. Fairness towards the employees, suppliers, creditors, etc.

Source: carried out by the author, conducted by Elaine Sternberg, *Just Business. Business Ethics in Action*, 1994 and Laura Nash, *Good Intentions Aside. A Manager's Guide to Resolving Ethical Problems*, 1993.

Conclusions

The comparison between the perspective of the "enlightened" selfishness and the vision of the "contractual" ethics, as these are approached in the two representative studies we chose, show us an important issue. At the microeconomic level, the concept is fairly narrow and the argument quite stringent once the approached premises are accepted: the business as the private enterprise in the

market economy, with the unique purpose of legal profit maximization. Implicitly, only the moral obligations of the management are linked to the long-term owner value increase, and the consideration of the interests of the various categories of stakeholders is required only to the extent that can help the profit maximization.

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AN APPROACH TO THE PROSPECTS OF BUSINESS ENGLISH LEARNING

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Abstract

The future of English as a global language has widely been discussed for over 10 years, starting with David Graddol (1997), a language researcher and lecturer at the Open University in Britain, in his famous work 'The Future of English', to so many other language researchers, so much inspired by Graddol's book. Whether English will keep its supremacy as THE tool of communication in the future world is still debatable, fact is that English is still the language of business and information technology and it shall stay so for quite a while, in spite of the challenges coming from Spanish, French, German, Russian and… Mandarin. Once we acknowledge that, the question is: how can the teaching/learning process be improved in the future for a better and faster acquisition of English as the language of choice in the business world?

Key-words: *Business English, global English, globalization, information technology, sustainable development, universal language, neutral universal language, international language*

Overview on the universal language

The awareness for the need of a universal language goes far back, to the Biblical legend of the Babel Tower. 'All spoken human languages are descended from a single ancestral language spoken many thousands of years ago' (source: Wikipedia).As the legend goes, there was once an Adamic language (the language spoken by Adam and Eve – *Book of Genesis, 2:19*) and then with the Fall of Man, something happened also at the language level, a total confusion and a separation of languages. And yet the need for a unique tool of communication persisted so one by one, a few languages claimed dominancy in time, for various centuries in Europe. Latin was a universal language in the Middle Ages (mostly for literature, in justice), Greek (mostly for commerce). With the decline of Latin, the concern for a universal language revived. The failure of a vernacular language to become universal, the only tool of communication, resulted in the concept of a 'constructed language'. Therefore, at the end of the 19th century, several constructed languages drew some interest, among which Solresol, Volapűk and Esperanto. The latter became the most popular, 'in an attempt of facilitating the transition to a global society'.[1]

The creator of Esperanto, L.L. Zamenhof (*Unua Libro*, 1887, the birth certificate of Esperanto) intended to provide the world with a neutral and easy to learn language 'as a universal second language to foster peace and international

[1] 'Making a commitment to a universal language and a common script' in the 1995 statement by the Bahá'I International Community on the Occasion of the 50th Anniversary of the United Nations: http://statements.bahai.org/95-1001.htm#III

understanding'. Although Esperanto has approx. one thousand native speakers and an estimated range from 10,000 up to 2 million, no country has adopted it officially, because Esperanto turned out to be not as easy a language as its creator hopped it to be. Criticism against Esperanto refer to its artificial sound and look, the vocabulary and grammar are based on major European languages, therefore, it is not universal, it is not culture-based, the vocabulary is too large. So, it seems that all attempts to have a neutral universal language have failed so far, mainly because of the artificiality of the created languages on the one hand, and because of the lack of *economic and political interest* in the existing vernacular languages claiming supremacy on the other hand.

Global English and the driving forces that propelled it

The need and wish for a global language remained, to enable communication. In 1997, Graddol (*The Future of English,* p. 3) predicted the forthcoming 'universality' of English: 'According to many economists, cultural theorists and political scientists, the new 'world order' expected to appear in the 21st century will represent ***a significant discontinuity with previous centuries*** (our underlining). The Internet and related information technologies, for example, may upset the traditional patterns of communication upon which institutional and national cultures have been built. We have encountered ***a period in which language and communication will play a more central role than ever before in economic, political and cultural life*** (our underlining) – just at the moment in history that a global language has emerged'. Graddol announced the major restructuring of the world language hierarchy, though he drew the attention on the forthcoming threat coming from the challengers Mandarin, Hindi, Spanish, Arabic – mostly in point of the number of speakers of these languages.

Nevertheless, English is spoken now by 400 million native speakers and 700 non-native speakers worldwide (British Council survey, 2000), less than Mandarin or Spanish, but the latter has the global distribution of English. Another famous linguist, David Crystal found that non-native speakers of English outnumber native speakers by three to one. On the other hand, as compared to Esperanto, the projected 'ideal' universal language, English is flexible, a language that may constantly be changed, which makes it very alive, attractive, interesting. English is the language of commerce, finance, international law, global media and sports, and it is here to stay!

Language theorists identified two forces that brought English in the forefront:

- technology;
- globalization.

The Internet has imposed a new way of life and its absence has become unconceivable – and it came to our lives through English. However, French, Spanish and Russian have gained field in this respect lately, due to wide scale translations of the Internet facilities. On the other hand, 'the current enthusiasm for English is closely tied to the complex processes of globalization.' But English is now much more than the key tool of communication in the 'global village'. It 'is redefining national and individual identities worldwide, shifting political fault

lines; creating new global patterns of wealth and social exclusion and suggesting new notions of human rights and responsibilities of citizenship' (David Graddol, *op. cit.*).

In spite of the doubts expressed by Graddol in relation with the future supremacy of English over other languages – an opinion that we do not share –, his book summarizes a few trends in the use of English worldwide, which actually come to contradict his doubts:

- the global spread of English raised not just linguistic, educational and economic issues but also cultural, political and ethical ones;
- the key drivers of change were demographic, economic, technological and long-term trends in society;
- the relationships between English and globalization was a complex one: economic globalization encouraged the spread of English but the spread of English also encouraged globalization.

The influence of English goes beyond the immediate needs of communication, it has changed mentalities and English competency is seen as a *sine qua non* condition for any socially active individual. On the other hand, the use of one global language threatens linguistic diversity, the aim of the European Commission. The EC is concerned with the fact that English tends to push European national languages to a corner. It is argued that the ability of speaking two or more languages will give the Europeans economic and technical advantages over the monolingual America.

Future approaches in teaching/learning Business English

English has already been included into the curriculum of the learners worldwide and it will soon cease to be a foreign language for many. In some countries, Romania included (2007), there have been proposals of adopting English as additional official language with immediate benefits in the stimulation of business and cultural exchange. Some companies have already adopted English as their official language, so that English competency is no longer an advantage, it is natural. Workers of the (near) future will need to be competent in more than two languages to be competitive.

Business English is by far the most popular form of English for Specific Purposes and it is taught both in private settings and in official institutions. Lately, the world of language teaching has changed dramatically and UK Business English providers reported a difficult year, with the volume of business falling (www.businessenglishonline.net). The courses taught in private settings are customized and involve the financial support of the enterprise. With the current financial crisis, courses of English, or of any other type for that matter, are no longer a priority. While before the crisis (early 2009) there was a trend of paying for individual lessons or for more skill-based micro-courses sometimes focused on just one skill, now learning Business English in school is more welcome and the interest for Business English in the classroom will revive as it does not involve supplementary fees or time. With the revival of classroom learning, new approaches are imperative for an efficient acquisition of Business English matching

the needs of the new international citizens. The current focus on language models, the situation-based curriculum and the focus on language accuracy is no longer relevant or useful for the learners. The needs analysis may reveal certain needs with learners, which may differ greatly from one learner to another. So, the endeavour of conceiving a curriculum is a difficult one.

Business English has been and is still taught as a continuation of teaching standard English, incorporating specific vocabulary, topics and contexts that are relevant for the learners; the learners approach the study of English through a field that is already familiar to them and this used to be deemed sufficient for the completion of the learner's language training.

A change of approach in dealing with Business English is required as a result of the society changes. We should start from the fact that Business English is used in business schools, therefore we should consider first the future of business schools and the course design in business schools. Or in business schools there has arisen lately an interest in a more holistic approach of skills. Two types of skills are gaining more ground: *behavioural* and *societal*.[2]

Behavioural skills are related to the ability to communicate effectively, to work in a team, to have a multicultural background, to develop entrepreneurial skills. All these skills need to be reflected in the curriculum, and they have been in most of the aspects listed above, except for the 'multicultural background' which is still approached as a generous concept, but hard to achieve. Raising awareness in multiculturalism through courses of culture and civilization in business schools may be much more educational than 'targeted skills' in particular situations, which restricts approaches and the learner fails to grasp the whole image. Such courses may be challenged at first, but they have actual benefits in the long run for any learner, in any environment they may work, considering that no learner/student is certain of his/her future line of business!

On the other hand, the *societal* skills refers basically to dealing with ethics and ethical values and sustainable development. These values are not easy to teach, but they definitely should be included in any curriculum of the 21st century. One might argue that it is difficult to change behaviour of learners who have reached the age of college education and that ethics is not the function of business schools, but as behaviour and society values are a constant in everyone's life as socially integrated individuals, they should be present in any curriculum and long life learning programs. The current focus on subject specialism is no longer enough to perform efficiently in a work environment.

Business English course design

In the late '90s there was a concern that education would eventually become virtual with the classroom-based model of education becoming obsolete and useless because of the ICT revolution and the need to provide global solutions of education in faster delivery time. There has even been a growth of interest in

[2] Hawawini, Gabriel, *The Future of Business Schools*, "Journal of Management Development", vol. 24, no. 9, 2005.

delivering course materials to iPhones and other mobile devices. In Japan, elementary education by means of robots is experimented, basically for cost-cutting reasons. At some point globalization and IT will join forces and will bring about a radical change in education. The school of the future is likely to become a network for lifelong learning, a knowledge and learning network.

But all these new forms of teaching and learning are still experimental, they have not replaced traditional classroom models but only complemented it.

It is common knowledge that communicating well in English means now gaining a competitive advantage in the ever more demanding world markets. But while for the school of the future, customized courses will be the best solution, for the current school the changes in curriculum design should consider the relevant business purposes and basic communication skills. The mobile employee of the near future working across cultures should develop a range of communication strategies and styles to meet various expectations. The focus should be placed on the acquisition of knowledge on the types of discourse, language register, cohesion and coherence to enable the learner to listen effectively, to speak clearly, to manage conflict, to give feedback, to exert influence in their environment and have an impact on the business partners. Language accuracy is less relevant, people can communicate and understand each other without being accurate. Strategic competence in English is becoming more and more important than language competence. An approach that leaves behind the learning modules, language accuracy and learning language in contexts and situations and focusing instead on language strategies and on ethics is more relevant for the learners of today.

Conclusion

While English dominant position as the international language is challenged, the need of only one key tool of communication is uncontested. Globalization and IT have propelled English in its top position and as long as English is the basic language of business, IT, media, law, it is here to stay! Business English, as the most popular branch of English, needs to adapt to the new trends and to be approached differently in the school setting. A strategic approach of the language is more likely to be effective for the learners than an approach from the language accuracy point of view. Notions on type of discourse, language register, communication strategies, ethics, societal values may add better to the profile of the future competitive individual.

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FLEXICURITY STRATEGIES ON THE ECONOMIC CRISIS BACKGROUND[1]

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Abstract

The flexicurity concept – a combination of flexibility and security strategies, specific to each country – is a successful outcome[2] of the 2010 Lisbon Strategy. Ever since 2000, this concept has been implemented for continuing the European labour markets reform. The conclusion of the Mission for Flexicurity[3] is that the European labour markets challenges have not changed, therefore flexicurity is the strategy to be further implemented in order to align to the new competition requirements, providing also the necessary social protection, especially on the current economic crisis background.

The paper addresses the flexicurity concept development, the implications of the flexicurity strategies and of the steps taken on the European Union Member States labour markets, on the economic crisis background.

Key-words: *flexicurity, economic crisis, unemployment, employment*

JEL Classification: J00, J20, J40, J50

Introduction

Flexicurity, primarily developed in the Scandinavian countries, is suggested by the European Union leaders and by the European Commission as a solution for issues regarding employment. The „flexicurity" strategies are successful outcomes of 2010 Lisbon Strategy. A few important data reflecting the flexicurity concept development are provided below, as follows:

- **November 2006 –** The *Green Paper* public commission on the labour market reform in the EU Member States;

[1] Paper included in the 91-038 project *Tools for promoting the flexibility and security strategy (flexicurity) and for reducing market segmentation,* Project Manager Daniela Paşnicu.

[2] Lisbon Strategy review document, EC working document CE, 2.2.2010, p. 3.

[3] „Report of the Mission for flexicurity", The Council of the European Union, Brussels, 12 December 2008.

➢ **27 June 2007 –** The Commission's Communiqué *„Common principles of flexicurity: more and better jobs through flexibility and security";*

➢ **29 November 2007 –** The European Parliament resolution on the Common principles of flexicurity;

➢ **5 December 2007 –** The European Council enforcing the eight principles of flexicurity;

➢ **1 February 2008** – The "Mission for Flexicurity" – an action plan including visits in 4-5 states in order to supervise the implementation of flexicurity strategies at national level – is launched;

➢ **March 2008 –** The European Council supports the new guidelines of the Lisbon Strategy which include references to the common principles of flexicurity and the national action plans;

➢ **August 2008 –** The EU Council of Ministers adopts the guidelines recommended in the Commission's Communiqué, in order to increase the labour markets efficiency;

➢ **12 December 2008 –** The Mission for Flexicurity presents the final report, yet the action plan elaboration is postponed following the economic recession;

➢ **8 June 2009 –** The Council adopts the conclusions on „flexicurity in times of recession".

The question raised is whether on the background of the current economic crisis, implementing flexicurity will remain a priority in the European Union institutions through economic recovery packages and solidarity funds. Despite many voices in favour of maintaining[4] flexicurity as a symbol of the EU policy, still it is unclear in the 2010 context – a new EU strategy, a new European Parliament and a new European Commission – how far the EU institutions and leaders are willing to go in that direction.

The flexicurity concept in the 2010 and 2020 Strategies context

Flexicurity is defined in the European Commission's Communiqué from June 2007 as an integrated strategy of simultaneously consolidating flexibility and security on the labour market. The flexicurity concept is developed starting from the idea that the two dimensions of the labour market – flexibility and security – are not opposed, but complementary, especially on the background of the latest major challenges: globalisation, technological progress, ageing and labour market segmentation.

Flexicurity has been a highly discussed topic over the last ten years and has been differently perceived by every person involved in the debate. Due to its multidimensional character and to the complex and integrated approach, flexicurity is difficult to be analysed from an analytical perspective, requiring broad consensus. Nevertheless, according to the European Commission, the flexicurity

[4]The 2020 European Strategy, the final report of the Mission for Flexicurity, Europe's economic priorities 2010-2015 and the like.

strategy is a success[5], reflecting its capacity to reach a broad consensus, to stimulate and contribute to political debates, as well as to give rise to mutually accepted solutions.

On the current background, the main outcome of the Mission for Flexicurity[6] outlines that implementing flexicurity is even more appropriate in an unfavourable economic context, that the social partners' role in setting national guidelines for implementing flexicurity is crucial. Estimated trends on the labour market and the employment requirements are highly relevant for adjusting the components of the flexicurity strategies. The Report concludes that the long-term challenges have not changed and that *"flexicurity is without doubt the strategy that European labour markets must adopt in order to adapt to new requirements, while providing the necessary degree of protection, particularly in the current context of economic slowdown"*.

However, the social partners claim[7] that the flexicurity strategy must be re-thought. The participants in the Tripartite Social Summit stress that during the economic recession, increased employment is the key to economic recovery and that efficient and creative guidelines must be developed in order to bring people back to work. Experts believe that the flexicurity principles still stand, yet a series of steps must be taken, on the economic crisis background, in order to rejuvenate the labour markets. Presently, given the downbeat employment outlook, some workers enjoy high levels of security, with almost no flexibility, while another part of the European workforce is highly flexible, but regrettably insecure. Therefore, we must re-think flexicurity as a state in which all workers enjoy a fair balance of flexibility and security and are ready to meet the changing needs of the labour markets.

The document addressed to the European Commission, on Europe's economic priorities 2010-2015[8] outlines the need for EU further promoting flexicurity, but at the same time, warns that flexicurity strategies lose field on the economic crisis background. On the one hand, in 2010 the labour market will be characterized by an unusually low flexibility, for given the increased unemployment rate in all sectors, the major quality of flexibility – transferring the workforce from the economically affected sectors to the ones recording a progress – is likely to lose relevance on the economic recession background. On the other hand, in those countries promoting flexible labour rules (Great Britain, Ireland and the like) unemployment will reach significant levels, therefore both flexibility advantages and the governments' financial resources to support the unemployed are questioned.

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[5] Lisbon Strategy review document, EC working document CE, 2.2.2010, p. 3.

[6] Presided over by Commissioner Vladimir Spidla and by Gerard Larcher, December 2008.

[7] Tripartite Social Summit, 25 March 2010.

[8] Andre Sapir, s.a., *Europe's Economic Priorities 2010-2015: Memos to the New Commission*, Bruegel, March 2010.

However, once the crisis overcome, some economic sectors will experience progress, while others will record the same or even reduced levels. The economic growth rate will greatly depend on how easily the workforce will be transferred to the economically developing sectors. If, following rigid labour rules the workforce will be maintained in the less productive sectors, the economic growth will take the shape of a very slowly process.

Ton Wilthagen[9] claims that flexicurity has proven to be a "sunny weather" concept (economic progress stage). But how about flexicurity in "bad weather" (economic recession stage)? He advances several guidelines to be followed in this unfavourable context (table 1).

Table 1

The economic crisis and the flexibility and security modalities

Security Flexibility	Job security	Employment security	Income (social) security	Combined security (work and care)
External numerical flexibility (hiring – firing)	Temporary placement in other companies	Mobility centres; Worker pools	Unemployment benefit as wage subsidy; Retirement; Lower taxe	Mortgage support
Internal numerical flexibility (working time flexibility)	**Shorter working hours; WT accounts**	Multi-employership	**Part-time unemployment benefit, reduced working hours**	**Take up of leave schemes holidays, extra days off**
Functional (employability)	Job rotation	Internship in other companies; Retraining	Retraining for a new job	Accreditation of prior learning
Variable pay	Wage adjustment	Supplement wage new job	Extra unemployment benefits; private savings	Increased family allowance

Source: Ton Wilthagen, *Flexicurity in the crisis: the case of short-time working arrangements,* European

Labour market developments in the European Union Member States and the flexicurity principles implementation in order to manage the economic crisis impact

Between the second quarter of 2008 and the second quarter of 2009, all European Union Member States, except for Poland were struck by a significant

[9] Ton Wilthagen, *Flexicurity in the Crisis: the Case of Short-time Working Arrangements,* European Employment Observatory, Occasional workshop on Short-Time Working Arrangements, 13 January 2010.

economic recession. Both EU27 and the Euro Zone record a decrease in the GDP by almost 5%. This impacted considerably the labour market, where the reduced workforce demand led to major layoffs and increased unemployment rates. Given the fall in GDP, most European Union Member States faced reduced employment. The only country recording increased employment rates in that period was Luxembourg.

However, the output sector was much more affected than the employment one. The elasticity coefficient generally indicates an inflexible variation of the employed in relation to the GDP ($|E_{POC/PIB}|<1$). This translates in the fact that employers, in order to protect their human capital, avoided layoffs turning to part-time employment or reduced working hours. E

Nevertheless, there are three countries facing a more serious fall in employment compared to the decrease in GDP, namely: Greece, Spain and Ireland. A special case is Poland which, despite of the increase in GDP by 1,1%, adjusted its workforce by 0,7%.

Table 2

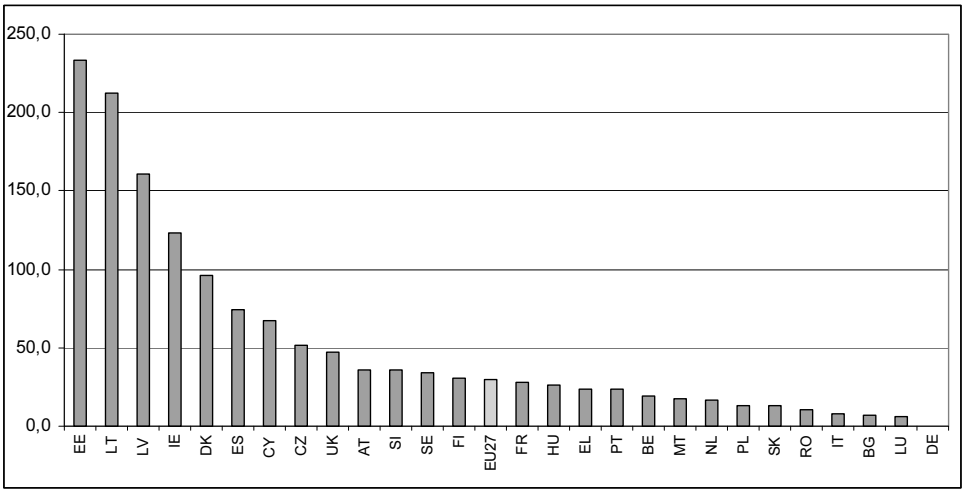
Variation of GDP and of employment in the second quarter of 2009 vs. the second quarter of 2008 within the European Union Member States

Țara	Δ %PIB	Δ %POC	EPOC/PIB	Țara	Δ %PIB	Δ %POC	EPOC/PIB
EU27	-4,9	-1,9	0,4	LT	-21,1	-6,7	0,3
BE	-3,7	-0,7	0,2	LU	-5,3	1,3	-0,2
BG	-4,9	-1,8	0,4	HU	-7,3	-4,5	0,6
CZ	-5,5	-1,4	0,3	MT	-3,0	-0,8	0,3
DK	-7,0	-2,6	0,4	NL	-5,2	-0,8	0,2
DE	-5,9	-0,1	0,0	AT	-4,5	-1,1	0,2
EE	-15,8	-10,2	0,6	PL	1,1	-0,7	-0,6
IE	-7,3	-8,3	1,1	PT	-3,7	-2,7	0,7
EL	-0,3	-1,0	3,3	RO	-8,3	-1,2	0,1
ES	-4,2	-7,1	1,7	SI	-9,0	-1,6	0,2
FR	-2,8	-1,2	0,4	SK	-5,4	-1,3	0,2
IT	-6,0	-0,9	0,2	FI	-8,9	-3,0	0,3
CY	-0,7	-0,5	0,7	SE	-6,1	-2,2	0,4
LV	-17,4	-13,1	0,8	UK	-5,5	-2,0	0,4

Source: EUROSTAT

In point of unemployment evolution, the Baltic states are the most affected by the economic recession. Countries as Denmark, Ireland or Great Britain, governed by very flexible employment security rules, also record significant unemployment rates.

Diagram 1. Relative changes in the unemployed number in the second quarter of 2009 vs. the second quarter of 2008 within the European Union Member States



Source: EUROSTAT

Conclusions

Having in view the aforementioned, we draw the following conclusions:

– The current economic context requires an efficient and integrated approach of flexicurity in all EU Member States.

– On short term, flexicurity strategies may help people let the unemployment and income cut fears aside by fostering and facilitating transitions on the labour market. Internal flexibility facilitates job security and reduces the unemployment flow, therefore providing the companies with the necessary workforce for economic growth times.

– Given the increased unemployment rates, the workforce demand/supply correlation is crucial. Better employability requires improved competences for an optimum adjustment to rapid technological changes.

– The disadvantaged will be the most affected on the current economic recession background. The activation and social inclusion policies, including the professional training ones, are essential for avoiding long-term unemployment.

In this context, the following steps must be taken on short and medium term:

- reduced segmentation, harmonized regulations on permanent and fixed term contracts and rapid implementation of the regulation on temporary employment agencies;
- improving the unemployed competences in order to meet the labour market requirements;
- granting job subsidies and implementing rapid equivalent employment procedures;

- reduced marginal tax rate for people with low paid jobs (see unemployment trap) to improve the demand.

The initiative called "An agenda for new competences and new jobs" of the 2020 European Strategy highlights that at the EU level, the Commission will focus on "defining and implementing the second stage of the flexicurity plan together with the social partners in order to identify ways to improve the economic transactions management, to fight unemployment and to increase employment"[10].

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III. ECONOMIC AND FINANCIAL CRISES AND THEIR RECOVERY

UNDERSTANDING AND RESPONDING TO THE REGIONAL PERCEPTIONS OF THE GLOBAL ECONOMIC CRISIS: TOWARD THE "LOW-TECH" KNOWLEDGE-BASED APPROACH[1]

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Abstract

In this paper, authors apply the 'sense-and-respond' model to understanding and modeling reactions of customers in the wider South-East European (SEE) region to the actual economic crisis. As results of the previous research indicate that the role of contemporary knowledge-based tools can serve as a complement, rather as a replacement for the 'traditional' research methodology, the role of universities and other knowledge providers to the business community in responding to the economic crisis is also critically examined. The paper suggests that development and the use of a modified 'sense-and-response' model at the industry/cluster level could assist all economic and social actors in relieving the consequences of the economic crisis/recession, as well as affirm the role of the university in the process[2].

Key-words: *model economic, financial assistance, economic crisis*

JEL Classification: O30, F01

1. The 'sense-and-respond' model in the context of economic crises

In their 1993 paper, published in Harvard Business Review, Haeckel and Nolan refer to the contemporary information & communication technologies

[1] Paper presented at the Annual International Conference in Economics, Informatics and Communications Field, *Spiru Haret* University, Campulung Muscel, 21-22 May 2010.

[2] Unity Through Knowledge Fund, Authors wish to express their gratitude to *The United Knowledge Fund,* Zagreb, Croatia for the financial assistance to research, provided through the project *Toward the knowledge-based development of the Alps-Adriatic region.* In addition, authors wish to acknowledge the helpful assistance of *Valicon plc* for granting access to research participants in Bosnia and Herzegovina, Croatia, Serbia and Slovenia.

(ICTs) as means of managing all kinds of organizations, by using the metaphor of the 'fly-by-wire' systems, used in the state-of-the-art fighter airplanes. Namely, provided that the amount of information and complexity of the environment are simply too overwhelming for the average pilot, the ICTs need to assume a proactive role, in order to keep the system stable. This implies that the aircraft's ICT systems are monitoring the selected flight parameters and other relevant aspects of the environment, in order to create the 'condensed virtual environment' by filtering out all insignificant information and emphasizing the critical determinants for the next decision to be made. Information system output is combined with the actual image of the environment and projected on the 'Head-Up-Displays', located in the pilot's helmet. His or her decisions, created by responding to the computer-generated information via so-called 'fly-by-wire' approach, are relayed to the lower-level/operational systems and executed[3].

In a similar manner, the role of ICTs is conceptualized in terms of filtering information and providing the snapshot of relevant environmental trends to the decision-makers, being tipically members of the top management team. In this context, different ICT tools and approaches are used, usually 'packaged' by using the comprehensive concepts of Business Intelligence (see, e.g. Howson, 2008), Customer Relationship Management (see, e.g. Payne, 2005), etc, while the data/information system output are delivered and displayed by employing customized corporate information portals and/or dashboards (see, e.g. Sullivan, 2003). Throughout the 1990s, the 'high tech' seemed to guarantee that the organizations will successfully adapt to the changing environment, although the 2001 stock crash of Internet-based firms ('dot-coms') started proving otherwise. In the after-2001 context, the high hopes of 1990s were, for the first time, challenged by the idea that the ICTs are no more than a widely available commodity, which does not provide strategic advantage over competition and should, therefore, be managed on the basis of cost efficiency (Carr, 2003).

As the global economic crisis, unprecedented since the Great Depression, raises once again the issue of organizational flexibility, the old 'sense-and-response' model needs to be adapted to the new realities. Special emphasis needs to be placed on the specific regional determinants, as it has been already discussed for the case of traditional marketing research tools/approaches, the regional/SEE actors seem to be adopting the trendy ideas from the more developed market economies with a certain lag, but often without a critical attitude (Pavicic, Alfirevic, Znidar & Soric Zelinscek, 2009). As the current theory seems to send 'mixed messages' even to the actors with a high degree of sophistication, a new and practical approach to understanding and responding to the customers in the context of economic crisis needs to be developed.

2. **The 'low-tech' approach to sensing and responding to customers in economic crisis**

Considering that managing one's cost position and protecting the cash-flow sustainability is the 'absolute must' in times of crises (Rhodes & Stelter, 2009), it is

[3] Authors have also consulted Haeckel (1999), as well as used their previous analysis, published in: Langer, Alfirevic and Pavicic (2005), pp. 174-181.

essential that all new investments, especially those related to ICTs, are based on very simple and low-cost technologies/methods (cf. Upton & Staats, 2008). Provided that the consulting and other intellectual services associated with such investments could be also a source of unexpected costs, economic actors should consider networking with the universities and other regional research organizations, as suggested quite a few years ago by proponents of the 'industrial districts'/'clusters' concept. According to M. E. Porter (1998), one of the leading authorities in the field of competitiveness, clusters are "geographic concentrations of interconnected companies and institutions in a particular field", which encourage production of trust and lasting long-term relationships among the actors, located in geographically concentrated areas (cf. McNeill & While, 2001). Competitiveness of clusters can be explained in terms of locally embedded relationships, social capital and routines for dealing with complex issues, with all of these issues easily explicable from the knowledge-based point of view, by using the notion of tacit knowledge. This form of knowledge implies intuitive understanding of the environment and the practices which provide the best 'fit' with its inherent characteristics[4]. However, such a knowledge cannot be simply 'learned'/transferred, but rather internally absorbed (cf. Polanyi, 1967). From the geographical/regional perspective, such a knowledge needs to be acquired by active participation in social practices of actors belonging to a common cluster. If the competitive practices are considered to be a significant obstacle to creating a common knowledge base and sharing relevant insights, then the role of nonprofit/public organizations in providing relevant knowledge and examples of best practice is emphasized (cf. Wolfe & Gertler, 2004). University, viewed as a 'generic' social institution fits well into such a context, especially taking into the account the shrinking levels of public financial support for the higher education sector and other incentives for developing the concept of the entrepreneurial university (Rothaermel, Agung & Jiang, 2007).

Therefore, the universities, research institutes and other providers of knowledge services to the commercial sector should strive to provide simple and efficient tools for understanding customers and their behavior, especially in the specific circumstances, such as these implied by the global crisis. An illustrative example for such an approach, developed by the regional research agency Valicon, is provided in the following text.

3. **Research methodology and preliminary results related to the regional customer behavior in economic crisis**

The following figure presents a simple methodology, used in developing the 'sense-and-respond' tool for detecting consumer attitudes toward economic crisis. It encompasses traditional techniques, such as group discussion, focus groups and individual interviews, which can, but do not need to be carried out on a representative respondent sample.

[4] The notion of 'fit' with the environment has been, traditionally, identified as one of the fundamental elements of the strategic success of an organization (see, e.g. Mintzberg, Ahlstrand & Lampel, 2001).

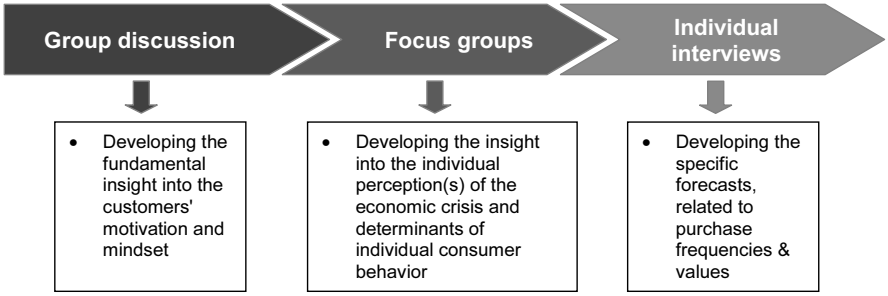
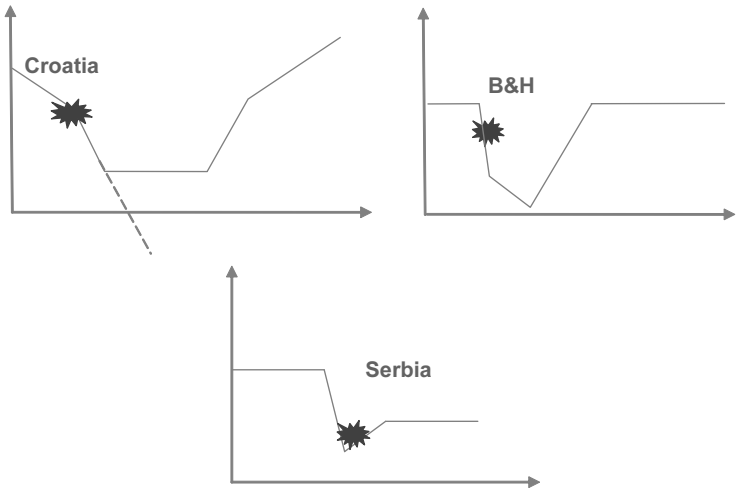


Fig. 1. *Research methodology*

Some preliminary results of the research project indicate that the regional consumers significantly differ in their perceptions of the economic recovery (as depicted by fig. 2), as well as in notions and social reactions associated with the idea of 'economic crisis', i.e. 'recession' (see table 1).



Source: Research results

Fig. 2. *Perceptions of economic recovery in the SEE region*

The public sentiment seems to be directed toward distrust to the elites, especially the political class throughout the region, except for some exceptions, such as the governor of the Croatian National Bank, Mr. Rohatinski, who is believed to be a person capable of designing relevant policy for alleviating the crisis. In addition, diminished expectations regarding the standard of living and future consumption patterns are also the common finding throughout the region. They are illustrated by the following table.

Table 1

Notions and social reactions associated with 'economic crisis', i.e. 'recession'

Croatia	Slovenia	Serbia	Bosnia & Herzegovina
Fear related to the difficulties in fulfilling all needs. More stress, uncertainty, pessimism, etc. observable.	**Fear** related to the possible banking crisis, losing one's job, devaluation of stocks and inflation (higher prices), depression & aggression.	**Fear** related to future, especially for the younger generation. Questionable fulfillment of fundamental needs.	**Fear** related to fulfilling fundamental needs (survival) and falling into poverty. Stress, uncertainty and pessimism observable.
Expectations of more unemployment, higher prices & interest rates.	**Expectations** of higher prices & less money available.	**Expectations** of more unemployment and extreme difficulties in finding new jobs, higher prices, lower wages and unethical/illegal behavior.	**Expectations** of social injustice and possible social unrests.
Behavioral changes: saving instead of spending, less enjoyment in life.	**Behavioral changes:** savings, worrying for the children's future.	**Behavioral changes:** divided perceptions between the pessimists and optimists.	**Behavioral changes:** adapting to the new circumstances and ensuring survival.

Source: Research results

Due to the crisis and its perceptions, consumers are expected to spend more time at home, in their family settings and, consequently, and spend their limited budgets on purchasing basic foodstuffs, low-cost entertainment (including TV, some telecommunication services, etc.) and other items, considered to be absolutely necessary for meeting the fundamental needs. Dining out, tourism and purchases of high-price domestic items, cars, etc. will be postponed, along with other 'luxury goods'.

4. **Instead of a conclusion**

In order to find the way out of the academic 'ivory tower', which has been considered the due social role of the universities in the SEE region for many decades, members of the academic community should deal with 'real', pressing issues in society and economy. This can be done along many different paths, especially by cooperating with the profit sector, as well as with the nonprofits (in the form of so-called service learning). In this paper, authors have presented a simple, 'low-tech' methodology for assessment of customer perceptions related to the current economic crisis. Its fundamental advantages are: (a) usage of traditional research methods, which can be applied without expensive consulting and/or other external knowledge-based business services, (b) low technological requirements and (c) practical applicability in a range of different industries and market settings. It has been created by a regional private research entity (Valicon), in cooperation with the members of the Croatian academic community and, as such, could represent an example of a good regional practice in the field.

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FINANCIAL CRISIS AND ROMANIA'S ECONOMY

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Abstract

The effects of the international financial crisis also have spread on the Romanian economy.

In terms of the direct impact, the banking system was less affected by not being exposed to the toxic assets, and because of prudential and administrative measures adopted over the time by the National Bank of Romania. Indirectly, the international financial crisis is expanding on the Romanian economy on the multiple channels.

The evolution of the financial crisis will lead economies into a deflationary spiral in the next year or even a longer lasting, as deficit reduction efforts will take large, and probably we shall assist an output of some euro area of weaker states.

Key-words: *financial crisis effects, economic policy, measures on economic growth, external financial agreement, the euro area, Greece*

JEL Classification: G28

Introduction

This article sheds light on issues of financial crisis on the Romanian economy and challenges for the economy in Romania.

We conciedered necessary the analysis of the issues related to the revitalization of the economy of our country (out of recession, budgetary correction, high dependence on foreign loans) and also the presentation of the measures taken by the Government in the Government Programme 2009-2012.

What do we need? In essence, it is necessary a significant strengthening of the fiscal and salary policies. In addition to this, the government can help improve the perception of the foreign investors through measures such as improving the capacity of absorbing EU funds and thus replacing the private external financing with the public external financing or by creating new jobs in the insufficiently exploited areas, which can gradually take over the role of engine of the economic growth.

Literature review

According to economic speciality literature (Fischer 1999), the financial crisis is a phenomenon which is in the spotlight of worldwide economists as a

result of the impact on their economies. Specialists of every country try to find solutions for overcoming the economic crisis by adopting an optimal combination of all policies: budgetary, salary, monetary in order to move the business towards work and productivity.

Even if the ongoing economic adjustment process cannot be accurately planned, however, the promotion of the coherent and credible economic policies could avoid a disorderly adjustment (hard landing).

Theoretical background

For this article we have studied the speciality literature, articles and studies recently published on this topic.

In our research we have examined the components of gross domestic product to show that, in Romania, economic growth in 2009 remained in the positive territory. For this we have consulted the national and international macroeconomic context, the Government Programme 2009-2012 and the official site of the National Bank of Romania.

Intern and international macroeconomic context in 2009-2010

The effects of the international financial crisis have also spread on the Romanian economy.

However, in terms of the direct impact, the banking system was less affected by not being exposed to the toxic assets, and because of prudential and administrative measures adopted in time by the National Bank of Romania. Indirectly, however, the international financial crisis and especially its obvious consequence – the recession in the developed countries – are expanding on the Romanian economy on multiple channels.

On the commercial the channel, slows or even reduces the export growth. On the financial channel, limites the access to the external financing, and thus restrict, the volume of lending, and creates difficulties in the private external debt service.

On the exchange rate channel, reducing the external financing reflected in the national currency depreciation.

On the confidence channel, there was a withdrawal of investors from the Eastern Europe countries. This as the effect the manifestation on the monetary currency market of some moments of panic and speculative attacks, such as the one in October 2009 in Romania, which made necessary the intervention of NBR, the central bank.

Finally, on the channel of wealth and balance sheet effects, the damage of the net assets of people and the companies occurs, due to the high proportion of loans in the foreign currency (related to the national currency depreciation) and the drop of the asset prices and capital values at unsustainable values (the propagation of these effects determines that the degree of uncertainty regarding the evolution of the economic variables be extremely high).

This contributes, in its turn, to the accentuation of the crisis through the negative effects it has on the expectations and by increasing the degree of cautious consumers and traders.

In Romania, the response to the adverse effects of the crisis cannot be similar to that made by some European countries or the U.S. There are several differences between the Romanian economy and these economies, which do not allow copying the package of measures developed there.

In essence, we talk about the fact that the Romanian economy has a large current account deficit, which indicates its dependence on the external financing. We have to chose between the orderly reductions of this deficit or its reduction by the market in the current conditions of tension and chose mistrust, with dramatic consequences for the exchange rate and the economic growth.

Even if the ongoing economic adjustment process cannot be accurately planned, however, the promotion of the *coherent and credible economic policies* could avoid a disorderly adjustment (*hard landing*). Thus, the government should avoid an emotional crisis approach under the unions and employers pressure, which should lead to same measures to stimulate the intern demand, complicating the reduction of the current account deficit at a sustainable level. Only a concentration of the macroeconomic policies combination on the process of the adjusting external imbalances (the current account deficit) and of the internal one (the budget deficit) may lead to the support of the soft landing of the economy and to improving the perception of the foreign investors.

What do we need? In essence, it is required a significant strengthening of the fiscal and salary policies (in the broad sense, including bonuses and awards of the quasi-wage nature). In this sense, the 2009 budget was an approvable first step, especially because of the relatively high allocation of funds for investment.

In addition to this, the government can also help improve the perception of the foreign investors through measures such as improving the capacity of absorbing EU funds and thus replacing the private external financing with the public external financing or by creating new jobs in the insufficiently exploited areas (infrastructure, tourism, agribusiness), which can take over gradually the role of the engine of the economic growth.

Generally, financing agreements with the international organizations, starting with the European Commission and the European Investment Bank are needed, in order to compensate for the reduction of sensitive private capital inflows are welcome.

As for the National Bank of Romania it remains consequent in its economic growth projection for 2010, with the following arguments:

– lower share of exports in GDP compared to other Central and East European countries, which still have projected a positive growth in 2010;

– the low level of the financial intermediation (nongovernmental credit as a share of GDP), which implies a smaller contraction of the economy due to the financial channel;

– the exchange-rate flexibility, which allows some exogenous shocks to dissipate over the nominal variables (exchange rate), rather than to affect the real economy.

Another set of arguments for maintaining the economic growth in the positive territory is based on the analysis of GDP components (consumption, investment and the net exports):

– as for as the consumption is regarded, in the 2nd trimester of 2010 it is highlighted an increase of the final consumption with 0,4% compared to the 1st trimester of the same year, mainly as a result of the increase in the expences volume for the final consumption of the population (+ 0,8%);

– a negative effect on the GDP had the evolution of the net export as a result of the accentuate glowth of the imported goods and services (+ 24,5%) compared to the exports' volume (21,4%);

– direct net investment show an increase of 1.773 mil. Euros in the 2nd trimester, compared to the first trimester of 2010, when their value reached only 839 mil. Euros.

In the first of 2010, the net GDP's decline continued, but its annual rate reached –2,6%, as compared to – 6,5% in the last trimester of 2009. In the second trimester of 2010, the gross GDP increased by 0,3% according to the datas extracted from the CEB's annuel buletine published in september.

It is expected that at the same time with the resumption of the economic growth, the private sector will record the deficits again. In order for Romania's current account deficit to remain within sustainable limits it is necessary to restrict the budget deficit below the 7.3% of GDP, the entire year.

The government promises to reduce the budgetary deficite from 6,8% of GDP in 2010 to 4,4% of GDP in 2011, to 3% in 2012, and 2,5% in 2013.

In early of 2009, the completing of a multilateral external financial agreement with the International Monetary Fund, the European Union, the World Bank and other international financial institutions took place in the following context:

• a high volatility of the financial markets, characterized by an increased risk of the investment abandon and withdrawal of the foreign investors' capital, especially from the emerging economies;

• combining the effect of the international financial crisis with the following specific macroeconomic imbalances of the Romanian economy:

– share of high current account deficit in GDP (7.3% in 2009) and funding in an increasing proportion of it by accumulating short-term external debt;

– accumulation of short-term debt, mostly private, which has fuelled unsustainable growth rates for increasing the nongovernment credit and the risk of inability of the debt rolling at the moment of amplifying the international crisis and reducing the liquidity on the international level.

From the perspective of the Romanian authorities, the motivations of such an agreement have been and remain the following:

• limiting the impact, of otherwise greater than originally anticipated, of the international crisis over the Romanian economy. Thus, were avoided adjustments that could become unsupported by the population and the economic agencies;

• improving the prospects for development of Romanian economy, sustainability and coherence in the public policies through the commitment to implement some reforms in the areas agreed with the international financial institutions in a given time frame;

• access with relatively low cost to funds for replacing any major reduction in the capital flows towards the Romanian economy.

The agreement with international financial institutions induced a number of immediate positive effects, namely:

– providing resources on attracting external funding through both gradual borrowed resources and through the "Initiative of coordination in the banking field in Romania", in which parent banks of major credit institutions with foreign capital from Romania have undertaken in the maintain exposure of such groups from Romania and to increase the capital of these institutions to deal with the possible negative effects of economic crisis. Besides, in the first half of this year, the rolling degree for the external dept was aproximatly 82% above the projections from the initial program signed with the international financing institutions;

– mitigating volatility of the national currency exchange rate, at the same time with the reduction of risks related to the external financing;

– reducing the risk premium charged by the foreign investors in Romania.

Internationally, a number of economic indicators tend to suggest a stabilization of activity. There are, however, a number of potential risks that may slow the current trend:

– revitalizing the U.S. economy and of some economies of the euro area was caused mainly by a temporary measure. The perspective of the very high public debt in many developed countries will put increasing pressure on the interest rates. Thus, the speed of the return of savings could be slowed;

– the effects of the fiscal stimulus in these countries and of the provided financial aid given to the financial sector will diminish during 2010;

– lending will continue to be limited to a medium time horizon. It is expected that the economies in Europe will be the most, affected because the crediting through the banking system is predominant;

– slow-absorption of the unemployed can generate social tensions;

– the regional context is uncertain. The possibility of contagion due to the devaluation of the currencies of the Baltic countries is still relatively high.

Romania's economy is highly integrated in the EU economy, so any external negative shock will spread quickly internally.

The evolution of the financial crisis

The evolution of the financial crisis will lead developed economies towards a deflationary spiral in the next year or even for a longer period, as deficit reduction efforts will take large, and probably we shall assist to the withdrawal of some weaker states from the euro area.

The growth in U.S. and the euro area was based largely on the consumption and debt over the last two, three decades and everytime the economy has tried to eliminate the excesses and errors resulting from excessive growth of the credit, the

interest rates were low and the debt burden became even greater, notes the analyst. This type of model succeeeds on a short term, but in time needs more and more substantial stimulants as to avoid a collapse – "which would actually be just a return to the balance".

This evolution was facilitated by an "irresponsible approach" of the debt and speculation problem, evident in the ease with which they were saved from insolvency imprudent countries and private companies from Mexico and countries from the Southeast Asia to the fund Long Term Capital Management in 1998. This has contributed to an overall increase in debt burden, accumulated during the credits offered too cheaply. "And now it would be too simplistic and naive, for the West to believe that can easily escape the sins of excess crediting in the past 20 years" (Nick Beecroft). The major transformation of the private debt into public debt "seemed until now as a panacea", but cracks in this edifice are beginning to appear, as one can see for the example of Greece.

In the euro zone we could witness the secession of some of the weakest members, which is probably the desire of Germany, as suggested by the German analyst Wolfgang Munch in a commentary from the Financial Times ("Narrow the euro area and established a European fiscal union ").

Conclusions

Romania could face to the economic crisis and succeed on the medium and the long-term in the European Union if it will focus on areas that bring added value, where we are competitive.

The faith of Romania on the medium-term depends on its capacity to support these strategic areas, which bring added value, competitiveness, external orders, and not least, new jobs.

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DIVERSE AND EDUCATED WORKFORCE – REQUIREMENT IN THE RECOVERY CONTEXT

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Abstract

The existence of a highly skilled workforce is a key factor to the new challenges of globalization, population growth, aging, development of new information technologies and the need for appropriate and rational use of resources. Investing in training in terms of ensuring equal opportunities is a requisite for ensuring a healthy, creative and innovative workforce, with appropriate professional skills and knowledge to produce tangible and intangible goods and services that can meet the challenges of economic recovery, being the main driver of innovation and progress. Also, a diverse workforce with varied characteristics, perspectives and ideas, is more effective in today's society where creativity and innovation are essential.

Key-words: *diverse workforce, education and training, equal opportunities*

JEL Clasificare: J11, J15, J24

In the current context of regionalization, globalization and of the financial and economic crisis, **the effective management of diverse and better training workforce** is essential to an economic recovery. More so, under the current global crisis, **investment in human capital should be treated as a key measure of economic growth and social cohesion,** since previous recession periods have shown that **effective programs and investment in human resource management can contribute to economic recovery, allowing deployment of a healthy, educated and competent workforce,** thus making up as a central strategic pillar.

To achieve the objectives of the Year 2010 - **European Year for Combating Poverty and Social Exclusion,** Community policy on equal opportunities requires a comprehensive approach, primarily based on **law, gender mainstreaming, and positive actions** to eliminate inequalities and promote equality opportunities in all European Community.

European Union Member States have many regulations in the field of equal opportunities, but reality shows that are not yet sufficient guarantees that discrimination will disappear from all the institutional and organizational practices. European Employment Strategy recognizes the role of labour legislation and of social partners in achieving the goals of equality, the latter being responsible and accountable for them to be actively involved in increasing employment of women, youth, disabled, ethnic, sexual minorities and to ensure their balanced representation and their participation in certain sectors and/or occupations and to improve opportunities of developing their careers.

1. **The Benefits of a Diverse Workforce**

The richness of European society is given by the diversity of origins and cultures of its citizens. In order to fully benefit from this wealth of skills, specificity, talents and ideas, **is essential a serious engagement with the design, implementation monitoring and evaluation of inclusive policies and equal opportunities for all,** measures promoted steadily, as shown, by the European Union. This increasing **diversity** offers us plenty of opportunities waiting to be used, but is also one of the new confrontations which we must cope with.

In this context, the use of a diverse workforce can help companies to improve their competitiveness, not only represent a legal or moral obligation. Many reports (for example, the EC Report of 2005) show that **most companies with a clear policy in this regard, obtained real commercial benefits. A diverse workforce with varied characteristics, perspectives and ideas, is more effective in today's society where creativity and innovation are essential.**

Among the strategic priorities contained in the **2007-2013 National Development Plan** relating to human resources, equality refers to the vulnerable labor market: female, disabled, youth, the roma minority, the elderly looking for a job. **Social cohesion, full employment, economic growth ultimately depend on the use of employment potential of these vulnerable groups,** with everything it implies: their increased participation on the labour market, promotion of part-time work, access to positions of leadership in politics, equalization level payroll, reconciliation of working men and women employees' work and family life etc..

Major obstacles facing the women, the disabled, ethnic and sexual minorities, in our society continue to be those related to attitude and stereotypical thinking. In view of economic recovery, a **diverse workforce supports the company' efforts of increasing business, of adapting to new situations and of discovering new development opportunities.**

A new, performing and in line with European law type of human resource management must take into account the value of a diverse workforce, the performance of an organization is given by the performance of all its employees, which has to be constantly maximized. This requires to identify the specific needs of each type of employees (women, disabled, ethnic minorities, sexual) and to integrate those into its various policy management of recruitment, promotion, motivation, training and assessment, work conditions, motherhood and combining family and professional life.

Enhance the quality of management, the organization can obtain *each employee's performance increase and thereby of profit and market competitiveness***;** the organization's offer for its employees becomes higher then other similar organizations, materialized as an *opportunity to attract the best employees*; may acquires *legitimacy and credibility*, in the respect of labor law relating to equal opportunities for men and women and treating his employees fairly and equitably. Such management can be achieved by developing joint partnerships: companies, SMEs, state institutions, NGOs, companies that provide outsourcing services personnel (recruitment, training, occupational health, etc.) to local level for the development and implementation in these organizations of policies on equal opportunities.

Difficult access to information attracts increasing risk factors in relation to discrimination and labor abuses. **Efforts to increase awareness of this problem should be aimed at both employees and employers.** Employees do not know their rights related to work, so can not identify discriminatory practices within the labor market and legal rights and procedures for resolving cases of discrimination. Also, employers are poorly informed about legal provisions on discrimination in employment, the existing stereotypical attitudes on the labor market and the forms of manifestation, consequences and resolving cases of discrimination.

2. **The Need for an Highly Educated Workforce**

The last decades have seen the essential technological mutations such as the expansion of production techniques through automation and new Information and Communication Technologies (ICT). *The question is how these technological mutations are acting on the demand for workforce with high level training.* Two hypotheses attempt to explain the relationship between the demand for highly skilled workforce and technological developments. The first concerns the relationship between the rate of technological change and the demand for workforce with high level of training, indicating that workers with higher education levels are at an advantage in adapting to new technologies, which, in turn, being able to increase the demand of highly qualified human capital. If demand for skilled labor supply growth outruns, the rate of schooling increases. According to the second hypothesis new technologies tend to highly qualified. So, investment in workforce training **is a necessary precondition for the implementation of new technologies**.

To understand the theoretical effect of technology evolution on employment, suppose a firm decides to implement a computer-aided manufacturing process. Applying this new process allows the company to obtain the same volume of production with a reduced number employee which generates a negative effect on employment. This translates into lower costs and prices. Lowering prices can have a result in increased demand and the production, generating positive effects on employment. The positive effect tends to increase with the competition in that economic sector with technological knowledge and demand elasticity. These considerations make the relationship between technological development and employment in at company and industry level to be a proiri unclear.

Therefore the following objectives are priority:

- **Supporting lifelong training** to avoid both the accelerated depreciation of skills during the rapid technological development and to have a workforce prepared for future economic recovery
- **Improve conditions for accumulation of human capital in research**. An important part of this human capital is generated as a by-product of the research itself, and therefore focused on human capital policies that will strength the link between higher education and research, both public and private.
- **Focus on improving access to education and to skills acquisition of people from disadvantaged backgrounds.**

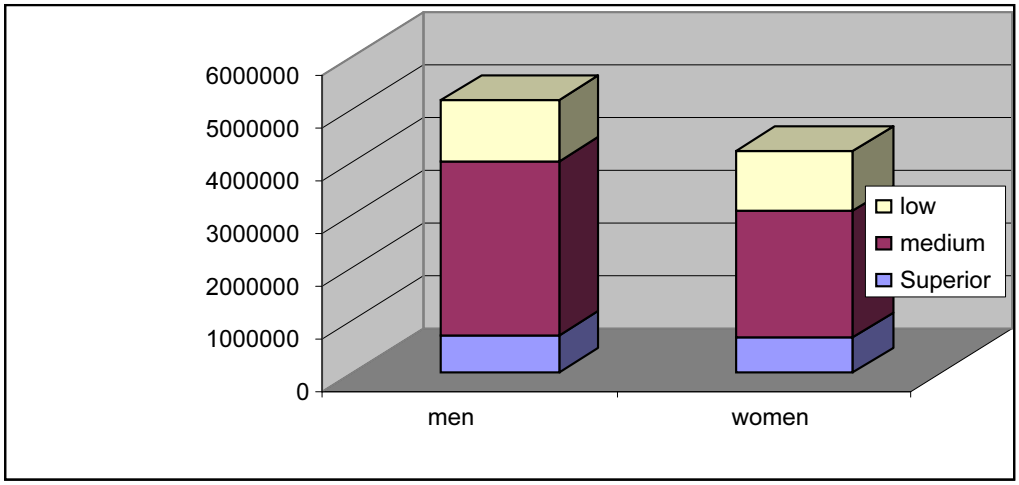
2.1. **The current situation in Romania**

It is now recognized that **human capital is one of the determinant in terms of productivity, both individually and generally, and that has a key role in current knowledge-based economy.** Highly skilled workers are able to adapt to new requirements and to learn much faster. It is expected that they will be more productive then the unskilled workers, irrespective of the production process, and they are able to work with more sophisticated technology which require they capabilities in a higher degree.

In Romania in 2008, over half of total employment, 60.7% respectively, had an average educational level (specialized or technical secondary, secondary, vocational or apprenticeship complementary and secondary stage I), a rate of 24.5% had a low educational level (secondary, primary, without graduated school) and only a percentage of 14.8% of all workers had a higher educational level (university).

Employment segregation by sex and educational level shows that are more male workers with medium education level (64%) than female workers (56.6%), while the ratio is reversed in favor / against women both high and low level of education and training.

Graphic 1. *Employed population, by educational level, 2008 data*



Source: Workforce in Romania 2009

In conclusion, although **numerically, men are the majority in the labor market in terms of higher level training, in terms of percentage, they are overwhelmed by the percentage of women registered at this level.**

2.2. **Forecast EU-27**

Recently, **the European Centre for the Development of Vocational Training (Cedefop)** published its **report** "*Skills Supply and Demand in Europe: medium-term forecast up to 2020.* Thus, it is expected that in the next decade, the number of jobs to shrink by 10 million at EU level due to economic crisis and by the year 2020, to reach the level achieved in 2008.

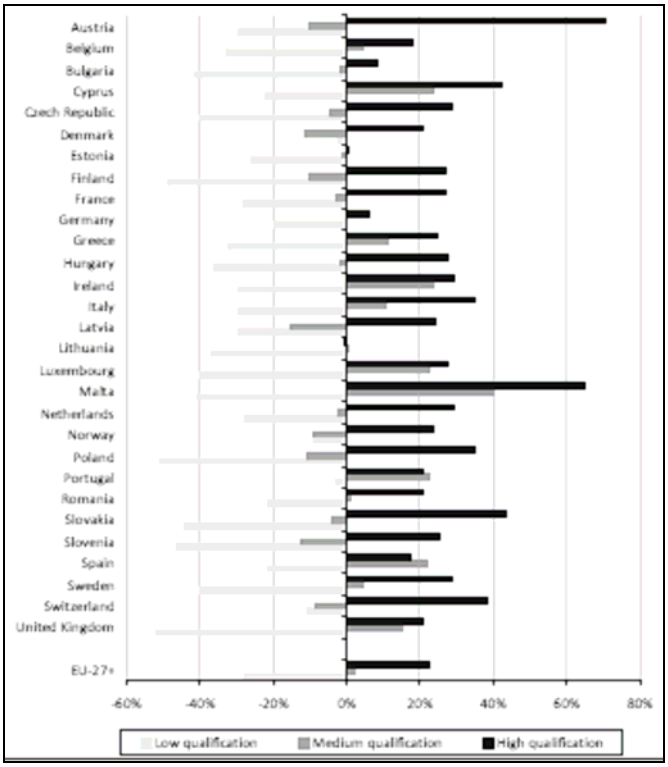
The report findings confirm that the transition to a service economy will increase and it is expected to be created almost seven million jobs, mostly within occupations that require higher skills and education level, such as management functions and jobs highly technical and professional level. Meanwhile, it is expected that jobs with routine activities decrease. In 2020 just over half of all jobs will be filled by skilled workers on average, thus preserving the present situation, while **the share of jobs held by highly skilled people will increase** from 29-35% at the expense of those held by low-skilled workers. Evolution of employment will be correlated with trends in the classification, as the young generation with higher level qualifications will enter the labor market and older people with lower qualifications will leave, retiring.

The development model of EU-27 is retained in the member countries, while differences in size changes occur. Thus, between 2010 and 2020, is provided a similar development, both the number of workers with low skill levels and those with high level, while the development prospects of workers with average qualifications vary from country to country: in some countries, the number is expected to rise and in others to decrease. Graphic No. 2 compares the dynamic changes in the EU27. In all European countries, the share of highly skilled labor will rise while that of low skilled will decline.

In Romania it is expected that the number of jobs requiring low training level will decrease while the number of jobs which require a high level of education and more skills will grow significantly.

Improving skills in accordance with future needs, adapting education and training more closely with the world of work requirements and improving the matching of supply and demand are key objectives for the initiative **"EU New Skills for New Jobs Initiative" and 2020 European strategy** for smart, sustainable and inclusive growth. This forecast may help policy makers take better informed decisions and progress in implementing these strategies. It might occur imbalances that will cause **strengthen cooperation with employers to build strategies concerning skills of a diverse workforce.**

Graphic 2. *Predicted changes (%) workforce, by countries and level of qualification, 2000- 2020*



Source: Cedefop (IER estimates based on E3ME and StockMOD), Skills supply and demand in Europe: medium-term forecast up to 2020, p.29

Conclusions

The existence of a highly skilled workforce is a key factor to the new challenges of globalization, population growth, aging, development of new information technologies and the need for appropriate and rational use of resources, whose role will become increasingly important in terms of economic recovery. **Investing in training in terms of ensuring equal opportunities** is a prerequisite for ensuring a healthy, creative and innovative workforce, with appropriate professional skills and knowledge to produce tangible and intangible goods and services that can meet the challenges of **economic recovery**, being the main driver of innovation, and progress.

It appears that the stimulation of measures for ensuring a highly skilled workforce must be an important part of any political action measures to promote development. Thus, implementation of human capital policies presented at the European summit is a particularly important issue for European regions with much lower levels of productivity and income per capita, especially in this difficult crisis period.

We consider useful tracking regional studies attempting assessing levels of competence of the workforce as a whole and support research on determinants of performance of educational systems, because these studies can be a useful contribution to formulate a policy on human resources, which must be an essential aspect of current EU efforts to increase regional cohesion and overcome the current economic and financial crisis.

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BRAND MANAGEMENT IN MEDIA CRISIS

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Abstract

Due to the turbulent and chaotic economic climate over the entire advertising industry, the TV stations, and particularly those in Romania, face a critical challenge in terms of dealing with an unprecedented crisis within this market. Since the last quarter of 2008, the Romanian advertising market is going through a serious phase of contraction and reconfiguration.

One of the causes is the strong connection with the other similar markets within the Central and Eastern Europe, as well as with those from the West, which face the same decline. Several important publications were closed during 2009 and the beginning of 2010, together with higher unemployment in the media sector and major changes of the biggest media groups strategies. This paper aims to portrait the perspective of the TV Brand Managers in the center of a challenging environment, both in the organizations and in the overall market.

Key-words: *brand manager, marketing, advertising market, media, crisis*

JEL Classification: M31, M37

Introduction

Since the second half of 2008, crisis is the main topic of debate in every office of either advertising agencies or TV stations in every corner of the world. Companies from each and every domain proceeded to severe cuts of the amount of budgets invested in communication. Anywhere in the world, the first budget that suffered was the communication one. Less money invested in communication led to an overall decrease of the entire advertising and media market. 2009 marked the deepest phase of the market decline, with pretty different strength from one country to another, due to the evolution of the entire economy within those countries, but also as an effect of the degree of development of every specific advertising market.

Within the European and global context, Romania was among the countries average affected by the crisis. One of the reasons is that local market grew in a spectacular manner within the last 15 years1. Another one is the very powerful link with the European marketing and communication market which led to the fact that every symptom of the crisis that the global advertising market is facing is present

[1] Laura James, *Adspend prospects in Europe, the US and Japan: European Advertising & Media Forecast*, World Advertising Research Center, January 2009.

in the last one year and a half in our country: consistent restructuring and fundamental changes of marketing strategies for most of the players on the market, but also even more negative effects such as the disappearance of several newspapers, magazines or radio stations and completely new rankings in terms of top advertisers.

Even though a global market experiences a slight recovery, in Romania this is expected to happen with a delay of at least half a year. The ad spend continues to remain at the lowest level in the last 4 years and the main advertisers still base they reactions exclusively at the cost levels (the media rate cards).

Taking into account this environment, this article aims to display the perspective of one of the most important positions within the most important organizations of the marketing and communication market: the TV stations brand managers. As key persons in their media companies, the role they play in this critical landscape reflects this market evolution in the most accurate way and the struggle find the adequate strategy to get through the crisis with less harm in terms of power of the brand portfolio.

Literature review

Many authors took in discussion the Brand Management in Media subject. Tilde Heding; Charlotte F. Knudtzen; Mogens Bjerre published in 2008 the theory and research of this function compiling models and theories. Alan B. Albarran, Sylvia M. Chan-Olmsted also have an important contribution for the subject, inputs being synthesized in "Handbook of Media Management and Economics", published in 2006. After an indepth view of the subject, the conclusion is related to the absolute degree of novelty of the subject. Strong brands are necessary in media because technology has increased the number of content providers and made it possible for many more competitors to seek the attention and loyalty of audiences and advertisers. Brands are crucial in separating media companies and their products from those of competitors, in creating continuity of quality and service across extended product lines, and in helping develop strong bonds with consumers. In his workpaper, Siegert, G. (2008) discusses communicative tactics and the building of media brand equity, focuses on strategic aspects and brands as vehicles for business expansion, and investigates issues of media brands on advertising markets. The paper contributes to the wider understanding of brand-related issues facing both practitioners and academics. Brand management has become an important managerial task and researchers are challenged to uncover the implications of this for media firms, consumers, and society at large.

1. **The Romanian "Full-Format" TV stations during the crisis**

The first quarter of 2009 meant in Romania the implementation of a severe reconfiguration in the distribution of the media and advertising budgets[2]. In the first phase, written publications seemed to be mainly affected by this reconfiguration of budgets. The lack of orders for print ads and advertising inserts

[2] Alfa Cont Media Watch, February 2009.

generates in drastic need to reduce costs, job cuts and even the disappearance of many newspapers and magazines. Major media holdings as Intact, ProTV SA or Realitatea-Catavencu reduced their activity with 50% in some operations within affected domains. This led ultimately to massive restructuring in terms of personnel, as well[3].

Some media holdings chose to operate a temporary migration of several publications affected by the reconfiguration of the advertising budgets from the classical outfit (printed one), becoming exclusively present on-line. It is the example of the Go4IT and Descopera magazines from the Publimedia Group portfolio. In those cases, the companies strategically chose to migrate the operations from areas severely damaged by the effect of the crisis toward save areas, having some growing potential as well.

Price cuts and decreased sales caused significant fall in terms of revenues in 2009. The financial results for the first half of 2009 announced by Central Media Enterprise (CME), the American group that holds 95% of the Romanian ProTV SA, as well as 22 TV stations from other 7 countries (Czech Republic, Slovakia, Ukraine, Slovenia, Croaria, Bulgaria and Montenegro) show that during the crisis, the profit margin (consolidated EBITDA with both corporate and non-broadcast operations) decreased from 35% to 14%. Iulian Comănescu, media market analyst suggests that "overall, CME doesn't look bad at all, and this is a survival lesson on the Romanian media, during times of crisis. "After so many pessimistic news, I have the feeling that we have reached the point where bad surprises are few and we might see soon the recovery".

The financial results for Romania of the company managed by Adrian Sârbu, as CEO are:

– Revenue felt from 137,8 million USD to 84,5 million USD.

– EBITDA has decreased from 61,7 million USD to 22,6 million USD.

Regarding the entire company, the revenue on the first 6 months of 2009 was of 327,4 million USD (38,9% less than of the previous year)[4]. The company went from an operational profit of 217 million USD to a loss of 72,8 million. During his press conference announcing those results, Adrian Sârbu said that the entire advertising market contracted seriously, reaching the 2007's level and that the entire market waits for a strong recovery. An interesting factor within CME result is the percentage of the Romanian operations among the whole company. In the first half of 2009 it reaches 25,8%, compared to an 26,1% during the same period of time in 2008. In Bulgaria only, CME spent 1,47 millions in the first 6 months of 2009.

The profit in Romania remains a significant one and this shows that early personnel cuts made by ProTV SA were made in the best moment. "The ProTV guys were the first who fired people", remembers Iulian Comănescu, "mainly in the local stations. At that particular time, the news was an "apocalyptical" one, because Adrian Sârbu was the first important manager doing this. But, as far as I see through the figures, the operation went well and the pacient is safe and sound".

[3] http://comanescu.hotnews.ro, last accessed, March, 18.

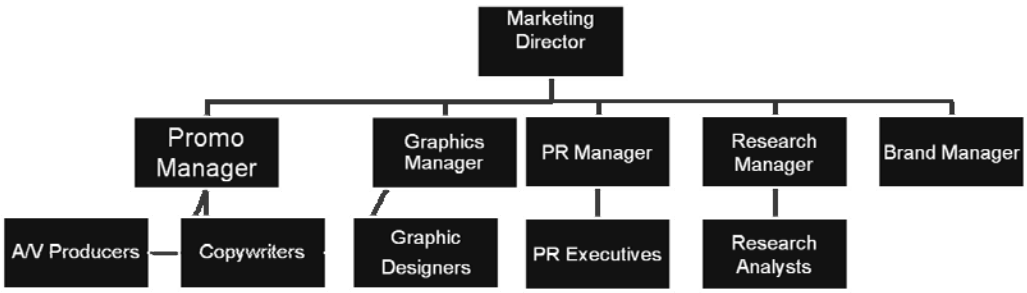
[4] Central Media Enterprise (CME) financial report, 2009.

2. **The brand manager's importance in a Romanian TV station**

Taking into account that a TV station deals with an important portfolio of brands (programs, TV shows, stars, etc.), in a sharp competition with similar organizations, the need to ensure a proper brand management of it has become a challenge within the last decade. The Brand Managers appeared as a result of needs such as having a continuous focus over the brand power's status, having a permanent coordination of the multiple and simultaneous campaigns and having a coordination of many different departments within the marketing structure of a TV channel. This position is pretty similar with that of an Account Manager in the advertising agencies.

Romania is one of the countries with the most powerful media sector in the Eastern and European countries. A record number of 31 national TV stations are listed in the Gfk's daily audience analysis, 3 times more than in the Czech Republic, 5 times more than in Slovakia, Croatia, Slovenia or Bulgaria[5]. The competition among the so called "full-format" TV stations sharpened in such manner in which the process of audience fragmentation was accelerated in the last years[6]. With "spoiled" viewers having a wide range of TV programs to chose from, the focus on the brand portfolio's power is a critical success factor. The first station to implement that specific Brand Manager position was ProTV in 2003, followed by Antena 1 in 2004. Since 2007, all the "full-format" TV stations and the majority of the national niche channels have their own Brand Managers.

Their main purpose is to play a "pivot" role between the main sub-departments of the Marketing structure, in order to help the Marketing Director to cope with the challenges coming from every sector while initiating, developing, coordinating or evaluating a campaign.



Source: Personal representation

Fig. 1. *Marketing department organigram in TV stations*

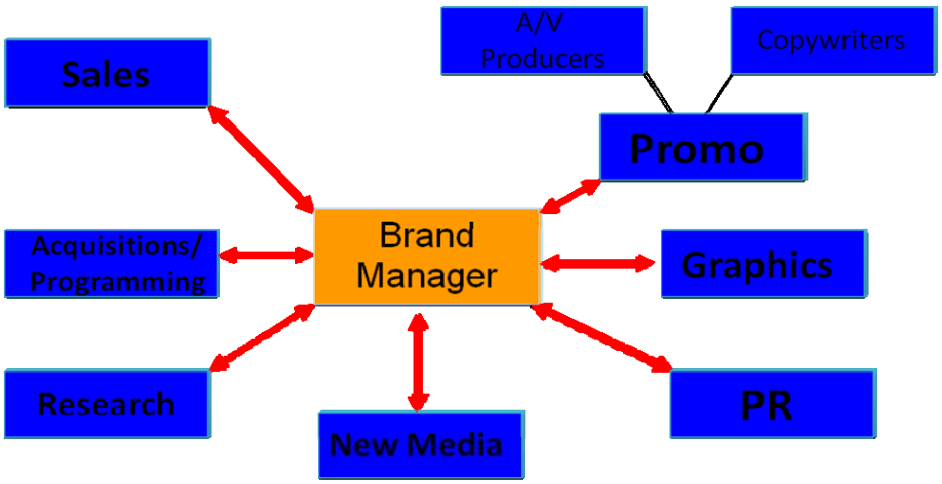
3. **The main tasks of the brand manager**

While taking into account the role of the Brand Manager in the tasks flow, mainly in big TV stations (e.g.: ProTV and Antena 1) he interacts at all levels with various departments both under the Marketing umbrella and from the other functional departments of the particular TV station.

[5] Gfk TV Data Research analysis, 2008 and 2009.

[6] TNS/AGB Data Research analysis, 2007.

The Brand Manager has to define and supervise the implementation of the marketing strategy for the assigned brand in order to increase its power (awareness, favorability and loyalty) among viewers and stakeholders. In terms of hierarchical relations, a Brand Manager is subordinated to the Marketing Director and to the General Director (the CEO of the TV station). In case a big channel portfolio is in place, like Antena 1, 2, 3, Euforia (for the Intact Group), or ProTV, Acasa, ProCinema, Sport.ro, ProTV International and MTV (for the ProTV SA group), each station has a Brand Manager directly subordinated to the Marketing Manager, or (in the ProTV's case), there is a Senior Brand Manager who coordinates the entire Brand Managers team in place.



Source: Personal representation

Fig. 2. *The role of brand manager in TV stations*

In terms of responsibilities and attributions[7], the Brand Manager is in charge of ensuring its brand profitability by implementing and developing the marketing strategy for the allocated brands. There are 3 layers in which he primarily operates:

- Budget layer. The Brand Manager develops and administers the marketing budget for allocated brands. He is in charge of the marketing budget and asks for the Marketing Manager's approval regarding all the budget matters.
- Organizational layer. It includes all the activities in which the Brand Manager is responsible for quality control, including reviewing, measuring and evaluating staff performance, output and project process. It also deals with tasks, as being in charge of researching for the necessary resources (human and specific know-how) to increase output value of the team. Extra activities within this task are the following:

[7] The Brand Manager Job Description (Marketing Department, ProTV SA).

o Setting expectations and standards (build a culture) for team attitude, behavior, teamwork and professional development. Lead accordingly.

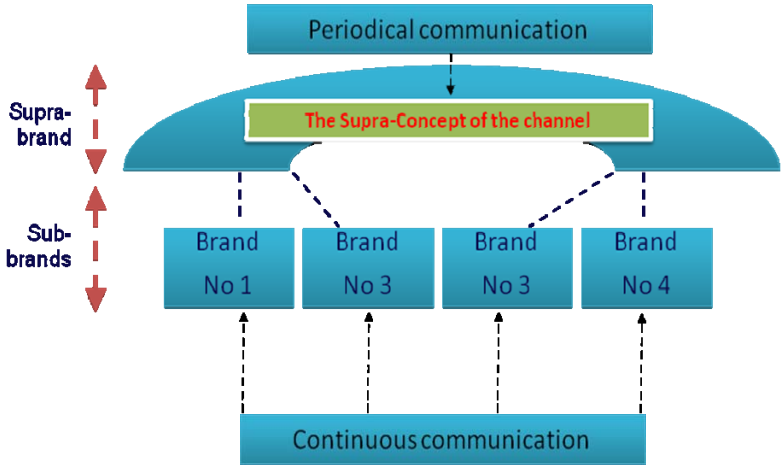
o Proposing regular working meetings.

o Organizing team work flow.

▪ Marketing planning. It is also the Brand Manager the one who is responsible for supervising the brands plan-marketing, implementation and evaluation of marketing actions. An important aspect from the marketing planning perspective is the one that involves proposing the innovations aiming to expand the brands notoriety on the market, in accordance with the marketing strategy and channel strategy. Together with the Research Department, that provides market analysis information pertaining to brands' performance, competitors, trends and activities, the Brand Manager evaluates the performance of the brands, working closely with Sales and Research teams. He also increases the performance of the brands, working closely with Graphics, Promo, PR departments.

In order to always have an accurate perspective over the environment in which his brand portfolio operates, the Brand Manager must keep up to date with market trends and new developments, using information for brand strategy improvement

4. **Brand portfolio and its communication**



Source: Personal representation

Fig. 3. *Brand portofolio structure*

The entire brand portfolio is structured in 2 groups:

– Supra-brand. It is about the communication layer in which you strengthen the brand power of the channel itself. Powerful on-air self-promos and graphic IDs are main vehicles which communicate the supra-brand values. Ex.: the "Gandeste Liber" of "You are ProTV!" promos for ProTV, "Mereu Impreuna" for Antena 1

and “We love to Entertain You” by PrimaTV. They all have in common an emotional addressability and carry the channels’ values and the station’s slogan as well.

– Sub-brands. They define types of programs, categories in which every TV station groups it offer and market to the viewers accordingly:

o Ex.: Entertainment on Antena 1, consisting of: “Neatza cu Razvan si Dani”, “Te Pui cu Blondele?”[8], “Un Show Pacatos”, etc. The channel communicates separately this category (sub-brand) under the slogan of “Numarul 1 in Divertismentul de Televiziune”[9] (“Number one in TV Entertainment”), through vehicles such as: on-air promos, graphic package, billboard, and print ads within written press. Another strong example is the “Pro Movie” (“Filmul Pro”) on ProTV. Every month, the on-air promo space on ProTV is full of promo works which present the entire blockbusters offer of that specific month, under the umbrella of the “Pro Movie”.

The Brand Manager is in charge with tracking the value of this portfolio and to continuously impose work (both creative and implementation) on these layers, in order to keep the viewers aware of these brands and the values and content within.

The approach of the brand portfolio is a part of the planning of marketing program for the station, for which the Brand Manager (coordinated by the Marketing Manager are responsible. The content of the marketing program is drawn as follows:

– The planning process consists of 2 phases:

o monthly planning;

o weekly planning;

o monthly planning.

– The goals are the following:

o Setting the priorities in terms of communication for the following month (E.g.: the movie of the month/campaigns/strengths of communication).

o Maintaining the unity/coherence of communication within the entire marketing mix.

o Short terms (ex.: weekly) planning.

Conclusions

Taking into account the TV stations’ pressure from an unpredictable environment marked by turbulence over the entire media and advertising sector, essential for the players on this market is to adapt the brand communication and internal structure in such a manner in which the crisis challenges to be easily overcome. Due to the crisis, TV stations tend to focus exclusively on increasing the sales income and to neglect the necessity of brand communication. That’s an opportunity for the channels that are able to use this in order to strengthen the value

[8] http://www.antena1.ro, last accessed March, 18

[9] http://www.primatv.ro, last accessed March, 18.

of the brand which will ultimately led (after the crisis will disappear) to better capitalization of it in financial terms as well.

Positions within the Marketing structures of the TV stations such as that of the Brand Manager play a key role in ensuring a fluent, coherent and efficient implementation of the Marketing strategy. It's about consolidating the brand portfolio's value through troubled times and in a complex manner, involving many types of individuals from different departments, with fewer resources and while usually the focus of the company's strategy is exclusively on increasing sales.

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BUDGET FOR ROMANIA IN 2010
CONSTRAINTS AND CHALLENGES

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Abstract

Generally speaking, the budget of any state represents the way how that state develops, expressed by the capability to spend for consumption and investments – smaller and higher amounts of money – depending on the income level that the state may circulate, based on the taxes and duties applied onto economy.

What happens with Romania in the middle of 2010, when it is facing one of the most menacing situation in terms of the possibility of covering the current budget expenses from the taxes and duties – not to mention the investments? The paper herein will be dealing with this issue and more:

- *the reasons of this unparallel situation, compared to the other EU countries;*
- *the objectives and prerequisites of the budget building;*
- *the main categories of income and expenses stipulated in the budget;*
- *the critical analysis of the measures set for recovery and proposal for alternative measures, in order to avoid the 'grecizing' the country.*

Key-words: *state budget*, *income and budget expenses*, *budget deficit*, *taxes and duties*, *austerity measures*, *economic and financial crisis*

JEL Classification: G18, G30, G32, G38

I. **The internal and international economic climate**

The internal and international macro-economic environment for building the budget for Romania for 2010 is the most unfavourable one:

Externally

The European Union has gone through (and still is – see Greece, for instance) the most profound, longest and extended economic crisis in its history. As a matter of fact, all its savings have been affected by this crisis; for 2009, the GDP has contracted to circa 2% in France, 4.5-5% in Germany, Italy and Great Britain. For the entire EU economy, this GDP contraction is around 4.1-4.2%.

In the USA, where the current economic and financial crisis started in 2007, the GDP contraction was of circa 2.5% in 2009; for Japan, the GDP reduction was around 5.9%.

For the European Union, a special award should be granted to Poland, whose GDP in 2009 was higher than the 2008 (even the growth rate has slowed down). In Asia, China is a good example to follow, as its GDP has constantly grown, by a 8.7% rate.

The GDP evolution for the last three years, in the world economy and economic areas, is as follows:

	-annual percentage change-		
	2007	2008	2009
• TOTAL GLOBAL ECONOMY	5.1	3.1	-1.2
• EU 27, out of which:	2.9	0.8	-4.1
– the EURO zone	2.8	0.6	-4.0
• GERMANY	2.5	1.3	-5.0
• ITALY	1.6	-1.0	-4.7
• France	2.3	0.4	-2.2
• USA	2.1	0.4	-2.5
• JAPAN	2.3	0.7	-5.9

Source: The fall forecast of the European Committee

Internally

For the year of 2009, the GDP contraction in Romania was almost double (7-8%) compared to the EU (4.1%), as a result of a combination between an not favourable external environment and a more rapid reduction of the internal demand.

Even if the budget initially approved for 2009 had a budget deficit of circa 2% of GDP, due to the economic contraction brought about by the world crisis effects and to the lack of real and effective anti-crisis measures, this budget was successively resized by two rectifications during 2009, i.e. to 4.6% and 7.3% out of GDP, respectively. This thing happened in the event when Romania had contracted a record loan from IMF, European Commission and the World Bank, in the amount of 19.95 billion euros.

For the last three years, the main budget indicators are as follows:

	-% out of GDP-		
	2007	2008	2009
• Income	32.5	32.8	30.7
• Expenses	35.6	37.8	38.0
• Budget deficit	3.1	5.0	7.3

Sources: MFP Macroeconomic evolutions and trends

Until the end of 2009, Romania has been included into the accepted level of the budget deficit set up by the Maastricht Treaty, i.e. of 3% of GDP the most. The years that followed witnessed a strong decline – at the end of 2009, the deficit level was more than the double approved in the Treaty above.

As far as the real economy, it has registered significant drops, reflected in the size of gross added value for each branch (constructions – 18.9%, services – 5.6%, industry – 4.3%, agriculture – 2%, etc.).

The evolution of the gross domestic product for the last three years, in its components, shows as below:

	- % compared to previous year -		
	2007	2008	2009
• The domestic demand, out of which	14.7	7.9	-13.0
– the final individual consumption of population	9.8	8.4	-10.7
– the final collective consumption of the public administration	7.6	3.7	-3.0
– the gross building of the fixed capital	29.0	19.3	-20.0
• Export of goods and services	7.9	19.4	-10.5
• Import of goods and services	27.2	17.5	24.8
• The gross domestic product	6.2	7.1	-7.0

Source: MFP Macroeconomic evolutions and trends

Should we only refer to the reduction of the final consumption for 2009 versus 2008, it is worthwhile mentioning that this has been associated mainly with the population (-10.7%) and less with the public administration (-3.0%).

II. **The prerequisites of the budget building**

The 2010 budget for Romania has started from the below *premises:*

As far as the ***economic growth*** is concerned, the following possibility has been visioned: for the first two trimesters in 2010, the real GDP growth be negative but for the entire year, the negative sector will be left behind and switched to a GDP increase, in real terms of 1,3%.

Thus, reality proved to be harsher – the economic contraction for the first semester will be worse; therefore, the IMF mission in May this year gave a negative forecast for the Romanian economy and admitted that the +1,3% forecast was 'too optimistic', and a zero 2010 growth in Romania would be a happy outcome.

Romania has delayed the adjusting of the macroeconomic policies to the new environment created by the international economic and financial crisis, and as a consequence, the macroeconomic imbalance has continued or become worse at mid 2010.

➢ *The annual inflation* has registered a sinuous and contradicting evolution during the last three years, which manifested as sudden changes of the trend, as such:

- % / year -

	2007				2008				2009*			
	Trim. I	Trim. II	Trim. III	Trim. IV	Trim. I	Trim. II	Trim. III	Trim. IV	Trim. I	Trim. II	Trim. III	Trim. IV
Real inflation	3.66	3.80	6.03	6.57	8.63	8.61	7.70	6.60	5.65	4.83	4.14	4.21
Inflation target	4.00				3.80				3.50			

Source: The National Institute of Statistics and RNB. The annual average inflation for the 2009 was of circa 5.6 %.

The inflationist pressure at this time has been very well mirrored in the non-alimentary products (excise increase for the tobacco-based products), the increase of services fees, as well as the unfavourable evolution of the exchange rate for the national currency compared to foreign currencies (the depreciation of the national currency versus EUR and USD).

The inflation could have been worse if the increase in prices had not been slowed down by the price evolution of the alimentary products, which was 4 % below the total annual rate of the prices.

A notice should be made about the RNB policy to reduce inflation – it had no results for the period of time under discussion – as all the targets have been missed: in 2007, the target was 4%, the effective inflation was 6.57%; in 2008, the target was 3.8%, the effective inflation – 6.60%; in 2009, target 3,50%, the effective inflation 5.6%. At the end of the first trimester in 2010, the registered inflation was 4.20%, while the annual RNB target forecast for 2010 was 3.5%.

➢ The maintenance of the *flat income tax* for the income of the legal and natural persons at 16 % is another alternative taken into account while setting the budget for 2010. From this point of view, one can notice the non-uniform policy of the European states.

Below is a list of the UE states that operate a flat income tax for the income of legal and natural persons:

- % -

	Natural persons	Legal persons
Bulgaria	10	10
Czech Republic	15	20
Estonia	21	21
Slovakia	19	19
Romania	16	16

For other countries, the income tax follows a system of progressive taxing, as it follows;

- % -

	Natural persons	Legal persons
Germany	15-45	30-33
England	10-40	30
France	0-40	33.3

From the direct income taxing, Romania places on the 25th as far as the taxing on natural persons income in concerned and on the 23rd for the legal ones.

After the first trimester of 2010, specialists in economy are talking about going up to 20% for the legal persons and progressive taxing for the natural ones.

Another prerequisite considered for the 2010 budget was *the maintenance of the VAT at 19%,* which would bring income to the state budget an amount representing 6.6% of GDP.

As for as the VAT is concerned, the European practices vary a lot, but they still converge to using two levels of VAT, standard and lower ones, operational for a range of goods of a social importance. Thus,

-VAT %-

	Standard	Lower
Netherlands	19	6
Greece	19	4.5-9
Czech Republic	19	9
Slovakia	19	10
Hungary	25	5
Bulgaria	20	7

Source: MEP The fiscal policy

The major challenges that the Romanian economy is facing in the middle of 2010, due to the delay in the economic recovery and also to the difficulty in collecting the income already estimated by the adopted budget, are bringing pressure on the Government for increasing the VAT to circa 24%.

The implementation of this measure, as well as the accrual of the income tax for the natural and legal persons during the crisis might have dramatic effects, on both the economic and social areas.

- *Employment* (unemployment). The unemployment rate registered at the end of 2009 was of circa 8% of the active population, almost double than the level for the previous year (circa 4.4%), when the number of unemployed people officially registered exceeding 700,000.

Should we add to this number another 200,000 in technological unemployment or with their unemployment benefits cut off (and still out of job), the real unemployment rate rises up to 10% of the active population, and their number is circa 1 mil. And this number is not final, taking into consideration that a large group of Romanians have decided to leave the country and find employment abroad (mainly Italy and Spain).

➢ *The minimum wage* has increased by 2.13 times during the last electoral cycle, from 718 lei in 2004, to 1742 lei in 2008 and cca. 1845 in 2009.

The increase of the minimum wage, largely in the budgetary sector, seems to be unstoppable, unless radical measures are being taken (see the sacrifice curves) – similar to the ones recently made public, due to the pressure from the international financial organisms, which forecast a decrease by circa 25% of the wage income in the central and local administration, starting with June 1, 2010.

III. **The income and budget expenses for 2010**

In accordance with the Act concerning the state budget for 2010, its main components have been set up:

- Income: 66.654,3 mil. lei
- Expenses: 101.678,4 mil. lei
- Budget deficit: 35.024,1 mil. lei

The deficit in the state budget represents 5.9% of GDP, when all the state-financed investments amount up to 4% of GDP, i.e. the budget is not balanced on either the income or current expenses.

As a matter of fact, almost 2/3 of the budget represents staff-related expenses (27.6% of the total of budget expenses) and pensions (35%); thus, there are not enough resources for maintenance and operation and zero resources for investments (the ones mentioned will be exclusively covered from the deficit).

Conforming to the Act above, Romania has assumed the following *objectives and challenges*:

➢ *the reduction of the budget deficit* during a time when the global economy is in recession (from 7.3% of GDP in 2009, to 5.9% of GDP in 2010);

➢ *the promotion of structural reforms,* at a time when the social problems are higher due to the national and international economic environment.

For the first half of 2010, these objectives were not implemented for real, the structural reforms were late to show up, the budget instrument was not restricted and, thus, generated huge expenses; the lack of economic recovery, correlated with difficulties in collecting the forecast income led to the impossibility to bear such expenses, and therefore jeopardized the inclusion into the approved budget (6.8% versus 5.9%) and threatened to push the country into an economic and social regression like the one in Greece.

Under such circumstances, Romania only had two alternatives:

a) *the fiscality rise* by increasing:

– Flat tax, from 16 % to 20%;

– VAT, from 19 % to 24%.

b) the adoption of several *radical measures,* meant to drastically reduce the expenses, such as:

– the lowering of wages for the people employed in the central and local administration, starting with June 1 r.y, by 25%;

– the lowering of pensions by 15%, as of the same date;
– the cutback in the unemployment benefits, by 15%;
– the extreme decrement of the subventions;
– the fusion of all those 16 social assistance programmes into a single one, coherent and efficient.

The main items of income and expenses of the state budget, approved for 2010, are as below:

-mil. lei-

BUDGET	2008	2009	2010	% 2010/2009
I. **TOTAL INCOME**, out of which:	**61,150,392**	**56,401,227**	**66,654,311**	**18,18**
• tax on profit	13,039,901	11,325,500	11,561,500	+2,08
– economic agents	12,338,636	10,657,500	10,289,000	-3,62
– banks	701,265	650,000	1,272,500	95,77
• tax on the micro-companies income	369,633	406,200	444,000	9,31
• tax on pensions	351,161	507,700	1,200,000	136,36
• tax on rents	356,336	315,300	356,336	13,01
• tax on gambling	82,226	89,100	82,226	-7,71
• wage taxes	15,581	34,033	10,000	-70,62
• VAT	40,873,555	35,405,000	35,548,800	0,41
• excises	12,382,507	13,319,200	16,886,300	26,78
• tax on foreign commerce and international transactions	962,334	540,000	710,500	31,57
• tax on dividends	882,345	350,000	1,200,000	242,86
• contributions from insurance paid be:	454,222	463,000	471,400	1,31
– employers	291,912	270,000	271,400	0,52
– insured	162,310	193,000	200,000	3,63
II. **TOTAL EXPENSES,** out of which:	**80,741,254**	**92,737,132**	**101,678,400**	**9,62**
• personel expenses	15,791,230	15,309,554	16,899,800	10,39
• capital expenses	5,641,265	3,307,711	2,948,966	-10,68
• interests	2,087,686	5,096,075	7,758,202	52,24
• extracting industry, of processing and constructions	455,409	381,811	391,928	2,65
• agriculture and forestry	6,305,360	6,722,041	5,879,271	-12,54
• transports	7,823,742	9.997.415	9,720,240	-2,77
• communications	18,562	143.362	267,883	86,86
• funds for awards	714,370	498.483	521,416	4,60
• leave benefits	540,226	228.515	303,150	32,66
• research	1,963,259	1.392.782	1,396,104	0,24
• education	7,367,864	5.417.792	4,931,502	-8,89
• insurance and social protection	18,500,305	20.604.700	21,366,632	3,70

Source: The Act of state budget for 2010

To avoid a new convulsion of the economic and financial crisis and to prevent the economic downturn, more **clear-cut measures of production increase** come along the old ones:

➢ Distributing money for investments, even during the present austerity conditions, for full employment and multiplication in economy;

- The acceleration of the process for accessing the European funds – a special opportunity for Romania, which is about to be (partially) missed;
- The support of the agriculture development projects (mainly ecological), tourism and small and medium enterprises;
- The protection of the economic interests of population and assurance of social security – especially for people with low and very low income;
- The priority payment of the state administration debts to the economic agents (due invoices, received but not paid works, etc.);
- The extension of the due date for payments coming from the economic agents that have been affected by the economic and financial crisis;
- The balancing of VAT to be paid with the income;

As for the stimulation of the SMEs sector development, few things have been done. The European Commission acknowledges the fundamental role of the SMEs for the states economy, as they represent the largest echelon, with an essential part to play to come out of the crisis and help the economy recover. This is the reason why a great attention needs to be paid to. In our country, the **SMEs generate most of the GDP (circa 70%)** and also employment places.

Within the recovery measures for the Romanian economy, the authorities need to consider the active stimulation of export. For this stage, the economic recovery may only be successful if based on the economic engine of exports.

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THE STATE AND THE ECONOMIC RECOVERY

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Abstract

World economy undergoes the century's most serious crisis. At the same time, worldwide population is facing the food and energy crises, the climate change, poverty and a strong economic outlook uncertainty. Several developed countries feel the recession effects, while developing countries record lower development assistance levels. This trend may impact considerably those vulnerable and marginalized groups, especially women (according to the World Bank's programmes). On this background, the state must have an active role; the decisions to be further made by the European leaders at micro and macroeconomic level will affect the worldwide population.

Key-words: *economic crisis, state, development strategy, European funds, emer-ging markets, small and medium - sized enterprises*

JEL Classification: A10

Introduction

The world is facing the most serious recession since 1930. Although it does not originate in the developing countries, such states undergo severe financial conditions and the trade sector records a decrease. Poverty and hunger are on the increase and the Millennium Development Objectives set by the international community to eliminate poverty and hunger will most likely fail to be achieved. Children, women, poor workers, emigrants and the already deprived people are most exposed. Environmental degradation and social tensions are other consequences of the recession. The labour market is also at risk.

The financial and economic global crisis comes after the 2008 food crisis, which is not over.

Reduced investments in environmental protection, energy, renewable energy, water and land management, as well as in afforestation measures would result in low endurable development and climate change efforts. Prolonged recession and an insufficient focus on social needs would entail social issues, increased crime and decreased governmental authority.

The situation in the developing countries – least responsible for the crisis, but most affected – has determined some economists warn on "losing some development decades", which would impact considerably both wealthy and poor countries.

Literature review

Most Romanian analysts have tackled the economic and financial crisis in various publications, such as: "Money Express", "Capital", "Economistul", "Ziarul Financiar", "Tribuna economică", while the World Bank's forecasts may be tread in "Global Economic Prospects", "Global Development Finance"; "Journal of Economic Growth" includes various interesting ideas of foreign economists. "World Economic Outlook (WEO)*"* includes reports on the economic development projects at global level, regularly published by the International Monetary Fund.

1. **Solving the actual problems of the mankind generated by the economic and financial crises**

After coping with high prices in food, fuels and fertilizers, as well as with the climate change effects, the developing countries face a rapid decrease in sales and in import/export operations. The World Bank which describes the crisis as an "emergency situation in progress" estimates a potential financial deficit amounting up to 700 billion dollars and the risk of "losing a generation" with an estimated juvenile mortality rate of 1,5 to 2,8 millions by 2015.

Ban Ki– moon, the General Secretary of UNO warns on the fact that the entire "international community should have in view the problems and poor living standard of hundreds of millions of people from the developing countries".

Some major reunions of world leaders and experts and the adopted declarations on solving the economic and financial crisis– related issues are mentioned below:

– the G20 Summit from Pittsburgh, 24 and 25 September 2009;

– the G20 Summit from London on April 2, 2009;

– the G8 Summit from L'Aquila (Italy) between 8 and 10 July 2009;

– The Millennium Declaration, adopted by the United Nations Organization on 8 September 2000, which defines the Millennium Development Objectives set by the international community in order to eliminate poverty and hunger;

– The European Agreement on development and the EU Code of ethics on complementarity and the division of labour within the development strategy;

– The Monterrey Agreement, adopted at the International Conference on Development Funding held in Monterrey (Mexico) between 18 and 22 March 2002;

– The Paris Declaration on aid efficiency;

– The Accra action plan;

– the report of the International Monetary Fund (IMF): "The implications of world financial crisis on poor countries – update", published in September 2009;

– the IMF report: "World Economic Outlook – supporting the recovery process", published in October 2009;

– The IMF report: "World Economic Outlook Update", published in January 2010;

– the World Bank's report: "Fostering progress: the challenges facing the poor countries on the world recession background", published in September 2009;

– the World Bank's report: "Funds for development at world level: a world recovery agenda 2009", published in June 2009;

– the World Bank's report: "World economic prospects – crisis, finances and growth", published in January 2010;

– the 2009 European report on development: "Redressing the weaknesses in Africa – elaborating a new European strategy", published in October 2009;

– the report of the UNO action Group on preventing the delays in attaining the Millennium Development Objectives: "Strengthening the world partnership for development on the crisis background", published in September 2009;

– the International Conference on Development Funding, organized in Doha, Qatar between 28 November and 2 December 2008;

– the recommendations of the Expert Commission for the financial and monetary reforms at international level, formulated by the President of the UNO General Assembly, published in March 2009.

In Romania, the economic and political context at world and European level, as well as the effects of the current economic and financial crisis impose a long–term strategy enabling our country to regain its position as a competitive and sustainable power. Moreover, an initiative in this respect has already been formulated at the EU level as well, in effect by 2020. The crisis has determined researches worldwide analyse the state's role in the economy. Therefore, all experts and policy– makers from each country join their efforts to reach a national agreement in order to cope with the crisis– related challenges.

At the beginning of the new millennium the analysts, banks and governments wouldn't have imagined interventionism and capitalism coexist. Nowadays, most experts deem it a viable solution. During the past few years, the most powerful states have passed from one side to another: from free markets and lenient legislation to nationalized banks and more strict legislation. In other words, from John Maynard Keynes to Milton Friedman and now back to Keynes.

After a time in which the neoliberal doctrine imposes the minimal state concept, apparently this aspect has been reconsidered on the current crisis background, by recognizing the need of a state with a more important role and a power comparable to the one of the market mechanisms.

2. **Romania and the economic crisis problems**

This aspect has not been highly addressed in our country in the last twenty years. Regardless of the extent to which the state's role in the national economy has been theoretically explored, upon the change in the 1990 political regime, practice reveals an original role of the state, compared to the one adopted in the former communist countries. Romania being currently ranked last or the one before last on the European development scale can be the result of the state's original involvement in an ailing economy. Specialists highlight the underlying causes of this critical situation, as follows:

a. In a modern economy, the state becomes an instrument contributing to the proper operation of the market institutions and mechanisms. In Romania, the

market institutions have become the state's instruments. This is the reason why we can hardly say we witness an important conceptual change in the state's role in the economy. Such a change would involve understanding and accepting the capitalist model of development in its current structure.

b. The post 1990 governments' attempts to adjust the state's role or to make it original or particular, based on political or context interests, fail to improve the economy. The 1990– 1996 conception according to which Romania should adopt an original strategy by developing the market social economy– like state or a Scandinavian– like one, characterized by a 2004– 2008 based highly developed social security system hinders the state reforms implementation. The current Government perceiving the state's reforms only in point of the staff cut is also an inefficient approach. The state's role in modern economy involves three prerequisites:

– guaranteeing private property and its decisive role in motivating the business entities;

– stimulating free initiative;

– making the market relations democratic.

No deviation from or construction of these prerequisites is permitted irrespective of the political interests or even the IMF agreements objectives.

c. The Romanian state cannot provide the proper operation of the economic sector through the observance of competitive economy rules and principles; moreover, various "beginners" holding information unavailable to most business entities and enjoying political support are promoted on the market. The state and the market do not cooperate in point of consolidating their roles of producers and distributors of goods and services, on the private/public correlation background.

The overwhelming pressure of the politic over the economic has a biunivocal effect: it interferes with the market mechanisms and with the democracy ones exercised through the public institutions.

After twenty years of transition, Romania is still incapable to capitalize the economic, social, cultural, educational and informational advantages of the European capitalist system. This translates in the fact that although on the pressure of international negotiations, the state has managed to develop the market institutions, it has continued its active interference in order to meet the political clientele's interests, which in fact has hindered the progress.

Judging from the development model we should rather be part of the Latin American countries group than of the European Union. Major income inequities, serious social polarization, generalized corruption and political instability are more specific to the Latin American model than to the European one.

3. **Romania's development strategy shaped by the actual government**

The development strategy outlined by the current Government should have in view Romania's membership to the EU and to the group of the states with emerging economies. The emerging markets are specific to the states experiencing an accelerated growth, either during the transition from a centralized to a market

economy, or during the post-crisis recovery process. These markets are more exposed to instability because the developed markets specific mechanisms are not entirely operational. This element is vital in elaborating the development strategy. Having in view these realities, we can identify and launch programmes adjusted to our country's specific features and we can inspire from the successful strategies elaborated by many countries from this group. Let's not overlook that the emerging countries are nowadays the engine of global development. Brazil, China, India or South Africa have been less affected by the crisis due to their dynamic economies. An example from Europe is Poland, a country experiencing an economic growth during the crisis due to the fact that it invests the European funds, considering that foreign investments record low levels. Poland is the only European country experiencing an economic growth in 2009, while other member states undergo recession; Romania, for example, records a decrease of 7,1% in the GDP. The European funds seem to be our only solution for the economic recovery, given the decreasing direct foreign investments and consumption (the economic growth engine in the past).

The development strategy must identify the available resources of our country (human and financial) and set clear ways to rationally and efficiently use such resources. Priorities must also be set. The major sectors, such as: agriculture, energy, some manufacturing industries, infrastructure and tourism must be the state's priorities. The state's involvement is vital in such a context, not only in point of developing a strategy or in its capacity as resources administrator, but especially as an active player in the development of various projects and in the proper operation of some companies and branches. Besides taking part in public projects the state may directly or indirectly become a partner (even shareholder for a limited period) within private firms/companies of national interest in order to support them to cope with the crisis and to maintain (increase) the domestic or international market share. Unfortunately, the small and medium– sized enterprises, considered by many developed countries (see Germany, Austria, France and the like) the engine of the economic recovery and workforce usage, face bankruptcy. In the last three months, other 8,000 firms have been subject to bankruptcy. As Greece, Romania becomes insolvent although the fifth tranche from the International Monetary Fund is disbursed. The state must facilitate cooperation with the important national manufacturers (multinational companies or foreign capital regional firms), with the Romanian small and medium– sized enterprises, so that the latter become subset providers for the end products of the former and beneficiaries of some technologies and know– how to make them competitive on the domestic and foreign market. It is common knowledge that exports play an important role in the economic recovery process. Romania belongs to the group of emerging countries which play an active part in foreign trade. Many of these players wish to develop relations with our country, to finance important projects, but what can Romania offer in exchange to maintain a fair trade balance?

A development strategy assumed by our country will have an impact on the international markets as well: new clarity and sustainability elements rating agencies take into account to measure more accurately the stability level in Romania. This increases the investors' trust determining them to become partners in important development projects.

A strategy accepted at national level would send a stronger signal of stability and economic recovery to the Romanian banking system, which would consider funding the companies and householdings. The banks non– involvement in the economic recovery process may entail serious issues.

A national development strategy will draw international private funds at the convenient terms and costs for our country. We need to draw resources from the domestic and European markets, having in view the still reduced capacity to pay the dues (current expenses, loan repayment, high interests payment).

The development strategy should include adopting the EURO currency, a nationally assumed mission. The attainment of this objective by 2015 requires a nationally assumed decision and a blend of strategies and programmes covering not only the monetary and currency area, but the fiscal and economic ones as well. The EURO adoption criteria are very strict. So are the steps to be taken in this respect. Given the serious issues facing some Euro Zone countries and the joint efforts to implement economic recovery programmes requiring extraordinary resources, the EU and European Central Bank leading authorities will be more strict when analysing and deciding upon Romania adopting the EURO currency.

Conclusions

In many respects, the global crisis has been the catalyser of the severe economic crisis foreseen by the Romanian analysts and businessmen.

According to the general view, our country will follow the great powers path towards recovery. Some of them (The United States, Germany, France) are heading in the right direction. Therefore, we can anticipate a similar trend in the second half of 2010 at the latest. Oddly or not, in Romania's case the major shortcomings are in fact the main advantages because they are beneficial for businessmen and implicitly foster the economic recovery.

The best example is infrastructure (not only the transport infrastructure, but various other facilities, such as: hospitals, education institutions, waste management systems, lighting systems, leisure facilities and the like). The economic downturn may be counterbalanced through sustained efforts, the European funds being an important funding source. Moreover, as the investors' involvement in the Eastern Europe, including in Romania increases, the public/private partnership model gains more credibility. A successful project depends largely on the politicians' wisdom who must understand the economic value of such a project and to objectively support its development.

The projects must be started as soon as possible and carried on under the initial terms, irrespective of the changes in the political regime. The investors need continuity in order to implement long– term strategies while establishing constructive cooperative relations with the state and the public institutions is a prerequisite in this context. For a long time the economic growth was due to a prosper business environment. The crisis struck the private sector and now the economic recovery is at the public sector's hands. In this context, the state must improve the entire system and take steps for reducing bureaucracy, professional

improvement and improving the quality of services. A transfer of mentality and pragmatism from the private to the public sector is required. This is the prerequisite for a sustainable economic growth.

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IV. THE INSTRUMENTS TO INCREASE THE EFFICIENCY OF MARKETING AND MANAGEMENT

MOBILE AGENT LOCATION MANAGEMENT IN GLOBAL NETWORKS

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Abstract

Mobility management is a necessity in highly dynamic and large-scale Mobile Agents (MAs) networks, especially in a multi-region environment in order to control and communicate with agents after launching. Existing mechanisms for locating MAs are not efficient as these do not consider the effect of location updates on migration time and produce network overload. This paper presents a hierarchical model for location management of MAs in global networks. Three protocols are developed, namely search, update and search-update. The location management technique uses one combination of search, update and search-update protocols throughout execution. Three cases are considered for Update and Search-Update Protocols. Thus, nine combinations of location management protocols are generated, from which an agent can dynamically select one as per requirement, to communicate with other agents on the global network. We have implemented these protocols on the system developed at IIT Roorkee, to evaluate the performance. Results indicate that overhead generated by these protocols does not affect the actual agent response and migration time1.

Key-words: *location management, Mobile Agent, MA, update protocol, search protocol and search-update protocol*

JEL Classification: L86, O30

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1. Introduction

A Mobile Agent (MA) (Picco, 2001) is a software process, which can move autonomously from one physical network location to another. The agent performs its job wherever and whenever it is found appropriate and is not restricted to be colocated with its client. Thus, there is an inherent sense of autonomy in the mobility and execution of the agent. Agents can be seen as automated errand boys who work for users. MA research evolved over the past years from the creation of many different monolithic Mobile Agent Systems (MASs), often with similar characteristics and built by research groups spread all over the world, for optimisation and better understanding of specific agent issues (Picco, 2001; Tripathi et al., 2001).

As large-scale MASs are the next trend following the popularity of MA technology, the collaborations between roaming agents has increased. There should be an efficient mobility management for locating MAs as part of the agent communication platform. The basic operations associated with mobility management are:

1. A roaming agent updates its location frequently to the central management server, that is, a directory server (Stanski et al., 1998).

2. The agent management server refreshes the current location record of the agent in its location database.

3. When there is a request asking for the location of the agent, the management server searches the database and replies with the current location of the MA. Besides these three basic steps, the server may also process issues such as out-of-date location records. Most existing MASs have provided partial mobility management, by defining different naming and locating mechanisms.

The ability to locate MAs while they are migrating from one node to another one is of great importance for the development of agent-based applications which have to work in geographically distributed environments (van Steen et al., 1998). This issue becomes even more important when focus is shifted from distributed application limited in space, to distributed application whose environment is spread all over the Internet. None of the Java-based MA platform provides a comprehensive, effective location management system. In any case these mechanisms are strictly tied with the platform that they are designed for without exploiting existing techniques for searching or locating objects in the Internet. When a global environment such as the Internet is considered, a centralised naming protocol quickly becomes a bottleneck for the system, providing poor performance. Distributed techniques and algorithms are often more effective even if their implementation is more difficult (Bernardo and Pinto, 1998; Lazar et al., 1998; Roth and Peters, 2001).

Location management is an important issue in MA computing. It consists of location updates, searches and search-updates: An update occurs when a MA changes location. A search occurs when a MA/Agent Host (AH) (Patel and Garg, 2004; Patel, 2004) wants to communicate with a MA whose location is unknown to the requesting agent/host. A search-update occurs after a successful search, when the requesting agent/host updates the location information corresponding to the searched MA. The goal of a good location management protocol should be to provide efficient searches and updates. The number of messages sent, size of messages and distance the messages need to travel, characterise the cost of a location search and update protocol. An efficient location management protocol should attempt to minimise all these quantities. Hence, a new protocol is required that would generate minimum overhead and be suitable for both global and local area networks.

This paper reports several location management protocols based on a hierarchical tree structure database. It also reports on the results of implementations carried out to evaluate the performance of proposed location management protocols for various call and mobility patterns. Platform for Mobile Agent Distribution and Execution (PMADE), developed at IIT Roorkee, is used as the development platform (Patel and Garg, 2004; Patel, 2004).

The rest of this paper is organised as follows: Section 2 reports on a system model for a distributed system with MAs. Section 3 presents proposed location management protocols. Evaluation results are shown in Section 4. Conclusions are given in Section 5.

2. **System model**

In PMADE, agent location is based on some assumptions for the distributed environment, as shown in Figure 1. We have assumed that the global network environment is divided into network domains, regions (subnetworks) and AHs (local sites). Further, there is a Domain Management Server (DMS) in each network domain which has information about all other DMSs in the global network. It also has information about all the regions in the network domain. It is responsible for maintaining uniqueness of names of regions, which are part of that network and helps to identify the region in which an agent is present.

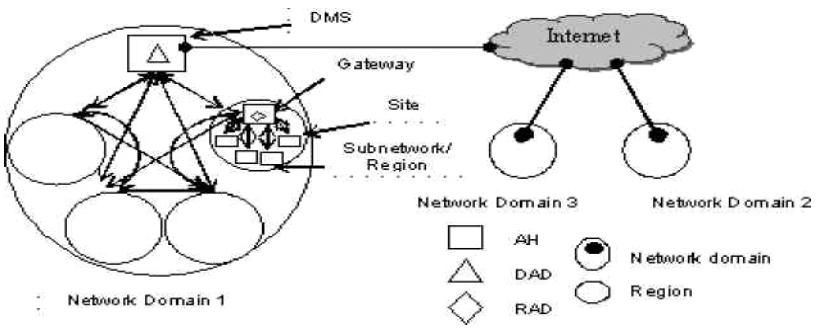


Fig. 1. *Structure of a distributed environment*

Each DMS maintains a Domain Agent Database (DAD), for information about the current location of all agents which were created in that domain or transited though it. Every region maintains information about all AHs that are part of that region. An AH can be a member of an existing region or can start in a new region. In each region, a Region Agent Database (RAD) is present at an AH which runs at the gateway of a subnetwork. It contains location information about each agent that was created in that region or transited through it. This host acts as the Agent Name Server (ANS) (Terry, 1985), which manages the RAD. ANS is responsible for maintaining uniqueness of names of all MAs, created in that region. When a new agent is created, the user assigns a name to it by registering in the RAD of its birth region.

Each entry of DAD of the form (*A*, FD, *r*) represents that agent *A* can be found in region *r* of the foreign network domain FD or it has transited from that network domain or region. Each entry of RAD of the form (*A*, *r*, Nil) represents the region *r* where agent *A* was found or transited through it. Similarly (*A*, Nil, AH) represents an agent *A* which exists in that region at AH. For DAD and RAD, the primary key is the agent name *A*.

Agent migration from one network domain to another is always accomplished through the DMS. During inter domain migration the agent has to update location information in the DAD of the present domain and register in the DAD of the target network domain.

For intra region migration, it has to update its location information in the RAD of that region. This is an Intra Region Location Update. During inter region migration, the agent has to update the location information in the RAD of present region and register in the RAD of the target region, specifying the host in that region to which it is migrating. Any location protocol for MAs deals with three aspects: *name binding*, *migration* and *location*, each related to a particular phase in the agent's lifetime.

Mobile networks generally comprise of a static backbone network and a wireless network. There are three distinct sets of entities, namely MAs, mobile hosts (MHs) and fixed hosts. A host that can move while retaining its network connection is called a MH. The static network comprises of the fixed hosts and the communication links between them. Some of the fixed hosts, called Base Host (BH) are augmented with a wireless interface and they provide a gateway for communication between the wireless network and the static network (Patel, 2004).

Due to the limited range of wireless transreceivers, a MH/MA can communicate with a BH. The geographical area covered by a region is a function of the medium used for wireless communication. Currently, the average size of a region is of the order of 1–2 miles in diameter. As the demand for services increase, the number of regions may become insufficient to provide the required grade of service. Region splitting can then be used to increase the traffic handled in an area without increasing the bandwidth of the system. A MA communicates with one BH at any given time. The BH is responsible for forwarding data between the MH/MA and the static network.

Due to mobility, MH/MA may cross the boundary between two regions while being active. Thus, the task of forwarding data between the static network and the MH/MA must be transferred to the new regions. This process, known as handoff, is transparent to the mobile user (Kessler et al., 1995). The initiative for a handoff can come from the MH or the BHs. Handoff helps to maintain an end-to-end connectivity in the dynamically reconfigured network topology.

3. **Location management protocol**

A location management protocol is a combination of a search protocol, an update protocol and a search-update protocol. Only the location management protocols in the absence of a Home Location Server (HLS) are discussed in this paper.

3.1. *Logical network architecture*

A Global network consists of MAs, MASs and Location Servers (LSs). The Logical Network Architecture (LNA) is a hierarchical structure (a tree with *H* levels) consisting of BHs and LSs. As shown in Figure 2, the BHs are located at the leaf level of the tree. Each BH maintains information about the agents residing in its region. The other nodes in the tree are called LSs. Each LS maintains information regarding MAs residing in its subtree.

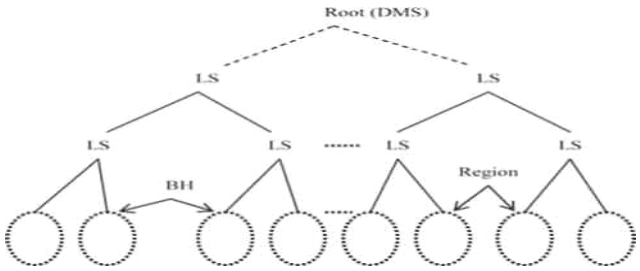


Fig. 2. *Logical network architecture*

Each communication link has a weight attached to it. The weight of a link is the cost of transmitting a message on the link. Let *l*[src][dest] represent the link between nodes src and dest and let *w(l)* represent the weight (or cost) of link *l*. The cost depends on the size of the message, the distance between the hosts (agents), and the bandwidth of the link. For analysis purposes, we assume that, for all *l*, *w(l)* = 1. Essentially, the cost metric is the number of messages sent.

3.2. *Data structures*

There is a unique 'home' address for every MA. The home address is the identifier/name of the MA. The 'physical' address of a MA might change, but its home address remains the same, irrespective of the agent location (Patel, 2004; Stefano and Santoro, 2002). Each LS maintains an address matching table that maps the home address to the physical address of the MAs residing in the subtree beneath it. Thus, the problem of location management basically focuses on the management of the address matching tables.

There is a location entry in a LS corresponding to an agent *A*, if it is in a region in the subtree under LS. If *A* moves to a region which is not in the subtree under LS, then the entry corresponding to *A* is updated at LS. All the nodes maintain location information using three-tuples which have the following elements:

1. MA identifier (id) (given by agent naming server)
2. forwarding pointer destination (*fp*_dest) and
3. time at which last forwarding pointer update took place ((*fp*_time).

Each LS maintains a three-tuple for each MA residing in the subtree beneath it and each BH maintains a three-tuple for each MA residing in its region. The default value of *fp_dest* and *fp*_time is NULL. If the *fp*_dest field of an agent *A* is NULL in LS *L,* then, *A* is not in a region in the subtree under *L.* Let us suppose that we are using a protocol which uses forwarding pointers for location updates. Let *A* reside initially in the region *r.* The BH of region *r* will have an entry (*A*, NULL, NULL). Let there be a LS *L* which maintains information about the agents residing in *r.* There will be an entry (*A*, *r*, NULL) corresponding to *A* at *L.* Let *A* move to a new region *r*', which is not a part of the subtree of *L.* Let *t* be the local time at the BH of *r* when change of location of *A* is recorded at BH. Let *t* be the local time at *L* when the change of location of *A* is recorded at *L.* Thus, the location information of *A* will be (*A*, *r, t)* at *L* and (*A*, *r, t)* at BH of region *r.*

Note: The above data structures contain *fp*_time field to store time. The *fp*_time entry for a data structure on a node, say *v,* contains the local time at node *v* when the data structure was last modified. We will denote this time by *t* in the following. It should be noted that the correctness of the algorithms does not require the clocks at various nodes to be tightly synchronised.

3.3. *Initial conditions*

It is assumed that, initially location information of the MAs is stored in the corresponding LSs, that is, each LS has the correct location information for all the agents residing in the region in its subtree. Thus, the root LS should have the correct location information of all agents in the system. In Figure 3, nodes LS_{7} are LSs and $BH_{8\text{-}15}$ are BHs. There are two MAs A_1 and A_2. In the initial state, agent A_1 is in region 8 and A_2 is in region 12. Initially, the correct location information of agent A_1 will be available at LSs LS_4, LS_2 and LS_1. Likewise, the location information of A_2 will be available at LSs LS_6, LS_3 and LS_1. Thus, the location information of an agent is available at all the LSs located on the path from its current BH to the root.

3.4. *Update protocol*

The protocol for updating the location information at the LSs and the BHs, when a MA moves, is as follows: Let src and dest be the source and destination regions, respectively. Let *A* be the identifier of the MA. Let *t* denote the local time at a node when a change in location of *A* is recorded at that node. The value of *t* will be different at different nodes. For this protocol we have considered three cases as follows.

Case 1 Single Updates (SU): in this the update takes place only at the BH of the source and destination regions. A forwarding pointer is kept at the source BH. The updated entry at the source BH becomes (*A*, dest, *t*). An entry for agent *A*, (*A*, NULL, NULL) is added at the destination BH. The location information at the LSs are not updated. The cost of update is zero because there is no update message being sent.

Case 2 Full Updates (FU): upon a move, apart from BHs involved (i.e., BH of the source and destination regions), location updates take place in all the LSs located on the path from the BH of the source and destination region to the root. Details are as follows:

Source region: (1) *At the BH*: for agent *A*, set *fp*_dest = dest and *fp*_time = *t*. The updated entry for agent *A* at the BH becomes (*A*, dest, *t*). (2) *All LSs on the path from src to the root*: the BH of src sends update message to these LSs. Upon receipt of the update message, the LSs update the entry for *A* to (*A*, dest, *t*).

Destination region: (1) *At the BH*: an entry (*A*, NULL, NULL) is added for agent *A*. If there was an old entry for *A*, it is overwritten by this new entry. At any node, there can be only one entry per agent.(2) *All LSs on the path from dest to the root*: the BH of dest sends update message to these LSs. Upon receipt of the update message the LSs create an entry. If there was an old entry, it is over written by this new entry.

3.5. *Search protocol*

If agent *A* in region *R* wants to communicate with another agent *A′, A* has to know the location of *A′*. This requires that agent *A* search for agent *A′*. As stated earlier, we do not make explicit use of HLSs for searches. The search process in the absence of a HLS is as follows.

1. If the BH of *R* has no location information for *A′,* it forwards the location query to the next higher-level LS on the path to the root.

2. If the LS does not have any location information for *A′*, it again forwards the location query to the next higher-level LS on the path to the root.

3. Repeat 1 & 2 until a LS which has location information for *A′* is reached.

4. If the location information (i.e., region identifier, say *S)* for *A′* is obtained, the location query is forwarded to the BH of region *S.* Agent *A′* will either be in region *S* or the BH will have a forwarding pointer corresponding to *A′*.

5. If *A′* is in region *S,* the search is complete. Else, a chain of forwarding pointers is traversed until BH of the containing agent *A′* is reached.

3.6. *Search-update protocol*

Location management becomes more efficient if the location updates also take place after a successful search. For example, suppose there is an agent *A* that frequently calls *A′*. It may be useful to update the location information of *A′* after a successful search, so that if *A* calls again, the search cost is likely to be small. The location information update takes place at the BH of the caller agent.

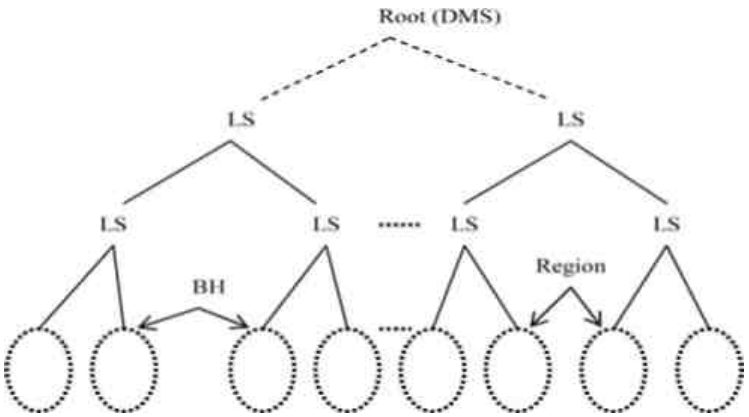


Fig. 3. *Logical network*

Case 1 No Update (NU): there are no location updates, the fp_time field of the entry corresponding to A' at the BH on the search path is updated to the current time at the BH. The cost is zero. This is because the update of the time field could be done during the search process itself and no additional message needs to be sent for this purpose. The update in fp_time is done to avoid purging of the forwarding pointer data at the BHs. The purge protocol is explained in the next section.

Case 2 Jump Update (JU): a location update takes place only at the caller agent's BH, that is, BH of region K. The entry for A' at the BH of region K is set to (A', K', t), where t is the local time at the BH when the location information is updated. This update cost is 1. This is because only one message needs to be sent from BH of K' notifying the location information of agent A'.

Case 3 Path Compression Update (PCU): upon a successful search, a location update takes place at all the nodes in the search path. All the LSs on the search path have the entry of A' updated to (A', K', t) where t is the local time at the LS when the location information is updated. All the BHs on the search path including the caller agent's BH have an entry of A' updated to (A', K', t), where t is the local time at the BH when the location information is updated. In Figure 3, let agent A1 calls agent A2. Suppose the location information of A2 is available only at the LS6, LS3 and LS1. Using the search protocol described previously, the search path will be BH8—> LS4—> LS2—> LS1—> BH12. The location updates take place at LS, LS and LS and BH. The update cost is the length of the search path that is in this example is 4.

3.7. *Purging protocol*

We need to periodically purge stale forwarding pointers at the LSs and the BH. This should be done in order to save storage space at the nodes and avoid storing stale location information.

We use a parameter called Maximum Threshold Call Interval (MTCI) to decide whether to purge the forwarding pointer information or not. Let the current time be curr_time. If fp_time ^ NULL and curr_time - fp_time > MTCI then the entry for the agent is purged from the BH, if some other agents in the system have recently used the forwarding pointer information of BH. In the LSs, if curr_time - fp_time > MTCI for MA, the location entry for that agent is purged.

When SU and LU cases of update protocol are used, the forwarding pointers at higher-level LSs do not get updated and become stale. Thus, these forwarding pointers get purged periodically. However, some of the searches for the agent might reach the higher levels. If the LSs at the higher levels do not have information about the agent, the root has to broadcast to determine the location. To avoid this, the forwarding pointers at the LS on the path to the root from the current BH must be updated periodically along with purging. The current BH of each MA achieves this by sending a location update message to the LSs on the path to the root.

Note: the fp_time value for an agent residing in the region will be NULL. So we are considering agents which are currently not residing in the BH's region and whose forwarding pointer information is stored at the BH.

4. **Evaluation results**

Our tests took place in a 10/100 MBps switched LAN that connects 850 workstations and personal computers and is used by about 500 hundred researchers and students. We ran PMADE equipped with the developed protocols on several P-4, 3 GHz machines. The Agent Submitter (AS) node and AH nodes have 256 MB main memory, while the LS (AH at the root) has 512 MB. We used the j2sdk 1.4.1 Java Virtual Machine with native thread support.

First, we tested the capacity and performance of our storage backend. The LS (root AH) was able to hold up to 4×10^6 entries before the system ran out of memory (Figure 2). This means that, given an extreme of 8×10^8 Internet users (*NUA estimates there were more than 605.60 million users online in the Internet on September 2002,* http://www.nua.com/surveys/how_many_online) each running 100 MAs simultaneously, about 20,000 LSs would be required to keep all entries. This is less than 0.0057% of the hosts in the Internet, according to ISC estimates (*ISC estimates there were more than 350,000,000 hosts in the Internet in January 2005*, http://www.isc.org/ds) at the time of writing.

Next, we let up to eight agents/ASs send requests concurrently. Table 1 gives the response rates we measured in tests with a single agent/AS, sorted by request type. Secured registration was slowest, as could be expected. However, this type of request is required only once per agent. In this test the LS handled about 400 agent lookup requests per second, which includes processing overhead at the AS (ASs start requests in parallel threads). Figures 4 and 5 show the response rates we measured for concurrent lookup requests with one to eight agents/ASs (average of 6000 measured values taken).

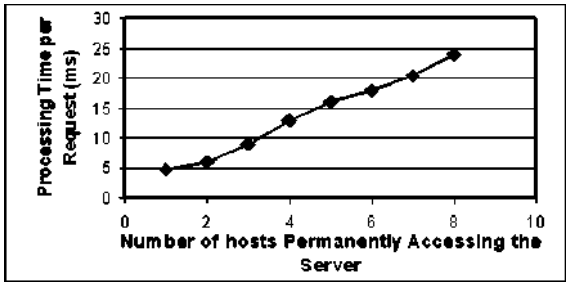
Table 1

Size of request packets and average processing time of the searching service with one agent/AS, by request type

Type	*Length*	*Mean*	*Request*	*Action of*
Lookup	32	4.7 ms	313	Location
Registration	431	11 ms	15	Init
Update	103	1 ms	150	Location
Register	103	5 ms	270	LS

[a] The lengths marked which might differ depending on the length of the stored location reference

The average number of requests handled by a LS



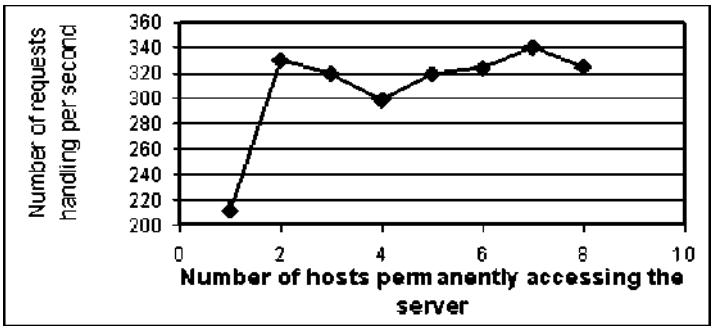


Fig. 5. *Response times*

With two or more agents/ ASs, the response rate jumps from about 210 requests per second to roughly 332 and remains more or less stable at this mark (with one agent/AS, the AH has idle time, with two or more it becomes congested). Table 2 gives how response times develop with an increasing number of agents/ASs. With about 2626 agents/ASs, requests take longer than 13 sec to process, which causes network connections to time out for few agents.

Table 2

Agent response time (includes Agent Migration Time, Agent Decryption Time, User/Agent Authentication Time, Result Encryption and Packaging Time)

No. of AH	1	2	4	8 16	32	64	128	256	512
No. of agents/AS	1	2	4	8 16	32	64	128	256	512
Response time	301 ms	572 ms	1 sec, 500 ms	2 sec, 4 sec, 3 ms 3 ms	6 sec, 6 ms	10 sec, 510 ms	21 sec, 21 ms	53 sec	154 sec, 100 ms

We also measured the impact of the location service (search and update) integration on the migration time of MAs in the PMADE. Without location service integration, we measured an average of 140 milliseconds per migration of a simple benchmark agent, compared to with location service (search and update), which we consider tolerable (Table 3).

Table 3

Effect of LSs on Agent Migration Time (size of agent is considered 10.203 KB

No. of LSs	1	2	3	4
Agent migration time when LSs are active (ms)	145.7	147	148.1	150
Agent migration time when LSs are not active (ms)	140	140	140	

5. **Conclusion**

In this paper, we have presented several location management protocols based on a hierarchical tree structure database. These location management protocols use one combination of search, update and search-update protocols throughout the execution.

We have applied these protocols in the real life application implementation developed on PMADE. It is found that overhead generated by them does not affect the actual agent response and migration times.

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MODERN APPROACHES IN THE MANAGEMENT AND KNOWLEDGE SOCIETY

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Abstract

The study analyses the determining role that the knowledge-based management has in the modern society. In this context, an analysis is conducted with regard to the decisive role of knowledge in the foundation of the new management system. Finally, assessments are made with regard to the conception and practice of the knowledge-based management in the organizational environment.

Key-words: *knowledge society, knowledge-based organization, knowledge management, intellectual capital*

JEL Classification: M12, M54

Introduction

The knowledge-based society is defined by acquiring the top knowledge of science and technique and changing it into a competitive advantage, by means of its usage. It accomplishes the transfer from the physical resource-based economy to the knowledge-based economy, as a result of the scientific research. This knowledge is permanently renewed, at an astonishing speed, representing the main source of the economy. The crystallization of the knowledge society determines the outlining of new orientations in the evolution of the companies and imposes a proactive attitude aiming at the acquirement of the advanced knowledge and technologies, in order to ensure the company competitiveness within the global framework.

Specialist literature review

The creation of a knowledge-based society and the development of the institution processes of the knowledge-based managerial practices in organizations are extremely complex actions.

According to Peter Drucker's (1999) opinion, the new society represents the greatest change in the modern world, its evolution being conditioned, to a large extent, by the scientific knowledge, regarded as the main source of power for individuals and society.

The new era, characterized as an increasingly complex and fast changing society, is an age of knowledge, where, once the scientific research focused, the role of strategic resource of the organization will go to knowledge, as a decisive source for its economical performance.

The knowledge society is the one where the information, regarded as a generic element of the reality representation and knowledge processes, means power in the most general sense. This genuine informational revolution led to the extension of the knowledge frontiers, decisively marking the evolution of all the global system components, making the creation, usage and superior valuing of the knowledge become the key stone of the society.

Among *the characteristics* of the knowledge-based society, we can mention:

– the unprecedented increase in the number of employees having a specific higher and medium education, also of the general level of the population's general culture;

– the explosion of the scientific and specialized publications number, of the general interest publications and the exponential multiplication of the information dissemination sources;

– the practically unrestricted access of the whole population to mass-media, which represents the most important information vehicle;

– the expansion of the companies which offer intellectual and professional services-research-development, projection, technical, technological, marketing, managerial, legal, economical, and environmental consulting;

– the generalization of the concept and practice of long life learning;

– the significant enrichment of the theoretical knowledge framework referring to the organization and its management;

– the supremacy of the intellectual capital in the evolution of the organizations. In the knowledge society, where knowledge is applied to knowledge, the intellectual capital holds a primordial role in the development of the modern companies, as a main source of the competitive advantage of the company and strategic resource of its management (Rusu, C., 1999).

The knowledge society, where the prestige and the financial capital will go to those companies which value the ideas at the maximum, is focused on the production of knowledge values, which constitute the essence of the political, social and economic necessities of the society reaching this superior level of development.

Theoretical background

The knowledge society provides company management, through its new functions, knowledge access, use and development opportunities. Knowledge-based management can be regarded as an approach that engages specific strategic actions, oriented towards the motivation of the organization in the direction of the accumulation and valorisation of new knowledge through the stimulation of sustained learning. It is characterized by:

– the improvement of the managerial competences and processes;

– the decentralization of decisions;

– the organic connection of knowledge with the working processes and of the working processes with knowledge;

– the growing importance of the externalization of the specialized activities explicitly and of the internalization of the highly specialized activities.

Knowledge-based management is a collection of learning processes associated with the exploration, exploitation, sharing and dissemination of human knowledge effectively using the most appropriate technology, influenced by cultural environment that increases the capital to develop an organization and facilitate performance. Michael Lester defines knowledge management as "a key process whereby at the level of companies, industries and countries superior economic performance is obtained for the population involved, by fully developing the potential benefits of the changes brought about by digital technologies and internet" (Lester, M., 2001). Lester approaches knowledge management in relation with peak information technologies; he places a special focus on the innovation and its associated knowledge and he puts a special emphasis on all interested parties which may contribute to the development of knowledge, using the concept of stakeholders. With a pronounced economic dimension, Abell and Oxbrow (2002) emphasize that "knowledge management is a scientific discipline promoting an integrated approach of the creation, attraction, organization, access and use of the intellectual capital of the company, regarding the clients, markets, products, services and internal processes, while knowledge management seen as an economic practice consists in the acquisition, sharing and use of knowledge within organizations, including learning processes and information systems." A manager who takes into account the informational aspects of the organization shall transform the experiences of the organization, as well as the experience, abilities, competencies and the tacit and implicit knowledge of the people surrounding him into a real challenge to offer high quality products and services. Neil Ferguson (1998) considers that "knowledge management consists in the processes and economic solutions implemented within an organization, with the aim of exploiting the knowledge obtained through experience and generated by the abilities of its workforce, as well as by external sources and in the strategic applications of the intellectual capital intended to improve the operational efficacy, the efficiency and profitability of the organization". Ferguson emphasizes that information technology, economic processes and organizational culture are combined to create an environment in which knowledge (experience, abilities, and information) is identified, collected, spread and exploited. This approach puts emphasis on the economic content of the processes and solutions involved; links the knowledge and the intellectual capital; highlights the multidimensional nature of the processes involved. *As a science*, knowledge management "consists in the study of knowledge-based managerial processes and relations, in the discovery of the laws governing such processes and relations and in the design of new systems, methods, techniques, with the aim of enhancing the functionality and performances of organizations, making the best use of the great potential of knowledge. *As a practice*, knowledge management consists in the corporate approaches, methods and techniques focused on the generation and use knowledge, whereby a higher multi-faceted development of knowledge is ensured, as compared to the previous period" (Nicolescu, O., Nicolescu, L., 2005). The new conception of knowledge-based management makes it compulsory to rethink the organizational system of the company, the organization under all its aspects.

The knowledge-based organization

The contemporary organization sees all its processes as knowledge processes. This new organizational model is capable of valorising the employees' creative potential, of conceiving and developing projects.

Specific to the contemporary society, the knowledge-based society structures new responsibilities regarding the creation, management and dissemination of the knowledge. Being defined as a "group of workers dealing with a conception work, interconnected through a computerized infrastructure" this new organizational model is able to develop and value the employees' creative potential, the knowledge being the basis of all the operations and production processes, strategies and business tactics (Holsapple, C.W., Whinston, A.B., 1987). The organization, as a whole, registers change processes with immediate effects in its raising capacity of efficient creation, attraction and usage of new knowledge, becoming more and more performant in this manner.

In a world marked by the spectacular evolution of the new information technologies, by sharp economical competition and by massive requests for more and more sophisticated products and services, the companies are dependent on the knowledge creation and management. The major challenge of the assimilation of the new trends at the level of the contemporary societies is given by the fact that all these changes take place under the circumstances of the permanently changing evolutive coordinates of the company – under the influence of a bigger and bigger number of endogenous and exogenous variables, more or less controllable and having effects of the most unexpected. The huge companies have understood the solicitations imposed by the informational society and substantially invest in the knowledge creation at the organizational level, in the processes of innovation of products and services. These companies stimulate and motivate the knowledge creation, relying its long-term strategies upon the knowledge exploitation and its usage in the processes of the product innovation (Ştefănescu, C., 2008).

Related to the specific of the non-hierarchical configuration of the knowledge-based organizations, the knowledge management activities are not submitted to a strict and rigid hierarchical control. In such an organization, the employees realize the importance of the knowledge creation, usage and transfer. They are encouraged to continuously learn and train, to create, to apply and develop their knowledge, by means of developing their innovation and conception competences. New clues of organizational culture based upon competitiveness, lifelong learning, and development of the partnerships regarding the creation and transfer of information and knowledge may also appear.

New roles and responsibilities are registered in the managerial behaviour, concerning the knowledge fund management and valuation, with immediate effects in the organization raising capacity of creating, attracting and efficiently using new knowledge, becoming more performant this way. The managerial act needs new competences, methods and instruments of operating the concept of knowledge-based organization. The administrative responsibilities give more and more place to the activities of conceptualizing, strategy creation, project management, change

management and promotion. For the whole team, the knowledge capital is considered as the main source, decisive for performant development. The employees are appreciated and rewarded for the performances obtained in innovative, creative activities, for competences related to the production and valuation of new knowledge. Within this framework, the knowledge gets the role of strategic resource and, next to the human factor, knowledge is integrated in *the intellectual capital* the organization holds and which is unanimously recognized as the main source of progress today.

In the knowledge society, the competitive companies will be the ones promoting the innovation, the advanced technologies, the own scientific research, in order to raise the quality of the products and services offered and the customers' satisfaction (Nicolescu, O., Plumb, I., Vasilescu, I., Verboncu, I., 2004). The features specific to the modern, knowledge-centred companies, have the following distinct characteristics:

- knowledge represents the essential factor of performance within the organization framework;
- the whole organization realizes the decisive role of knowledge;
- a special interest is given to attracting, using, valuing and protecting the advanced technologies and knowledge;
- promotion of the career management and, also, performance in management;
- using information as a strategic resource – source of competitive advantage at the competition level;
- developing the employees' creative capacity represents an outstanding feature of the organizational culture;
- the emergence of new responsibilities concerning the management and implementation of new knowledge and advanced technologies;
- raising of decision quality and promptness;
- lifelong education and training.

The creation of a knowledge-based society and the development of the processes of implementation of the knowledge-based practices at organizational level are extremely complex actions. The following activities should be promoted in order to achieve them:

– the creation of a framework which should stimulate the knowledge production and innovation (groups of creativity, centres of competence and dissemination of new knowledge);

– stimulation of the process of lifelong learning and training;

– the development of the competences connected to knowledge and its management;

– involvement in the effort of research-development and project development;

– the introduction of decision assisted-expert systems;

– the adoption of the best practices of knowledge management.

All these actions have to be sustained in the organizational framework, by the introduction of last generation technology, as well as managerial interventions based upon advanced knowledge. The organization, in its entirety, records processes of change with immediate effects upon the organizational culture, oriented towards competitiveness and the creation, attraction and efficient use of new knowledge. Thus, new benchmarks of the organizational culture emerge in connection with creativity, communication, life-long learning, innovation and improvement.

Conclusions

The capacity of organizations to adapt to the requirements of the economy of the future depends on the development of a new type of management, a management centred on the values of scientific creation and knowledge. The knowledge society provides company management knowledge access, use and development opportunities. The organization, in its entirety, records processes of change with immediate effects upon the organizational culture, oriented towards competitiveness and the creation, attraction and efficient use of new knowledge. In such an organization the manager must develop and improve the employees' creative potential, and he must initiate specific strategic actions oriented towards motivating the organization to accumulate new knowledge by means of stimulating life-long learning. The company of the future must place a special focus on the continuation of managerial innovation which has become even more necessary considering that changes at all the levels of activity of the company promise to be more and more ample and frequent.

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DEVELOPMENT AND EFFICIENCY OF BANKING AND ECONOMIC GROWTH IN CENTRAL AND EASTERN EUROPE[1]

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Abstract

In an endogenous growth framework, well developed and efficient financial system can promote economic growth. A number of empirical studies confirmed this hypothesis. Since the financial systems of transition countries are dominated by banks, in this paper we analyze the importance of banking industry for economic growth using methods of panel data analysis for 15 Central and Eastern European countries in the period from 1992 to 2006.

Using variables that measure both quantitative and qualitative aspects of financial intermediation, our findings support the view that the effectiveness of banking industry is more important than its size per se for the economic growth in the Central and Eastern European countries.

Key-words: *banking, financial intermediation, endogenous growth, panel, Central and Eastern Europe*

JEL Classification: E44, G21

1. Introduction

In the last two decades there has been a huge increase of literature in the growth theory on the relationship between financial intermediation and economic growth (for the survey see Levine (1997), Thiel, (2001), Ang (2008)). According to the new growth models financial intermediaries lower financial market imperfections (transaction costs and information asymmetry) and affect economic growth through four channels: changing the marginal productivity of capital, proportion of saving funnelled to investment, saving rate and rate of technological innovation. A numerous empirical studies evidence that financial intermediation plays a growth-supporting role, while some have contradict results. The findings on the contribution of financial development to economic growth in transition countries are ambiguous (for the survey see Fink et al. (2008)).

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The aim of this work is to examine empirically if the banking industry as dominated part of financial systems in transition countries plays a growth-supporting role while controlling for other influences on economic growth and endogeneity. In order to accomplish the task we use endogenous growth model and apply a panel estimation techniques. Our sample consists of 15 Central and Eastern European countries in the period from 1992 to 2006.

The paper is organized as follows. In section 2 the data are described. Section 3 presents methodology. In section 4 the estimation results are presented. The paper finishes with some concluding remarks and policy recommendations outlined in section 5.

2. **Data**

In our research of banking development and efficiency and growth nexus we estimate economic growth regressions in a unbalanced panel (cross-country, time-series) data set consisting of 15 Central and Eastern European countries (Belarus, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Russia, Slovakia, Slovenia and Ukraine) over the period 1992-2006. Table 1 presents descriptive statistics for all variables used in the regressions. See Appendix for the sources of all the variables used in the research.

Economic growth is measured by growth rate of GDP per capita. In choice of proxies of banking variables we follow Koivu (2002). The level of banking development is measured by bank credit to private sector in relation to GDP (private credit). We expect positive relationship between the first banking variable and economic growth. The second variable is interest margin measured by spread between bank's lending and borrowing rate. It measures efficiency of the banking industry. We use the banking variables both current and one period lagged as in Koivu (1999) and Fink et al. (2008).

Table 1

Descriptive statistics

Variable	Mean	Median	Maximum	Minimum	Std. Dev.
Economic growth	0.044	0.049	0.122	-0.229	0.046
Private credit	0.255	0.242	0.784	0.003	0.152
Interest margins	0.117	0.067	2.690	-0.003	0.234
Log initial GDP per capita	8.135	8.258	9.864	5.991	0.793
Investment	0.005	0.007	0.094	-0.087	0.027
Education	0.924	0.930	1.090	0.720	0.075
Openness	0.520	0.521	0.854	0.223	0.141
Inflation	0.365	0.084	9.535	-0.009	1.227
Government	0.416	0.416	0.650	0.294	0.073

The first control variable is the initial level of economic development, measured by the log initial level of GDP per capita. It is introduced in the model to capture the convergence effect or the tendency of economic growth rate to converge across countries. Thus, the expected sign of the parameter of the initial level of economic development variable is negative. The second control variable is

investment. We follow the common practice of using gross capital formation as a proxy for investment. The expected sign of the coefficient is positive. The positive sign is expected for the coefficient of education variable, too. Education accounts for human capital. As a measure of education variable we use secondary enrollment. The next variable used in our research as determinant of economic growth is openness. As a measure of openness, we use export of goods and services in relation to GDP. We expect that export is positively related to economic growth. The inflation rate is used to account for monetary discipline. It is expressed by GDP deflator (annual percentage). We expect its negative correlation with economic growth. The last variable used to control for other influences on economic growth is government expenditure in relation to GDP accounts for government burden. The expected coefficient has a negative sign.

3. **Methodology**

We form the following econometric model:

$$y_{it} = \alpha + \beta X_{it} + u_{it} \quad (1)$$

where the subscripts i and t represent country and time, respectively. α is the intercept term. y is the dependent variable, that is, the growth rate of GDP per capita. X is the vector of observations on the explanatory variables that include private credit and interest margin as well as other variables that are shown empirically to be determinant of economic growth (log initial level of economic development, education, openness, inflation and government expenditure). β is the vector of coefficients to be estimated on the explanatory variables. The error term is uit~N.I.D.(0,σ2).

At the first stage three approaches are taken when estimating the equations of form represented in (1). They include estimation of simple pooled regression (model with neither fixed nor random effects), fixed and random effects models. Some researchers in the finance-growth nexus empirical literature use the fixed effects model (Koivu, 2002), while some criticize it (Wachtel, 2001). We test the presence of fixed or random effects. First, the parameters of cross-section fixed effects model are estimated by using ordinary least squares (OLS) estimator. To test the significance of cross-sectional effects F-test is applied. Then we apply feasible-generalised least squares (F-GLS) method to estimate parameters of cross-section random effects models. The choice between fixed and random effects models is based on the Hausman test. If, according to Hausman test, the cross-sectional fixed effect model is preferable, then we apply F-test in order to test significance of period-fixed effects. In order to estimate the regressions with heteroscedasticity robust standard errors we use White's modified standard error estimates in all the specifications.

The equations estimated using above mentioned methods ignore the effects in other direction. Since there is a possibility of reverse causality between financial development and growth, in the next stage we extend analysis to the estimation by using instrumental variables that accounts for some endogeneity in the explanatory variables. We apply two-stage least squares (2SLS) estimator. As instruments we use one-period lagged regressors.

4. **Empirical results**

The findings of the analysis are presented in the following tables. First, the results of F-test and Hausman test are shown in the Tables 2 and 3, respectively.

Table 2

F-test results

Redundant Fixed Effects Tests							
Equation with private credit				Equation with interest margin			
Effects Test	Statistic	d.f.	Prob.	Effects Test	Statistic	d.f.	Prob.
Test cross-section fixed effects				Test cross-section fixed effects			
Cross-section F	2.685343	(14.158)	0.0015	Cross-section F	3.469394	(14.144)	0.0001
Cross-section Chi-square	38.634477	14	0.0004	Cross-section Chi-square	48.539269	14	0.0000
				Test period fixed effects			
				Period F	1.413968	(12.146)	0.1656
				Period Chi-square	18.360798	12	0.1052

Table 3

Hausman test results

Correlated Random Effects - Hausman Test							
Equation with private credit				Equation with interest margin			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.	Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Test cross-section random effects				Test cross-section random effects			
Cross-section random	10.665972	8	0.2214	Cross-section random	32.65494	8	0.0001

The preferred model for both proxies of banking variables is identified. Regarding the specification with private credit as proxy of banking development, according to F-test there are significant cross-section fixed effects, while according to Hausman test, random effects model is preferred. In another combination of variables with interest margin used as proxy of banking system efficiency, the favoured model is the fixed effects model. Testing of period-fixed effects shows insignificance of period effects.

The results obtained by the analysis which is made according to random effects model in the specification with private credit, and according to fixed effects model in specification with interest margin are shown in (3) and (4) respectively in Table 4. Beside these results, the table present results of the OLS estimation of the simple pooled regression ((1) and (2)).

According to the results, private credit in current value enters positively in growth equation in the both specifications, but only in the second one it is significant. The lagged values have negative sign, but without significance. On the other hand, coefficients of interest margin variable, both in current and lagged values, in all the specifications have expected negative sign and they are significant at 1 percent level. Regarding the control variables, investment appears to be the most important determinant of economic growth. The others significant factors are inflation and government. Coefficients of the education and export variables have expected signs, while significance varies among specifications.

Table 4

Bank development and economic growth: OLS/ F-GLS and 2SLS

	Dependent variable: GDP growth					
Independent variables	(1)	(2)	(3)	(4)	(5)	(6)
Constant	-0.012845	0.266011	-0.024585	-0.02936	0.110281	0.128374
	(0.03213)	(0.039502)	(0.053381)	(0.041068)	(0.100684)	(0.0667)
Private credit	0.063207		0.070222***		0.505386	
	(0.042191)		(0.038044)		(0.367399)	
Private credit$_{-1}$	-0.035619		-0.032798		-0.466598	
	(0.053325)		(0.046319)		(0.366931)	
Interest margin		-0.035798***		-0.040554***		-0.065657*
		(0.013138)		(0.013685)		(0.0415)
Interest margin$_{-1}$		-0.023577***		-0.021483***		0.028192
		(0.00858)		(0.012189)		(0.06154)
Log initial GDP per capita	0.003421	-0.026171	0.005653	0.008496	-0.009422	-0.006314*
	(0.004725)	(0.005443)	(0.006474)	(0.005641)	(0.010185)	(0.003976)
Investment	0.880548***	0.42394***	0.86392***	0.469506***	1.044227**	0.129819
	(0.083906)	(0.16735)	(0.079699)	(0.185463)	(0.489028)	(0.536024)
Education	0.061678***	0.050312	0.063645	0.041177***	-0.003534	0.016862
	(0.036815)	(0.023513)	(0.046721)	(0.024416)	(0.094107)	(0.055269)
Openness	0.023997	0.033337***	0.034777	0.08306***	0.030533	0.056349***
	(0.016931)	(0.014252)	(0.026387)	(0.023422)	(0.020865)	(0.016791)
Inflation	-0.007131***	-0.009942***	-0.006708***	-0.010697***	-0.026493	-0.024847*
	(0.002533)	(0.000642)	(0.001011)	(0.000661)	(0.005166)	(0.015682)
Government	-0.125033***	-0.153175***	-0.162603***	-0.160588***	-0.044946	-0.147356***
	(0.039854)	(0.027047)	(0.047952)	(0.06648)	(0.096814)	(0.039475)
R^2	0.60803	0.592308	0.620315	0.695139	0.203921	0.52646
F	33.35108***	28.69348***	35.12592***	14.92482***	20.97027***	13.87794***
Observations	181	167	181	167	152	139

*Standard errors in parentheses. ***, **, * denote statistical significance at the 1, 5, 10 percent level.*

Regression results from 2SLS estimator are presented in (5) and (6) in Table 4. Private credit in current value has a positive sign, while in the lagged value it has a negative one, without significance in both cases. Interest margin enters economic growth equation in the expected sign with significance for current value, but not for the lagged one. Regarding the control variables, the coefficients on all the variables have expected sign, except for the education variable in the first specification, but it is not significant.

Thus, the overall results suggest that effectiveness of banking industry in funnelling financial resources from surplus to deficit units is an important determinant of growth. An efficient and competitive banking system lowers the costs of channelling saving into investment and promotes economic growth. On the other hand, the relationship between private credit and economic growth seems not to be completely clear. But, domination of insignificantly coefficients (coefficients with positive or negative sign with no significance in all the specifications, but one) leads us to conclude that the size of the banking sector is not as important for the economic growth as its effectiveness. The results are in line with those of Koivu (2002).

Besides of the specific characteristics of transition process, soft budget constraints, high share of non-performing loans in the banks' balance sheets, banking crises in 1990s, bank financing of enterprise working capital while the investments are financed by internal earnings and through foreign direct investment, which are among the main explanations of the empirical results of the weak relationship between financial development and economic growth in transition countries in 1990s, we add one more that is related to the more recent period. In many transition countries credit to private sector has been growing at high rates in the last years. The credit growth has been driven by macroeconomic stabilization, economic growth, reforms in the banking systems and capital inflows (Duenwald et al. (2005), Backe and Zumer (2005)). But the banks have increasingly focused on households in their lending activities. From 2000 to 2006 the household credit as proportion of GDP in the countries in our sample rose in average 3.8 times, while the credit to enterprises in relation to GDP rose 1.5 times (EBRD, 2006, 2008). Important reason is lower risk in comparison to bank lending to enterprises. Part of the credit to households is used for financing acquisitions of imported goods since there are no such goods in the local markets. However, by increasing consumption of imported goods, the rapid growth in household credit may cause macroeconomic imbalance in term of the current account deficits (Coricelli, et al., 2005). On the other hand, the banks have a limited impact on reducing financing constraints of enterprises in transition economies. But the problem also lies on the enterprise side because of the lack of enterprise reform and good investment projects (Kraft, 2006). Thus, the structure of credit to private sector could be important in explanation of the impact of the banking sector's size on economic growth in transition countries.

5. **Conclusion**

The results of empirical analysis of the role of banking industry in economic growth of Central and Eastern European countries suggest that the size of the industry, measured in terms of bank credit to private sector, is not as important as it is its efficiency together with competitive and adequate regulated bank environment. The important reason of insignificance of private credit size could be the changes in the structure of bank credits, since banks in transition economies are increasingly focused on household lending and have limited impact on lowering enterprise financing constraints.

These study findings could be suggestive for as well as for banks' policy makers and for those on the macroeconomic level. In countries with less reformed banking system, there is a need for the improvements especially in banks' risk management practice. Banks should better use their unique position among financial intermediaries regarding the function of providing mechanism of payment which enables them to collect important information on users of their services. They should make progress in forming their own credit registers, which are an important aspect of evaluating credit risk and reducing information asymmetry which should have implications on lowering the financing constraints of enterprises. The banks efforts should be helped by institutional reforms, too. Beside those that provide competitive bank market structure and adequate banking regulation, the important improvements are needed in the field of forming public creditor register, the valuation of collateral and the creditor rights protection. In these countries as well as in those with more reformed banking sector there is a need for stronger efforts in reforms of the real sector in order to enterprises become able to offer promisingly investment projects to be financed from the banks' sources.

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APPENDIX

Sources of the data on variables used in the regression analysis

Variable	Sources
Gross domestic product	World development indicators (WDI) database, World Bank
Private credit	Financial structure database, World bank, Transition Report, EBRD
Interest margin	Transition Report, EBRD
Investment	World development indicators (WDI) database, World Bank
Education	EdStats, World Bank
Export	International Financial Statistics, IMF, line 90c World development indicators (WDI) database, World bank
Inflation	World development indicators (WDI) database, World Bank
Government	Transition Report, EBRD

THE ROLE AND IMPORTANCE OF THE STRATEGIC PLANNING IN BANK MARKETING

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Abstract

The paper aims to highlight the strategic planning role and place in bank marketing, define the concepts of strategic planning and marketing planning and the tactical planning, marketing plan and marketing program.

In this context, the author emphasize the strategic marketing planning process and its implementation stages (defining the specific mission, environmental analysis, formulation of objectives, strategies, action plans and programs, implementation, testing, overhaul and performance evaluation). Also, are reviewed organizational and decision levels specific for the strategic planning, higher organizational level, strategic unit level and operational level and the criteria considered in formulating objectives: acceptability, flexibility, motivating character, clarity, feasibility and compatibility.

Key-words: *marketing plan, marketing planning, strategic planning, tactical planning, marketing program, higher organizational level, unit level strategic, operational level*

JEL Classification: M20, M21

Literature review

Scientific marketing literature, regarding services marketing in general and banking marketing in particular has a tremendous evolution after '90s when many authors emphasized the role and importance of the services as tertiary economy sector, as been a source of competitive advantage for organizations.

The particular issue concerning strategic planning in bank marketing has been also approached by many specialists in the field, as a result we just point out some of most important findings that in our opinion highlights the importance and the relevance of strategic planning process in bank marketing.

As early findings we could cite Arthur Meidan (1993) – who was concerned with grouping different bank marketing strategies. The author grouped marketing strategies into two broad categories: growth and competitive strategies. Also there are taken into consideration the criteria on the basis of which marketing strategy selection can be made and there are highlighted alternative strategies suitable for different banks.

Later, L. Moutinho and P.A. Phillips (2002) stated that the impact of a variety of planning practices on competitiveness, overall performance of the bank

is a major problem of nowadays banking organizations, also bank branch effectiveness is affected by effective management practices; the overall performance of the branch depends highly on both long term thinking and innovation; long-term thinking seems to have also a high degree of impact on strategic planning effectiveness; and finally, the degree of precision attached to planning, programming, budgeting and control seems to trigger high levels of marketing effectiveness.

Other authors, such as Raija Järvinen, Uolevi Lehtinen, Ismo Vuorinen, (2003), have revealed the importance of high end technology used for banking operations from the perspective of strategic decision making. The authors consider that in addition to advanced technology, service providers need to pay explicit attention to social aspects. The best decision making process calls for more customer orientation when planning high-tech solutions in service operations, and taking a new attitude to segmentation of the customers.

In 2009, Celso Augusto de Matos, Jorge Luiz Henrique, Fernando de Rosa have approached issues relating to different roles of switching costs on the satisfaction-loyalty relationship in bank marketing. The research conducted by the authors revealed that: switching cost is a significant antecedent of both attitudinal and behavioral loyalty; the mediating effect of switching cost is stronger in the relationship between satisfaction and attitudinal loyalty; and the moderating effect of switching cost is stronger in the relationship between satisfaction and behavioral loyalty. Customers with different switching costs levels will manifest distinct relationship between satisfaction and behavioral loyalty. Thus, investment on marketing strategies and campaigns should be oriented to better convert switching perceptions into effective loyalty considering its mediating or moderating effects

Marketing variables as price could have a very important effect on loyalty and customers satisfaction, besides environment, personnel, etc. From a strategic planning perspective assuring a high level of loyalty in banking services represents not only one of the main objectives but in the same time a condition for competitive advantage and marketing efficiency.

Related also to the different aspects of decisions efficiency is the work of Joseph Coughlan, Estelle Shale and Robert Dyson (2010). They illustrate the effect of including the customer as a resource in efficiency measurement. Authors have studied different bank branches and find out how relationship and transactional paradigms are affecting performance. Although the average profile of the efficiency scores was similar, the scores of the individual branches differed greatly depending on how customers were counted. Some branches then can be typified as relationship oriented while others as transactions oriented bearing in mind that all branches have both remits.

Future research in efficiency measurement should include customers as a resource of the bank given the importance of them for the activity of co-production.

The concept of **planning** is not seen as important and valuable as it used to be although it has been considered a concept of maximum importance within the economic theory and practice for a long time. The causes for this have at least two reasons. Firstly, we must take into account the fact that since the ‘90s, the concepts of “plan” and “planning” begun to depreciate over time and also the fact that planning is considered to be superfluous in an instable and even sometimes turbulent environment.

In reality though, success is dependable on the consistent elaboration effort, on the effort of following and accomplishing the planned objectives, in fact on the **marketing plan**. The respective concepts – planning and plan – must regain the deserved importance, the marketing plan being the instrument that can drive the organisation's intercessions towards the wanted direction for the accomplishment of its general mission and objectives.

Within such a context, the **strategic planning** gains a crucial importance today, taking into consideration the post '90's evolution of the Romanian society and economy, the complexity of the environment where the commercial agents work in general, and of the market in particular. Such processes along with other ones generated multiple and profound changes in the life of society and implicitly in the activity taking place at a micro-economic level, therefore at the level of the market agencies, regardless of their activity object, form of ownership and organisation manner.

These are only some considerations that must be taken into account by the banking societies, as the competition in the field is acerbic.

The collocation **marketing strategic planning** is a "complex process of establishing the best relations between the objectives, the employees' preparation and a company's resources on one hand and the marketing mix related to the market's conjuncture on the other hand"[1]. In the banking activity, strategic planning is a process consisting in formulating objectives and strategies on the long term at organizational level, meant to insure a viable relation between the resources and the environment, favourable for the development and the pursuit of its fundamental purpose.

Besides **the tactical planning**, the strategic planning is a component of the marketing planning with the main role of reducing the risk of error emergence and placement of the bank in a position that makes it possible to anticipate the change, to react to it and to be able to generate advantageous situations for the parties involved. In such a context, the strategic planning insures a natural long-term evolution for the company within the market in order to reach a more convenient position through marketing strategies conceived on basis of own resources and the tendencies manifesting in the environment where it activates. The necessity of strategic planning for the banking institution is determined by the fact that the performances obtained by the banks using marketing planning are greater than the ones registered by the other institutions. Therefore, we shall mention *the advantages* of marketing strategic planning that generally refer to:

- The rise of the managerial motivation level and a better cooperation between departments.
- The establishment of rational marketing objectives and a greater probability of accomplishment of the general objectives resulting from the banking institution's mission.
- A greater possibility to identify the subsequent evolutions of the markets, products and banking services.

[1] C. Florescu, P. Mâlcomete, N.A. Pop, *Marketing. Dicționar explicativ*, Economica Publishing House, Bucharest, 2003, p. 524.

- The capacity to face the changes and even to impose them in the subsequent activity.
- The reduction to a minimum of the irrational reactions before unanticipated situations.
- Better communication between the members of the bank management.
- They generate a systematic, perspective thinking.
- Insure a more efficient allocation of the banking institution resources depending on the market opportunities.
- Offer an optimal control and correction framework on the continuous basis of the activities.

A series of *constraints* and barriers intervene in the achievement of the marketing strategic planning, the specialist literature[2] highlighting the confusions that occur between the marketing strategies and the marketing tactics, between the marketing function and the marketing concept, between the marketing planning process and its result and, last but not least, between the marketing plan and the marketing programme. These barriers are connected to the specific organizational culture, the lack of knowledge and skills manifested by the personnel holding responsibilities in the field of marketing and even by persons in the management, to the incorrect establishment of the priority objectives etc.

Definitely, the adoption of the marketing strategic planning by the bank is a complex decision conditioned by a series of multiple ***factors***, the literature in the field[3] mentioning the following as the most important ones:

- the existence of some compatibility between the intrinsic values of the marketing planning process and the fundamental values of the organisation;
- the climate and the organisational culture;
- the level of maturity reached by the bank's evolution;
- the knowledge, understanding and correct use of the marketing concepts and instruments.

The most favourable conditions for the adoption of the marketing strategic planning are insured by those banks with a high flexibility in relation to the ones exclusively based on hierarchy, that use adequate personnel motivation mechanisms, that promote a collaboration climate and that are strongly oriented towards the market and the client satisfaction.

The experience of strategic planning show that there are some basic steps to take for its implementation at organizational level: the definition of the specific mission of the organisation; the analysis of the environment (internal and external); the formulation of the objectives; the definition of the strategies; the elaboration of the action plans (programmes); their implementation and, finally, the control, review and evaluation of the performances. We shall analyse them one by one.

a. *The mission of the organisation* is a characterization of the general mission of the banking institution related to the specific activity. If the institution is a freestanding entity, its mission shall be defined on basis of the same benchmarks taken into consideration by a big corporation. In most cases, the mission of the

[2] C. Florescu, P. Mâlcomete, N.A. Pop, *quoted work*, p. 526.

[3] Nicolae Al. Pop (coordonator), *Marketing strategic*, Economica Publishing House, Bucharest, 200, p. 189.

institution and the main objectives issued out of it remain valid for a long period of time, the exceptions rising when big changes occur in the marketing environment, changes that could not have been anticipated or when the resources of the organisation are modified significantly.

b. *The analysis of the internal and external environment* of the company means the correct identification and evaluation of the opportunities, but also of the existent and expected threats within this environment and especially within the targeted markets. The maximization of the strengths is usually pursued by combining the existent potential with a new one, resulted from a certain development modality. With regard to the internal environment, the evaluation of the own resources is intended, as well as the reference to the existent situation within the market, in order to discover the strengths and weaknesses of the organisation.

c. *The establishment of the objectives* referring to the basic aspects of the business activities is pursued within the stage that we have named the formulation of the institution's objectives, both from a quantitative and a qualitative point of view. The objectives referring to the growth of the sales volume, the rise of the market share, of the profits (quantitative objectives) but also the ones referring to innovation, reputation, image (qualitative objectives) must be realistic and must insure compatibility between different objectives.

d. *The formulation of the strategies* is a compulsory condition for accomplishing the bank's mission. Of course, it is the strategy that designates the action direction, the path to follow in order to reach one or more objectives. Regarding the market strategy, this is the result of various factors,[4] the most important being:

- Factors reflecting the general situation of the banking institution, taking into consideration its mission, objectives and strategic capacity.
- The status of each product (service) within the market.
- The status of the competition.
- The opportunities and threats existent in the marketing environment.

e. The fifth stage is the *elaboration of the action plans (programmes*), meaning a certain way of action from the marketing point of view, in general, and the mix, in particular, in order for the established objectives to be achieved. Such an action plan should indicate "what" needs to be done, "when" it should be done and "how will the actions and decisions that lead to the company's marketing strategic objectives accomplishment be coordinated."[5] Usually, the marketing programmes are developed in accordance with the allocated budgets and their time horizon is targeting the following year.

f. In the following stage, the one of the *implementation*, the marketing plans (programmes) are put into practice, the factors of the internal environment having a special role in making them become reality.

[4] N. Al. Pop (coord.), *quoted work*, p. 183.
[5] *Idem*, p. 184.

g. The last stage of the strategic planning is the *review and control* one, subsequent to which the necessary corrections will be operated within the objectives, strategies and programmes and their manner of implementation. It is good to make such changes before any crisis situation is reached.Within every banking institution, the strategic planning process is developed on many independent **organisational and decisional levels.** There are three such levels: the superior organisational level, the level of the strategic unit of activity and the functional level.

a. *The superior organisational level* is the highest planning level in any organisation. At this level, the decisions concerning the establishment of the mission and the formulation of the banking institution's objectives are taken, the structure of the activity portfolio, the determination of the development modalities, the volume and manner of allocation of the resources according to the resources. In this context, the planning at such level pursues both the financial objectives and the non-financial ones, the adopted decisions and activities developed influencing the other two organisational levels.

The objectives corresponding to this organisational level refer to the totality of activities developed by the banking institution, the general objectives establishing the performance levels that are going to be accomplished in a certain period of time. These objectives are usually formulated officially, being expressed mainly in statistic-financial terms (turnover, value and volume of sales, sales growth index, rate of profit, dividend level, value of an action, efficiency of the investments, cash flow, etc.), but also non-financial (the development of the employees' salaries, creation of opportunities regarding their career, the relations of the bank with the employees, the information and informational programme, the social stability towards the clients, the local collectivity and society in general in fields such as education, public activities, health of the community, etc.).

b. *The level of the strategic unit* of activity is a very important one, as the organisation is a complex system formed of various strategic activity units. In fact, such a strategic unity of activity is concentrated on a single product or brand, on a line of products or product mix commonly associated and that satisfy a certain market need or a group of connected needs. In order to be defined as a strategic unit of activity, it has to cumulate three characteristics: separate planning, distinct leadership and own competitors.

The planning at the level of strategic unit of activity establishes the products (services) that are to be developed, the targeted markets or market segments, but also the way the clients' requests are satisfied, in order to accomplish the general objectives of the institution. At such a level, the managers pursue the identification and exploitation of the competitive advantage within the market of the targeted market segment in order to insure the viability of the strategic unit of activity.

The objectives need to be clearly defined and distinctly established for each unit. In this case as well, the objectives are usually financial – statistic, formulated similarly to the general objectives of the organisation. Unlike the latter, the objectives of the strategic units of activity are much more specific and are limited to a part of the institution's activity.

c. The functional level of *the strategic planning* refers to the functions of the banking institution in the conditions in which the way they are accomplished influences the bank's competitiveness on the market. For each business strategic unity, the marketing functions, the financial- accounting, production, research and development and human resources functions will be individually planned. The managers will have responsibilities such as the establishment of the annual objectives, the elaboration of the strategies on the short term and the accomplishment of the strategic plans of the bank. Therefore, plans for each product will be elaborated at the level of the marketing function, plans that will include both strategic and tactic decisions. The objectives and strategies of the product plans must be in compliance with the objectives and strategies of the organisation's strategic marketing plan. According to their nature, the objectives of the marketing plan will firstly be statistic – financial ones (the turnover, the sales value, the level of the profits, etc.) and secondly, objectives specific to the marketing, quantitative (market share, relative market share, the notoriety of the bank, the degree of market coverage) or qualitative (the improvement of the institution's image or of a product (service) it offers, of a brand, etc.). In the latter case, the favourable modification of the potential clients' perceptions is observed.

In the planning process, the managers at the superior organisational level and the ones at the level of strategic unit of activity will concentrate on efficiency, while the managers from the functional level (such as the marketing managers) will focus both on the effectiveness and on the efficiency of the activity developed.

In order for the formulated objectives to facilitate the accomplishment of the banking institution's mission, it is necessary for it to fulfil a series of **criteria**, characteristics referring to: acceptability, flexibility, measurability, the motivational character, clarity, feasibility, compatibility. Although the content of these criteria results from their denomination, we shall present it briefly nevertheless.

- *Acceptability* is the requirement of the objectives to respond to the main shareholders' objectives within the bank or exterior to it, otherwise their accomplishment can be baffled.
- *Flexibility* means the possibility to adjust the level of the objective according to any unexpected changes emerged in the external or internal environment of the banking institution. Only in exceptional cases, when such a verification cannot be operated, the nature of the respective objective will be changed.
- *Measurability* means the possibility to quantify the object, so that it should clearly mention what is to be done in a specific period of time. Such a quantification leads to more chances for the objective to be accomplished, limiting at the same time the emergence of certain misunderstandings inside the banking institution, between the different organisational levels that have attributions in accomplishing the objective.
- *The motivational character* of the objective means the extent to which its level generates a high level of involvement from the bank's personnel. This implies carefully establishing the level of the objective, taking into consideration the

requirements of the environment and also the possibilities, the real resources the organisation holds.

- *Clarity* means defining the objective in order for it to be well understood by everybody holding liability in its accomplishment. The importance of the clarity is enhanced by the fact that objectives are a benchmark for the evaluation of the obtained results and they are useful for the adoption of certain measures for enhancing the performances.
- *Feasibility* means establishing the level of the objective realistically, otherwise the objective becomes non-relevant for the bank.
- *Compatibility* is that characteristic that shows that the objective has been formulated in accordance with the other objectives of the banking institution. Therefore, the possible contradictions that could occur between the objectives corresponding to the different levels of planning must be avoided.

Conclusions

As we have stated in the beginning of the article, papers related to the strategic planning issue in bank marketing emphasized the very importance of this issue related with developing viable marketing strategies.

The process of planning presume a wide range of variables to combine, different endogen and exogenous factors, and a particular sort of stages to attain.

Decisional factors have to combine into a creative way the strategic resources of the organization for assuring the competitive advantages on the market. These advantages depending on a great extent by the feedback of the modern bank customers, not only by the traditional competitive environment. This is why for a successful planning process decision makers has to overcome old perceptions and preconceptions about customers, make an efficient segmentation strategy and research in a throughout manner the banking service level of customers involvement.

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NEUROECONOMICS – INTERDISCIPLINARY SCIENCE OF INVESTIGATION OF THE HUMAN BRAIN FUNCTION AND OF THE DECISIONAL BEHAVIOUR OF THE HUMANKIND

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Abstract

Cet article aborde un domaine relativement nouveau: neuroéconomie.

La littérature montre qu'il existe une science nouvelle qui combine les résultats de recherche sur les plans économique, psychologique et sur le plan du neurosciences.

Dans le présent document nous aprecions que aussi d'autres sciences peut que contribuer a la fondation de cette nouvelle science

Les recherches sur les réponses du cerveau aux différents stimuls, par exemple, les images publicitaires, utilisent des techniques spécialisées et des dispositifs tels que l'imagerie fonctionnelle, électroencéphalogramme, etc. On peut donc déterminer quelles zones du cerveau sont activées pendant que les décisions économiques sont prises, le type d'émotions qui sont générées et les facteurs qui déterminent ou les influencent. Cela pourrait également examiner la décision de neurones.

Les résultats obtenus jusqu'a présent démontre le rôle important que les processus émotionnels ont dans la décision économique et financiere plus que les décisions rationnelles

Mots-clé: *neuroéconomie, science interdisciplinaire, neurosciences, pensée, cerveau, imagérie célébrale*

JEL Classification: D87

Introduction

The financial crisis set off in 2007 highlighted the fragility of the econometric models, meaning the models known as rational, besides the caused damage, the series of bankruptcies and the threat of a systemic world crisis, then the economic crisis and its worldwide generalization. These models mean the maximization of profits in given social, technical and economic conditions, on basis of purely rational estimations. The reality of the markets, above all the financial ones, demonstrated that in most cases, the economy based on rational models, also known as "classic economy"[1] is outdated. The Kerviel business[2], the

[1] It is admitted that the classic economy represents an economic thinking whose beginnings are in the Great Britain, and initiated with the publication of the notorious volume "Wealth of Nations" by Adam Smith. NA.

Madoff[3], Caritas[4], FNI[5] scandals, "the end of Wall Street", the new status of the two great investment banks, Goldman Sachs et Morgan Stanley, the fall of Bear Stearns and Merrill Lynch following some emergency mergers, [1] the nationalisation of the Fannie Mae, Freddie Mac funds [2] and AIG, [3] as well as the bankruptcy of Lehman Brothers [4] and Washington Mutual [5] stand as consequences of behaviours where the "economic rationalisation" seems to not have been involved.

Such situations have been, are and will be possible as a consequence of the synergetic interaction of various factors which may be classified as follows:

– factors of the given social-technical-economic environment where an important role is played by the type of society, the values and norms shared by this environment;

– the initiators of certain processes, actions and activities which may be named businesses in the economic language;

– the participants to these businesses;

– the stakeholders involved.

Therefore, the understanding and explanation of such market behaviours is difficult to achieve with econometric models whose heuristic limitation in the field is obvious. People's minds and thinking must be penetrated. The subtle mechanisms that determine people to make certain decisions in emotional, risk, panic, uncertainty, manipulation and other conditions must be decoded. Promising results have been and continue to be obtained within the new field named "neuroeconomics"[6].

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[2] The trader who caused Société Générale to lose many billions of euro as a consequence of very risky placements made with the purpose of exceeding his own performances. The judges ascertained that according to his own declarations, Jérôme Kerviel had an irrational behaviour, an emotional one and not a sick one. "I was in a virtual world" he confessed concluding "I agree that all these had no sense, no purpose, no finality and no objective for me" NA.

[3] The former president of NASDAQ, who gained trust on the market by emotionally exploiting his status in the financial world and managed to achieve the greatest financial theft in history. Over 50 billions of dollars acquired from over 40.000 persons, financial institutions, banks, companies, institutions, etc. NA.

[4] "The Caritas scheme developed by the Caritas firm in Cluj-Napoca, owned by Ioan Stoica would promise the return of an amount eight times greater than the one initially consigned after a period of only six months. Over 400.000 of consigners were thus attracted and the amount reached approx. 1 billion dollars. The scheme functioned between 1991 and 1994 when it went bankrupt, having debts of approx, 450 millions of dollars. Ioan Stoica was sentenced to seven years in prison… in the end the sentence was reduced to 18 months". Wikipedia, online encyclopaedia.

[5] National Investment Fund (FNI), company founded in by SOV Invest, functioned as a pyramid game and led to the impairment of approx. 318.000 investors.

[6] Interdisciplinary science based on knowledge in the fields of neurosciences, endocrinology, economy, psychology, sociology, cerebral imagery used in the decision making at individual and collective level, as well as the processes, actions and activities developed on basis of this knowledge. The definition belongs to the author and may be improved. Many specialists only consider the neurosciences, economics and psychology. We consider that following the involvement of a great number of persons in businesses of the above mentioned type, social processes emerge. Also, the influence of hormones on the

Review of the specialist literature concerning the subject

It is generally accepted that the first one to use the word "neuroeconomics" in the economics literature was Paul W. Glimcher in 2003[7].

Since the award of the Nobel Prize for economics in 2002, to the psychologist Daniel Kahneman[8], the great universities have developed their own multidisciplinary research laboratories and have added to their university curricula subjects such as neurosciences, neuroeconomics, neuromarketing. A rich specialty literature was published on this subject; we herein present some titles: *Neuroeconomics*[9], *Neurosciences et neuroéthique: des cerveaux libres et heureux*[10], *La neuroeconomie*[11].

The specialist literature highlights that neuroeconomics is a new science combining research results from the economics, psychology and neurosciences fields.

In this paper we advance the idea that other sciences contribute or will contribute as well to the foundation of this new science.

Within the research concerning the neuroeconomics, the responses of the human brain to different stimuli are analysed, for example the images published with the help of certain techniques and special equipment, such as the functional imagery, the electroencephalogram, etc. Thus, the brain areas activated during the economic decision taking can be determined, the type of the generated emotions, as well as the factors determining or influencing them. Therefore, the basis of the neuronal decision can be researched.

The results obtained so far demonstrate the important role of the emotional processes in the economic and financial decision taking which seem to prevail in practice against the rational decision.

The research in the field of neuroeconomics also involve serious research ethic problems on one side and ethics in use of the results of these research, as by penetrating the profound and subtle field of the thinking mechanisms, its understanding premises are created and, once understood, manipulation techniques and methods cam be imagined.

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functionality of the human brain cannot be doubted and, therefore, knowledge in endocrinology is also necessary.

[7] *Decisions, Uncertainty, and the Brain: The Science of Neuroeconomics*, by Paul W. Glimcher, MIT Press, Cambridge, Massachusetts, 2003.

[8] Nobel Prize in 2002 "for having integrated the advance of the psychology investigation in the economic science especially with regard to the human judgement and the adoption of decisions in insecure conditions", NA.

[9] Neuroeconomics, Editor in Chief: Paul W. Glimcher Hardbound, 556 pages, publication date: OCT-2008, ISBN-13: 978-0-12-374176-9, Imprint: ACADEMIC PRESS

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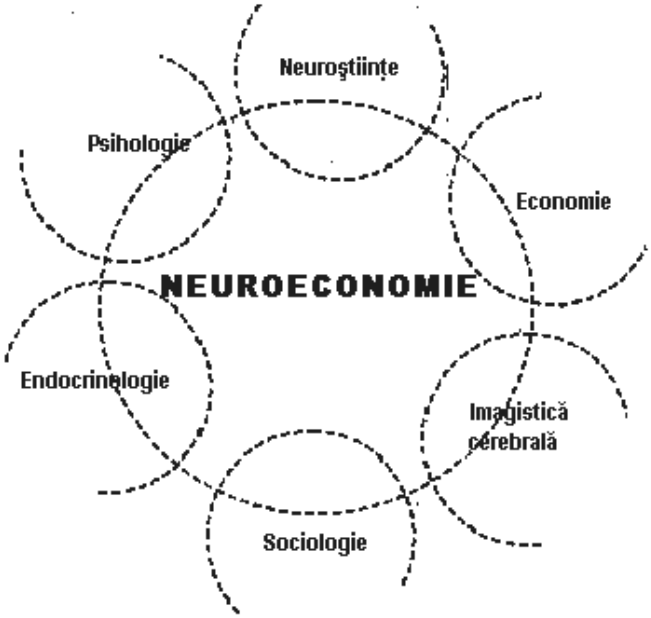


Source: Personal representation

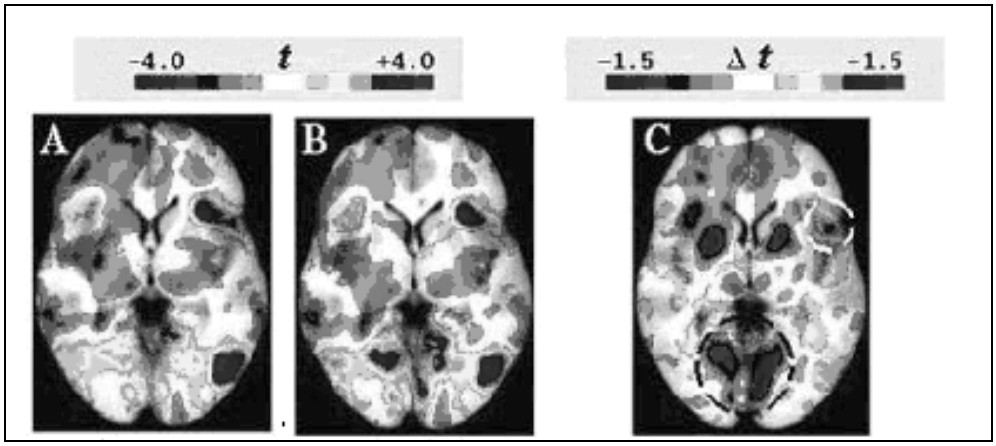
Fig. 1. *The main sciences contributing to the founding of neuroeconomics*

As it can be observed, neuroeconomics is an interdisciplinary science and it represents the geometrical locus of certain knowledge in different fields and knowledge pertaining to the new science. We must mention that none of these sciences can substitute neuroeconomics and the latter cannot substitute either one of the sciences participating to the foundation of its knowledge corpus.

We must start from the idea that the thinking mechanism and the human brain functionality are not enough known and there are still totally unknown areas, although great advancements have been made in their research recently. These will probably bring new surprises in the field of knowledge in the future. The functional imagery and investigation of the human brain have opened the way to the understanding and founding of the new science: neuroeconomics. Neurology, which is a medical science concerned with the understanding and care of the nervous system should not be confused with neuroeconomics. The latter is placed at the intersection of the behavioural economics with the neurosciences and its purpose is the understanding of the brain function in the process of taking decisions based on stimulus and information analysis coming from the exterior while using the own internal possibilities, algorithms and procedures.

With the help of the current technical investigation means, images of the brain activity can be taken while thinking, dreaming, resting, imagining or taking a decision or managing the functionality of the human body. This does not mean that

there are images of the thinking, dream, rest, imagination, decision, etc., but sequences from the functional processes of the brain subsequent to which these cerebral activities are produced. Such neuro-images can be taken in any area of the brain. The equipment used are the CAT Scan Type, DIE (Diagnostic Imaging Equipment) fRMN, etc. Also, the functional activity of the brain can be investigated with the help of the elecro-and magneto-encephalograph. The gathering and processing of the information as survey or test opinions of the subjects and their corroboration with the cerebral neuroimages and the encephalograms obtained allow a better knowledge of the cerebral mechanisms standing at the origin of the decisions regarding the choice of a satisfactory type out of a range, the link between this decision and the rational opinions of the subjects, the tracking of the emotional components and the factors inducing them, the physiologic and psychological implications of the decision process, as well as the cognitive factors, the neurofunctional factors and the ones that stimulate the long and short term memory. The obtained neuroimages shall look like the ones in figure 2. For the administration of different stimuli and for the different decisions taken, there are neuroimages obtained with different cortical areas. These allow the localization of preferences for different factors and the corroboration or even "verification" of the honesty and correctness of the surveys, as well as the discovery of tastes, preferences, motivations and finally the real decisions the investigated subject has to take.



Reaction Stimulation Variation

Source: http://www.ethique.gouv.qc.ca/index.php?option=com_docman&Itemid=7

Fig. 2. *Neuroimages reflecting the functionality of the brain in different circumstances*

Therefore, this is how precise data regarding the behaviour of the consumers who may be able to influence the strategic directions of development and evolution can be available for the satisfaction factors' suppliers of the advertising companies of the stakeholders. This is how the necessary information for developing new products is obtained, the information for developing new communication,

advertising strategies, how the neuronal activities connected to the studied satisfaction factors which allow the adaptation of the products and strategies according to the information provided by the neuronal activity with major implications upon the fabrication and operation costs are identified.

At the same time, cerebral mechanisms that influence the decision process in choosing and acquiring certain satisfaction factors that would "solve" the human needs and necessities – the latter being understood as being human requirements valued through the value-norm system specific to a social-technical-economic and cultural given space and partially or totally assumed at an individual level – are identified. In this context, "the satisfaction factors" represent "stimuli" for the human subjects and the "treatment" and "processing" of these influences they have upon the subjects' behaviours represent a complex process that can be deciphered exploring, analysing and interpreting all or as many as possible factors determining this process in all its sequences. Theoretically, the main block sequences that are the object of the research in the neuroeconomic field are "the symbolic representations of the satisfaction factors" "the current behaviour of the human subjects" "the human subjects behaviour in connection with a range of satisfaction factors" "the behaviour of the human subjects in connection with the symbolic representations of the satisfaction factors of the brand type, presented as stimuli in different advertising formulas" and "the obtainable economic or other effects".

Neuroresearch regards any satisfaction factor from the ones aimed at the material, spiritual, social cohabitation necessities of the society. In the real competitive economy there are multiple suppliers for each of the satisfaction factors. We can mention here the car, a certain type of aliment, a drink, a television brand, a perfume of another cosmetic product, a type of service, a cultural product, an electoral offer etc. For each of the satisfaction factors belonging to different or potential suppliers there can be made different presentation variants that can work as neuromarketing stimuli (symbolic representations such as presentation handouts, images, models, layouts, where possible – the products themselves, logos, brands or more complex products such as ads etc.). On basis of certain sample algorithms, survey and research volunteer groups are selected. The same conditions and stimuli are applied to all of them. The neuroeconomy and neuromarketing research highlight the current behaviour of these human subjects and their reactions towards the satisfaction factors as such and their symbolic representations as mentioned before. This is how conclusions can be drawn with regard to human being's ontology and knowledge can be obtained regarding the rational-emotional balance in the decision act at the neocortex level, which is a relatively random one, implying an amount of relativity and interchangeability. The state of the functional brain when the decision is taken must be specified, its integrity, normality and health, the quantity and type of hormones, as well as the quantity and type of psychotropic or other substances present in the circulatory system, etc. The cerebral activity is also influenced by the psychic state of the subject, as well as by the psychological and sociological context he/she is in. On the other side, the thinking, as result of the brain functionality, is a complex, auto-generative process as "thinking is being thought" and it, therefore, has individual and collective particularities. These particularities can be stimulative, inhibitive or constrictive.

That is why images alone are not enough for the interpretation of the research results of neuroeconomic nature but these results mean taking into consideration the factor complexity that determines or influences the decisional and cognitive brain processes.

Simplifying, we could say that the economics are a sum of options and actions based on econometric models, in the case of the classic economy and on neuro-options and neuro-actions in the case of neuroeconomy. The research in neuroeconomy, neuromarketing, neuromanagement, neurofinances, etc. provides unprecedented information regarding the intrinsic and profound behaviour of the consumer that transcend the information obtained through current techniques, survey, questionnaire, brainstorming, etc. and which, whether consciously or not are filtered, sometimes are censored by the subject of the research. On the other hand, even when such censorship mechanisms or filters do not manifest themselves, the research can be influenced by the training level and the perception and manifestation capacity of the subject. The neuroeconomics research allows the investigation of the subjects' reaction at different stimuli and allows the comparative analysis of their intern function at cerebral level with the reaction expressed mediately and which had passed through their rational filter.

There has been serious international neuroeconomics and especially neuromarketing research ongoing, requested by big companies such as Coca Cola, Pepsi Cola, Renault. As a consequence, reserves and even opinions against neuromarketing have emerged, as some have considered it affects the client's freedom of choice.

That is why there are certain recommendations with regard to the results of these researches and the initiation of a multidisciplinary research programme that should rejoin researchers from the field of neurosciences, social, administration sciences that should follow up the results of these researches.

At a global level, the researches advance quickly and new magnetic resonance imaging techniques are developed. Today, these allow not only a very accurate 3D photography of the brain, but also the registering and localization of the activity of its different areas in time with the help of the functional magnetic resonance imaging (fMRI). This new instruments allow the observation of the cerebral activity of the consumers when they are subjects to different stimuli for the analysis of the reactions triggered by the satisfaction factors or by the advertising stimuli and which can set off the pleasure of the consumer, before making great financial efforts to develop different products. We can, therefore, see a new important direction in the resource saving.

Internationally, such cognitive methods have already entered the range of methods used by the best-known brands Unilever, Nestlé, Procter & Gamble, DaimlerChrysler, LVMH and L'Oréal, etc. for the testing, adaptation and optimisation of their products, as well as of the advertising campaigns.[12]

[12] Business Week, 8 October, 2007 "This is your brain on Advertising".

Within a won project that is still ongoing within the Partnership programme[13] there are researches aiming at neuromarketing aspects in Romania, a social-technical and economic space with specific particularities in comparison to the researches made in the developed countries where such researches have been accomplished so far. The behavioural paradigm of the consumers from an emergent space such as the one in Romania, with excessive polarizations of the purchase power, is expected to be different from the "established" spaces regarding the balance of the consumers having a medium purchase power. Also, the mentalities of human subjects who have lived 50 years under a centralised and planned system are expected to influence the purchase decision.

In figure 3, we present one of the investigation means used in the field of neuroeconomy, the CAT scanner; in figure 4 there is the photography of a combined MRI- Encephalograph that offers the possibility of combined simultaneous recordings MRI (magnetic resonance) and EEG (electroencephalogram). In figure 3, as you can see, the subject is wearing an EEG helmet that allows the simultaneous determination of the cerebral activity registered with the help of the helmet and the MRI. This combination allows the simultaneous provision of very precise spatial and temporal information regarding the cerebral activity.

Source: http://www.virtualcancercentre.com/healthinvestigations.asp?sid=2

Fig. 3. *CAT scanner*

[13] Interdisciplinary researches regarding the neuromarketing and the subjects' behaviour in relation to the branding, advertising and satisfaction factors, 92125/1.10.2008, project financed by ANCS, project coordinator S.C. SETKO IMPEX SRL, director Corbu Ion.

Source: Inauguration du Brain Behaviour Laboratory 12 mars 2009 Photos: Dorothée Baumann

Fig. 4. *MRI-electroencephalograph combination*

The emergence and development of the neuroeconomy and the complementary sciences, the neuromarketing, neuromanagement, neurofinances, etc. confirm what the philosopher Thomas Samuel Kuhn said [6] with regard to the leap evolution of scientific knowledge. The scientific knowledge has stability periods dominated by a scientific paradigm, a set of values, models, beliefs, procedures and techniques accepted and used generally by the members of the scientific community. Along the entire stability period, the theory, seen as a hypothetic-deductive corpus of non-contradictory correlated assertions that are interrelated one with the other so that none is left aside, is developed by finding solutions to the problems connected to the evolution of the field in relation to the accepted paradigm. At the same time, as consequence of the impossibility to solve all the issues and the impossibility to prevent the emergence of new ones outside the existent paradigm, anomalies and contradictions of the paradigm emerge and accumulate. Solving them often leads to the emergence of a new paradigm that satisfies and finds solutions to many problems. Therefore, we think that the neuroeconomy paradigm has developed and tends to replace the classic economy paradigm.

In a recent logics course, the following is ascertained: "For over 23 centuries-taking into consideration the space and time of the European culture beginning with the «Greek miracle»– there are certain people who have asked themselves: **how do we think**? We will never thought be able to pretend a precise, full and reasonable answer to the question **what do we think**? I do not think it would be of great importance to answer the second question as, in a really civilised world, the common sense impulses us to admit that **thoughts are free** – every person has the right to think **whatever** he/she wants and can.

And in the end, history or hazard has selected and sanctioned – positively or negatively – what still remained from what has been and is thought. There are people who have asked themselves why we are thinking what we are thinking. What makes

the difference between those who ask themselves how? And the ones who struggle to find out why? Is that the first ones are the logicians and mathematicians and the other ones can be philosophers, psychologists, sociologists, historians, jurists etc." The economists, psychologists, sociologists specialised in neurosciences, endocrinology and the specialists in neoro-imaging are trying hard to get closer to the core of this miraculous process of the human being that is the thinking, starting with the necessity of understanding the mechanisms of economic thinking.

Conclusions

The study of the cerebral activity while the decisional activity and mainly during the analysis and elaboration of the economic decision highlighted the fact that these decisions are closely related with sensations and emotions.

Neuroeconomics, as emergent science, is ascending and enlarging the interest field of experimental and behavioural economics and will change the economy known as classic.

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BUSINESS CONTINUITY, A CONSTANT ISSUE FOR MANAGERS AND AUDITORS

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Abstract

The crisis of credits and its effects upon all companies, make the assumption of activity continuity be not anymore a pre-established conclusion. The major cash issues, affecting the banks, insurance companies, retailers, car manufacturers and all companies regardless of their activity, prove that keeping the business continuity, i.e. having enough funds for compliance with an obligation to be able to reach maturity at least twelve months after the balance sheet date is now a real problem for many companies.

Likewise, we are paying attention to the topic and to the increasing number of insolvencies at the national, European and international levels.

Key-words: *insolvency, principle of business continuity, financial statements, auditor, manager*

JEL Classification: E16, M41, M42

Introduction

The article herein presents the increase of the number of the insolvencies as derived from the economic crisis, for the 2007-2009 interval of tine, for various fields. Similarly, we have considered that this crisis effect called ‚insolvency' makes questionable the most important principle of assessing the assets, liabilities and equity in the financial statements and the principles of business continuity. Therefore, it seemed necessary to synthetically present the current regulations relating to the continuity principle in both the accounting and financial auditing. The bottom line is that the evaluation of the continuity hypothesis is a responsibility of the managers.

Literature review

The literature includes many debates focused on the business continuity, mainly on the role that an auditor plays here. Instruments held by the companies to evaluate to what extent their activity may continue have been examined. The same was done for the effects of the financial situations that might occur in case of violating the fundamental principle of the business continuity. And if the existent regulations provide enough clues for the financial auditor in looking at the business continuity issue. Academia and others (CKK Lam, RELaSalle and M. Miller) have

thought about, among other things, whether the financial, non-financial factors or a combination of the two should prevail in the issuing an auditing report that highlights business continuity issues.

We have also questioned whether the auditor should have an active or passive role in testing the principle of continuity or examining the financial auditor liability. Moreover, the process of thinking about the business continuity was reviewed by various authors from different perspectives, in order to identify the key factors in the auditor's decision-making process.

The evolution of the number of insolvencies for 2007-2009

The information published on the National Trade Register Office website has been used in drafting table 1, the evolution of the bankruptcies number per sphere of activity.

By the generic name of ‚bankruptcies', it is understood all registered cases of insolvency, namely: companies that have initiated the bankruptcy procedure, in the judiciary reorganization and companies for which the bankruptcy proceedings were closed due to lack of assets.

Table 1

Distribution of the insolvency cases, per activity sectors, for 2007-2009

	2007		2008		2009	
Activity sector	**Total insolvencies**	**% total insolvencies**	**Total insolvencies**	**% total insolvencies**	**Total insolvencies**	**% total insolvencies**
Retail trade	2,371	16.81	3,553	24.53	3,684	20.00
Wholesale trade and distribution	3,431	24.33	2,932	20.24	3,501	19.01
Construction	1,066	7.56	1,666	11.50	2,497	13.56
Transport	723	5.13	811	5.60	1,237	6.72
Hotels and restaurants	520	3.69	782	5.40	1.022	5.55
Other services meant for companies	625	4.43	718	4.96	979	5.31
Manufacture of wood and wood products	810	5.74	793	5.48	927	5.03
Manufacture of textiles, clothing and footwear	731	5.18	705	4.87	762	4.14
Agriculture, forestry, hunting and fishing	1,093	7.75	575	3.97	934	5.07
Industry of food and beverages	1,064	7.54	627	4.33	573	3.11
Metallurgical industry	338	2.40	38	0.26	496	2.69

Manufacture of chemicals and chemical products	302	2.14	158	1.09	223	1.21
Estate transactions	121	0.86	159	1.10	281	1.53
Drainage, garbage removal, sanitation	185	1.31	163	1.13	206	1.12
Other personal service activities	86	0.61	114	0.79	204	1.11
Recreational, cultural and sports activities	115	0.82	111	0.77	157	0.85
Industry of machinery and equipment	136	0.96	94	0.65	166	0.90
IT	96	0.68	132	0.91	172	0.93
Financial intermediation	83	0.59	78	0.54	139	0.75
Postal and telecommunications	92	0.65	97	0.67	129	0.70
Extractive industry	45	0.32	131	0.90	54	0.29
Health and social assistance	26	0.18	19	0.13	47	0.26
Production and supply of electricity and heat, water and gas	45	0.32	27	0.19	31	0.17
TOTAL	**14,104**	**100.00**	**14,483**	**100.00**	**18,421**	**100**

Source: The National Trade Register Office

It is noticed that the number of insolvency cases increased from 14.104 in 2007 to 14.483 in 2008 and, in 2009, reached 18.421.

The economic crisis deepening in Romania, the lack of effective measures for economic recovery to be promoted by the government authorities and the funding resources tightening will lead to a more severe payment behaviour of companies.

Towards the end of 2007, a number of 14,104 companies, as recorded, were found in various stages of insolvency proceedings, of which 188 were in the judiciary reorganization, 513 closed for reorganization or bankruptcy proceedings due to lack of assets and the remaining 13,403 already in bankruptcy.

As seen above, for 2007, the first positions among all bankruptcies are occupied by the commercial companies. The commercial sector including retail, wholesale trade and distribution has 41.4% of all cases of bankruptcy at the end of 2007, higher than 2006, when they accounted for 36.8% of all bankruptcies. This demonstrates that the small retailers manage harder and harder to compete with the major retail officers, who extend their networks each year, in smaller and the smallest towns.

In 2007 only, the big national and international retailer have opened 152 stores.

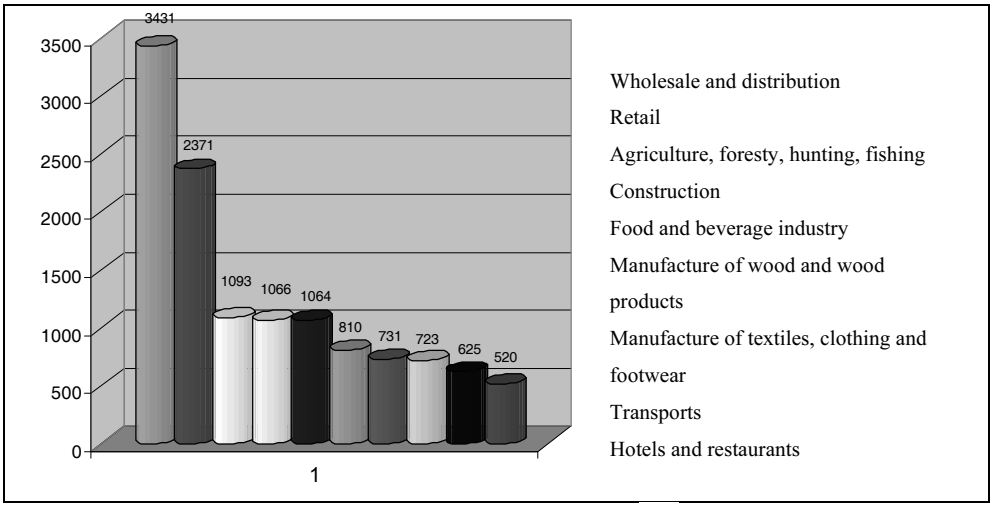
For example, the number of hipermarkets increase with 29 stores, as a consequence of the fact that Carrefour, Real, Auchan, Kaufland and the national

network PiC opened new units. In 2007 Carrefour bought a new supermarket chain, Artima, having a number of 21 new units, which will allow it to bring on the Romanian retail market a new form of stores retail.

The number of supermarket rose by 36 units, but the discount type stores developed the most, opening other 63 units.

The third and the forth positions are occupied by agriculture and food industry, which are closely connected. The low capacity in agriculture, the lack of resources, the lack of a clear strategy in agriculture, and the delay of the reforms in this domain turn a favorable sector into an insolvent one. Although this sector rose spectacularly, is still one of the most critical. The constructions sector in Romania had the most rapid increase among all the European Countries, 35% and continues to grow in 2008.

Compared with 2006, the highest increase in bankruptcies share is recorded by the wholesale and distribution, with 6% more in 2007. An increasing number of bankruptcies is seen in construction (2%) or transportation (1.5%). A significant share of total bankruptcies with total insolvency is in agriculture, with a decline of 5.5% and industry food, with 3.3%.



Source: Own processing based on the data published by ONRC

Fig. 1. *Top 10 industries in terms of number of bankruptcies recorded in 2007*

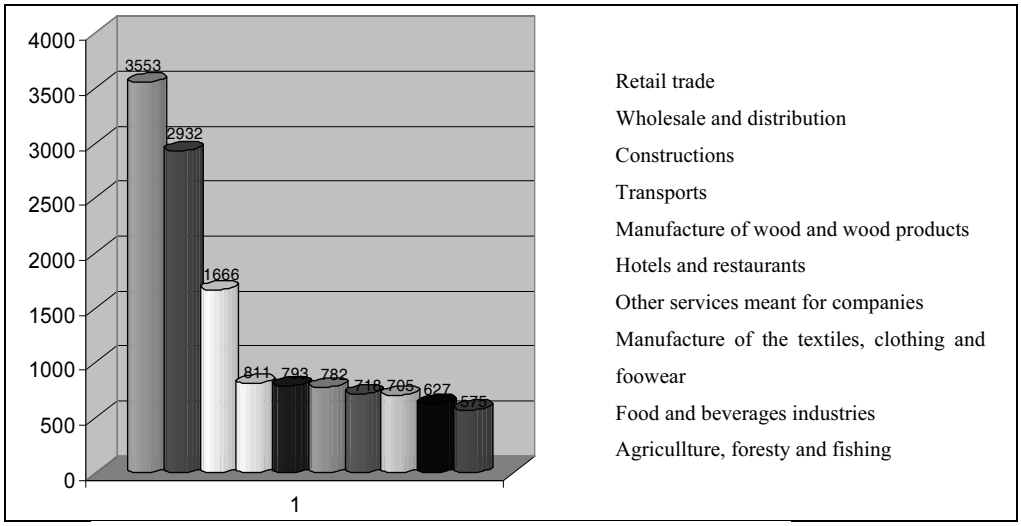
At the end of 2008, a total of 14,483 companies were in various stages of insolvency proceedings. Among them, 6,022 companies were in general insolvency procedure, 4,771 in the simplified insolvency procedure, 3,672 in bankruptcy and 18 in judiciary reorganization. The total insolvencies then shows only a slight increase (+2.7%) compared to the situation at the end of 2007 (14,104 companies in insolvency).

For 2008, the distribution of the bankruptcies per activity field, shows a change in the Top 5, which showed sectors that felt for the first time the "shock wave" of the financial crisis, leading to the 2009 bankruptcy.

Although the first two positions are held by trade companies, as previously, it is noteworthy noticing the reversal between wholesale and retail trade (located in the second position in 2007). Also, the third position of the construction sector and location in Top 5 of the transport and furniture industry, the number of insolvencies of these areas exceeds the one in agriculture and food industry, these sectors were among the first five at the end of 2007, as total bankruptcies.

Another important development is represented by the spacing in the ranking of the first three sectors generating insolvencies (retail trade, distribution and construction), where these have together a share for over 56% of the total bankruptcy in 2008, compared to 49% in 2007.

The analysis of the sector evolution in the total number of the bankruptcies in 2008 over the previous year shows significant increases in the extractive industry (+191%), retail trade (+49%), construction (+56%), hotels and restaurants (+50%), IT (+37%) and real estate transactions (+31%).



Source: Personal processing, based on the ONRC published data

Fig. 2. *Top 10 of the industries in terms of number of bankruptcies in 2008*

The economic crisis effects are still strongly felt by most companies, as seen in the sales decline, a limited access to finance and, consequently, a considerable decrease of liquidity reflected in a surging number of bankruptcies during the last months. As a matter of fact, the first six months of 2009 feature a 7.6% economic decline, 25% a decrease in payments by debit instruments (promissory notes, checks, etc.), over 50% increase in unemployment; hence, the insolvency procedure, regulated by Law 85/2006, has become more and more known and used by the economic agencies in Romania, where the number of bankruptcies recorded in the first half of 2009 exceeded 10,000 cases.

In 2009, a total of 18,421 companies were in various stages of insolvency proceedings. Among them, 8,950 companies were in general insolvency procedure,

4,890 in simplified procedure of insolvency, 4,543 in bankruptcy and 38 in judiciary reorganization.

Out of these, most of insolvencies were for SRL's (95%), followed by SA's (3%), the remaining 2% go to others (SCS, AF, NAS, RA, etc.).

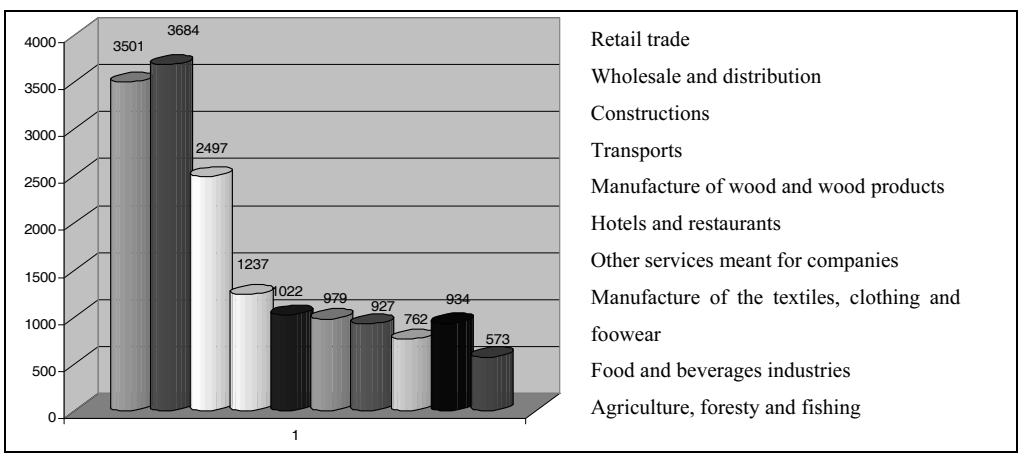
The ailing of the economic activity towards the end of 2008 continued in 2009 and made the top of four ranking positions keep their seats, while the trade (retail or wholesale and distribution), construction and transportation remain the most affected.

However, it should be mentioned the rising in the rankings by one position of the hotels and restaurants sector and the business services activities, while the wood industry fell two positions, ending on the seventh at the end of June.

At the end of 2008, there is a strong concentration of the number of insolvencies in the first three sectors (retail trade, distribution and construction), which is over 50% of the total number of bankruptcies for early 2009.

According to the data published by the National Institute of Statistics in 2009, the volume of turnover for retail trade (except for motor vehicles and motorcycles trade), decreased by 9.7%, compared to the same period of the last year, making this area to remain the hardest touched by insolvencies.

Analysis of this field evolution shares changes in the total bankruptcies in 2009 versus the end of 2008 and reveals no significant changes, as expected; on the contrary, it maintained a relatively stable situation, with small increases in the most affected industries: construction (+1.22%), metallurgy (+2.26%). In these circumstances, the retail trade recorded the largest decrease of the total bankruptcies (-4%), followed by food and beverage industry, agriculture, extractive industry, etc. but with insignificant reductions.



Source: Personal processing based on ONRC data published

Fig. 3. *Top 10 of the industries in terms of number of bankruptcies in 2009*

Regulations about the activity continuity

It can be noticed that the number of bankruptcies has increased and will likely increase, therefore we will focus on the continuity principle in preparing the financial statements as the manager and the auditor's responsibilities.

Table 2

Current regulations regarding the continuity activity principle

Regulatory Framework	Regulation for financial reporting	Regulation for audit
International	- Conceptual framework for preparing and presenting the financial statements (IASB), paragraph 23 - IAS 1; Presentation of Financial Statements; paragraph 25 to 26	ISA 570 'The principle of the activity continuity' (IAASB)
European	The fourth Directive of the Council no. 78/660/EEC Section 7 'Assessment Rules', Art. 31	ISA 570 'The principle of the activity continuity' Regulations/guidelines issued by the professional bodies in the Member States
National	Order of the Ministry of the Public Finance no. 3055/2009 for the approval of accounting regulations with European directives, Section 7 'General Accounting Principles', Article 38	Chamber of the Financial Auditors of Romania, The minimum standards of auditing, Section B2, ,Review of the principle of continuity', Section F'Audit approach'

Source: Țurlea Eugene, Mihaela Mocanu, *Considerations on the responsibility of the directors and auditors in assessing the principle of continuity*, 'Financial Audit Magazine', no. 3/2010.

According to the **Conceptual framework,** the financial statements are prepared; they usually begin to **presume** that a company will also continue its work in the future. Thus, it is assumed that the company has no intention or need to eliminate or significantly reduce its activity, whether such intention or need exists; hence, the financial statements have to be prepared on a different basis of evaluation, which basis will be presented below.

In IAS 1 **Presentation of the Financial Statements** in the subsection **Accounting policies**; in the paragraphs 23 to 24 there is a reference to the activity continuity as:

– In preparing the financial statements, the **management** must evaluate the company's ability to continue the activity. The financial statements are prepared on a continuity activity basis, unless management either intends to liquidate the company or to stop the activity, or has no realistic alternative then proceeding so. While doing the assessment, the management is aware of **significant uncertainties** related to events or conditions that may cause the significant doubt on the ability of the company to continue the activity, then those uncertainties should be pointed out.

When the financial statements are not prepared on a continuity of activity, this should be mentioned, together with the financial statements being drafted and the reason why the company was not able to continue its activity.

– When the management believes that the activity continuity basis is appropriate, all the information available for the foreseeable future will be taken into account; the interval must be at least twelve months from the balance sheet date, without being limited to this time. The importance depends on each case. When the company had a history of profitable activity and easy access to the financial resources it could be concluded that the 'going concern' basis was appropriate, without a detailed analysis. For other cases, the management may need to consider a range of factors that affect the current and expected profitability, the debt repayment schedules and the potential sources of refinancing, before being sure that the activity continuity basis is appropriate.

At the European level, this basic accounting principle is regulated by the Fourth Directive of the Council 78/660/EEC (with subsequent amendments). In the section 7 'Valuation rules' in Article 31, line 1, paragraph a), states that the Member States **will ensure** that the financial statements are evaluated according to six general principles, where the first one is that the entity must and will continue its activity.

The national accounting rules specifying that the evidence presented in the annual financial statements are assessed in accordance with the general accounting principles. These regulations were formulated and adopted the following principles: the principle of the activity continuity, the precautionary principle, the principle of the separate assessment of assets and liabilities, inviolable principle, the principle of the permanent methods, the principle of the independence of the accounting exercise, principle of netting, the principle of the economic prevalence, besides the judiciary, the principle of the significance threshold.

Upon applying the principle of the activity continuity, it turn many accounting practices legit, such as cutting the life of the company in the financial and accounting exercises, in order to determine the financial position, the financial changes and the results, via the historical cost and the fair value (of using) in the valuation of assets and liabilities, expenditures and incomes, demarcation of expenditures and income in time, separation of assets and the fixed assets, each structure with a different substitution regime, the long-term depreciation of assets, differentiation of the debts in the long-term and short-term debts, awareness of the accounting at the inflationary factor.

The financial audit regulations about the principle of the continuity activity are wider than the accounting provisions mentioned and contain **details** about the objectives and audit procedures in assessing the principle of the continuity activity.

Internationally, the International Auditing and Assurance (IAASB) has issued the International Standard on Auditing ISA 570 'The principle of the continuity activity', which, after a brief overview of this principle, describes its responsibilities in its testing and establishes requirements upon the financial auditor request.

In Europe, some Member States have acceded to the International Standards on Auditing as the principle of the continuity activity testing by the financial auditor; ISA 570 is the standard in use today.

At the national level, the Chamber of the Financial Auditors of Romania set out in Section **B2**, 'Review of the principle of continuity' and in section **F** 'Audit approach' of the Minimum standards for the audit, so the auditor will be able to test whether the principle of the continuity activity is an appropriate basis for the financial statements of the audited company.

The Standard of the Audit ISA 570 'The principle of the continuity activity' stresses that the principle of the continuity activity is a fundamental principle in preparing the financial statements, the management has the responsibility to evaluate the entity's ability to continue its activity even if it does not provide an explicit responsibility in the financial reporting.

The Standard of the Audit ISA 570 ,The principle of the continuity activity' refers to the auditor's responsibility, saying that it must gather sufficient appropriate evidence regarding the appropriateness of management using the principle of continuity, in preparing and presenting the financial statements. In addition, the auditor should conclude whether there is a significant uncertainty regarding to the entity's ability to continue the activity. 'The auditor cannot predict the future events or conditions that may cause the termination of an entity activity.' [1]

Any judgment about the future is based on the information available at the time when the judgment is expressed. The subsequent events can contradict a judgment, which was reasonable at the time it was expressed.

The size and the complexity of the entity, nature and status of its activity and the degree to which it is affected by the external factors influence the development of the events or conditions evolution.

Conclusion

The deepening of the economic crisis in Romania, the lack of the real economic recovery measures promoted by governments and funding resources restriction led to a severe deterioration of the payment behaviour of the companies; hence, from 14,104 bankrupt units in 2007 went up to 18,421 in 2009.

The bankruptcies analysis per activity sector, we notice that the first three positions are taken by: wholesale trade, retail trade and construction, which means a lower consumption and consumer liquidity.

The assumption of the activity continuity is found both in the national and international rules, as well as the fundamental principles for drafting the financial statements.

Upon analyzing the international, European and national standards that refer to the principle of continuity, we see the **requirement** and **responsibility of the management** in assessing the company's ability to continue the work for a

[1] The International Standard of Audit ISA 570 „The principle of the activity continuity" paragraph no. 10

12-month period starting from the balance sheet date, in order to reflect the significant uncertainties related to continuity, to present the information the financial statements are based on, and why the company cannot continue its activity.

After analysing the international, European and national audit standards besides the principle of continuity, we see that **the auditor should gather sufficient appropriate** evidence regarding the appropriateness of management via the principle of continuity, in preparing and presenting the financial statements. In addition, the auditor should conclude whether there is a significant uncertainty regarding the entity's ability to continue the activity.

Therefore, the absence of any reference to the uncertainty of the activity continuity in the audit report can be viewed as a guarantee of the entity's ability to do so.

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V. ECONOMIC ANALYSIS AND THE ECONOMIC FINANCIAL PROGNOSIS

CURRENCIES ANALYSIS BASED ON STABILITY USING APRIORI-ALGORITHM[1]

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Abstract

This paper presents the stability of currency that is more stable with respect to other currencies. Various currencies are studied and graphs are plotted with reference to dates on a yearly basis and analyze its patterns. The stability of a currency was determined by using Apriori-algorithm. This algorithm maneuver in continues manner unless the desired results are achieved.

Key-words: *currency conversion, data mining, decision graph*

JEL Classification: G17

1. Introduction

The stability of currency plays very important role in the economical upraise of a nation and for the investors in particular. Some one said correctly that stability of currency behaves like oxygen to the economical conditions of the country to survive. This is very important for the World economical growth which will boost up the human needs and serve as catalyst to economize and yield positive activities to support economical market as the present tsunami is expected to last for many years more. Therefore, other line of actions must be adopted to serve as a cushion for all countries economy and the governments got enough passage to handle their economical situation. Minor efforts will count a lot in this regard. This research was based on the insight of currency stability [1, 2].

[1] Paper presented at the Annual International Conference in Economics, Informatics and Communications Field, *Spiru Haret* University, Campulung Muscel, 21-22 May 2010.

The Apriori- Algorithm determines the selection of most frequent occurring currency values in a whole year is represented by a universal (U) set. The selection from the whole set of various currencies is considered and represented by (S). In this set most frequently occurring currency with specific dates are noted down and separated from the universal set to yield the result (X) sets. The set S is further chosen with specific entries to select again more frequent entries in set S. This process continues unless desired results are achieved [3-6].

In this paper, section 2 provides the detailed explanation of exchange rates. In section 3 the methodology is discussed in detail. The simulations are carried out along with results on the algorithm in section 4. Section 5 provides conclusion and the next section communicate future work.

2. **Exchange rates**

An exchange rate is the rate at which one currency can be exchanged for another. In other words, it is the value of another country's currency compared to that of other. Let suppose if traveling to Egypt, the exchange rate for USD 1.00 is equivalent to EGP 5.50, this means that for every U.S. dollar, a five and a half Egyptian pounds is required. Theoretically, identical assets should sell at the same price in different countries, because the exchange rate must maintain the inherent value of one currency against the others [7].

2.1. *Fixed rates*

There are two ways the price of a currency can be determined against another. A fixed, or pegged, rate is a rate the government (central bank) sets and maintains as the official exchange rate. A set price will be determined against a major world currency (usually the U.S. dollar, but also other major currencies such as euro, yen, pound or a basket of currencies). In order to maintain the local exchange rate, the central bank buys and sells its own currency on the foreign exchange market in return for the currency to which it is pegged [8].

2.2. *Floating rates*

Unlike the fixed rate, a floating exchange rate is determined by the private market through supply and demand. A floating rate is often termed "self-correcting", as any differences in supply and demand will automatically be corrected in the market. This simplified model: if demand for a currency is low, its value will be less (decrease), thus making imported goods more expensive and thus stimulating demand for local goods and services. This in return will generate more jobs, and hence an auto-correction would occur in the market. A floating exchange rate is constantly changing [9].

Moreover, no currency is wholly fixed or floating. In a fixed regime, market pressures can also influence changes in the exchange rate. When a local currency does reflect its true value against its pegged currency, a "black market" which is more reflective of actual supply and demand may develop. A central bank is often forced to revalue/devalue the official rate so that the rate is in line with the

unofficial one, thereby halting the activity of the black market. Similarly, in a floating regime, the central bank may also intervene when it is necessary to ensure stability and to avoid inflation; however, it is less often that the central bank interferes in floating regime [10, 11].

3. **Methodology**

The methodology that was adopting having the following main steps:

a) Judge the stability of currency by using Apriori-Algorithm.

b) Choose data mining tools and selection of data mining techniques to visualize the decision graph about stability of currency.

c) Testing of algorithm on real market data for authenticity.

Based on the above three mentioned steps further strategies are adopted [12].

3.1. *Theoretical findings*

Our findings are based on the following data mining techniques:

a) Applying Apriori-Algorithm to currency data to check stability.

b) Testing on Apriori on real data of bank of Canada.

After achieve the results the required graphs are plotted [13, 14].

3.2. *Currency apriori pseudo code*

The proposed algorithm pseudo codes are as follows:

Currency Apriori (Cur, Year) {***input for selection of set***}
$L_1 \leftarrow$ {***Rise in transaction in the Year "Y" Set 2008***}
k$\leftarrow$ 2 {***loop factor***}
While $L_{k-1} \neq \emptyset$
$C_k \leftarrow$*Generate* (L_{k-1}) {***stability checks***}
for exchange rates t ε *C*
$C_t \leftarrow$ Subset (C_k, *t*) {***subset selection***}
for candidates c ε Ct
count [c]$\leftarrow$ *count[c]+1*
$L_k \leftarrow$ {c ε C_k | count [c] $\geq \varepsilon$} {***final selection***}
k$\leftarrow$ k+1
return U_k L_k {***return of results***}

Codes are implemented and test for each stage.

4. **Experimental analysis and findings**

Following are the main approaches in this regard:

4.1. *Description of figure 1*

Stability and secure business dependents upon the decreases in percent loss. Figure 1 depicts about the Great Britain Pound (GBP) verses date of the year (i.e. 365 days of year 2008). The curves in the graph show that how stable is the currency. This can be viewed from the graph given below. The variation in graph absolutely shows profits and loses yearly wise. But we are stressing upon the needs of small investors to establish a low scale business with low risk factors [14]. In this

graph, the graph goes down especially in the months of June, July, September and October below 0.5 which shows instability of GBP. The probabilistic instability per year is 4/12 = 0.333 which is 33% unstable months of the whole year 2008. So investors can not rely on GBP totally.

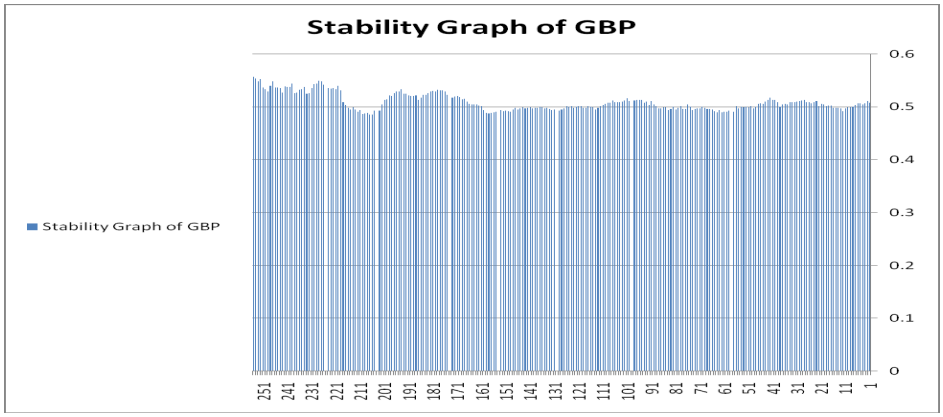

Fig. 1. *Graph of Stability of GBP in correspondence with Canadian Dollar (Year 2008)*

4.2. *Description of figure 2*

Figure 2 shows the stability of US Dollar with time span of year 2008. This graph shows instability in the last months of year especially in the months of October, November and December. These changes are abrupt so investors can not totally rely on the businesses of the US dollar. A bit hesitation is felt due to its abrupt changes by investors. So the probabilistic change is 3/12 = 0.25 which is 25% unstable months in the whole year 2008.

4.3. *Description of figure 3*

Figure 3 shows the Euro verses date of the year 2008. The curves in the graph show the stability in currency. More the variation in the currency more the instable is the currency. The implementation of Apriori-Algorithm in the scenario international currency gives more strengthened results. It is observed from the graph as it goes below line 0.6 in Figure 2. This situation reaches in the month of December but that is negligible with respect to the whole span of the year. Its ratio 1/12 = 0.083, which is about 8.3% unstable in whole year 2008. As shown in Table 2

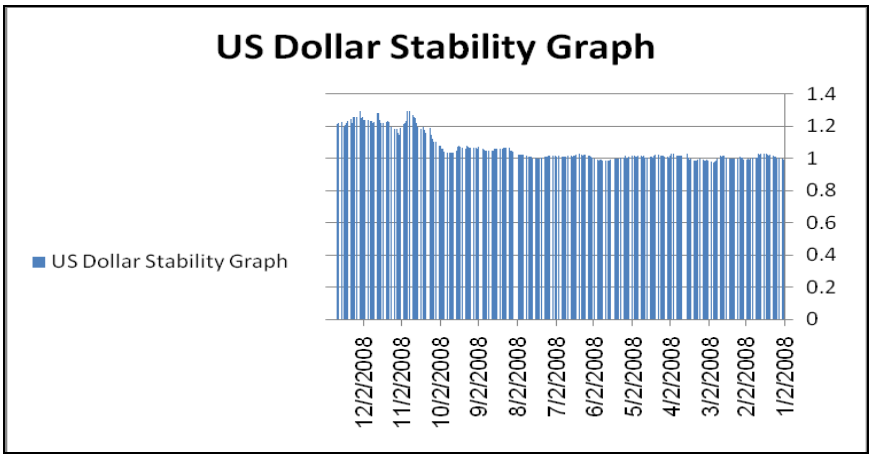

Fig. 2. *US Dollar Stability graph with perspective of Canadian dollar*

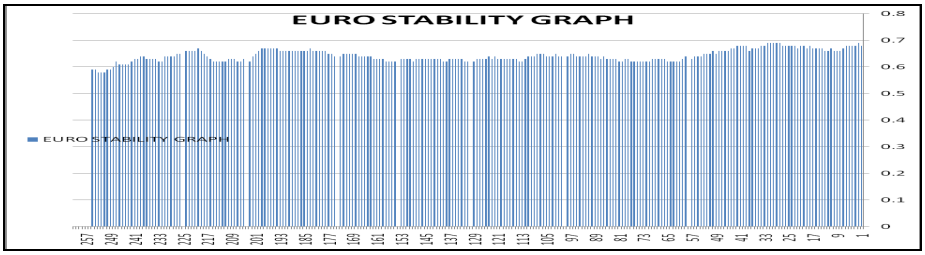

Fig. 3. *Euro Stability graph with perspective of Canadian dollar*

Table 1

Percent Probabilistic Stability

Currency	GBP	USD	EURO
Percent (%) Probabilistic Stability	100 - 33 = 67.0%	100 - 25 = 75.0%	100 - 8.33 = 91.27 %

5. **Conclusion**

It is concluded that Euro is more stable as can be observed from the Figures 1-3. This fact was also verified through the implementation of Apriori-Algorithm as shown in Table 1. In the case study of conversion, the US Dollar and GBP were not proved to be stable. Further, Table 1 depicts the percent probabilistic stability which is 91.27% in case of Euro. This proves that those who invest in Euro for currency conversion businesses, no matters small or big investors they will not only on the safe side but will have good returns on their investments.

6. **Future work**

The algorithm presented in this paper can be implemented in software in any desired tools i.e. VB.Net & Oracle or ASP.Net & Microsoft SQL Server. This will enhance our algorithm with respect to establish a Micro Currency Exchange data ware house.

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MACROECONOMETRIC MODEL FOR SLOVENIA

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Abstract

Slovenia entered the European Union in 2004 and was the first country of the ten new members to enter the Euro Area in 2007. As Slovenia was part of Communist Yugoslavia until 1991, the economic history of this country to some extent started after that date. This provides difficulties for attempts to discover empirical regularities to be exploited for forecasting and policy analysis. Nevertheless, in this paper, we describe a macroeconometric model for Slovenia, called SLOPOL6. It was estimated using most recent quarterly data and rests on up-to-date econometric methodology, including stationarity and cointegration analysis. The model has already been used successfully for simulations of alternative monetary and fiscal policy measures[1].

Key-words: *simulation and optimization experiments, policy analysis, econometric methodology*

JEL Classification: E24, E60

1. Introduction

May 1, 2004, Slovenia joined the European Union together with nine other countries, seven of which from Central and Eastern Europe. Although trade barriers were removed to a large extent already during the accession negotiations, participation in the EU is further fostering economic integration of the new member states with each others and with incumbent Union members. One important integration aspect concerns the monetary policy framework. From the first day of membership onwards, the new member countries have been participating in the European Economic and Monetary Union (EMU), albeit with a derogation. Being EMU members does not imply introducing the euro immediately. In order to have the right to adopt the common currency, the new EU member states are required to fulfill the convergence criteria set out in the Maastricht Treaty. In May 2006, both the European Commission and the European Central Bank decided that Slovenia fulfilled all relevant criteria. Thus, on 1 January 2007, Slovenia was the first of the new members to enter the Euro Area.

[1] Paper presented at the Annual International Conference in Economics, Informatics and Communications Field, *Spiru Haret* University, Campulung Muscel, 21-22 May 2010.

This is remarkable as Slovenia so far is the only former Communist country having the euro as legal tender. Apart from monetary policy, an evaluation of fiscal policy is important for membership in the EMU as the country has to fulfill the requirements of the Stability and Growth Pact of the EMU.

As for other countries, it is desirable to have a tool for forecasting macroeconomic developments over the short and medium run and for evaluating alternative policies aiming at influencing the business cycle, at stabilizing unemployment and inflation and at enhancing growth and employment in Slovenia. A macroeconomic model is such a tool, especially if it is an econometric model based on sound theoretical foundations and estimated with real data of the economy under consideration. To build such a model, it is of crucial importance to have available a data base with sufficiently long time series to provide reliable estimates. For Slovenia, this provides a major problem as this country was part of Communist Yugoslavia until 1991 when it became an independent state and then was transformed into a parliamentary democracy with a market economy. Data before 1991 are based on Communist accounting rules and are not comparable to those of later years. Moreover, many data (especially those from national income accounting) are of dubious quality even for the first years of the transition process. Therefore estimations of behavioral equations for Slovenian aggregates have to rest on data starting around 1995. In order to get estimations with sufficient degrees of freedom, an econometric model for Slovenia has to use quarterly or – where available – monthly or higher-frequency data. Here we describe a quarterly macroeconometric model called SLOPOL6, which is a revised and updated version of a series of models we built since the late 1990s, with increasing degrees of sophistication and reliability. These models were used for various purposes of forecasting and especially evaluating alternative policies, where simulation and optimization experiments were conducted to arrive at politically relevant insights and policy recommendations (see, e.g., Neck et al. 2004).

2. **Variables of the econometric model slopol6**

SLOPOL6 (SLOvenian economic POLicy model, version no. 6) is a medium-sized macroeconometric model of the Slovenian economy. In its current version, it consists of 57 equations of which 21 are behavioral equations and 36 are identities. The former were estimated by ordinary least squares (OLS), using quarterly data for the period 1995:1 until 2005:4. Data for Slovenia were provided by the Slovenian Statistical Office, by the Institute of Macroeconomic Analyses and Development (IMAD), and by the Bank of Slovenia. Euro Area data were taken from the EUROSTAT database, except for the short-term interest rate in the Euro Area, which was extracted from the database of the German Bundesbank. In this Section, we describe the variables used in the model SLOPL6. All data are available from the authors upon request.

Endogenous Variables

AGWN	Average gross wage per employee, nominal, SIT / quarter
AGWR	Average gross wage per employee, real
BUDGETREST	Balance of other, non-allocated government revenues and expenditures
CAN	Current account balance, real
CAGDP	Current account balance as percentage of real GDP
CAPR	Capital stock, real
CPI	Consumer price index
CR	Private household consumption, real
DEBT	Public debt level, nominal
DEBTGDP	Public debt level as percentage of nominal GDP
DEFGDP	Budget deficit as percentage of nominal GDP
DEFICITN	Budget deficit, nominal
DEMAND	Total final demand, real; *GDPR* + *IMPR*
EMP	Employment; 1,000 persons
EXR	Exports, real
GDPDEF	GDP deflator
GDPN	Gross domestic product, nominal
GDPR	Gross domestic product, real
GINVR	Public investment, real
GNFIN	Government consumption according to government financial statistics
GR	Government consumption, real
GRGDPR	Annual growth rate of real GDP
GRYPOT	Annual growth rate of potential GDP
ILONGR	Real long term interest rate
IMPR	Imports, real
INCCORP	Government revenues from corporate taxes, nominal
INCOME	Disposable income of private households, nominal
INCOMER	Disposable income of private households, real
INCTAX	Government revenues from total income taxes, nominal
INFL	CPI inflation rate
INTEREST	Payments on outstanding public debt
INVENTR	Inventory investment, real
INVR	Investment, real
LFORCE	Labor force; 1,000 persons
LTIRLN	Nominal long term interest rate
M3N	Money stock M3, nominal
M3R	Money stock M3, real
NAIRU	Inflation-stable rate of unemployment
NETWAGEN	Average net wage, nominal
NETWAGER	Average net wage, real
PERSINCTAX	Government revenues from personal income taxes, nominal
PRINVR	Private gross fixed capital formation, real

PROD	Labor productivity
SITEUR	Nominal exchange rate, SIT per euro
SITEURREAL	Real exchange rate between Slovenian tolar and euro
SOCCOMP	Employers' social security contributions, nominal
SOCEMP	Employees' social security contributions, nominal
SOCTOTAL	Total social security contributions, nominal
STIRLN	Nominal short term interest rate (policy instrument and determined in a Taylor-rule type equation in the case of flexible interest rates)
TREND_EMP	Trend employment (labor force minus "natural" unemployment)
UCC	User cost of capital
ULC	Unit labor costs
UN	Unemployment, 1,000 persons
UR	Unemployment rate, % of the labor force
UTIL	Capacity utilization rate
WEDGE	"Tax Wedge"; difference between average nominal gross and net wage per employee
YPOT	Potential GDP, real

Exogenous Variables, Not Controllable By Slovenian Policy-Makers

DEBTADJ	Possible adjustments to the stock of public debt
DEPR	Depreciation rate of the capital stock
DUM021	Dummy variable, 1 in the first quarter 2002, 0 otherwise
DUM05	Dummy variable, 1 in the year 2005, 0 otherwise
DUM992	Dummy variable, 1 in the second quarter 1999, 0 otherwise
DUM993	Dummy variable, 1 in the third quarter 1999, 0 otherwise
EUR10Y	Interest rate for 10 years government bonds in the euro area
EUR3M	Three-months interest rate in the euro area
GDPEUR12	Real GDP in the euro area
HICPEUR12	Harmonized index of consumer prices in the euro area
TIME	Linear time trend

Policy Variables

GINVN	Public investment, nominal
GN	Government consumption, nominal
INCTAXRATE	Average "tax" rate, including income tax and employees' social security contributions
SOCEMPRATE	Social security contribution rate for employees
TRANSFERSN	Transfers to private households, nominal

3. **Tests for stationarity of the time series**

Next, we report about the results of Augmented Dickey-Fuller tests (ADF), Phillips-Perron tests (PP) and Kwiatkowski-Phillips-Schmidt-Shin tests (KPSS) for stationarity. All variables except for interest rates and population were seasonally adjusted before testing. Variables which are unambiguously stationary according to these tests are denoted with a §, those which are unambiguously non-stationary are given a &. The decision on lag length was based on the Schwarz information criterion (SIC). We used the test model with a constant and without a deterministic trend.

Levels

Variable		ADF		PP		KPSS
	Lags (SIC) 0		Bandwidth 0		Bandwidth 5	
AGWN &		0.095		0.095		0.842***
AGWR &	0	–0.865	12	–1.089	5	0.844***
CAN §	0	–4.454***	3	–3.672***	4	0.141
CAGDP §	1	–2.013**	4	–3.814***	4	0.241
CAPR &	2	–0.036	5	1.819	5	0.821***
CN &	1	0.165	2	0.031	5	0.842***
CR &	1	–0.574	1	–1.413	5	0.848***
CPI &	1	–1.654	4	–1.032	5	0.838***
DEBT &	2	–0.955	31	–0.827	5	0.838***
DEBTGDP	3	–3.804***	17	–3.231**	5	0.707**
DEFGDP §	0	–7.625***	2	–7.649***	1	0.244
DEFICITN §	0	–7.443***	3	–7.421***	2	0.327
DEMAND &	1	1.057	5	1.127	5	0.840***
EMP &	0	1.039	2	0.798	5	0.790***
EXR &	0	1.948	5	2.538	5	0.832***
GDPDEF &	0	–1.069	2	–1.001	5	0.832***
GDPN &	1	0.310	4	0.540	5	0.834***
GDPR &	2	0.454	1	–0.423	5	0.847***
EUR10Y	1	–2.555	2	–2.857**	5	0.674**
EUR3M	1	–2.868**	3	–2.054	5	0.677**
GDPEUR12 &	1	–0.867	3	–1.002	5	0.825***
GINVN &	1	–0.314	7	0.781	5	0.842***
GINVR &	1	–1.126	4	–0.846	5	0.810***
GN &	0	1.213	2	1.157	5	0.839***
GR &	0	–1.094	5	–1.234	5	0.850***
HICPEUR12 &	0	2.360	5	2.142	5	0.841***
ILONGR	0	–2.790*	1	–2.771*	5	0.704**
IMPR &	1	1.239	5	1.527	5	0.830***
INCCORP &	3	1.644	42	0.886	5	0.806***
INCOME &	3	–1.747	4	–0.500	5	0.837***
INCOMER &	1	–1.701	2	–1.554	5	0.824***
INCTAX &	2	0.408	3	0.469	5	0.841***
INCTAXRATE &	2	–0.731	3	–1.918	5	0.832***
INFL &	0	–0.525	0	–0.525	5	0.571**
INTEREST &	2	–1.147	3	–1.118	5	0.800***
INVENTR §	1	–2.969**	2	–4.926***	3	0.099
INVR &	1	–1.129	5	–0.577	5	0.807***

LFORCE &	0	0.306	2	–0.229	4	0.718***
LTIRLN &	1	–0.417	1	–2.649*	5	0.747***
M3N &	0	0.259	5	0.144	5	0.831***
M3R &	0	–1.250	4	–1.300	5	0.834***
NAIRU &	18	0.261	3	0.482	5	0.800***
NETWAGEN &	0	0.265	3	0.308	5	0.841***
NETWAGER &	0	–0.553	7	–0.173	5	0.838***
PERSINCTAX &	2	–0.987	7	–0.963	5	0.832***
POP &	3	–0.412	2	–0.131	5	0.636**
PRINVR &	1	–1.223	2	–0.853	5	0.799***
PROD &	1	–1.691	1	–1.903	5	0.836***
SITEUR &	3	–2.579	3	–2.080	5	0.832***
SITEURREAL &	4	–2.112	2	–1.605	5	0.606**
SOCCOMP &	0	3.568	4	4.469	5	0.778***
SOCEMP &	2	0.696	17	0.729	5	0.845***
SOCEMPRATE §	0	–4.240***	3	–4.229***	3	0.133
SOCTOTAL &	0	3.209	3	3.723	5	0.833***
STIRLN &	4	–1.910	2	–2.904*	5	0.758***

Variable	ADF		PP		KPSS
	Lags (SIC)		Bandwidth	Bandwidth	
TRANSFERSN &	0	–0.448	1	–0.462	5	0.839***
TREND_EMP &	0	–1.005	1	0.937	5	0.817***
UCC	0	–2.790*	1	–2.771*	5	0.704**
ULC &	0	–0.312	0	–0.312	5	0.837***
UN &	1	–0.593	3	–0.315	5	0.746***
UR &	0	0.316	3	–0.017	5	0.762***
UTIL §	1	–3.889***	4	–4.817***	5	0.333
WEDGE &	2	–0.932	35	–1.576	5	0.841***
YPOT &	0	4.052	3	3.203	5	0.839***

First Differences

Variable	ADF		PP		KPSS
	Lags (SIC) 0		Bandwidth 4		Bandwidth 0	
AGWN §		–5.010***		–4.977***		0.172
AGWR §	0	–5.982***	11	–6.481***	10	0.169
CAN §	0	–11.015***	9	–14.202***	7	0.094
CAGDP §	0	–11.923***	11	–16.463***	11	0.159
CAPR	1	–2.292	0	–2.740*	5	0.453**
CAPR, 2nd diff. §	0	–10.407***	1	–10.223***	4	0.154
CN §	2	–8.637***	2	–8.865***	2	0.115
CR §	0	–8.034***	4	–8.982***	1	0.101
CPI §	0	–4.311***	3	–4.408***	4	0.240
DEBT §	1	–7.752***	18	–12.795***	34	0.383**
DEBTGDP §	2	–5.682***	14	–8.940***	16	0.400**
DEFGDP §	2	–8.571***	31	–35.378***	16	0.211
DEFICITN §	2	–8.221***	41	–37.986***	19	0.226
DEMAND §	0	–12.001***	2	–12.683***	4	0.207

EMP §	0	–5.392***	2	–5.417***	3	0.235
EXR	0	–6.342***	2	–6.346***	0	0.484**
GDPDEF §	0	–6.014***	3	–6.014***	2	0.228
GDPN §	0	–8.909***	4	–8.781***	4	0.226
GDPR §	1	–7.046***	1	–11.026***	0	0.026
EUR10Y §	2	–4.250***	2	–4.196***	3	0.307
EUR3M §	2	–3.774***	2	–3.860***	3	0.147
GDPEUR12 §	0	–3.538**	0	–3.538**	4	0.189
GINVN §	0	–8.783***	18	–17.223***	8	0.240
GINVR §	0	–8.922***	15	–15.151***	11	0.169
GN §	0	–6.224***	1	–6.224***	2	0.332
GR §	0	–20.327***	3	–19.921***	7	0.185
HICPEUR12	2	–1.334	5	–6.414***	5	0.397*
ILONGR §	0	–5.341***	5	–5.297***	5	0.251
IMPR §	0	–11.771***	2	–12.264***	4	0.304
INCCORP §	2	–6.175***	30	–16.908***	28	0.352*
INCOME §	2	–2.696*	4	–7.954***	4	0.158
INCOMER §	0	–8.854***	3	–8.742***	3	0.180
INCTAX §	1	–8.038***	4	–14.938***	3	0.104
INCTAXRATE §	1	–8.939***	18	–38.496***	11	0.124
INFL §	0	–6.324***	1	–6.295***	2	0.117
INTEREST §	1	–9.341***	4	–14.501***	2	0.091
INVENTR §	0	–11.701***	5	–12.952***	12	0.144
INVR §	0	–10.080***	3	–10.611***	5	0.102
LFORCE §	0	–4.742***	0	–4.742***	2	0.171
LTIRLN §	0	–10.031***	1	–9.420***	9	0.208
M3N §	2	–1.898	5	–6.858***	5	0.142
M3R §	0	–7.333***	4	–7.284***	4	0.164

Variable	ADF Lags (SIC)		PP Bandwidth		KPSS Bandwidth
NAIRU §	15	–3.413**	3	–7.203***	3 0.362*
NETWAGEN §	0	–6.985***	3	–7.002***	3 0.106
NETWAGER §	0	–7.289***	7	–8.737***	7 0.090
PERSINCTAX §	1	–7.850***	16	–22.007***	21 0.306
POP §	1	–4.285***	4	–3.530**	2 0.213
PRINVR §	0	–10.287***	1	–10.682***	1 0.058
PROD §	0	–10.496***	1	–10.828***	2 0.279
SITEUR §	2	–2.615*	3	–5.163***	1 0.386*
SITEURREAL §	2	–3.655***	1	–6.369***	7 0.094
SOCCOMP	0	–5.224***	4	–5.450***	4 0.598**
SOCEMP §	1	–6.886***	14	–10.982***	17 0.224
SOCEMPRATE §	0	–7.036***	8	–8.870***	9 0.175
SOCTOTAL	0	–5.632***	3	–5.759***	4 0.577**
STIRLN §	0	–9.934***	1	–9.284***	10 0.267
TRANSFERSN §	0	–8.967***	1	–9.049***	1 0.076
TREND EMP §	0	–5.668***	2	–5.690***	2 0.235
UCC §	0	–5.341***	5	–5.297***	5 0.251
ULC §	0	–7.134***	1	–7.141***	1 0.091
UN §	0	–4.137***	0	–4.137***	3 0.168
UR §	0	–4.555***	2	–4.554***	3 0.200
UTIL	1	–6.262***	3	–10.308***	3 0.568**
WEDGE §	0	–9.054***	12	–12.015***	25 0.402*
YPOT	0	–3.968***	3	–3.957***	4 0.557**

Thus it turns out that most level variables are I(1). We also tested for cointegration between those time series where we suspected long-run relations to hold. In those cases where cointegration seemed to be present, we used error-correction models as dynamic specifications for these relations while estimations in levels or first differences were tried when tests indicated absence of long-run relations between stationary or I(1) variables, respectively. In the following, we show the results of successful cointegration tests for the behavioral equations finally adopted. *, **, *** means that the null hypothesis (ADF and Phillips-Perron: no stationarity of the residuals; KPSS: stationarity of the residuals) can be rejected at the 10, 5, 1 percent level of significance, respectively.

Tests For Cointegration – Tests For Stationarity Of Residuals Of The Equations

Equation Phillips-Perron	ADF		KPSS
Potential GDP (production function)	–4.197***	–4.199***	0.139
Private consumption	–7.142***	–7.122***	0.087
Fixed capital formation	–3.877***	–3.558**	0.086
Inventory investment	–8.606***	–8.380***	0.086
Equation	ADF	Phillips-Perron	KPSS
Exports	–4.988***	–4.896***	0.148
Imports	–6.826***	–6.820***	0.108
Employment	–3.565**	–3.619***	0.065
Labor supply	–6.384***	–6.384***	0.123
Wage rate	–4.937***	–4.814***	0.071
Consumer price index	–3.740***	–5.049***	0.059
GDP deflator	–5.928***	–5.918***	0.310
Real money demand	–5.906***	–5.935***	0.122
Short-term interest rate (flex. exchange rate)	–2.791***	–2.897***	0.158
Short-term interest rate (fixed exchange rate)	–5.057***	–3.460***	0.323
Long-term interest rate	–2.412**	–2.587**	0.227
Exchange rate	–3.565**	–5.373***	0.155
Soc. sec. contr. by companies	–5.455***	–6.483***	0.103
Corporate taxes	–5.388***	–5.393***	0.136
Balance of other government exp. and rev.	–6.196***	–6.475***	0.125
Interest payments on public debt	–6.002***	–6.038***	0.192
Government consumption	–4.735***	–4.739***	0.114

4. **Model equations**

The model combines Keynesian and neoclassical elements. The former determine the short and medium run solutions in the sense that the model is demand driven and persistent disequilibria in the goods and labor markets are possible. The supply side incorporates neoclassical features. Almost all behavioral equations are specified in error correction form, except for the equations determining the exchange rate, the interest rates, changes in inventories, the NAIRU and potential GDP. In this section, the behavioral equations are first described very briefly. The model equations are then presented in detail. For a more extensive discussion of an earlier version, see Weyerstrass et al. (2001).

Consumption of private households is explained by disposable income and by the real long-term interest rate, the latter reflecting wealth effects. Investment is

derived from profit maximization of firms. Real gross fixed capital formation is thus influenced by total final demand and by the user cost of capital (the real long-term interest rate plus the depreciation rate of the capital stock). Real exports of goods and services are a function of the real exchange rate and of foreign demand for Slovenian goods and services. As the aggregate Euro Area is by far Slovenia's largest trading partner, accounting for about 60 percent of Slovenian foreign trade, the other 12 Euro Area countries approximate the rest of the world[1]. Therefore, foreign demand is measured by Euro Area real GDP, and only the exchange rate between the Slovenian currency tolar and the euro is considered. Slovenian real imports of goods and services depend on final domestic demand. A significant influence of the real exchange rate on imports was not supported by the data.

Money demand depends on real GDP and on the short-term interest rate. The long-term interest rate is linked to the short-term rate in a term structure equation. In addition, the long-term interest rate in Slovenia depends on its Euro Area counterpart, reflecting Slovenia's integration in the European capital market. The exchange rate equation rests on considerations of the uncovered interest parity and the purchasing power parity theories: the nominal exchange rate between the Slovenian tolar and the euro depends on the interest differential between Slovenia and the Euro Area and on the ratio of the price levels of both countries/regions.

Labor demand (actual employment) is influenced by real GDP and by unit labor cost, where the latter are defined as the ratio of the nominal gross wage and labor productivity. Labor productivity is defined as real GDP per employee. Labor supply depends on the real net wage and on real GDP. The latter influence is to approximate the "discouraged worker effect": in an economic downturn, increasing unemployment discourages people from actively seeking employment. On the other hand, in an upturn, improving labor market conditions encourage more people to enter the labor market. The wage rate is determined by the price level, the unemployment rate, labor productivity, and the tax wedge on labor income, the latter being defined as the sum of income taxes and employees' social security contributions. Consumer prices depend on domestic and international factors. The former are made up by unit labor costs. Imported inflation is approximated by the nominal exchange rate of the Slovenian tolar vis-a-vis the euro. This specification shall account for the fact that a depreciation of the domestic currency raises import prices. The GDP deflator is linked to the consumer price index.

Potential output, which is determined by a Cobb-Douglas production function with constant returns to scale, depends on trend employment, the capital stock, and autonomous technical progress. Trend employment is defined as the labor force minus natural unemployment. The NAIRU (or inflation-stable unemployment rate) is modeled by first applying a band-pass filter to the actual unemployment rate in order to extract the trend. In the simulations, the NAIRU is then modeled as an AR(8)-process.

Government expenditures and revenues are linked to economic policy instruments and to the economic situation in Slovenia, which is approximated by GDP at current prices. Revenues from personal income taxes and from employees' social security contributions are determined by multiplying the tax rate and the social security contribution rate, respectively, by the number of employees and by the average gross wage per employee. In a behavioral equation, corporate income taxes are explained by GDP. Interest payments on public debt depend on the

In the estimation period, Slovenia did not belong to the Euro Area.

The debt level and the long-term interest rate. The difference between the remaining government revenues and expenditures is explained by the lagged debt level. This specification shall approximate a fiscal rule according to which the primary budget surplus is increased if debt rose in the previous period. Such a rule shall guarantee long run fiscal sustainability by preventing an ever increasing debt level. Government consumption and investment as well as transfers to private households are regarded as policy instruments. The budget deficit is given by the difference between total government expenditures and revenues.

Behavioral Equations

R2 is the adjusted coefficient of determination, DW is the Durbin Watson statistic; t-statistics are given in parentheses below coefficients.

Potential output

log(YPOT) = - 0.839136 + 0.648102 * *log(TREND_EMP)* + (1 - 0.648102) * *log(CAPR)* + 0.004365 * TIME

log(GDPR) = - 0.839136 + 0.648102 * *log(EMP)* + (1 - 0.648102) * *log(CAPR)* + 0.004365 * *TIME*

(-2.548920) (3.625960) (3.625960) (3.339869)

R2= 0.986289 DW = 0.801470

NAIRU

D(NAIRU) = - 0.044581 - 0.283872 * *D(NAIRU(–1))* + 0.387325 * *D(NAIRU(-3))* + 0.281913 * *D(NAIRU(-4))*

(-1.124953) (-1.856249) (2.335843) (1.845909)

+ 0.496290 * *D(NAIRU(-5))* - 0.276744 * *D(NAIRU(–8))*

(3.380917) (-1.814794)

R2= 0.395800 DW = 2.376885

Consumption of private households

log(CR/CR(–1)) = 0.359946 + 0.375626 * *log(INCOMER / INCOMER*(–1)) - 0.293998 * log(*CR*(–1))

(1.542137) (4.390582) (-3.586244)

+ 0.199217 * *log(INCOMER(–*1)) -0.002379 * *ILONGR*(–1*)* + 0.032129 * *DUM992*

(2.575871) (-2.415892) (4.291727)

- 0.041086 * *DUM993*

(-4.896282)

R2= 0.825881 DW = 2.262197

Gross fixed capital formation

log(*PRINVR* / *PRINVR*(–4)) = 0.547377 + 1.677160 * log(*DEMAND* / *DEMAND*(–4)) – 0.582231 * log(*PRINVR*(–4))

(0.572847) (5.306386) (–4.372626)

+ 0.385862 * log(*DEMAND*(–4)) – 0.133517 * log(*UCC*(–4))

(2.114335) (–2.100554)

R2= 0.781110 DW = 0.960741

Inventory investment

INVENTR = 6.756782 + 0.613727 * *INVENTR*(–1*)* - 0.531997 * *D(GDPR-INVENTR)*

(4.902811) (4.301567) (-4.923027)

R2= 0.416334 DW = 2.424885

Exports of goods and services

log (*EXR* / *EXR*(–4)) = – 19.2466 + 0.314805 * log(*EXR*(–1) / *EXR*(–5)) (–3.2646) (2.512399)

+ 2.379488 * log (*GDPEUR12* / *GDPEUR12*(–4)) (4.236104)

+ 1.451913 * log(*SITEURREAL*(–4)/ *SITEURREAL*(–8)) (3.34502)

– 0.2386 * (log(*EXR*(–4)) + 1.439955 * log(*GDPEUR12*(–4)) (–1.95847) (2.96063)

+ 1.843658 * log(*SITEURREAL*(–4)) (3.03146)

R2= 0.679354 DW = 1.582236

Imports of goods and services

log(*IMPR* / *IMPR*(–1)) = – 1.743142 + 1.882760 * log(*DEMAND* / *DEMAND*(–1)) – 0.447201 * log(*IMPR*(–1)) (–4.490866) (28.51655) (–4.281792)

+ 0.631109 * log(*DEMAND*(–1)) (4.363494)

R2= 0.967468 DW = 2.029496

Employment

log(*EMP* / *EMP*(–4)) = 2.000938 + 0.339420 * log (*EMP*(–2) / *EMP*(–6)) + 0.271201 * log(*GDPR* / *GDPR*(–4)) (1.592327) (2.785268)(2.200591)

– 0.652660 * log(*EMP*(–4)) + 0.386212 * log(*GDPR*(–4)) – 0.122940 * log(*ULC*(–4))

(–3.686853) (5.041517) (–2.556979)

R2= 0.796073 DW = 1.066295

Labor supply

log(*LFORCE* / *LFORCE*(–4)) = 6.102313 + 0.638838 * log(*LFORCE*(–1) / *LFORCE*(–5))

(7.199566) (9.491211)

+ 0.142518* log(*NETWAGER* / *NETWAGER*(–4)) (6.081654)

– 1.00027 * log(*LFORCE*(–4)) + 0.107418 * log(*NETWAGER*(–4)) (–7.38534) (7.393059)

R2= 0.906754 DW = 2.069466

Wage rate

log(*AGWN* / *AGWN*(–4)) = 0.082167 + 0.432615 * log(*AGWN*(–1) / *AGWN*(–5)) + 0.446809 * log (*CPI* / *CPI*(–4))
(0.226989) (4.616714) (3.392647)

– 0.554777 * log((*AGWN*(–4) / *CPI*(–4))) + 0.249325 * log (*PROD*(–4))
(–5.577310) (2.522555)

– 0.007189 * *UR*(–1) + 0.074054 * log(*WEDGE*(–1) / *WEDGE*(–5))
(–2.521480) (1.878302)

R2= 0.943467 DW = 1.615415

Consumer price index

log(*CPI* / *CPI*(–4)) = – 0.70481 + 0.293566 * log(*CPI*(–1) / *CPI*(–5)) + 0.149449 * log(*ULC* / *ULC*(–4))
(–2.34034) (3.145323) (2.76944)

+ 1.495533 * log(*HICPEUR12/ HICPEUR12*(–4)) – 0.44142 * log(*CPI*(–4))
(5.249042) (–5.55076)

+ 0.396769 * log(*ULC*(–4)) + 0.41625 * log(*UTIL*(–4))
(4.72042) (5.577107)

R2= 0.960395 DW = 1.42735

GDP deflator

log(*GDPDEF* / *GDPDEF*(–4)) = 0.216883 + 0.516409 * log(*GDPDEF*(–1) / *GDPDEF*(–5))
(2.6838) (5.3777)

+ 0.734706 * log(*CPI* / *CPI*(–4)) – 0.361865 * log(*GDPDEF*(–4) / *CPI*(–4))
(5.851895) (–2.836337)

R2= 0.844573 DW = 1.606334

Real money demand

log(M3R / M3R(-4)) = - 2.10635 + 0.538002 * log(*M3R*(–1) / *M3R(-5))* - 0.031762 * *(STIRLN / STIRLN(-4))*
(-2.50222) (4.537744) (-1.408705)

- 0.405264 * log(*M3R*(-4)) + 0.820429 * *log(GDPR(-4))*
(-3.516973) (3.132024)

R2= 0.721868 DW = 1.969595

Long term interest rate

(*LTIRLN* – *LTIRLN*(–4)) = 1.006125 * (*STIRLN* – *STIRLN*(–4)) + 0.419646 * (*EUR10Y* – *EUR10Y*(–4))
(26.49522) (2.035559)

– 0.539421 * *LTIRLN*(–4) + 0.597430 * *STIRLN*(–4)
(–3.248753) (3.227697)

R2= 0.963106 DW = 0.538018

Short term interest rate

(*STIRLN* – *STIRLN*(–4)) = 1.292312 * *INFL* + 0.418398 * (*GRGDPR* – *GRYPOT*)

(10.55622) (2.220118)

– 0.905898 * (*STIRLN*(–4) – *EUR3M*(–4))

(–11.96319)

R2= 0.797275 DW = 0.684259

Exchange rate

(SITEUR / 100) = 0.212657 - 0.001893 * *(LTIRLN - EUR10Y)* + 2.184844 * *(CPI / HICPEUR12)*

(5.46069) (-2.027690) (61.08336)

R2= 0.996093 DW = 0.895409

Social security contributions by companies

log(*SOCCOMP* / *SOCCOMP*(–4)) = – 0.527861 + 0.538986 * log(*SOCEMP* / *SOCEMP*(–4))

(–6.497854) (6.649808)

– 0.547033 * log(*SOCCOMP*(–4)) + 0.620918 * log(*SOCEMP*(–4))

(–10.49479) (13.81405)

+ 0.245643 * *DUM05*

(14.53665)

R2= 0.941112 DW = 1.823315

Corporate taxes

log(*INCCORP* / *INCCORP*(–4)) = – 7.144794 + 0.169314 * log(*INCCORP*(–1) / *INCCORP*(–5))

(–6.187364) (2.102092)

– 0.747633 * log (*INCCORP*(–4)) + 1.331591 * log(*GDPN*(–4))

(–8.024657) (6.701796)

– 0.654201 * *DUM992*

(–6.812059)

R2= 0.808315 DW = 1.744074

Balance of other government revenues and expenditures

log(*BUDGETREST* / *BUDGETREST*(–4)) = – 0.501472 + 1.031814 * log(*DEBT* / *DEBT*(–4))

(–0.940508) (2.476841)

– 0.934227 * log(*BUDGETREST*(–4)) + 0.783257 * log(*DEBT*(–4))

(–7.272604) (5.762485)

– 0.413477 * *DUM021*

(–4.426783)

R2= 0.715886 DW = 2.032736

Interest payments on government debt

(*INTEREST* – *INTEREST*(–1)) = – 7.689128 – 1.049878 * (*INTEREST*(–1)) + 0.018931 * (*DEBT*(–1))

(–1.948023) (–6.077313) (5.341489)

+ 0.292619 * *LTIRLN*(–1)

(2.178987)

R2= 0.507888 DW = 1.949515

Government consumption according to financial account

log(*GNFIN* / *GNFIN*(–4))= 0.053910 + 1.145092 * log(*GN* / *GN*(–4) – 0.612290 * log(*GNFIN*(–4))

(0.423991) (5.166543) (–3.868434)

+ 0.583018 * log(*GN*(–4))

(3.649542)

R2= 0.713945 DW = 1.470469

Short term interest rate in model version with fixed exchange rates

(*STIRLN* – *STIRLN*(–4)) = 1.319104 + 0.998259 * (*EUR3M* – *EUR3M*(–4)) + 0.523320 * (*SITEUR* – *SITEUR*(–4))

(1.360326) (2.901757)(7.518843)

– 0.587592 * (*STIRLN*(–4) – *EUR3M*(–4))

(–7.106245) R2= 0.748326 DW = 0.960985

Identities

GR	= *GN* / *GDPDEF* * 100
AGWR	= *AGWN* / *CPI* * 100
CAN	= *EXR* * *GDPDEF* / 100 – *IMPR* * *GDPDEF* / 100
CAGDP	= *CAN* / *GDPN* * 100
ILONGR	= *LTIRLN* – *INFL*
GRGDPR	= *GDPR* / *GDPR*(–4) * 100 – 100
GRYPOT	= (*YPOT* / *YPOT*(–4) – 1) * 100
PROD	= *GDPR* / *EMP* * 100
ULC	= *AGWN* / *PROD*
UN	= *LFORCE* – *EMP*
UR	= *UN* / *LFORCE* * 100
DEMAND	= *INVR* + *INVENTR* + *CR* + *GR* + *EXR*
M3N	= *M3R* * *CPI* / 100
SITEURREAL	= *SITEUR* * *HICPEUR12* / *CPI*
INCOME	= *GDPN* + *TRANSFERSN* – *INCTAX* – *SOCTOTAL*
INCOMER	= *INCOME* / *CPI* * 100
INFL	= (*CPI* / *CPI*(–4) – 1) * 100
UCC	= *ILONGR* + 2.7
PERSINCTAX	= *INCTAXRATE* * (*AGWN* * *EMP* / 1000) / 100
SOCEMP	= *SOCEMPRATE* * (*AGWN* * *EMP* / 1000) / 100

WEDGE	= *AGWN* * (*INCTAXRATE* / 100 + *SOCEMPRATE* / 100)
NETWAGEN	= *AGWN* – *WEDGE*
NETWAGER	= *NETWAGEN* / *CPI* * 100
SOCTOTAL	= *SOCCOMP* + *SOCEMP*
INCTAX	= *PERSINCTAX* + *INCCORP*
CAPR	= (1 – *DEPR* / 100) * *CAPR*(–1) + *INVR*
GDPR	= *CR* + *GR* + *INVR* + *INVENTR* + *EXR* – *IMPR*
GDPN	= *GDPR* * *GDPDEF* / 100
TREND_EMP	= *LFORCE* * (1 – *NAIRU* / 100)
UTIL	= *GDPR* / *YPOT* * 100
DEFICITN	= *GNFIN* + *GINVN* + *TRANSFERSN* + *INTEREST* – *SOCTOTAL*– *INCTAX* – *BUDGETREST*
DEFGDP	= *DEFICITN* / *GDPN* * 100
DEBT	= *DEBT*(–1) + *DEFICITN* + *DEBTADJ*
DEBTGDP	= *DEBT* / (*GDPN* + *GDPN*(–1) + *GDPN*(–2) + *GDPN*(–3)) * 100
GINVR	= *GINVN* / *GDPDEF* * 100
INVR	= *PRINVR* + *GINVR*

Conclusion

The model SLOPOL6 as described in the previous Section was obtained after a series of steps in a trial-and-error process, following the general-to-specific methodology initiated by David Hendry and associates (see, e.g., Hendry 1995). We also conducted simulations of the model (both static and dynamic) with historical values of

(non-controllable and policy) exogenous variables over the period of estimation and found reasonable tracking quality for most variables with respect to trends and turning points. This encourages us to use the model (even more than its predecessors) for policy analysis.

So far, we used SLOPOL6 for simulation analyses to answer two questions: First, we asked whether Slovenia's choice of participating in the exchange rate mechanism of the European Monetary System II (ERM-II) soon after EU accession was the best strategy in terms of the macroeconomic performance (Weyerstrass and Neck 2007a). We found that a better overall economic performance could have been achieved under a crawling peg regime allowing a depreciation of the Slovenian tolar before introducing the euro in 2007. The worst policy results were obtained when the exchange rate was totally fixed at an early stage of EMU integration. Moreover, we showed that the labor market performance could be significantly improved by cutting income taxes and social security contribution rates.

The second application of SLOPOL6 examines which macroeconomic effects can be expected from Slovenia's adoption of the euro as legal tender (Weyerstrass and Neck 2007b). It was shown that Euro Area accession might bring about temporarily higher real GDP growth, a permanently higher GDP level, more employment, temporarily lower inflation and a permanently lower price level. On the other hand, both public finances and

the current account might deteriorate. Hence, in contrast to the path towards abandoning the national currency tolar for the euro, which posed problems of adjustment, the (mostly supply-side) effects of the eventual Slovenian membership in the Euro Area will have mainly advantages for the Slovenia economy. These insights were obtained with the help of the SLOPOL6 macroeconometric model, and we are convinced that it can also be used to deal with other economic policy problems for Slovenia.

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ENCRYPTION ALGORITHMS FOR DATABASES

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Abstract

For most cases, people use an ecrypted mode when sending personal information to a server, via an electronic form. Whenever shopping is done online, the browser uses cryptographic methods to send to the server the credit card number and private information. Thanks to the surprising development of the Internet, and not to the structural models (OSI and TCP/IP) this technology is based on, the electronic commerce requires quality, security, reliability and, above all, the possibility of implementing all such concepts.

It is interesting that none of the widely used cryptographic systems is mathematically demonstrated to be safe. As a matter of fact, the entire technology of cryptography is based on mathematical problems that are still unanswered to.

Looking at the above, the study of the cryptographic and security methods, as well as finding strong crypto-systems is still a pivotal issue.

Key-words: *encryption algorithms, database security, crypto-graphically, cipher*

JEL Classification: L86

Introduction

Nowadays, the databases are essential constituents of the web applications, providing them the possibility to have a dynamic content. Due to the fact that the secret or confidential information is usually stored in a database, the protection of them must have a high priority.

In order to receive or send any information, one needs to connect to the database, to send a valid call, to receive the results and to close the connection.

One of the widely used query languages for such type of interaction is Structured Query Language (SQL).

For the database systems, data protection is twofold: security and integrity. Data security and integrity denotes the fact that the access to data requires a legit and controlled authorization, which is the task of the database administrator, via the Databases Administration Systems (D.A.S.). To this purpose, D.A.S. allows the authorization and control of access to data, the use of visions, special procedures, data encryption.

Encryption algorithms for databases

Cryptography is a set of standards and protocols for encoding the data and messages, so that they might be stored and sent, in a safer manner. This science underlies many Internet-based security services and mechanisms, by using mathematical methods to change the data, aiming to hide their content or to protect them against alteration. Cryptography provides help in having a safer communication, even when the transmission environment is not trustworthy. Likewise, it may be used to encrypting the sensitive files, so that the number of intruders is kept to a minimum. Also, it may contribute to providing data integrity, as well as keeping them secret. Cryptography assists in checking the data and messages source, by the digital signatures and certificates. When cryptographic methods are being used, the cryptographic keys must remain secret – the algorithms, the keys size and the files formats may be made public, without bringing any harm to the security issue. The modern cryptography has to include the following features:

Confidentiality – the guarantee that no one can read the message, except for the meant recipient.

Data integrity – it achieves data protection against alteration or unauthorized handling. Data handling means insertions, delays or substitutions.

Authentification – involves the possibility to identify the information source and the entity, where the latter may be a person, a computer terminal, a credit card.

Non-repudiation – prevents the negation of some previous actions.

In other words, cryptography need to appropriately account for directions, both theoretically and practically. It needs to prevent and detect stealing and other ilegal action, as it is one of the information security assurance techniques.

There are two types of *cryptographic* systems:

• *symmetric (secret key)* that use the same key, for both encrypting and decrypting the messages;

• *asymmetric (public key)* that use distinct keys for encrypting and decrypting (connected to each other).

From the algorithm perspective and of the field of use, cryptography may be divided into four cryptographic primitives:

- secret-key cryptographic algorithms;
- public-key cryptographic algorithms;
- digital signature;
- hash functions.

In order to build a cryptographic system that will solve the issues of the computer-based security, surely and efficiently, there is a need to use the cryptographic primitives as a group, upon requirements.

A *cryptosystem* is made of:

• M-clear text;

• C-ciphered text;

• 2 inverse functions, *E()* and *D();*

• an algorithm that generates the keys *Ke* and *K*i

Secret-key cryptographic algorithms (symmetrical)

To assure confidentiality of date stored in computers or transmitted via networks, *secret-key cryptographic algorithms (symmetric)* are being used. They are characterized by the fact that both users share the same key, both for encrypting and decrypting. The encrypting key should be kept secret from the unauthorized users, since the one who knows it will be able to access the secret information. The symmetric cryptographic algorithms have a high encrypting speed, compared to the asymmetric ones, and are very comfortable in encrypting large blocks of information.The security of such type of algorithm largely depends on the key length and the possibility of keeping it secret.The main issue that emerges during the attempt to create secret communications among the various users is the key management; for n users, n(n-1)/s bi-directional connections are possible (and we need the same number of keys). Generally speaking, this involves difficulty in generating, distributing and memorizing the keys. The use of the electronic computers has allowed the usage of larger keys, therefore increasing the resistance to cryptoanalitic attacks. When the secret key has a reasonable size and is frequently enough changed, it is practically impossible to break the code, even if the encrypting algorithm is known.

The symmetric encryption security greatly depends on the *encryption key protection*. As a result, their management is an essential factor and refers to:

– *keys generation*, i.e. the (pseudo)random means of creating the key octets (bits) succession;

– *keys distribution,* meaning the way how the keys are distributed and made known to all the users who have access to the encrypted information;

– *keys memorization,* i.e. their safe storage on a magnetic support or a card, usually encrypted under a different keys encryption key, called *master key*.

The fundamental issue of using the encryption in networks is the one to find a method of *safe* and regular *distribution* of the encryption keys, as it is necessary to change them as often as possible.The internet and other networks that involve working with databases are also using the network services, via specific protocols or public key systems, the so-called *digital envelopes.*

The most known symmetric encryption algorithms are:

1) block ciphers:

- DES (Data Encryption Standard), Triple DES;
- DEA (International Data Encryption Algorithm);
- AES (Advanced Encryption Standard).

2) sequential ciphers:

- RC4.

Public-key cryptographic algorithms (asymmetrical)

A new perspective upon the encryption systems is provided by the public-key cryptographic algorithms (asymmetrical). These algorithms are characterized by the fact that different keys are used during encrypting and decrypting, keys that are connected between them by a mathematical relation. This type of relation has such nature, that, whether a key is known, the other one is very difficult to find. Thus, if we encrypt with one of them, we will only be able to decrypt with the other one and vice versa.

Two directions of using the asymmetrical crypto-systems:

– *confidentiality*, the public key will be made public and the person who wishes to send confidential data to the public key owner will only encrypt via this key, being aware that the owner solely can decrypt them;

– *authentification of both the transmitter and data,* where the transmitter encrypts the data via his secret key, and the person who wishes to authenticate the data will use the pair key for decryption (the public one).

Even if the asymmetric cryptosystem is strong enough, you need to have the key length of at least 2,304 bits, in order to provide a security level, comparable with the one from a 128 bit-key in the symmetric cryptosystem. The asymmetric cryptosystems are much slower in encrypting and decrypting and are not as good at encrypting large volumes of information, i.e. the computer-based databases. The symmetric cryptosystems are circa 1,000 times faster than the asymmetric ones, hence the latter ones are more often used for the basic purposes:

– *key distribution*, used for the encrypting symmetric algorithms;

– *the digital signature,* an attribute of a user, for the purpose of his identification.

The most widely used asymmetric encryption systems are as below:

– RSA (Rivest-Shamir-Adleman);

– EG (El Gamal);

– ECC (Elliptical Curve Cryptography).

Hash functions

The hash function applies to a message of a certain length M and transmits a value of a fixed length h: h=H(M), where h has the m length. There are plenty of such functions, but the hash ones have also extra properties, which make them unidirectional:

- knowing M is easy to calculate h;
- knowing H and h it is difficult to calculate M, for which H(M) = h;
- Knowing M, is it difficult to find another M1 message, for which H(M)=H(M1).

The hash functions play an important role in the authentication of a message content, transmitted to the systems including databases. Their role is not to reveal the secret of transmission, but to create a value h=H(M), also called *digest,* essential in the digital signature procedure, very hard to forge. One of the fundamental requirements for such function is that, by changing a bit upon entrance, this will trigger an avalanche of changing bits at the exit.

There are more calculation plans for the digest of a message, where the most widely used are:

– MD5 – an algorithm that receives a message of an arbitrary length at the entrance and generates a digest of 128 bits at the exit;

– SHA1 – NIST, along with NSA designed an algorithm for the calculation of hash function, called *Secure Hash Algorithm (SHA),* where the standard is *SHS.* It is meant to be used together with the digital signature system, *DSS*. *SHA* generates a digest of 160 bits, higher than *MD5.*

Therefore, the issue of an efficient definition of a encryption infrastructure emerges.

The infrastructure of the hybrid encryption algorithms systems for databases

The definition of the infrastructure of the encryption algorithms systems is done via the exchange of confidential information by a vulnerable network, like Internet or Intranet. The information should not be read by anyone else than the recipient, who will be able to identify the information source, in order to detect a possible information alteration. The components required for the above are as follows:

- a symmetric encryption algorithm (for eg AES), to encrypt the information flow;
- the infrastructure of the keys in use (creation, organization, storage, distribution, maintenance):
- session keys, used by the symmetric encryption algorithms;
- terminal keys, used to encrypt the session keys (the infrastructure of the public keys is utilized – PKI);
- master keys, necessary for encrypting the terminal secret keys;
- asymmetric encryption algorithm (for changing the session keys);
- hash functions, to validate the integrity of data or to authenticate their content;
- a digital signature, to authenticate the data source.

The drafting of the hybrid encryption system of an instant files transfer into databases

The system above-mentioned refers to creating encrypted communication systems on Internet or Intranet, which allows the instant transfer of files and/or messages. This system may be implemented into various systems of databases, information-distributed. A proposition has been made to create a hybrid encryption system at the application level in the TCP/IP protocols series. The application defines a port for communication and uses the TCP protocol to transport data within the relations among the databases.

This encryption system is seen as a solution to the computer-based security issues of databases and may be done both for the calculation systems that are connected to the Internet by a constant IP address and for the ones where the IP is generated upon connection.

The hybrid encryption system includes the following components:

- the symmetric system of data flow encryption;
- the asymmetric algorithm for a regular change of the session keys;
- the digital signature to authenticate the entities during communication.

The general architecture of the system includes the following applications:

- a server application, with functions of generating, signing and administration of the certificates for each user;

o user applications, which communicate among them and with the server application.

The server application provides the following services:

o the generating of digital certificates for each user;

o keeping the record of the users who received certificates;

o the signing of the certificates, to check their validity;

o the control and follow-up on the certificates that have been voided or are expired.

The certificate that contains the secret key will be encrypted via a phrase introduced by the user, and the public-key certificate will be stored in a public database, so that each user has access to it.

The public key certificate has the following structure:

– the identification series of each certificate;

– user (personal data);

– the certificate expiration date;

– the public key of the user;

– the signature of the server application.

The certificate that keeps the secret key will have the same structure, except that this secret key is encrypted with a symmetric encryption algorithm (the hash function of the user phrase will be used as a key).

The database user application has the following possibilities:

1. Connecting to another user:

o at first, the user identity will be checked via the key phrase;

o the creation of a connection request to the desired application.

2. The request includes the following data:

o the request subject;

o the public key certificate;

o the session key, encrypted with the recipient public key;

o the source digital signature.

3. The acceptance of a connection from another user:

– the source authenticity will be checked;

– the session key will be extracted and decrypted.

4. The encryption/decryption of the data flow via the session key.

5. The loading of the public keys digital certificates from the server application.

In order to achieve a encryption system, the most efficient platforms need to be used, to create the applications: the *Java* platform at Sun or the *Microsoft .Net Framework* platform.

Three extensions are being suggested, as a integrant part in the SDK package, which gives a new perspective upon security. The three extensions are: JCE (*Java Cryptography Extension*), JSSE (*Java Secure Socket Extension*) and JAAS (*Java Authentication and Authorization Service).*

JCE represents the frame where the below are implemented:

– encryption algorithms, where the most known are DES, RC2, RC4, IDEA, 3DES, AES, RSA;

– algorithms to generate keys for the encryption algorithms;
– password encryption, PBE (Password Based Encryption).

JCE has the following services:

– key plants (keys may be generated for the algorithms types above-mentioned);
– the creation and management of the databases where the keys are stored;
– the building and management of the encryption algorithms parameters;
– certificates plants.

JSSE implements the protocols SSL V3 (*Secure Socket Layer*) and TLS 1.0 (*Transport Layer Security*). This extension also provides such a support for the HTTPS protocol and the RSA encryption algorithm.

The JAAS extension allows to the services on a server to authenticate themselves and provide the control upon the users of these services.

Microsoft suggests, in general, the same services via Microsoft CryptoAPI technology.

Future trends in the databases security

One of these trends is the *elliptical curves in Galois fields*. The complexity of solving an equation of an elliptical curve type is an issue much harder than the decomposition of a number in prime factors. The study is still in its first stages and a cipher using this scheme is expected soon.

Not long ago, the theoretical bases for the quantum computers have been drafted. They rely on the *polarization effect*. The measure unit of information for such systems is the *qbit*. In comparison to the classic bit, which may have only two values, these systems include a third one, depending on the system structure at one point. The great advantage of this system is that, once the information transmission starts between two terminal points, any attempt to capture the information without changing it is impossible, due to the polarization effect. This method operates perfectly in theory and hardware implementations are expected in the future.

Thanks to the surprising development of the Internet, and not to the structural models (OSI and TCP/IP) this technology is based on, the electronic commerce requires quality, security, reliability and, above all, the possibility of implementing all such concepts.

Consequently, the study of the encryption and security methods for the computer-based databases, as well as finding strong cryptosystems remains a permanent issue.

Conclusions

The computer-based security of databases is an issue that becomes more relevant and acute, along with the development of the calculation networks and systems industry. One of the basic methods in providing informational security is the encryption method. At the present moment, cryptography covers a set of protocols, encryption algorithms, infrastructures of handling the cryptographic keys, etc. In order to achieve a safe system of information protection, we need to

foresee all the directions it may be attacked from, since it is useless to secure a side of the system when the attach might come from a more vulnerable point. A cryptographic system is effective when it maintains the balance between what is necessary and what is possible. To create such system, a good infrastructure is required, with the following components: symmetric cryptographic algorithms, asymmetric, of hash function, digital signature and an infrastructure of the necessary keys.

In practice, should the issue of implementing this system emerges, two ways can be taken: the selection of an existent system or the creation of a new one. Each of these two has its advantages and disadvantages. The existent solutions have been already studied by specialists and implemented, hence they are safer to use; the problem is that they cannot be included in our computer-based system all the time. Therefore, we need to create a system adjusted to our needs.

Such system is suggested for the secured data transfer among distributed information systems. This system is an effective solution for the companies that own a distributed information infrastructure. The advantages brought about are the flexibility, automatization at work and an increased security by implementing the encryption algorithms of the computer-based databases.

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COMPETITIVENESS IN ORGANIZATIONAL INTEGRATED COMPUTER SYSTEM PROJECT MANAGEMENT

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Abstract

The organizational integrated computer system project management aims at achieving competitiveness by unitary, connected and personalised treatment of the requirements for this type of projects, along with the adequate application of all the basic management, administration and project planning principles, as well as of the basic concepts of the organisational information management development.

The paper presents some aspects of organizational computer systems project management competitiveness with the specific reference to some Romanian companies' projects.

Key-words: *competitiveness*, *management, project management, advanced technologies, organizational integrated computer systems*

JEL Classification: O32, L86

Introduction

The strategic management within an economic organisation went though profound changes regarding the business development model, passing from the *top-down* classic model based on strategy (vision, mission, purposes, strategies, tactics and action plans) to the *top-down and bottom-up* combined model based on new opportunities and competences (where the flow *strategic intentions-challenges* of the social-economic environment-*opportunities* is covered, depending on the practical situation emerged at some point, both ways). The project management is one of the most important management categories (as divisions of the management science) putting into practice the strategic management model.

The constant tendencies in the competitive business management clearly highlight the competitiveness requirements by providing a rapid reaction time on the market in relation to the organisational integrated information systems (SIIO), just like in relation with the auto products, electronic or telecommunications products. In order to deal with this requirement referring to the rapid reaction time we must use a coherent and efficient set of methods, techniques and instruments, as well as applicable technologies for this purpose.

The organisational integrated computer system project management aims at obtaining *competitiveness* by unitary, co-related and personalised treatment of the requirements for this type of projects, along with the adequate application of all the

basic principles of management and project planning, as well as the basic concepts of the information and organisational management development, according to the requirements of the organisational strategic management.

Competitiveness in the integrated computer system project management

The competitiveness of the organisational integrated computer system project management involves a technical side and an economic side. The competitiveness of the organisational integrated computer system projects is a complex characteristic that imposes the simultaneous fulfilment of the conditions specific to the technical and economic sides. *The technical competitiveness* of an organisational integrated computer system is defined by that computer system state whose technical level is comparable to that of other computer systems with the same employment for the satisfaction of certain needs of the clients. A *minimal technical level* is defined in relation with the inferior limit measure of client needs satisfaction. The organisational integrated computer system projects that satisfy *the minimal requirements* are part of a competitiveness area. Different methods with a greater or smaller degree of objectivity are used for the evaluation of the technical level of competitiveness of the organisational integrated computer system projects.

For instance, the *DISTECH method* (Scarlat C., 2001) or the *technical distance method* was developed and tested in the laboratories of the *industrial management department* within the *Politehnica* University of Bucharest. The *DISTECH method* is a managerial method for analysis and decision referring to the technical level of the products or services projects, the technological level of fabrication of the products or service delivery and for the competitiveness of the products and services. The *DISTECH method* provides the ranking of the products and services in an ascending sequence of the absolute technical distance of the product or service and the forecast of the future directions of product and services improvement, by highlighting the characteristics that need improvement.

The economic competitiveness of an organisational integrated computer system project is defined if the set of economic delivery requirements as contractual provisions (cost, delivery conditions, payment instruments, commercial and exchange policy components etc.) is *comparable* to the one belonging to other products of the same use for the satisfaction of clients' needs. *The cost* of an organisational integrated computer system project has a superior and an inferior margin, thus being defined the *economic competitiveness area*. The inferior margin of the cost (*the minimum cost*) is determined by the production cost of the organisational integrated computer system. Regardless of the technical level, a computer system project becomes non-competitive if its cost exceeds the *maximum cost.*

The technical-economic competitiveness field of an organisational integrated computer system project can be represented by the function **Cost=function (technical distance)**, as a hyperbole, like shown in Figure 1. The smaller the technical distance is (meaning the technical level is more elevated), the greater the unit cost of the organisational integrated computer system project is.

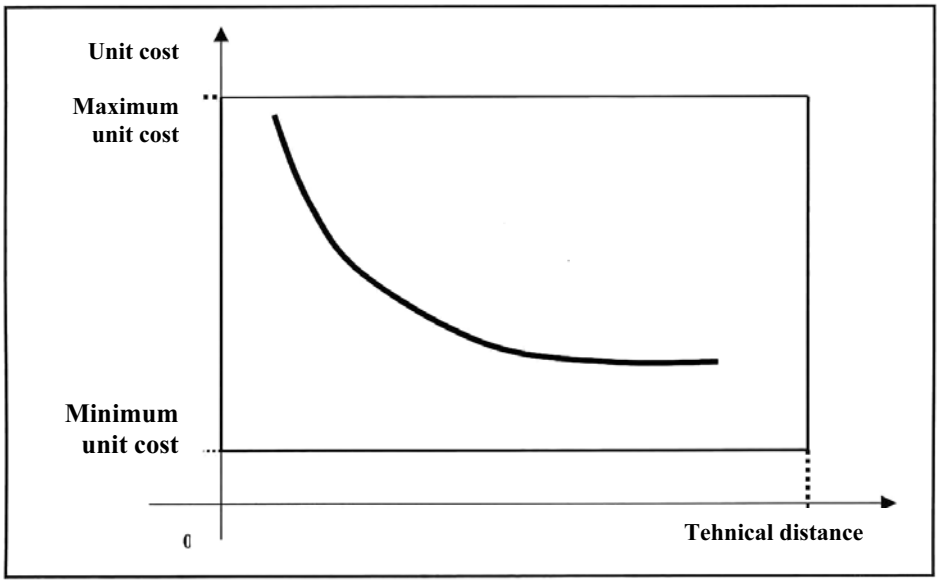

Fig. 1. *The technical-economic competitiveness area of an organisational integrated computer system project*

The establishment of the technical-economic competitiveness area may be effected on the set of the organisational integrated computer system or on the component modules of these computer systems.

Competitive organisational integrated computer system projects

In compliance with the international standard of evaluation of the software products quality – ISO/IEC 9126, the characteristics of a computer product fall into three *categories*: 1) technical and of use, 2) economic and 3) social and psychological-sensuous. *The metrics* of the SIIO projects are quantitative, qualitative and belonging to the project management. *The production model* for SIIO is *a model of production of projects* where the activities can be specific to a certain phase of the life cycle or can be independent of it.

The performance characteristics of the organisational integrated computer system projects, used in the evaluation by classification of each characteristic are mentioned: functionality, reliability, usability, efficiency, maintainability, portability, inter-operability, complexity, maturity, scalability, cost, "*friendly*" computer applications, a level of understanding of the computer applications by the final users, immediate accessibility of users' training, the availability of different versions of SIIO projects, the compatibility with many hardware platforms and operation systems, the level of security.

For the analysis of the organisational integrated computer system projects competitiveness (SIIO) *of the Enterprise type* (table 1) the technical distance calculation method was applied on basis of the performance technical and economic characteristics of the computer products. This method was presented in the anterior paragraph and was used in a survey made on 42 master candidates, graduates or persons who are currently employed in the field of integrated computer system projects.

In a downward order of the importance of the performance characteristics of the studied SIIO, these correspond to the ISO/IEC 9125 hierarchy: functionality, reliability, usability, efficiency, maintainability, portability.

The higher the cost, the better SIIO is from the point of view of the functionality characteristics, security, easy usage, maintainability, scalability, compatibility, level of computer security.

The higher the cost, the better SIIO is from the point of view of the technical and economic competitiveness, this conclusion confirming the variation in the curve represented in fig. 1.

Table 1

Organisational integrated computer system projects evaluated by the DISTEH method

No.	Name of the organisational integrated computer system project	**Supplier company**	**Competitiveness coefficient**
1.	*WizPro*	*Wizrom*	8,22
2.	*Charisma Enterprise*	*TotalSoft*	8,42
3.	*Socrate Open Enterprise*	*BitSoftware*	8,36
4.	*Enterprise Project Management*	*eData*	8,20
5.	*Enterprise Resource Planning*	*IQUEST*	8,38

The higher *the competitiveness coefficient* is for the five evaluated SIIO (table 1), the more competitive SIIO is.

Table 2

Organisational integrated computer system projects evaluated on basis of the MAGIQ competitive analysis metrics

No	Name of the organisational integrated computer system project	**Technical performances 0,2500**					**Economic performances 0,7500**		**Total quality**
		Functionality 0,4567	*Reliability 0,2567*	*Usability 0,1567*	*Maintainability 0,0900*	*Portability 0,0400*	Cost 0,7500	Delivery conditions 0,2500	
1	*Enterprise Resource Planning*	0,4567	0,2567	0,4567	0,4567	0,2567	0,0900	0,4567	**0,2356**
2	*Charisma Enterprise*	0,2567	0,4567	0,1567	0,2567	0,1567	0,4567	0,1567	**0,6963**
3	*Socrate Open Enterprise*	0,1567	0,0900	0,0400	0,0900	0,4567	0,2567	0,2567	**0,2244**
4	*WizPro*	0,0900	0,0400	0,2567	0,1567	0,0900	0,1567	0,0400	**0,1230**
5	*Enterprise Project Management*	0,0400	0,1567	0,0900	0,0400	0,0400	0,0400	0,0900	**0,0588**

By applying *the decision assistance multi-criteria analysis techniques*, similar results referring to the SIIO activity can be obtained. Such a technique is represented by James McCaffrey's Multi-Attribute Global Inference of Quality, MAGIQ. In table 2, the ranks of the opinion/perception survey presented in the case of DISTECH techniques were pointed out.

Conclusions

Within the *Economic Competitiveness Growth Local Operational Programme* (with projects financed through European Structural funds), the priority axis 3 referring to IT&C projects includes areas for the IT usage support projects, for the development of the electronic public services and for the development of the *e-economy*. Within these projects specific to the above mentioned areas, the organisational integrated computer system component represents the architectural core whose competitiveness determines the competitiveness of the whole project.

In our country there are preoccupations for the study of self-competitiveness, local, regional, national competitiveness, in universities and research units. Such an example is Politehnica University of Bucharest and the Chamber of Commerce and Industry and Agriculture from Timisoara. At *Spiru Haret* University there are courses entitled *Economic integrated computer systems* and *Comparative financial and accounting computer systems* within the *Accounting of economic entities and public institutions master programme*, which develop themes referring to the SIIO competitiveness.

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DISTRIBUTED SYSTEMS AND NUMERIC CALCULATION

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Abstract

Many software applications are considered as being failures, due to the fact that they cannot deal with certain issues. Thus the application and the investment are not justified. This situation is named implementation trap [1]. The resolution of a false problem can damage the whole project: it can be abandoned, so one can lose time and money. The architecture offers different but complementary points of view over the soft.

Key-words: *software architecture, web services, numeric calculation, distributed systems*

JEL Classification: C63

Introduction

The process of projecting architecture is described through the following steps: the problem understanding, the identification of the projection elements and the relations among them, the evaluation of the architecture, the transformation of the architecture. The architectural perspective of the software developing cycle is centered on the application or system projection and on the way the project leads to its application. This is named architecture based on software construction. (Sewell M, Sewell L., 2002). The domain analysis is one of the most important activities when realizing a software architecture. A good analysis of the domain can significantly contribute to the success of the software applications. As a rule, the programmer is focused on the computer science.

The source code represents an abstraction of the machine instructions and the data types structured in the terms of a programming language grammar. Two programs written in different programming languages, but compiled on the same hardware platform will use the same machine instruction (Albin S.T., 2003).

Java and C programming languages offer different concepts. C affords the type of structure data, which is vaguely defined by the user and Java affords a type

of classes which is strongly defined. It is possible to obtain the same machine code and types of data when one compiles a Java and C program. Java is compiled in byte code and interpreted by the virtual Java machine which, in its turn is compiled for a specific hardware platform.

Literature review

A problem can occur in any other field, not necessarily in informatics. It can be a physics, engineering or even a life problem. Regardless of the field of the problem, a pattern is created. It can be a discreet or a continuous one. In order to resolve it, we can use one of the two methods: analytical or numerical, depending on the type of the problem. After the completion of the first three stages, there is the implementing stage, which involves the application in a programming language as C/C++/Java/Python and the usage through a parallel calculation. In the end, we meet the visualization, the interpretation and the experimentation of the solution.

The graphic representation of the solving stages is shown below:

PROBLEM	PATTERN	METHOD	IMPLEMENTATION
– Physics – Engineering – Life	– Discreet – Continuous	– Analytic – Numerical	– C/ C++/ Java/ Python – Parallel calculation
THEME – Vizualization – Interpretation – Experimentation			

Fig. 1. *The graphic representation of a problem resolving stages*

If we examine the classical process of information, such as the process of automation with the help of the computers, we find the solution for the informatics request. Each and every case was preceded by a period of procedures formulating. These were precise and not ambiguous. They represented the base for the algorithm concept. The procedure must be applied to the data.

Therefore, the digital technologies are based on charges identified through data and algorithms. A consequence is the fact that they require a good training about the contents, mostly for that derived from two fields: the tasks field and the informatics field.

The additional knowledge in data, algorithms and programs executed with data algorithms accumulated in the Computer Science must be added to the Applied Informatics.

It is crucially important to choose the adequate program for the success of the program use.

Theoretical background

Once the application realized, it must be connected through a web service. From now on, it is not only an individual application anymore, it can also communicate with other ones.

The Web services revolutionize the way one application communicates with other application, offering a universal format of data which can be easily adapted or transformed. Based on XML, the Web services can communicate with different platforms and operating systems, regardless of the used programming language (Lawler Jones P., Howell-Barber H., 2008).

Every Web service is a code sequence which deals with a specific set of tasks. The Web services are independent, they can be linked in order to create a new group.

At present, the technology of the Web applications is known. It is known the fact that the Web application technology is realized by exchanging data and information via Internet. The exchange is based on the protocols through the portal servers.

The Web services eliminate many barriers in communicating the information, but there are also several problems. The elimination of the differences between the used technology, the protocols and the information structure represents the solution to these problems.

The distributed object technologies allow the ruling objects on a computer be accessed by applications or objects belonging to other systems.

The importance of the distributed systems is assured by the software components. The developer of such an application must combine efficiently the role of the software components, the used technology and the chosen architectural model with the initial and later requirements of the user.

There are many practical considerations (Bass Clements P., Kazman R., 1998) as concern the projection of the distributed components, because there are significant differences between the unfolding of a local code sequence and the one of a remote code sequence.

The web service for numerical computation

The purpose of the present study is the analysis of the surplus introduced by the Web service interface and the exposure manner in a simpler way of the facilities it offers.

For my study I use the Numerical Library in Java for Scientists and Engineers. I do not implement again the codes used in it, I am only using the already implemented ones.

The transfer from an interface with the user in the command line to an interface based on the Web services represents a great advantage because it allows the combination and the usage of some procedures (routines), previously defined. The knowledge and the learning of the numerical computation methods are practical, efficient and elegant. The realization of a Web service will significantly contribute to this process (Hong T. Lau, 2004)

There is a series of functions within the realized numerical computation. They can be appealed by other functions belonging to other groups, named Basic. The table contains only the basic functions.

Table 1

The representation of the common functions

Function Name	Basic1	Basic 2	Basic 3	Basic 4	Basic 5	Basic 6	Basic 7
Rnk1min			Rnk1min		Rnk1min		
Praxis	Praxis		Praxis				
Marquardt	Marquardt		Marquardt				
Gssnewton	Gssnewton		Gssnewton				
Multistep	Multistep		Multistep				
Ark	Ark		Ark				
Efrk	Efrk		Efrk				
Efsirk	Efsirk		Efsirk				
Liniger1vs	Liniger1vs		Liniger1vs				
Liniger 2	Liniger 2		Liniger 2				
Gms	Gms		Gms				
Impex	Impex		Impex				
Peide	Peide		Peide				
Minmaxpol	Minmaxpol	Minmaxpol				Minmaxpol	

By using these functions I obtained a series of tests, following different possible scenarios for problem solving. The experimental results are presented in the table below.

Table 2

The obtained time when testing

	WS 2x2	Con 2x2	WS 3x3	Con 3x3	WS 4x4	Con 4x4	WS 5x5	Con 5x5	WS 6x6	Con 6x6	WS 7x7	Con 7x7	WS 8x8	Con 8x8	WS 9x9	Con 9x9
Suma 1	124	31760	155	63933	293	104647	317	118323	642	179817	1445	243078	96	286256	-	-
Suma 2	87	32082	122	60776	137	99928	146	112502	188	179686	1517	324743	3160	286083	-	-
Suma 3	89	29685	117	64181	103	100201	135	114665	213	171903	217	379526	263	371584	-	-
Scadere 1	56	31719	116	63946	128	100474	138	117425	190	180489	210	366958	259	280512	-	-
Scadere 2	55	32245	173	56843	791	100124	905	114534	1013	179535	1390	364693	2512	285700	-	-
Produs	63	31372	167	55817	173	99639	247	116339	426	192731	504	356460	8477	399901	-	-
Divizare	62	31922	173	62806	118	91329	1420	119942	200	183242	1668	360198	428	416070	-	-
Transpusa 1	4	28385	69	48881	91	87872	124	118044	168	180539	5777	352467	2646	405871	-	-
Transpusa 2	50	29611	68	62897	105	91625	1494	114164	2137	183603	3280	467799	4870	510209	-	-
Determinantul	31	156	124	286	515	3922	6508	4567	24233	23344	76555	255284	967344	826578	-	-
Inversul	286	34208	468	52574	5670	91807	18898	132468	151344	315996	1048074	2301332	8829661	10053879	-	-
Media	50	5362	61	5016	77	8467	124	11956	9	11921	140	19830	157	124004	-	-
Matricea medie	45	6134	57	10812	66	11434	83	11423	794	19435	116	19838	132	34184	-	-
Covarianta	75	29850	139	56160	166	87511	1064	112456	432	172651	1210	380630	698	439619	-	-

*) The time is expressed in microseconds

*) WS – Web Service

*) Con – Executed in a console

Due to the calculation of the inverse, the time for execution beginning with 9x9 is longer than 30 seconds.

The advantages of the functions usage:

✓ the possibility of resolving ample problems, which do not go in the user‘s computer memory;

✓ the identification of the common costs;

✓ the reduction of the costs;

✓ the reduction of the time response.

The client can get involved in the problem description.

Conclusions

In this paper I presented a general view on the architectures based on services and their present state in the informational and research fields. I also specified the role of the Web services and their benefits, but also the problems in realizing the Web services. I also carefully presented some concepts connected to the architecture of the distributed systems. The idea I want to develop is that of attaining some Web services, by using numerical computation methods. The applications are created on the Eclipse platform and made with the help of the book *Numerical Library in Java for Scientists and Engineers*. They begin with elementary structures and build up to some more complicated ones.

By grouping them and creating services for each of them, I realized that many functions appeal to other functions and thus, I created a table where I put only the functions which appear one time. I created a proper service for each function and I followed the response time. I noticed that this time differs depending on the complexity of the function.

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REVIEWS

GEORGE A. AKERLOF, ROBERT J. SHILLER

Animal spirits. How human psychology drives the economy and why it matters for global capitalism

Animal spirits[*]. How human psychology drives the economy and why it matters for global capitalism helps us understand how the economic systems operate on the economic theory crisis background. The message of the book is *recognizing the importance of irrationality factors in formulating the economic theory*.

The paper calls for reconsidering the economy fundamentals and principles, *presenting a new way of understanding the significant economic phenomena* that standard economic science cannot explain or accurately interpret. In this respect, a new way to revolutionize the economic thinking which might change the approach of the economic crises, unemployment, poverty, economic fluctuations and the like, is open.

The paper highlights the fact that the chaos and the economic and financial disorder are not incidental, there's *a coherent correlation between psychology and economy* in the economic behaviour sphere, demonstrating that strong psychological forces interfere with the nation's welfare. In this respect, *the state must play an active role in elaborating the rules of the economic game*, of the economic institutions and strategies, bringing up the *animal spirits* collocation used by Keynes to describe the gloomy outlook generated by the Great

Recession and by the change of the economic subjects behavioural psychology.

The two authors, George A. Akerlof and Robert J. Shiller are famous economists, professors, researchers and practitioners in macroeconomy; the former won the Nobel Prize for Economy in 2001 for his contribution to elaborating the theory of asymmetric information markets, while the latter is an expert in the behavioural macroeconomy analysis.

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[*] The "animal spirits" collocation (coming from Latin *spiritus animalis*, where animus pertains to the soul or means to animate) refers to that nervous fluid presently covering the *psychological and emotional motivation factors*. In a broad sense, the animal spirits refer to vivacity, to the natural state of a healthy animal, acting as an intermediary between the body and soul. In an economic context, Keynes speaks about the people's strength and vitality determining them to make bold decisions and to invest money, effort and time in business initiatives. From an economic perspective, the animal spirits cover an element of anxiety and inconsistency present in the economy, the people's unusual ambiguity and insecurity which sometimes paralyse them, while otherwise stimulate them overcome fear and hesitation.

The book emphasizes that in order to understand the significant economic phenomena and processes, we must have in view that their ethiology is particularly psychological, therefore we need to focus on *the thoughts that feed the people's ideas and feelings*, their animal spirits (the psychological and emotional factors).

The book *mainly aims at* explaining *the role of psychology in macroeconomy*, called by the authors the people's animal spirit. In its two parts, the book addresses the role of this spirit in explaining the operation and the development of the economic systems.

The first part of the book describes *five* different *animal spirits* of the humans being affecting their behaviours and the economic decisions: *trust, equity, corruption and disloyalty (antisocial behaviour), money illusion and stories*. The authors' theory is mainly based on trust and on the reaction mechanisms that "contaminate" the economy. A fair income distribution is mainly based on equity, the tendency towards corruption and antisocial behaviour is a feature of the man's animal spirits. Money illusion is another component of the authors' theory, emphasizing the fact that people cannot make an accurate difference between inflation and deflation nor are familiar with their effects. In the end, the authors believe that the sense of reality, namely who we are and what we do, intertwines with our and others' life stories, resulting in a great national and international story which plays an important part in the economy.

The second part of the book addresses the way in which the five animal spirits affect the economic decisions and behaviours, demonstrating their crucial role in answering *the following eight questions: why do economies undergo crisis?; why do the central banks' executives hold a significant weight over the economy?; why cannot people find employment?; why is there a long-term compensation between inflation and unemployment?; why is saving arbitrary?; why are the prices and corporate investments fluctuating?; why do real estate markets experience a cyclic evolution?; why do deprived minorities permanently face poverty?*

The animal spirits theory provides proper answers to each of these questions. The questions would remain unanswered if people were seen as having exclusively economic motivations, trying to rationally meet them, in other words, if the economy operated according to the Adam Smith's invisible hand principle. The questions are fundamental in order to explain the economic fluctuations, the involuntary unemployment, as well as the way in which the monetary and fiscal strategies affect the economy.

The authors state that the animal spirits theory solves the following *dilemmas*: why couldn't the current economic crisis be foreseen, how can we understand the crisis since its underlying causes are unknown and why all the anti-crisis actions fail, while the economic authorities publicly express their concern about the insufficiency of procedures.

The authors assert that the current economic theories dwell on rational expectations and efficient markets, instead of focusing on the most important dynamics of the economic crises; the failure to integrate the animal spirits in the theory-based patterns obstructs the identification of the real cause of the problems.

The crisis couldn't be foreseen by the society at large, economists and theoretists because no conventional economic theory principles took into account the animal spirits; such a theory excludes the changing, spontaneous thinking patterns and the business behaviours which generate crises, overlooking the lost of trust in determining real, unpredictable, contagious behaviours, as well as the feeling of equity and justice paralysing the price and income flexibility, elements which might stabilize the economy.

The book militates for integrating the animal spirits into the economic theory in order to understand how the economy really operates. The economic theory from the last three decades has been heading in the wrong direction by emphasizing its quantitative dimensions; macroeconomists impose research and explanatory discussions on where would economy head if people had exclusively economic reasons and if they were perfectly rational. In order to understand the trap the conventional economic theory has fallen into, let's imagine a square divided into four sections.

Answers			
		rational	irrational
Motivations	economic	the conventional theory	
	non-economic		

The current theories and patterns fit particularly in the upper left box, answering the questions: how will the economy behave if people have solely economic motivations to be rationally met? Yet, this question immediately leads to the following questions: how does the economy behave under the non-economic motivation and rational answer conditions?; how does the economy behave under the economic motivation and rational answer conditions?; how does the economy behave under the non-economic motivation and irrational answer conditions?

The authors believe that the answers to the most important questions on how the economy behaves and the steps to be taken when heading in the wrong direction reside in filling in the empty boxes.

In order to materialize the importance of the people's non-economic motivations and irrational decisions, we can stress the fact that the capitalist system does not merely sell the people what they really want, but what they think they want, especially on the financial markets. This leads to excesses and bankruptcy generating large-scale economic failures. All these phenomena are influenced by *stories and legends* people tell about themselves, about others and even about the way in which economy, as a whole, behaves; such stories vary along time.

According to the authors, the animal spirits world *enables the state* to take action. Its role is to set the terms under which the human feelings may be creatively used to serve a general, collective, social purpose. If people acted rationally to meet economic purposes, the state's role in market regulation (financial markets, in particular) and in demand setting would be limited. On the contrary, following the

animal spirits' tendency to determine the economy's direction, without any involvement from the state, the economy will experience major employment fluctuations and the financial markets are likely to face serious challenges.

Once in a while, the capitalist economies undergo major changes in point of the stories on who the people are and should be, such changes covering the stories on how the economy operates. In this respect, the book demonstrates that *"the invisible hand" story* and its consequences provide detailed recommendations on the *state's role*, even regarding extremely specific aspects. The authors argue that the economy and the state's role cannot be described solely on economic grounds, an advanced knowledge of trust, equity, opportunities, corruption, money illusion and stories is required.

To sum up, the authors state that the economic issues cannot be solved unless the animal spirits are taken into account.

From a theoretical perspective, *the globalization story* gains new, maybe more realistic dimensions, emphasizing the importance of *interdependences, interactions, polarization, anxiety and fear, panic, irrational reactions and the like* and highlighting the unpredictable behaviour of people, in general and of the economic subjects, in particular.

6 May 2010
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TITO BOERI, JAN VAN OURS

The Economics of Imperfect Labor Markets

Princeton University Press, 2008

Tito Boeri is professor of economics at Bocconi University in Milan and scientific director at Fondazione Rodolfo Debenedetti. Jan van Ours is professor of economics at Tilburg University in the Netherlands and temporary employee as professor of economics at Melbourne University. Their research field is mainly the labour economics and they have become notorious in the specialist literature for studying relevant economic phenomena, as well as their reflection on every day's life.

"The Economics of Imperfect Labor Markets" concentrates on the labour market institutions in the conditions of an imperfect labour market. The importance of the institutions for the economic development has been long ago understood, being highlighted, for example, in Adam Smith's work (1776) and acknowledged with the Nobel Prize (1993) awarded to Douglas North[1]. Although the labour market institutions have a determinant role in the performance of the labour markets, affecting equally the employee's behaviour and there is a general consensus on introducing certain "rigidities" on the labour market, the political implications in practice result in intense debates on the subject. How much rigidity is wanted? To what extent do the labour market institutions "ideally" reflect the specific characteristics and preferences? Which are the consequences of having faulty institutions and which are the benefits of their consolidation? Who is winning and who is losing as a consequence of the legislation regarding the occupation protection? These are only a few questions for which an answer is required.

The study is a novelty, enriching the specialist literature taking into consideration that for the first time, the institutions are analysed in detail, each of them being the subject of a chapter. Usually, there is not enough information in the available specialist books about the institutions of the labour market and the policies of the labour market; these are not treated in a complete and systematic manner. The book has 13 chapters, each of them analysing a labour market institution, except the first and the last chapter that are concentrated on a general presentation of the interaction between the institutions. The authors define the labour work institution as being: "a system of laws, norms or conventions resulting from a collective choice and providing constraints or incentives that alter individual choices over labor and pay".

The labour market institutions separately analysed in the 11 chapters are: the minimum wages, unions and collective bargaining, payroll taxes, regulations of

[1] North, Douglass C., *Institutions, Institutional Change and Economic Performance*, 1990.

working hours, retirement programs, family, education and training policies, migration policies, the employment protection legislation, unemployment benefits and active labour market policies. Each chapter is structured the same way, containing definitions, measurement methods (the variation between countries and the evolution of the time series), theories, empirical evidence (at a micro and macro level), policies, a general evaluation of the institution in the current context, suggestions, questions and a technical appendix including the theoretical background. The statistic information regarding the time evolution of these institutions is given for all the OECD countries.

The book is a novelty in the field because the institutions have been analysed in the context of an imperfect labour market, even if they are themselves a cause for imperfection. The labour market are not perfectly competitive by nature, most of the imperfections being caused by the information problems and the function of the market mechanism. The book has a holistic approach, taking into consideration that the institutions do not function isolated and therefore not only the direct effects of each institution upon the employement, unemployment and wages are analysed, but also the indirect effects mediated by the presence of other institutions.

The targeted readers include: students specialising in labour economics, political economics and business, graduates specialised in the field as well as economists working within international organisations and governmental agencies.

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