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**ASSESSMENT OF THE CONDITION OF PRIMARY HEALTH CARE IN BULGARIA**

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**Abstract**

*The article presents and analyzes four key characteristics necessary for the proper functioning of primary health care: accessibility, continuity, complexity and coordination. Accessibility is considered in three aspects - geographic, organizational and financial, as are the particulars of the Republic of Bulgaria and analyzed legal documents related to the problem. Continuity is discussed based on existing regulations in the country. As regards the other two key features is showed on the viewpoint of the authors and their current status in primary care.*

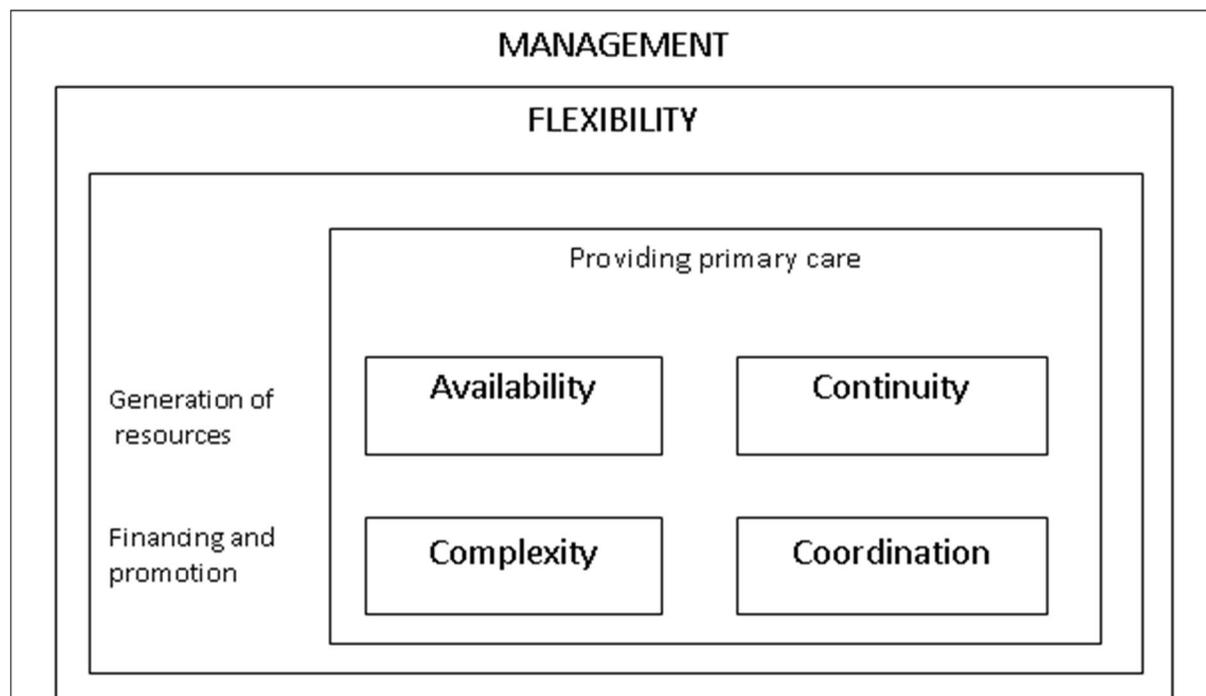
**Key words:** *assessment, primary health care, accessibility, continuity, complexity, coordination*

The features of the primary health care in the various countries are different. There are many different definitions of the components of the primary healthcare assistance. Regardless of this the entire and good developed system of the Primary health care should meet the following requirements:

The primary health care is at the level of the healthcare system, on which there is done the **primary contact** of all new needs and problems related to the health of the patient, it ensures **orientated towards the patient (and not only for the disease) care for a long period of time**, it provides cooperation with most of the diseases, with the exception of very rare and unusual situations, and this is the level, on which one **coordinates and integrates the given cares**, with the other levels of the system of the healthcare by other experts, too (Starfield, B.,1998).

The scheme of assessment of the primary health care (Figure 1) on grounds of which one develops the tools for evaluation, includes four functions of the healthcare system /management, generation of resources, funding and providing help/, combined with four key features of the primary healthcare services, which are part of the set of services, which is to be seen from the above provided definition.

We are going to present a short analysis of the four key features necessary for the proper functioning of the primary health care and we are going to give examples for the performance of these features in Bulgaria.



**Fig. 1.** Scheme to assess the status of primary health care

### Availability of services

In fact the access to healthcare services could be defined on grounds of how easily one could get medical assistance (Kelley E, Hurst J.,2006). In another way it could be determined as "ability for the patient to get assistance where and when this is necessary". There are different obstacles – with physical, mental, social and cultural or financial nature, which limit the availability. In the scheme of tools for assessment of the primary health care /PHC/ there are also included:

- ✓ geographical limitations (Distance to the medical institutions-ambulatories or distribution of the general practice = **geographical access**),
- ✓ factors, related to the organization of PHC (hours of work, remote consulting – on phone, due time = **organizational access**),
- ✓ as well as for costs, made by the patient (for sharing of the costs, mutual payment = **financial access**).

According to data from the Ministry of Healthcare /from January 2011/ 582 809 Bulgarian citizens live at places, where there is shortage of general practitioners. This is the population of the towns and villages, to which there is not enough interest from the part of the general practitioners. In fact these patients are not left without a general practitioner, they have usually chosen doctors from other practices, but actually they are deprived of quick access to medical services, because the doctor visits the village in particular days or the patients should travel long, in order to reach the doctor's cabinet. This situation puts the question about the **equal rights of the patients** - one of the biggest values of the European Union, which our healthcare system also should observe and provide for.

The total number of the unoccupied doctors practices here is 424, but the number of settlements without a doctor is bigger, since a part of the practices cover several villages. These are the so called “**non attractive regions**” – scarce populated, mountain or remote. Most unoccupied practices are in the region of Kurdzhali – 51. A serious shortage of doctors is in the regions of Targovishte and Silistra – 27 unoccupied practices each, Varna, Lovech and Plovdiv – 26 each, Razgrad and Rousse – 25 each. It is impressive, that part of them are also in towns, not only in villages. There is no lack of general practitioners only in Sofia city, Gabrovo and Vratsa. From decades on there are many small settlements which have no doctors, and the trend is that the general practitioners in the non attractive regions should become less and less. In Lovech for example 3 years ago the unoccupied practices have been 24, now they are 26. In Smolyan, however, they are surprisingly decreased in number – from 22 in 2009 unoccupied now are only 14. In Dobrich they were 5 and remain five, in Sliven from 5 unoccupied practices now they are only 1, in Turnovo, however, from 11 they are now 19.

Texts specifying **the organizational access** to medical assistance in our country, incl. to the general practitioner are to be found in:

- ✓ **the Law on the Health Insurance /LHI/, Art. 4.**, where „The mandatory health insurance guarantees free access of the insured persons to medical assistance by means of specified in type, scope and volume package of healthcare activities, as well as free choice of performer, who has concluded contract with the regional health insurance fund.”
- ✓ **the Law on the Medical Institutes /LMI/, Art. 29** – „the doctors, necessary for the out of hospital assistance in the Republic of Bulgaria, are planned and distributed according to a territorial principle on grounds of the needs of the population of accessible and due medical assistance, as the planning and distribution of the medical institutes is done by means of the National Health Card and Municipal Health Cards, by means of which one performs the national health policy.”
- ✓ **National Framework Agreement /NFA 2012/** for medical activities in Art. 125 ,(1), item 9. – The general practitioner ensures access to medical assistance out of the announced work schedule for the mandatorily health insured persons /MHIP/ according to **Ordinance Nr. 40 from 2004** as he/she provides for continuous access of the population to a doctor by means of one of the ways, which we discuss more detailed in the section about the continuous servicing.

With regard to the **financial access**, the one and only limitation with the mandatorily health insured persons could occur upon impossibility for payment of the user’s fee / to the amount of BGN 2.70/ with general practitioner, as one big part of the patients are released of this fee – In Appendix Nr. 12 of the NRD 2012 on the medical activities one has published a list with the diseases and the conditions, with which the health insured persons are released of paying the user’s fee on Art. 37 from the Law on Mandatory Health Insurance. Another problem is the presence of regulative standards, i.e. limited number of direction sheets for experts and medical diagnostic researches, which are highly scarce for covering the needs of the population and are a reason for creating conflicts between the general practitioners and their patients. In practice one cannot provide full coverage of the health needs despite of the presence of a package of guaranteed services because of the limited financial funds – from the budget of the NHIF for primary medical assistance one spends only BGN 169 000 thous. /or 14%/ which is very insufficient.

### **Continuity of the services**

An important feature of the primary medical insurance is the fact, that the interventions directed towards protection of the health of the patient should be in a long-term plan and they should be understood as successful treatment/ healing. The generic term of the continuity is “agreed management of the patient from one visit to another” (Starfield B et al., 1976). WHO /the World Health Organization/ offers a broader definition, which takes into consideration also (a possible) participation of different parties, supplying the healthcare services. The continuity is described as “the possibility to engage the corresponding parties which provide services, in order to propose incentives, which should be continuous in a short-term plan, regardless of the fact whether they are available for one and the same group of persons or for various groups of persons (cross-linked succession), there should be a continuous series of contact for a long period of time (long-term succession) ”( [www.euro.who](http://www.euro.who)).

There have been distinguished the various levels of continuity of the cares (Saultz JW, 2003):

First level – Continuity of information, related with the performance of medical and social history for the diseases of each patient, at hand for every person working in the field of healthcare, taking part in his/her treatment. This could be done by means of building a single information system in the healthcare system, which in Bulgaria is still not available.

The second level refers to the long-term succession, specifies the place, where the patient continuously receives medical cares from the part of the organization in an accessible and well known environment.

The third level – interpersonal succession which is determined as the continuous personal relations between the patient and the person, providing the services, is characterized with trust and respect (Saultz JW.,2003).

Besides in their work (Reid et al.) (Reid, R., Haggerty, J, McKendry, R., 2002), the authors suggest another level, called continuity of the reference: provisioning of duly and supplementary services within a plan for management. The scheme of the tools for evaluation of the PHC /primary medical assistance/ includes information, long-term and interpersonal continuity of the medical assistance.

In Bulgaria the continuity of the services, provided by the general practitioners, is regulated by the National Framework Agreement, the Law on the Health Insurance. According to NFA 2012 for medical activities in art. 125,(1), item 9. the general practitioner provides access to medical assistance out of the announced work schedule for MHIP according to Ordinance Nr. 40 from 2004, as he/she provides access of the population to doctor by means of one of the following ways:

- ✓ by means of a cabinet on duty of the group practice for primary out of hospital medical assistance, in which it is co-founder;
- ✓ on contract with another medical institute according to art. 8 from the LMI, which has opened a cabinet on duty and which is not more than 35 km away from the location of the practice of the general practitioner;
- ✓ individually by means of 24-hour provisioning of advice on the phone, in the ambulatory or in the home of the patient upon decision of the general practitioner himself;
- ✓ for the municipalities, which are in the rural and mountainous regions

### **Coordination of services**

As far as the PHC is main point of the medical services, often the general practitioners are engaged with the distribution of the flow of patients towards other levels of care. The coordination of the

primary medical assistance is an important factor and element of the efficiency of the healthcare services and the entire system. Potential coordination problems could be typical with the coordination between the primary and secondary cares or between the treatment and the non medical services (public health), directed towards the promotion of healthy way of life (Boerma WGW, 2006).

As a whole the coordination could be defined as “method of social cooperation between the different processes and is directed towards provisioning of maximum benefit for all”(9). In particular it could be specified as “characterization of the services, providing continuous planned treatment for the separate patients. Each plan should include clear targets and appropriate and efficient interventions.

In Bulgaria in fact there is no coordination of the services and the link between the various levels of the healthcare assistance is broken /it is done only by means of direction sheets/.

### **Complexity**

The complexity could be determined as provisioning of a full set of medical services directly by a doctor from the primary medical assistance or by other persons, providing services or a specific organization for such services at another place (Starfield B., 1991). In the PHC the complexity includes the service from therapeutic, rehabilitation and supporting measures, focuses on the promotion of the health and the prophylaxis of the diseases (Boerma WGW, 2006, 2003). The complexity of the service is not only a specific set of services, but also the conditions, equipment and facilities, as well as the level of skills and the professional expertise of the persons, providing medical services. Despite this there is important also the social orientation of the working in the primary medical assistance. All these parameters are taken into consideration when developing the tools for assessment of PHC.

In Bulgaria the complexity of the services, provided by the general practitioners, is regulated in Ordinance Nr. 40 for specifying the main package of healthcare activities, guaranteed by the budget of the national health insurance fund /NHIF/. This package includes the following main types of activities:

- ✓ Health and information activities
- ✓ Health promotion
- ✓ Prophylaxis of the diseases
- ✓ Dispanserization
- ✓ Control of the infectious diseases
- ✓ Diagnostic and treatment activity
- ✓ Other activities related to the diagnostics and treatment
- ✓ Activity of Medical Expertise
- ✓ Providing of access to medical assistance out of the announced work schedule

In conclusion we could say, that even though they are presented in different normative documents, the four key features needed for the proper functioning of the primary health care: availability, continuity, complexity and coordination, it is necessary that they should be more detailed investigated and presented in the Bulgarian conditions, in order for the biggest part of the healthcare problems to be solved at the level of PHC still in the earliest stage of the disease, with which one shall avoid the

costly hospital treatment and shall achieve more complete satisfaction of the patients from the primary medical assistance.

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**OPTIMIZED APPROACH TO FUNDING PRIMARY OUTPATIENT HEALTH CARE  
IN REPUBLIC OF BULGARIA**

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**Abstract**

*The choice of model for financing of healthcare system in a country does not directly affect the quality and the patient's satisfaction by healthcare system. It depends to a greater degree of organization of the system and its ability to meet user's needs.*

*In recent years the condition of outpatient healthcare model continuously gets worse. Main reasons for that are insufficient funds and lack of changes in regulations and operating rules. Changed many things of general practitioner' work. Along with the usual treatment, general practitioners have to deal with management, accounting as well must be familiar with regulations related to their work.*

**Key words:** *financing, general practitioners, primary outpatient health care.*

The choice of model for financing of healthcare system in a country does not directly affect the quality and the patient's satisfaction by healthcare system. It depends to a greater degree of organization of the system and its ability to meet user's needs.

There is a steady trend of distrust in the healthcare system among people and alienation from it. Bulgarians are not yet convinced that true reform can only be carried out with their participation and that health is their greatest asset. And yet many of them see it more as an obligation of the state, not as a priority or as their own capital which increases the number of their days in healthy condition and thus their ability to work and earn more.

The Bulgarian Industrial Association insists on carrying out a preliminary analysis of the effectiveness of the operation of the entire healthcare system and on the basis of its results to proceed with a reform, which covers the whole system.

For the past five years the expenditure on healthcare in Bulgaria has increased about 1.5 times and from approximately BGN 2 billion it has reached BGN 3.5 billion, whereas the Gross Domestic Product (GDP) percentage actually decreases [10].

The Primary Outpatient Health Care (POHC) is the basic health care based on practical, scientifically sound and socially acceptable methods and technologies that are universally available to any person, family and the society.

In recent years, its condition has been steadily deteriorating. The main reasons are insufficient funds and lack of changes in regulations and operating rules stipulated in the National Framework Contract (NFC) and the decisions of the Management Board of the National Health Insurance Fund (NHIF).

Changed many things of general practitioner' work. The hospitals and the medical practices have become companies and along with the traditional treatment, the General Practitioners (GPs) also have

to deal with management, accounting, as well as they should be familiar with the regulations related to their work (such as National Framework Contract, Health Insurance Act, Health Act, Medical-Treatment Facilities Act, etc.). Computerization has been incorporated in their work; in addition, modern medicine is developing quite rapidly and requires that a doctor should constantly specialize in order to offer their patients best quality and treatment.

A part of the budget earmarked for primary outpatient health care, in the opinion of many GPs, is unlawfully reserved for capitation which is to be paid in case the health uninsured persons restore their health insurance rights. This number of uninsured persons is constantly growing without prospects for downward trend. In 2007 it comes to 1.2 million citizens and at the end of December 2011 - about 1.62 million (according to a survey of 94 medical practices in nine districts carried out by the National Association of GPs) [7].

Currently, the treatment of this population is covered by the budget of the medical institutions and the health insured persons. Therefore, the opinion of doctors, patients and employers states that the uninsured persons should be entered in a special public register [9].

They constitute a huge figure and it is imperative to think over the reasons that make these people not pay their health insurance contribution. We should realize that some of them probably do so because they are not confident that the health system is able to offer really good medical services [10].

According to the GPs, the funds provided for the uninsured have become a hidden "reserve" or "balance" within the budget of POHC. The result is that in 2007 POHC implements its activity within a budget framework of 113 million as it was in 2003-2004, and despite the announced increase by 5%, there is in fact a decrease in the budget by 11%. The POHC budget as a percentage of the NHIF budget for 2007 is 7.48%, and for 2008 - 7.46% [2; 4].

The share of costs for POHC in the total public health expenditure is as follows: for 2007 - 4.8%, 2008 - 4.6%, 2009 - 5.1% [7]. The disbursement for POHC in 2008 is BGN 131 162 889, in 2009 – BGN 134 724 896. BGN 169 million has been provided for POHC for 2012.

For the period 2003 - 2008 there is no year in which the POHC budget has been increased by percentage greater than or equal to the growth of inflation or to the growth of minimum wage. In 2004 the growth of POHC budget is 0, and in the subsequent years it substantially falls behind compared with that of other types of medical services. For the period 2003 - 2008 the growth rate is 22% at rate of inflation over the same period equal to 50.2% and minimum wage above 63% (Figure 1).

Taking into account the unapproachable funds blocked in the aforementioned hidden "balance", the rising costs of electricity, heating, consumables, equipment, fuel and insurance burden which are at the expense of the GPs, there is a bright tendency to form a significant shortfall in the funding of POHC [3]. Such financial policy is unacceptable against the manifested shortage of GPs (inactive practices in many areas of the country), the need to improve the necessary equipment and to enhance the qualification [3].

The review of international practice shows that almost all European countries use a combination of the three main components of remuneration in the sector of primary care in different proportions. Similarly, in Bulgaria the payment for POHC is based on a combination of capitation, performance and user fees.

Figure 1. Growth of the inflation and the budget to POHC for period 2003-2008

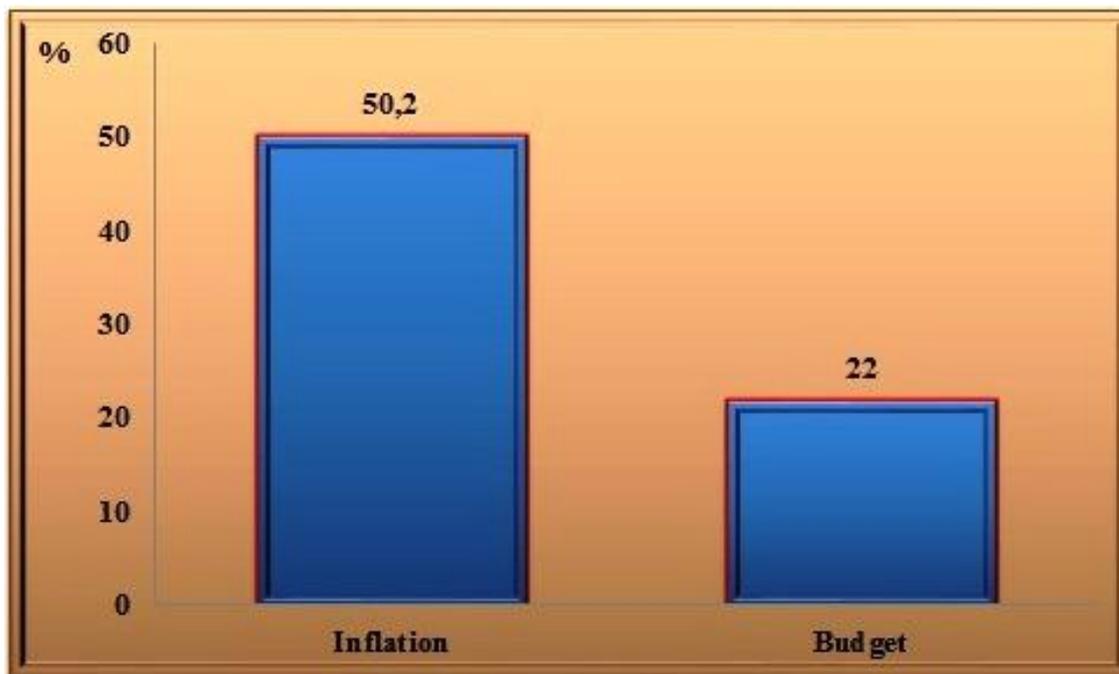


Figure 2. Payment per capita as a percentage of the total remuneration of GPs

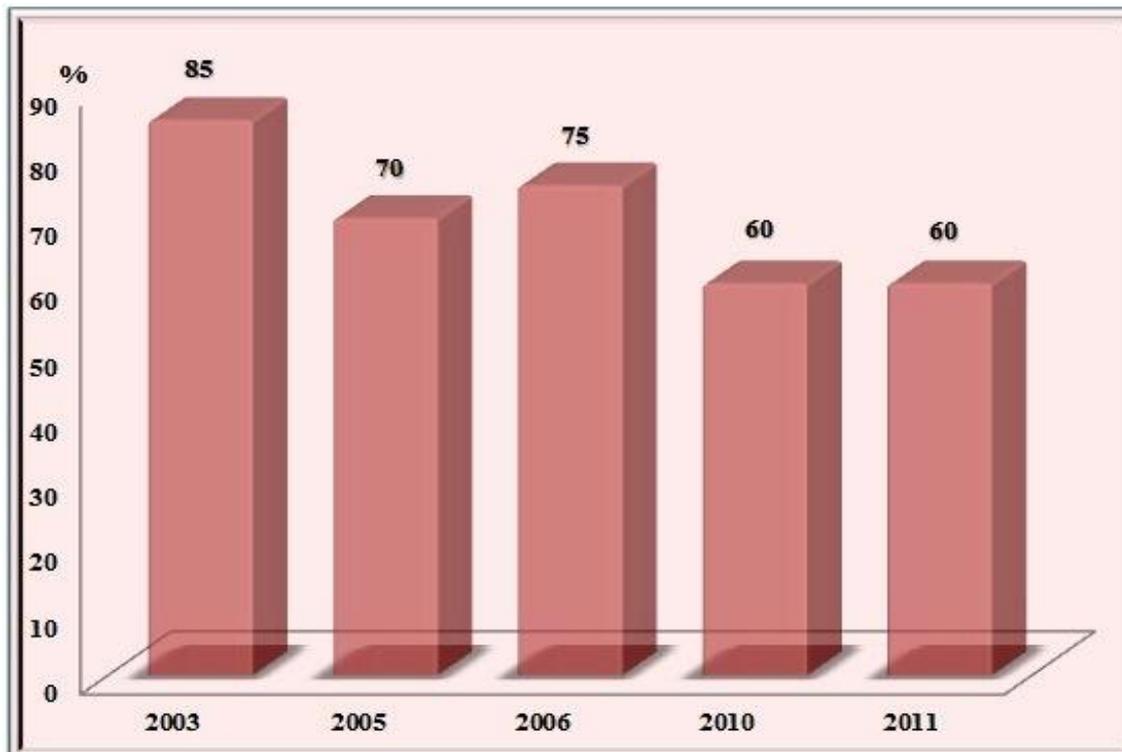


Table 1. Volumes and prices of activities in Primary health care for 2012

<b>Nomenclature</b>	<b>Volumes</b>	<b>Prices (in BGN)</b>
Per capita payment	6 273 929	
Persons from 0 to 18 years	1 237 746	1.26
Persons from 18 to 65 years	3 672 648	1.05
Persons over 65 years	1 363 535	1.37
Payment for access to medical assistance overtime to OHIP, according to Ordinance № 40 of 2004	6 273 929	0.11
Program "Child health" activity	3 160 171	
Prophylactic examinations of persons from 0 to 1 year	633 517	8.00
Prophylactic examinations of persons from 1 to 2 years	232 841	8.00
Prophylactic examinations of persons from 2 to 7 years	557 860	8.00
Prophylactic examinations of persons from 7 to 18 years	603 356	8.00
Immunizations of persons from 0 to 18 years	1 132 597	4.00
Program "Maternal health" activity	12 162	5.00
Dispensary observation activity	3 640 907	8.00
Prophylactic examinations of persons over 18 years	2 143 094	8.00
Immunizations of persons over 18 years	270 000	4.00
Occasional visits to the OHIP from other health regions	29 603	5.00
Adverse conditions		BGN 5 000 000 (annual value)

*Source: Contract for adoption of volumes and prices of medical assistance 2012 between National Health Insurance Fund and Bulgarian medical union*

In many cases the revenues of GPs depend on the number of health insured persons (sometimes given for granted, rather than choice, as is the situation in rural areas) and on the reported documents rather than on the actual performance. The payment per capita as a percentage of the total remuneration of GPs decreased from 2003 until now, but remains the main method of getting funds.

It forms about 60% of the total structure of the costs for the primary health care (Figure 2, Table 1) [1, 5]. This type of payment largely discourages GPs and reduces their capabilities, which in turn lowers the quality of medical treatment.

The remaining 40% covers payment for services provided by GPs (including the prevention and monitoring of patients with chronic diseases). The number of completed activities for the year (this includes all activities carried out by GPs – general examinations of the obligatory health insured persons (OHIP), prevention, immunizations, maternal health care, dispensary observation, occasional

visits) has significantly reduced - from 31 659 151 in 2007 to 26 073 499 in 2009. The same applies to the average monthly number of examinations within the year - from 2 878 105 in 2007 to 2 172 792 in 2009 (Table 2) [8].

Capitation's key aspect is that payment is not connected with the resources used by the providers or the volume of services offered by them. Consequently particular financial risk for the loss occurrence is transferred from the funding institution to the medical aid provider. The share of doctors who have to do more activities with less money because the expenses are running the practices continue to grow at a faster pace than revenues.

Table 2. Main indicators of activities and workload of the General practitioners for the period 2007-2009

<b>№</b>	<b>Primary Outpatient Health Care</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
<b>Data under review for Outpatient Health Care</b>				
1	Share of expenses for Outpatient Health Care in total public expenditure of public health	4.80%	4.63%	5.11%
2	Disbursed funds for Outpatient Health Care in BGN	113 939 813	131 162 889	134 724 896
3	Number of activities carried out for year	31 659 151	32 523 921	26 073 499
4	Average monthly number of medical examination for the year	2 878 105	2 710 327	2 172 792
5	Number of individual practices for Outpatient Health Care	4130	4014	3901
6	Number of group practices for Outpatient Health Care	210	210	230
7	Number of General practitioners per year	5 005	4 894	4 790
8	Average monthly number of medical examinations per GP	575	554	454
9	Average day number of medical examination per GP	26	25	21
10	Population, included in the patient's list of Outpatient Health Care	6 647 084	6 663 386	6 613 548
11	Number of medical examinations of 1 GP	6 325	6 646	5 443
12	Average length of stay in hours of ambulatory patients	8.71	8.39	6.87
13	Average monthly amount, paid to 1 GP in BGN	1 897	2 234	2 344
<b>Admissions</b>				
14	Number of medical examinations per day of 1 GP if the duration of medical examination is 20 min and the duration of ambulatory reception is 8 hours	24	24	24
15	Monthly number of medical examinations per GP for 22 working days in the month	528	528	528
16	Yearly number of medical examinations to 1 GP	6 336	6 336	6 336
<b>Results of the admissions in poin 14-16</b>				
17	Needed number of GP to carry out the number of examinations reported in year	4 997	5 133	4 115
18	Estimated yearly amount in BGN of 1 GP	22 803	25 552	32 739
19	Estimated monthly amount in BGN of 1 GP	1 900	2 129	2 728
20	Average number of patients for the year	1 328	1 362	1 381

Source: National Health Insurance Fund, Ministry of Finance

Other factors that should be taken into consideration and exacerbate the financial situation of the GPs include the large number of people exempted from user fees and the greatly inflated and complicated volume of preventive medical examinations of people aged over 18 (which makes the examination inefficient in terms of economics and time). For example, in a GP's patient list about 65% of the examinations are of patients exempted from user fees, i.e. the largest part of health services are provided to not working - people aged over 65 and children, for whom mandatory services are allocated. They are health insured by the state which guarantees them the right to use medical services. Statistics show that these groups, especially people aged over 65, consume 3.5 to 6 times more medical services, which in many cases exceeds the funds provided for them and does not generate income but a negative financial result for the contractor.

It should be noted that health insurance contributions for workers come to the average BGN 53 per month, whereas for people insured by the state - only BGN 19 [6].

I.e. 67% of the funds received in the NHIF come from health insurance contributions (or in most cases these are employers' contributions), while the state pays only 33% for health insurance for pensioners and children [9].

The Association of GPs in Bulgaria indicates that the introduction of user fee ten years ago defined its function - to regulate the use of medical services and to form a co-financing arm for outpatient practices and hospitals and for this reason they demand that the exempted amounts be refunded by the institution which has granted this privilege.

All this places the GPs in constantly deteriorating financial conditions and microclimate of working environment, and as the results of several surveys show it results in impossibility to release funds for investment and reinvestment in:

- Material-technical base (advanced outpatient centres, equipment, etc.);
- Post-graduate specialization and participation in maintaining and increasing the level of qualification of doctors and their associates - nurses, midwives and other staff;
- Inability to increase the amount of remuneration of the employees in the team of the GPs and the formation of extended teams (more than one nurse, for example social worker, technical secretary, etc.). Often a problem arises even with the appointment of the nurse required pursuant to the National Framework Contract.
- Financial instability and inability to use loans (e.g. for the purchase of new equipment) in the background of constantly declining revenues and lack of options for return on investment and realization of additional revenues.

## CONCLUSION

We can say that the mixed system of financing of POHC, combining payment based on performance and payment for registered health insured persons most adequately reflects the specificity of primary medical care, which has been confirmed by the surveys carried out, the results of which indicate that the highest percentage of GPs approve this method of financing. Therefore, it is appropriate that this system be maintained in the future and in order to optimize its financing we offer the following approaches:

**To increase the payment burden with respect to:**

- Activities covering the priority national health programs (e.g. child health care, maternal health care);
- Preventive and dispensary medical activity;
- Payment for home visits - here we offer the following payment options:
  - ▶ fixed medical examination fee + cost of transport;
  - ▶ price, determined by the market;
  - ▶ fee equal to about 10% of the minimum wage.

Thus, the GPs will be better motivated to visit their patients.

- Payment based on the length of service and on the acquired qualification;
- More streamlined funding of preventive medical check-ups of the OHIP (ECG-paper, tests of blood sugar using glucometer, urine test strips, test for occult haemorrhage are at the expense of the GPs);
- Introduction of financial incentives for work in group practices;
- Increase in the wages for work in practices with adverse work environment;
- Payment for information and administrative medical services;
- For patients with severe disabilities and numerous illnesses;

This would stimulate the GPs to increase the quantity and quality of their work.

- Allocation of a larger percentage of the NHIF budget for outpatient health care;
- Increase in the amount of payments from the National Health Insurance Fund or the POHC budget to include certain benchmarks as a percentage of the total NHIF budget (e.g. 15-20%), as it is in other countries or 10-15% of the state healthcare budget.
- Establishment of at least one competitive Health Insurance Fund;
- Providing a statutory option for the GPs to conclude contracts with voluntary health insurance funds to serve their customers;
- Provision of additional financing from the state;
- Provided that the doctors have the necessary qualifications for certain services not included in the package, they should be given the right to carry out them in return for a fee. Thus, on the one hand, they will be able to increase their revenues and will be more satisfied, and on the other hand, they will maintain and develop their professional competence. Only GPs are banned (pursuant to the provisions of the NFC) to provide services outside of the POHC, which makes them restricted within the said POHC budget. The NHIF budget for 2007 includes provisions prohibiting the transfer of unused funds to another item which means that they could be distributed among GPs. However, such bonuses should be provided outside the resources required for the implementing and development of the services, but not savings previously imposed in the budget, according to the National Association of GPs. It is necessary that the additional payment, needed in the cases when the annual POHC budget is not utilized, should be linked to the quality of the performance. The fact is that the POHC budget is

funded by a large percentage of priority actions in each healthcare system: prevention of socially significant diseases, continuity of medical care, monitoring and treatment of patients with chronic diseases, medical prevention of children and immunization of children and adults, etc. [2; 3].

In addition, it would be better if the accountability of the POHC contractors is simplified and facilitated, and one of the possibilities is the introduction of completely electronic reporting (not only XML format, but also of specifications and the introduction of electronic invoices).

Another possibility for increasing the utilization of the POHC budget offered by the National Association of GPs is the introduction of more diseases to the dispensary services covered by the POHC, introduction of coefficients to evaluate the services provided to the chronically ill (dispensary services), evaluation of qualification, costing of recommended vaccinations, increase of fees for the services provided by the GPs.

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**VARIABLES USED BY THE PALESTINIAN BANKS' MANAGERS TO MEASURE THEIR  
BANK PERFORMANCE**

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**Abstract**

*This paper tries to find the variables that banks managers in Palestine use to evaluate their bank performance. We used Balanced Scorecard method developed by Kaplan and Norton( 1992) which uses 4 groups of measures: Financial , customer satisfactions, innovation of product and services, and measures to judge commitment, learning, and growth of the employees. We applied these measures to Palestinian Banks using a sample representing 43% of the banks and branches in the West Bank. A questionnaire was distributed and filled by both bank managers of head office and branch. The ratio percentages and independent t-test were used. It was found that Palestinian banks use different measures than banks in other countries. Palestinian Banks use share price and net income as the most important financial measure, number of new customers for customer satisfaction, number of new products and services for innovation of product and services and number of seminars, lectures and training for judging the commitment, learning and growth of employees. The paper also tested the existence of statistical differences between foreign and local banks and between head offices and branches . The hypothesis testing results show mixed results between foreign and local banks and reject most hypothesis between head office and branch, which agrees with the agency problems and the concentration differences between head office manager and branch manager*

**Key words:** *balanced scorecard, customer satisfaction, innovation of products and services, net income, profit per client, innovation of products and services, return on investment.*

**1. INTRODUCTION:**

Traditionally industrial firms and financial institutions used financial variables to measure the management performance, in which management compensation and bonuses depend on these measures. Soon it was discovered that financial measures are temporary and can be manipulated through "window – dressing " techniques in favor of the management. For example several banks extended loans at a high rate to unqualified customers, which results in a high profit for the year. Soon many of those customers default on their borrowings and the bank become obliged to increase its loan /loss provisions, or might go bankrupt. Firms started using additional non-financial measures to sustain their growth and remain in the market, such as: customer satisfaction, credit risk management, motivation to customers such as services after sale, credit, discount....etc ,innovations, new markets to sustain growth. Improvement in product, .....etc. Due to the limitations of financial measurement system, several attempts have developed to overcome these limitations. Among these attempts were the ( Keegan , et. al. 1989 ) who developed a measurement matrix adding other non-financial measures. ( Lynch and Cross 1991 ) developed a SMART Pyramid including other non-financial

variables. The most important is a pioneer article published by the Harvard Business Review in 1992 by Robert Kaplan and David Norton called Balanced Scorecard Measures that Drive the Performance. The model tracks the key elements of a company's strategy from continuous improvement and partnership to teamwork and global scale. These measures give the managers complex information at glance, including financial and operational measures. The Financial measures tell the results of actions already taken and complements it with operational measures on customer satisfaction, internal process, and the organization's innovation and improvement activities. These operational measures are drivers of future financial performance( Kaplan and Norton 1992).

More specifically, the balanced scorecard allows managers to look at their business from four different angles " perspectives":

- 1.1."Customer perspective, which measures how customers see us.
- 1.2.Internal perspective, which emphasize on how can we do better than others.
- 1.3.Innovation learning perspective, this emphasize on continuing improvement and crating value.
- 1.4.Financial perspective, which tells us how can we look to shareholders".

If the management have information about the four perspectives then they can improve their businesses, increase their competition , sustain a long term growth and decrease failure( Kaplan and Norton 1992 ).Several firms started using the balanced scorecard techniques to improve the performance of their businesses. By the end of last century about 50% of American organizations and 40% of European firms moved to the new performance measurement system( Frigo and Krumwiede 1999 ). Several other studies found almost the same results when they applied their models to top 100 firms in the U.S or Europe. Due to the changes in information technology, capital requirements by Basil I and then Basil II, changes in laws and regulations and globalization, financial institutions started using the new techniques to measure and improve their performance. They selected the variables that affect their business most. ( Rahat, et. al. ) proposed a framework that can be used to examine changes in performance measurement system in organizations in general and in the banking industry in particular. ( Cobb, et. al. 1995 ) developed a model of organizational change and they included the significance of individuals in the change process within their extended model.

Despite these changes traditional performance system are still being used by banks such as Japanese banks( Hussain and Hoque 2002 ). Another study used the traditional measures is the one by ( Alkhatib and Harsheh 2012 ) on the performance of Palestinian banks . They used financial measures such as ROA, ROE, Price/Book value, and economic value added. ( Khrawish 2011 ) also used traditional financial measures in evaluating the performance of Jordanian banks. Very few studies examined the use of the new performance measures in Middle-East banks, among the most recent ones is the study by ( Ahmad et. al. 2011 ), they examined the performance measures used by the commercial banks in Pakistan within the four perspectives of Balanced Scorecard.

The aim of this study is to examine the performance of Palestinian banks using the four Balanced Scorecard model developed by Kaplan and Norton, and to find out to what extent the Palestinian bank managers are aware of these measures and if they use them in evaluating their performance, and what are the main variables they mostly use. The paper also aims at testing the differences between local and foreign banks and between head offices and branches regarding the above measures. The rest of the paper is organized as follows: Section 2 discusses the development of the Palestinian financial sector, section 3 overviews the related literature , section 4 discusses the methodology used in our research and then the analysis of the results in section 5, and finally section 6 is a concluding remarks.

## 2. DEVELOPMENT OF THE BANKING SECTOR IN PALESTINE:

Before the Israeli occupation of the West Bank in 1967, there were 11 banks in Palestine of which 8 in the West Bank and 3 in Gaza with 30 branches of which 26 were in the West Bank and 4 in Gaza and was distributed in almost all cities of the West Bank and Gaza ( ESCWA 1987 ) . In 1967 after Israel occupation of the West Bank, Israeli government closed all banks and frozen all their assets and transferred all their cash to the Bank of Israel . This sector was one of the most affected by the occupation during 1967-1993 as there were 180 military orders that aimed at restricting the activities of the financial system and closely control it . Soon after the occupation military orders allowed Israeli Banks to open branches in the West Bank and Gaza which caused to eliminate all financial relations with Arab Countries. By 1986 there were four Israeli Banks working in the West Bank and Gaza with 22 branches (ESCWA 1987). The Israeli banks remained working alone in the West Bank and Gaza until the Israeli court of justice allowed Bank of Palestine to reopen its two branches in Gaza in 1981.

Israeli banks' activities were very limited as their credit were less than 8% of their assets and their functions were mostly to finance trade, or overdraft for some merchants . Very few Palestinians were willing to deal with Israeli Banks and their credit facilities were very limited to facilitate trade between West Bank and Israel such as letters of credit or letters of guarantees which were issued to Palestinians to fulfill their commitment to Israeli firms or merchants at a very high cost (Harris Laurence 1988). This situation remained until 1987 when all Israeli banks were closed because of the Intifada. The country remained without banks during 1987-1993 except Bank of Palestine and Cairo-Amman Bank which was allowed to reopen one branch in Nablus in 1986. After the Oslo agreement in September 1993 and Paris economic agreement in 1994 and the Israeli – Jordanian agreements in Wadi – Araba in 1994 , Jordanian banks were allowed to reopen their branches closed in 1967. The Palestine Monetary Authority( PMA ) was established in 1995 which was authorized to give licenses to establish new banks and open new branches and started regulating the Palestinian banks in both West Bank and Gaza . This caused the number of banks to increase gradually to 18 banks with more than 200 branches in 2010 , of the 18 banks, 10 are foreign banks( mainly branches of Jordanian banks) with 102 braches and 8 are local banks with 100 branches . In addition there are 154 money changers 106 micro finance companies( PMA 2011).

The activities of Palestinian banks have been developing from traditional banking services of accepting deposits and giving loans to giving almost all services offered by modern banks. Their activities were spread over all cities and villages of the West Bank and Gaza. Total assets has been growing rapidly from less than \$500 million in 1993 to over \$8.5 billion in 2010, and their customers deposits were growing in the same way from \$300million to about \$6.8 billion during the same period.

The growth of deposits has caused an improvement in the credit facilities that reached \$2.9 billion representing 42.4% of total deposits last year, directed mostly to the private sector to finance trade, construction, and other sectors. Net profits of the banking sector has been also improving to reach about \$140 million in 2010. return on average equity(ROE) has increased to 17.5%, while ROA increased to 2.1% in 2010. these ratios are acceptable and within the range of regional returns of the banks in the area. Despite the instability that has characterized both West Bank and Gaza during the past decade, Palestinian banking sector also showed improvement in the area of non-performing loans which has been declining to 3.1% of total loans in 2010. these are below the average in neighboring countries The improvement in the banking sector has been reflected in banks' net equity which increased to \$1.1 billion, part of which was due to the PMA law to increase the minimum bank capital from \$10 to \$20 to \$50 million which was enforced recently in order for the banks to comply with Basil III.( PMA 2011).

### 3. LITERATURE REVIEW:

finance and bank management texts told us that in order to understand how well a bank is doing we need to start looking at the bank financial variables such as operating income and operating expenses to get net income. But sometimes net income does not give us an idea of how well the bank is doing, because it does not adjust for the bank size, thus it makes it hard to compare between banks. So a good measure of bank profitability that correct for the size of the bank is the return on assets (ROA). But bank owners are concerned more of the return on their equity investment so a better measure for them is the (ROE). In addition there are several financial measures such as net interest margin, net operating margins, earnings per share, asset utilization ratio.....etc. for more details see ( Rose and Hudgins PP171-180). All these measures can be summed into a single variable called financial measures. Several writers used these measures to find out the performance of the banking sector in their countries. For example ( Tarawneh 2006) used the financial measures to compare the performance of Omani banks and he found out that profitability performance is not a result of higher capital or larger deposits, credit or total assets. (Khrawish 2011) used internal and external factors, of which all financial factors to find the performance of Jordanian banks. He found that there is a significant and positive relationship between ROE and the bank size, total liability to total assets, net interest margin, exchange rate, and loans to total assets. And a negative relationship between ROE and annual growth rate of GDP and inflation rate. Finally (Alkhatib and Harsheh 2012) used internal measures such as ROA, market measures such as price to book value, and economic measures such as economic value added to measure the financial performance of Palestinian banks. They found that there is an effect (statistically significant) of the size of bank, credit risk, operational efficiency and asset management on the financial performance of Palestinian commercial banks.

Several other studies used the financial performance to compare between banks in the same country such as the study of (Hanif et. al. 2012) who compare the performance of conventional banks and Islamic banks in Pakistan. He used internal and external factors. The external factors include consumer behavior and perception about both Islamic and conventional banks. While internal factors include profitability, liquidity, credit risk and solvency. He finds that conventional banks were better than Islamic banks in terms of profitability and liquidity, while Islamic banks were better in credit risk management and solvency. Customers motivation factor are the location and shari'a compliance while in case of conventional banks is the wide range of product and services. Another study tested the relationship among corporate governance, risk management, and bank performance in Indonesian banking sector using a Triangle Gap Model. They found that the relationship between corporate governance and bank performance are sensitive to the type of ownership. They also found that foreign banks have better implemented good corporate governance than have joint-venture owned banks, state – owned banks and private domestic – owned banks. Finally they found an interrelationship between risk management and bank performance (Tendelilin et. al. 2007). A more recent study tested the effect of capital structure on the performance of Palestinian banks found that there is a good relationship between ROA and market value and between ROA and efficiency, and a weak correlation between loans and return on equity and loans and market value. (Abbadi and Abu-Rub 2012)

Even though financial measures are still widely used to measure the performance of banks and financial institutions, but due to the development in information technology, capital requirements, changes in laws and regulations and globalization, financial measures become insufficient to measure the performance of banks and other firms. New measurement performance systems were developed during the last two decades, the most famous was the Balanced Scorecard Measures developed by Kaplan and Norton. They used four measures in four different areas, namely, from the point of view of the customer, internal perspective, innovation and learning perspective and finally financial

perspective( Kaplan and Norton 1992 ). Several studies used this model to test the performance of firms and banks, while some other studies started developing their own model to include relevant variables to evaluate their businesses or banks .

(Ahmed et. al.2011)used the Balanced Scorecard to evaluate the commercial banks in Pakistan. They used to test the four perspectives of the model and they found out that commercial banks in Pakistan use return on investment, growth in revenues and profit per account as the main financial measures. They use the number of complaints number of new customers, and customer appreciations to judge the level of customers satisfaction. Measurement of internal process they use improvement in response time to customer quarries, new products and services and reduction in waiting time . finally measures used to judge the commitment, learning and growth of the employees are the feedback from employees, suggestions offered by employees , overhead turnover and employees training. Several studies tried to tackle a certain element of the banking sector and use non financial measures such as (Lin P and Mei A. K. 2006) who tried in their study to solve the problems of overdue loans and bad debts. Their research establishes the internal performance measures to monitor and enhance the operational quality of the employees in lending department. The research utilizes the value-added approach to analyze the lending production process and derive the internal performance measures to add value to the lending activities. The internal performance proposed in their article would be more effective for evaluating the job performance of employees in lending activities which will ease the lending operational risk.

Standard profit measures are affected by tax laws and regulations ( Gilbert and Wheelock 2007) studies the effect of subchapter S of the Federal tax code on the performance of small banks and found that these banks who applies for subchapter S (more than 2000 banks by 2006) performed better in terms of the financial returns than those banks who did not apply. This caused some authors to evaluate banks on pre-tax earnings. The article shows that different tax treatments of S and C banks has a quantitatively large impact on comparison of mean after-tax profit rates across banks. They also found that s banks tend to have higher rate of return than C banks of same size even when S banks rates are adjusted for the Federal Tax. This is because of lower expenses and higher ratios of net non – interest income to assets.

The effect of modern development in information technology has been studied. ( Al-Smadi and Al-Wabel 2011) studies the impact of E. Banking on the performance of Jordanian banks. They used accounting data to measure the bank performance and their results show that E. banking has a significant negative impact on banks performance. Cost associated with the adaptation of the E. banking technology is higher than revenues of electronic services. Another study on Bangladesh about the relationship between service quality and customer satisfaction in using E. Banking found that reliability, responsiveness and assurance have more contribution to satisfy the customer of E. Banking ( Nupur 2010 ).

#### **4. RESEARCH METHODOLOGY:**

To achieve the previous mentioned research objective ,the researchers used descriptive analysis approach ,using the appropriate questionnaire to gathering the data, which contain four sections: section one concentrates on the Financial Measures which include 8 variables, section two focuses on Customer Satisfaction which include 6 variables , section three designed for Innovation of Products and Services which have 9 variables; and finally measures to judge Commitments, Learning and Growth of the Employees include 7 variables. In order to achieve the study goals , the questionnaire

was conducted at the managers level in the Palestinian banks. Foreign and local head offices and branches managers were interviewed. The instrument used (questionnaire) was developed and utilized by Norton and Kaplan(1992) but the researchers modified it slightly to fit the Palestinian context.

#### 4.1. Study Population:

The Study Population include all banks operating in the Palestinian Authority Territory, Which contain, ten foreign banks having 68 branches, and 8 national banks having 70 branches scattered in the West Bank and Gaza strip.

#### 4.2. Study Sample:

Due to difficulties of transportation and communication with Gaza strip, and the difficulty in covering all banks in the West Bank: a sample contains 47 banks managers representing 43% of the population in the West Bank was chosen. The sample was selected randomly but represent both local and foreign banks. Table (1) shows the sample distributed among foreign and local banks and among head office and branch.

Table (1): Sample description.

Banks		Manager		Total
		Branch	Head Office	
National	Number	15	6	21
	Percent	71.4%	28.6%	100.0%
Foreign	Count	21	5	26
	Percent	80.8%	19.2%	100.0%
Total	Count	36	11	47
	Percent	76.6%	23.4%	100.0%

As the table shows the sample include 21 national banks of which 15 are branch manager and 6 head office manager and 26 foreign banks of which 21 branch manager and 5 regional manager.

#### 5. Statistical results:

The study used SPSS package to analyze the data using two kinds of statistical analyses:

5.1. Ratio Percentages: The Ratio Percentage of the variables were used in the four sections of the measures. In which Participant were asked to sort the criteria's of measuring the financial performance in general by giving 1 to the most important variable, 2 to the next and so on. The variable that get the least mean is the most important and the one which get the highest mean is the least important.

First question: How do banks manager measure the financial performance of their banks? The results are shown in table no. 2 below:

**Table (2):** Financial Measures Used by the Banks Managers.

Variable	No. of banks managers	Mean
Net Income	47	2.32
Total Deposits and Facilities	47	2.57
Profit per client	47	3.38
Return on Investment	47	3.60
Profit per account	47	4.06
Average cost per transaction	47	6.30
Share price	47	6.47
Comparison of standard cost with actual cost	47	7.21

Looking at the table number 2 above we notice that the net income was considered the most important factor used by the banks managers to evaluate their performance: while Comparison of standard cost with actual cost was the least important measure. these findings are not consistent with other studies such as (Ahmad et. Al.2011) who found that Pakistani banks use return on investment, growth in revenues, and profit per accounts their main financial variables.

Based on researchers opinion, since the majority of participating managers are branch managers, their main concern focuses on maximizing profitability of their branches, so the net income and the total deposits and facilities were their top priority.

Question two: What measures you use to judge customer satisfaction of your bank? The results are shown in table 3 below.

**Table (3):** Measures to Judge Customer Satisfaction.

Variable	No. of Banks Managers	Mean
Number of new customers	47	1.72
Number of customers	47	2.74
Market share	47	3.02
Number of complaints	47	4.11
Average length of time of an account	47	4.43
Independent survey	47	5.45

The table shows that the number of new customers is the most important and number of customers is the second according to the opinion of the participants , this is also different from the findings of Ahmad et. Al. on Pakistani banks which concentrate on number of complaints and number of new customers. Average length of time of an account and Independent survey were the least important indicators for the customers satisfaction.

The researchers might disagree with this direction of assessment . the customer surveys are the most independent and unbiased resource to measure their real satisfaction. An example may be many new customers will leave the bank totally or not activate their new account soon after they experience the bank services.

Question three: How do banks measure the Innovation of Products and Services of their banks. The results are summarized in the table 4 below.

Table (4): Measures for Innovation of Products and Services

Variable	No. of banks	Mean
Number of new product and services	47	2.66
Improve in response time to serve customers	47	3.21
Improvement in space utilization	47	3.91
Provision of in time services	47	4.00
Improve in response time to answer customers about their inquires.	47	4.23
Percentage of equipment maintained on schedule	47	4.64
Research and development expenses	47	5.96
Reduction in waiting time	47	8.17
Percentage of processes covered by IT	47	8.21

The above table shows that the Number of new products and services and Improve in response time to customers were the most critical factor to reflect the Measures for Innovation of Products and Services in the operating banks in West Bank ,which agrees with Pakistani banks while Percentage of processes covered by IT and Reduction in waiting time, were the least important indicators.( the later was a priority for Pakistani banks).

Question four: How do banks measure the Commitment ,Learning , and Growth of the Employees on their banks. The results are shown in the table5 below.

Table (5): Measures to Judge the Commitment ,Learning , and Growth of the Employees.

Variable	No. of banks	Mean
Number of seminars, lectures, and training	47	2.43
Number of trained employees	47	3.26
Labor turnover	47	3.40
Number of absences	47	3.74
Average years of services	47	3.81
Employees suggestions	47	5.30
Number of employees with advanced degrees	47	5.89

Looking at the table above we notice that the Number of seminars, lectures, and training was considered the most important factor in determining the evaluation used by the banks managers, which is also does not agree with Pakistani banks: while Employees suggestions and Number of employees with advanced degrees was the least important measure .

#### 5.2.Independent t-test:

A t-test was used to analyze the difference between foreign and local banks and between head office and branches. We used the following hypothesis:

H01 :There is no statistical inference at the level of indication ( $\alpha = 0.05$ ) on measuring the financial measures between national banks and foreign banks head offices.

H02:There is no statistical inference at the level of indication ( $\alpha = 0.05$ ) on measuring Customer Satisfaction between national banks and foreign banks head offices

H03:There is no statistical inference at the level of indication ( $\alpha = 0.05$ ) on measuring the Innovation of Products and Services on their banks between national banks and foreign banks head offices.

H04:There is no statistical inference at the level of indication ( $\alpha = 0.05$ ) on measuring the Commitment ,Learning , and Growth of the Employees on their bank between national banks and foreign banks head offices.

H05 :There is no statistical inference at the level of indication ( $\alpha = 0.05$ ) on measuring the financial measures between branches managers and head office managers.

H06:There is no statistical inference at the level of indication ( $\alpha = 0.05$ ) on measuring Customer Satisfaction between branches managers and head office managers

H07:There is no statistical inference at the level of indication ( $\alpha = 0.05$ ) on measuring the Innovation of Products and Services on their banks between branches managers and head office managers.

H08: There is no statistical inference at the level of indication ( $\alpha = 0.05$ ) on measuring the Commitment, Learning, and Growth of the Employees on their banks between branches managers and head office managers.

In testing the hypothesis, the following tables below show the results distributed by kind of measures and type of bank.:

**Table (6):** Financial Measures.

Variable	Branch/HO	National		Foreign	
		Mean	Sig.	Mean	Sig.
Return on Investment	branch	4.00	.331	3.71	.001
	Head Office	3.33		2.20	
Net Income	branch	3.00	.005	1.57	.635
	Head Office	4.00		1.40	
Profit per account	branch	3.80	.013	3.86	.915
	Head Office	5.67		3.80	
Average cost per transaction	branch	6.80	.838	5.86	.492
	Head Office	6.67		6.20	
Share price	branch	7.20	.000	7.14	.426
	Head Office	2.00		6.80	
Profit per client	branch	2.60	.193	4.00	.301
	Head Office	3.67		2.80	
Comparison of standard cost with actual cost	branch	6.60	.001	7.29	.141
	Head Office	8.00		7.80	
Total Deposits and Facilities	branch	2.00	.361	2.43	.002
	Head Office	2.67		4.80	

The tables above summarize the results of T-test in both local and foreign banks and between branches and head offices regarding the financial measures.

5.3. The table shows there is a significant statistical differences between local banks and foreign banks as in using financial measures, as well as between head offices and branches. Head offices in the Local banks concentrate on the share price, while in foreign banks they use more net income,

which is also the same in the foreign branches. While the national branches concentrate on total deposits and credit facilities rather than net income or share prices. So we reject the H01 and H05 for local banks and accepted it for foreign banks. These result are normal and consistent with the agency problem theory .

**Table (7):** Measures to Judge Customer Satisfaction

Variable	Branch/HO	National		Foreign	
		Mean	Sig.	Mean	Sig.
Number of complaints	branch	4.40	.595	3.43	.109
	Head Office	4.83		5.20	
Number of existing customer	branch	3.20	.068	2.71	.174
	Head Office	2.17		2.20	
Market share	branch	2.80	.094	3.86	.000
	Head Office	1.67		1.80	
Number of new customers	branch	1.40	.005	1.57	.002
	Head Office	2.33		2.60	
Average length of time of an account	branch	4.20	.614	4.57	.762
	Head Office	4.50		4.40	
Independent survey	branch	5.00	.165	5.71	.269
	Head Office	5.67		5.40	

5.3.1. The table above shows there is no statistical differences regarding the customer satisfaction we found at 5% level between local and foreign banks head offices, as they both use the market share as a measure of customer satisfaction so we accept H02. But we reject H06 as the branch managers in both local and foreign banks use the number of new customers as a measure of customer satisfaction.

**Table (8):** Measures for Innovation of Products and Services

Variable	Branch/HO	National		Foreign	
		Mean	Sig.	Mean	Sig.
Percentage of equipment maintain schedule	branch	2.60	.002	5.57	.806
	Head Office	5.83		5.40	
Improvement in space utilization	branch	4.60	.391	2.71	.019

	Head Office	5.33		5.20	
Improve in response time to customer	branch	4.40	.005	2.71	.001
	Head Office	6.33		5.40	
Improve in response time to customer requires	branch	3.80	.234	2.71	.078
	Head Office	3.33		3.40	
Provision of in time services	Branch	3.00	.281	5.29	.536
	Head Office	3.33		4.60	
Research and development expenses	branch	7.00	.000	7.00	.000
	Head Office	2.83		2.20	
Number of new product and services	branch	2.60	.112	3.29	.056
	Head Office	1.33		1.80	
Percentage of processes covered	branch	8.80	.042	7.57	.007
	Head Office	8.33		9.00	
Reduction in waiting time	branch	8.20	.621	8.14	.635
	Head Office	8.33		8.00	

5.4. The test results show that we accept H03 as no statistical difference between local and foreign Head offices in using number of new services and products as a measure of innovation of product and services. Branches of local banks use the same measure as their head offices so we accept the null hypothesis H07 for local banks but we reject it for foreign banks, as the branches of foreign banks use improvement in space utilization and improve in response time to customers as a measure of innovation and new services.

**Table (9):** Measures to Judge the Commitment ,Learning , and Growth of the Employees.

Variables	Branch/Head Office	National		Foreign	
		Mean	Sig.	Mean	Sig.
Number of absences	branch	3.40	.729	3.86	.660
	Head Office	3.67		4.40	
Labor turnover	branch	2.60	.050	3.14	.008
	Head Office	4.50		5.60	

Number of seminars, lectures, and training	branch	2.60	.897	2.57	.024
	Head Office	2.67		1.00	
Average years of services	branch	5.00	.247	2.86	.178
	Head Office	4.33		3.60	
Number of employees with advanced degrees	branch	6.40	.372	5.57	.967
	Head Office	6.00		5.60	
Employees suggestions	branch	5.60	.000	6.00	1.000
	Head Office	1.50		6.00	
Number of trained Employees	branch	1.80	.000	4.00	.001
	Head Office	5.33		2.00	

5.4.1. Finally the hypothesis testing shows a statistical difference between local and foreign banks head offices and between branches and head offices of local to judge the commitment, learning and growth of the employees, so we reject H04 and accept H08 as local banks head offices use employees suggestions while local banks branches and foreign banks and their branches use number of seminars lectures and training.

## 6. SUMMARY AND CONCLUSION:

6.1. This paper tries to find the variables that banks managers in Palestine use to evaluate their performance. We used the Balanced Scorecard method developed by Kaplan and Norton to divide these variables into four measures: Financial; customer satisfaction; innovation of product and services; and commitment, learning and growth of employees. Each measure is divided into several questions and a questionnaire was distributed on a sample of banks' managers representing 43% of banks and branches ( local and foreign ) in the West Bank , because of difficulties in reaching the Gaza strip. The results was analyzed in two different methods. The first one we used the averages where 1 was given to the top priority and 2 to the second and so on. So the one with least average is the best variable for the manager, and the highest mean is the least used variable. It was found that :

6.1.1. Net income was the most important variable used by the banks managers to evaluate their financial performance followed by total deposits and credit facilities.

6.1.2. Number of new customers is the first variable used to measure customer satisfaction followed by total number of customers: while the least they use is to make a customer satisfaction survey.

6.1.3. Number of new products and services is variable number one used to measure the innovation of product and services.

6.1.4. Number of seminars lectures and training is the most important variable used to measure the commitment, learning and growth of employees.

**6.2.** The second method used in this study to compare the measures used by foreign and local banks ; and between head offices and branches of both local and foreign banks. The main findings of the study are:

**6.2.1.** There is a significant statistical differences between foreign and local banks head offices in variables used to evaluate their financial performance. Local banks use share prices while foreign banks use net income .as their first measure. There is also a significant statistical differences between head offices and braches of local banks as branches of local banks use total deposit and credit facilities as their top priority measure.

**6.2.2.**There is no significant statistical differences between local and foreign banks head offices in measuring customer satisfaction as they both use market share as their first measure. But on the other side there is a significant statistical differences between head offices and branches of both local and foreign branches as the later use number of new customers .

**6.2.3.** There is no significant differences between local and foreign bank head offices in using number of new services and products as a measure of innovation of products and services. The same is true for local branches, but foreign bank branches use improvement in space utilization and improve in time to customers.

**6.2.4.**Number of seminars, lectures, and training is the first number variable used to measure the commitment, learning and growth of employees used by both local and foreign head offices and branches. While local head offices use employee suggestions.

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## BRANCH-AND-BOUND TECHNIQUE IN ECONOMICS

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### Abstract

*Integer programming problems arise frequently because some or all of the decision variables must be restricted to integer values. These problems are more difficult than they would be without the integer restriction. The present paper covers in step-by-step Branch-and-Bound Technique for two cases – minimizing and maximizing integer programming problems. There are two model problems in Economics. In the first, maximum of the objective function is reached for the nearest to the continuous optimal solution integer values (of course satisfying the system of restrictions), while in the second, the maximum is reached for values that are far from those of the continuous optimal solution. A computer code for solving any such problems in MATLAB is given.*

**Key words:** operations research, integer programming, MATLAB

## 1. INTRODUCTION

In many practical problems of linear programming, the decision variables actually make sense only if they have *integer* values. For example, it is often necessary to assign people, machines, and vehicles to activities in integer quantities. Then the mathematical model is simply the linear programming model with the one additional restriction that the all of variables must have integer values. In this case the model is referred to as **pure integer programming**. If only *some* of the variables are required to have integer values, this model is referred to as **mixed integer programming**.

The simplest idea for solving integer programming problem is to be solved as a continuous problem and if it is necessary the optimal solution can be rounded to the nearest integer values. However, there is no guarantee that the resulting approximate solution will satisfy the system restrictions. Furthermore, it is quite possible maximum or minimum of the objective function is achieved not closest integer values of the continuous optimal solution. In this paper are presented two model examples in Economics. In the first, maximum of the objective function is reached for the nearest integer values (of course satisfying the system of restrictions), while the second, the maximum is reached for values that are far from those of the continuous optimal solution.

Here we apply the algorithm that was developed by R. J. Dakin [2], based on a pioneering branch-and-bound technique by A. H. Land and A. G. Doig [7]. In the case of maximum and minimum the algorithm is described step by step. Finally we give a computer code in MATLAB.

## 2. THE BRANCH-AND-BOUND TECHNIQUE FOR INTEGER PROGRAMMING

The **branch-and-bound technique** and variations of it have been applied with some success to a variety of operations research problems, but it is especially well known for its application to integer programming problems. The basic idea of this technique is the following.

Suppose that the objective function is to be minimized. Assume that an upper bound (to be labeled  $Z_U$ ) on the optimal value of the objective function is available. This upper bound normally is the value of the objective function for the best feasible solution identified thus far. This solution is referred to as the **incumbent solution**. The first step is to partition the set of all feasible solutions into several subsets, and then, for each one, a lower bound (to be labeled  $Z_L$ ) is obtained for the value of the objective function of the solutions within that subset. Those subsets whose lower bounds exceed the current upper bound on the objective function value are then excluded from further consideration. Other subsets also are discarded if they are found to be of no further interest, either because the subset has no feasible solutions or because its best feasible solution has been found (so that this solution can be recorded and the rest of the subset eliminated). A subset that is excluded from further consideration for any of these reasons is said to be fathomed. After the appropriate subsets have been fathomed, one of the remaining subsets, say, the one with the smallest lower bound, is then partitioned further into several subsets. Their lower bounds are obtained in turn and used as before to exclude some of these subsets from further consideration. From all the remaining subsets, another one is selected for further partitioning, and so on. This process is repeated again and again until a feasible solution whose objective function value is no greater than the lower bound for any remaining subset is found. Such a feasible solution must be optimal because none of the subsets can contain a better solution.

#### **Summary of Branch-and-Bound Technique in the case to minimize the objective function**

**Initialization step.** Set  $Z_U = \infty$ . Begin with the entire set of solutions under consideration (including any infeasible solutions that cannot conveniently be eliminated) as the only remaining subset. Before beginning the regular iterations through the following steps, apply just the bound step, the fathoming step, and the optimality test to this one subset. We shall refer to this as iteration 0.

**Branch step.** Use some branch rule to select one of the remaining subsets (those neither fathomed nor partitioned) and partition it into two or more new subsets of solutions.

**Bound step.** For each new subset, obtain a lower bound  $Z_L$  on the value of the objective function for the feasible solutions in the subset.

**Fathoming step.** For each new subset, exclude it from further consideration (i.e., fathom it) if

Fathoming Test 1  $Z_L \geq Z_U$ , or

Fathoming Test 2 The subset is found to contain no feasible solutions, or

Fathoming Test 3 The best feasible solution in the subset has been identified (so  $Z_L$  corresponds to its objective function value); if this situation occurs and  $Z_L < Z_U$ , then reset  $Z_U = Z_L$ , store this solution as the new incumbent solution, and reapply Fathoming Test 1 to all remaining subsets.

**Optimality test.** Stop when there are no remaining (unfathomed) subsets and the current incumbent solution is optimal. Otherwise, return to the branch step.

#### **Summary of Branch-and-Bound Technique in the case to maximize the objective function**

**Initialization step.** Set  $Z_L = -\infty$ .

**Branch step.** Use some branch rule to select one of the remaining subsets and partition it into two or more new subsets of solutions.

**Bound step.** For each new subset, obtain an upper bound  $Z_U$  on the value of the objective function for the feasible solutions in the subset.

**Fathoming step.** For each new subset, exclude it from further consideration (i.e., fathom it) if

Fathoming Test 1  $Z_U \leq Z_L$ , or

Fathoming Test 2 The subset is found to contain no feasible solutions, or

Fathoming Test 3 The best feasible solution in the subset has been identified (so  $Z_U$  corresponds to its objective function value); if this situation occurs and  $Z_U > Z_L$ , then reset  $Z_U = Z_L$ , store this solution as the new incumbent solution, and reapply Fathoming Test 1 to all remaining subsets.

**Optimality test.** Stop when there are no remaining (unfathomed) subsets and the current incumbent solution is optimal. Otherwise, return to the branch step.

**Model problem 1.** A shipping company has two plants. Because of declining earnings, top management has decided to revamp the product line. Several unprofitable ships are being discontinued, and this act will release production capacity to undertake two potential new ships that have been demand. The Marketing Department has concluded that the company could sell as much of either product as could be produced with the available capacity. Therefore, management asked the Operations Research Department to study this question. After some investigation, this department determined the percentage of each plant's production capacity that would be available for these ships, the percentages required by each ship for each unit produced, and unit profit (in notional units) for each ship. This information is summarized in Table 1.

**Table 1** Data for Model problem 1

Plants	Ship of type 1	Ship of type 2	Capacity Available
Plant 1	1	1	6
Plant 2	16	11	88
Unit profit	6	5	

The company board wants to decide how many ships can produce to maximize the profit.

FORMULATION. Let us denote by  $x_1$  and  $x_2$  the quantities of Ship of type 1 and Ship of type 2, respectively. Then we obtain the following integer programming problem.

*Maximize*  $Z = 6x_1 + 5x_2$

subject to the restriction

$$x_1 + x_2 \leq 6$$

$$16x_1 + 11x_2 \leq 88$$

$$x_1 \geq 0, x_2 \geq 0$$

$x_1, x_2$  are integers.

Figure 1 shows the points of space solutions of the integer programming problem. The space of solutions of the continuous problem (without restrictions for integer values of unknown variables  $x_1, x_2$ ) is OABC.

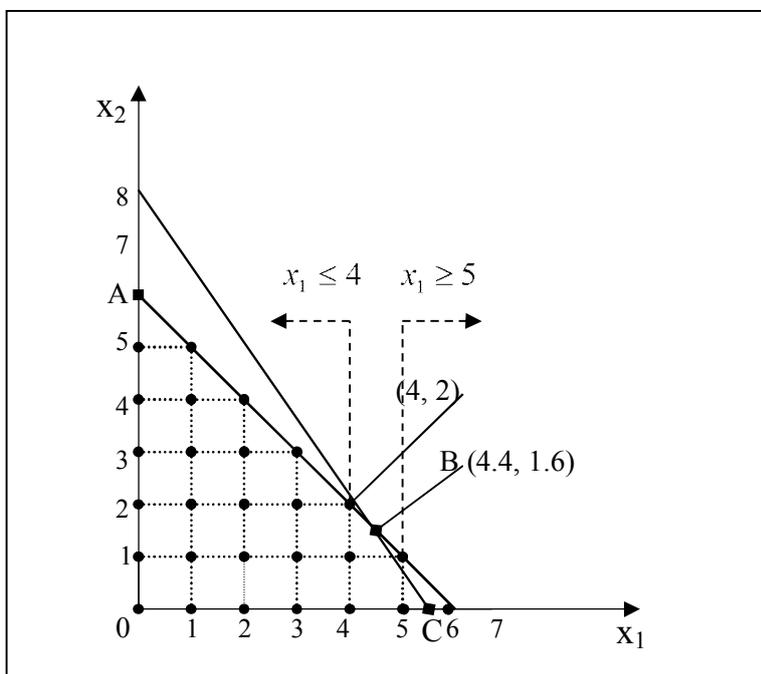


Fig. 1 A graphic interpretation of the solution of Model problem 1

For iteration 0, the optimal solution for the LP-relaxation of this problem is found to be  $x_1 = 4.4$ ,  $x_2 = 1.6$ ,  $Z = 34.4$ . Therefore iteration 1 begins by partitioning to  $x_1$  the *entire* set of solutions into the two subsets:

1. Solutions in which  $x_1 \leq 4$
2. Solutions in which  $x_1 \geq 5$

For this first subset, its LP-relaxation has the optimal solution,  $(x_1, x_2) = (4, 2)$ , which is integer valued, so this subset is fathomed by Test 3 and this solution becomes the first *incumbent* solution  $Z_U = Z_L = 34$ .

For the second subset we have  $x_1 = 5$ ,  $x_2 = 0.7273$ ,  $Z = 33.6364$ . Then by partitioning to  $x_2$  the entire set of solutions into the two subsets:

1. Solutions in which  $x_2 \leq 0$
2. Solutions in which  $x_2 \geq 1$

For this subset, its LP-relaxation has the solution,  $(x_1, x_2) = (5, 0)$  and this solution is the second incumbent solution  $Z_U = Z_L = 30$ .

Finally, by comparison of the first and the second incumbent solution we obtain the optimal solution  $x_1 = 4$ ,  $x_2 = 2$ , where  $Z = 34$ . So, the maximum of the objective function is reached for the nearest integer values, satisfying the system of restrictions.

**Model problem 2.** Let us assume that in situation of Model problem 1 the information is summarized in Table 2.

**Table 2** Data for Model problem 1

Plants	Ship of type 1	Ship of type 2	Capacity Available
Plant 1	1	10	20
Plant 2	1	---	2
Unit profit	1	5	

The company board wants to decide how many ships can produce to maximize the profit.

FORMULATION. Let us denote by  $x_1$  and  $x_2$  the quantities of Ship of type 1 and Ship of type 2, respectively. Then the integer programming problem is

$$\text{Maximize } Z = x_1 + 5x_2$$

subject to the restriction

$$x_1 + 10x_2 \leq 20$$

$$x_1 \leq 2$$

$$x_1 \geq 0, \quad x_2 \geq 0$$

$x_1, x_2$  are integers.

Figure 2 shows the points of space solutions of the integer programming problem. The space of solutions of the continuous problem (without restrictions for integer values of unknown variables  $x_1, x_2$ ) is OABC.

For iteration 0, the optimal solution for the LP-relaxation of this problem is found to be  $(x_1, x_2) = (2, 1.8)$ . Therefore, iteration 1 begins by partitioning the *entire* set of solutions into the two subsets:

1. Solutions in which  $x_2 \leq 1$
2. Solutions in which  $x_2 \geq 2$

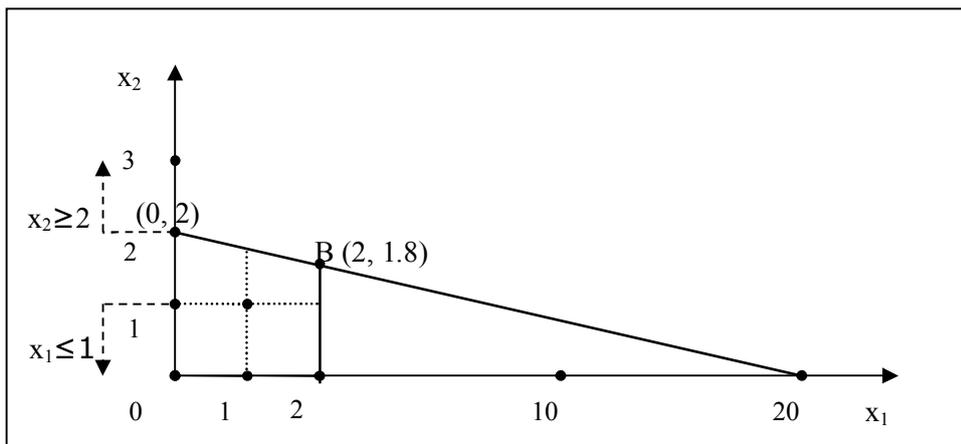


Fig. 2 A graphic interpretation of the solution of Model problem 2

For this first subset, its LP-relaxation has the optimal solution,  $(x_1, x_2) = (2, 1)$ , which is integer valued, so this subset is fathomed by Test 3 and this solution becomes the first incumbent solution  $Z_U = Z_L = 7$ . For the second subset its LP-relaxation has only one feasible solution,  $(x_1, x_2) = (0, 2)$ , but it is integer valued, so this subset is also fathomed by Test 3. Furthermore, this solution is better ( $Z = Z_L = 10 < Z_U$ ) than the incumbent solution, so it becomes the new incumbent solution (reset  $Z_U = 10$ ). However, there now are no unpartitioned subsets left that have been fathomed, and  $(x_1, x_2) = (0, 2)$  must be optimal. So, the maximum is reached for values that are far from those of the continuous optimal solution.

Now we give a computer code in MATLAB for solution of integer programming problem.

```
function [x,z,lag]=intprog(f,A,b,Aeq,beq,lb,ub,s)
nub=length(ub);
nlb=length(lb);
nf=length(f);
if nub==0
    ub=ones(nf,1)*inf;
```

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```
end
if nlb==0
    nlb=-ones(nf,1)*inf;
end
options = optimset('LargeScale', 'on', 'Display','off','TolX',1e-9);
[x1,z1,lag1]=linprog(f,A,b,Aeq,beq,lb,ub,[],options);
ns=length(s);
k=0;
lb2=lb;
ub1=ub;
if lag1==1
for i=1:ns
if (abs(x1(s(i))-round(x1(s(i))))<=1e-7);
    x1(s(i))=round(x1(s(i)));
end
end
for i=1:ns
if (abs(x1(s(i))-round(x1(s(i))))>1e-7)&&(ns~=0)
    k=i;
    break
else
    k=0;
end
end
if k==0||(ns==0)
    x=x1;z=z1;lag=lag1;
else
    ub1(s(k))=floor(x1(s(k)));
    lb2(s(k))=floor(x1(s(k)))+1;
    [x22,z22,lag22]=intprog(f,A,b,Aeq,beq,lb2,ub,s);
    [x11,z11,lag11]=intprog(f,A,b,Aeq,beq,lb,ub1,s);
    if (lag11==1)&&(lag22==1)&&(z22<z11)
        x=x22;z=z22;lag=lag22;
        lb=lb2
    end
end
end
```

```
elseif (lag11==1)&&(lag22==1)&&(z22>=z11)
    x=x11;z=z11;lag=lag11;
    ub=ub1;
elseif (lag11==1)&&(lag22~=1)
    x=x11;z=z11;lag=lag11;
    ub=ub1;
elseif (lag22==1)&&(lag11~=1)
    x=x22;z=z22;lag=lag22;
    lb=lb2;
else
    lag=0;
    error('there is not solution')
end
end
else
    x=x1;z=z1;lag=lag1
end
```

NOTE. If the integer programming problem is:

$$\text{Minimize } Z = f^t x$$

$$Ax \leq b$$

$$A_{eq} x = b_{eq}$$

$$lb \leq x \leq ub$$

$$i \in s \text{ when } x_i \text{ is integer,}$$

then the input data are:  $f$  – vector of coefficients from the objective function ( $f^t$  – transposed vector);  $A$  – matrix of coefficients from the system of linear inequalities of type “ $\leq$ ” and  $b$  – vector (right hand side);  $A_{eq}$  – matrix of coefficients from the system of linear equations and  $b_{eq}$  – vector (right hand side);  $lb$  – vector of lower bounds;  $ub$  – vector of upper bounds;  $s$  – vector of index numbers of integer variables. The output data are:  $Z$  – the optimal value of the objective function,  $x$  – the optimal solution,  $lag$  – indicator for existence of the solution (if  $lag = 1$ , then there is a solution, if  $lag = 0$ , then there is not a solution).

In the case of maximizing integer programming problem in the input data we have  $f = -f$  and in the output data we obtain the optimal value  $Z = -Z$ .

### 3. CONCLUSIONS

From the mathematical point of view we see that it is possible to reach maximum of the objective function for as the nearest to the continuous optimal solution integer values and as for values that are far from those of the continuous optimal solution.

From the practical point of view it is strange to obtain an optimal solution  $(x_1, x_2) = (0, 2)$ , i.e. the profit is maximum when the company produced only ships of type 2. It is easy to correct the solution if there are the following restrictions  $x_1 > 0$  and  $x_2 > 0$ .

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## ENTERPRISE SIZE DISTRIBUTION IN THE CROATIAN SOFTWARE INDUSTRY

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### Abstract

*Enterprise size is decreasing in recent 20 years. The emergence of large number of micro enterprises is the consequence of the different factors facilitating entry and survival of small and medium sized enterprises (SMEs) as well as the SME policy support in the European Union. In this paper we analyse the firm size distribution in the Croatian software industry. The aim of the paper is to find out if enterprise size distribution varies by age. We analyse several cohorts of enterprises differing by age and we compare their size distribution. Number of employees is used as a size proxy.*

**Key words:** *enterprise size distribution, enterprise age, software industry, Croatia*

### 1. INTRODUCTION

Since the appearance of pioneering works of Pareto and Gibrat, the distribution of enterprise size has been deeply studied both in the statistical and in the economic literature (Cirillo, 2009). Gibrat's Law (Gibrat, 1931), very popular among researchers, is the first attempt to explain in stochastic terms the systematically skewed pattern of the distributions of enterprise size within industry (Aitchison and Brown, 1957). Stochastic models indicate that enterprise size distribution is a result of the random walk. Empirical works on the evolution of the enterprise size distribution lead to the conclusion that the initial size distribution of new enterprises is particularly right-skewed but the log-size distribution tends to become more symmetric as enterprises become older (Coad, 2007).

Cabral and Mata (2003) present the facts on enterprise size distribution among Portuguese manufacturing enterprises which support significant right-skewness evolving over time toward a lognormal distribution. Instead of selection argument affecting market structure, they emphasize the role of financing constraints. Angelini and Generale (2003) confirm the finding of Cabral and Mata that size distribution of the enterprises is highly skewed to the right at birth and the skewness diminishes with enterprise age.

Botazzi et al. (2009) explore firm size distribution of French manufacturing enterprises at the aggregate and disaggregate levels and find out that there is a significant enterprise size distributions heterogeneity across industries. Cirillo (2009) analysis the size distribution of Italian enterprises by age and finds out that it is skewed for both young and old enterprises but clearly shifts to the right as time goes by.

In the late 1980s large enterprises started to lose their dominance as a business organization model (Thurik, 2009). Verheul et al. (2002) emphasize the demand side and supply side of entrepreneurship in their eclectic theory of entrepreneurship. Both sides are determined by the factors influencing creating and survival of SMEs. Demand side factors such as economic development, technological development, demand diversity, industrial structure and globalization could explain the appearance of entrepreneurial opportunity and entry of many SMEs in the market. Supply side factors also have its

important role in creating new opportunities (population growth, population density and urbanization rate, age structure of the population, immigration, participation of women, income levels and unemployment, income disparity). Both demand and supply side factors give help in explaining dynamic processes in new, SMEs dominated ICT service industries, particularly software industry.

Fast growing ICT sector can make a large contribution to economic growth, employment and productivity. Moreover, having a strong ICT sector may help firms that wish to use technology since the close proximity of producing firms might have advantages when developing ICT applications for specific purposes. Effective diffusion and use of technology is a key factor in broad-based growth, particularly when combined with organisational change and effective human resource strategies involving education and training. Future Croatian membership in the EU places emphasis on the importance and need to further develop the information society.

New technologies have reduced the significance of scale economies. Even micro enterprises that successfully implement innovations or are capable to retain their clients can thrive in the growing market. Structural changes, which account for a higher share of services in economies, have opened up new possibilities for entrepreneurship in the service sector.

Considering all the indicators supporting the fact of transition to entrepreneurial economy (Thurik, 2009) the question of the factors influencing the firm size distribution in software industry can be an interesting one.

## 2. THE CHARACTERISTICS OF THE SOFTWARE INDUSTRY

Nambisan (2002) states that the software industry can be considered „the prototypical high technology industry characterized by innovation-driven market growth, rapidly shrinking product and technology life cycles, high knowledge intensity, and global markets“.

The software and software-based services market in EU27 area was about respectable 231 billion Euros in 2009 but European software products are characterized by large economies of scale placing European software vendors at a disadvantage (Rönkkö et al, 2011). As Rönkkö et al. (2010) argue the global software industry is characterized by large variation in enterprise size. There are two reasons for the heterogeneity in software enterprise size distributions: the first one is the absence of entry barriers (supporting micro and small enterprise entry) and the second one is the existence of economies of scale and scope favoring larger enterprises.

Software industry can be divided into two branches: professional services activities and software product activities. Hoch et al. (2000) argue that the scarcity of the talented, competent people is crucial in the software industry. It is also known that the production of information goods characterize low and constant marginal cost (Shapiro and Varian, 1999), but the first copy cost is very high so it could lead to the conclusion that domestic market is small for the software enterprises. In the same time, there is a need for customization because the software product has to be integrated in the specific customer's information systems. ICT service providers are necessary when enterprises need local skills and advice to implement ICT-related changes which could have important role in supporting enterprise growth.

While analysing Croatian ICT sector it was noticed that service industries in ICT sector have no entry barrier regarding minimum efficient size. Software industry (software supply and software consultancy) and data processing activity have the smallest minimum efficient size among ICT services (Kovačević and Vuković, 2006). The minimum efficient size is usually taken in research as a

measure of scale economies or a measure of sunk cost. It can negatively affect entry if a huge output is required for potential entrants to reap the benefits from economies of scale. A small minimum efficient size in most industries in the ICT sector speaks in favour of the conclusion that a smaller minimum efficient size of an industry increases the survival chances of the enterprises in that particular industry.

If small enterprises or micro enterprises constitute a dominant share in the industrial population, new enterprises have better chances for survival. Industries in the ICT sector are not capital intensive. Instead, it can be said that ICT industries are human capital intensive (Vuković and Kovačević, 2010) if we take into account average salary as a proxy for human capital. Li et al. (2010) find out in their research that the firms that persist and survive over the long term in the dynamic software industry are able to capitalize on their competitive actions because of their greater capabilities, and particularly operation capabilities.

As entry rates are high, many enterprises start a software business but many of them fail. Hoch et al. (2000) also mention that very few of persons that start a business can run it and most never lead it to the initial public offering. There should be many obstacles to growth: high risk of growth, lack of finance, lack of self-confidence, lack of managerial and entrepreneurial skills, bureaucracy burden, strategic decisions of maintaining the current size of the enterprise.

### 3. ENTERPRISE SIZE DISTRIBUTION IN THE CROATIAN SOFTWARE INDUSTRY

In our research we use Financial agency database which contains longitudinal data on the panel of all Croatian enterprises in the software industry. Croatian enterprises are required to submit regular financial reports each year. Our analysis is restricted to the software industry. The data for our study relate to the period from 2002-2007 because of the statistical consistency. We consider, first of all, the continuing firms over this period.

We assume that all enterprises, or at least the vast majority of them, have submitted the financial reports regularly so that the sample covers the vast majority of businesses registered for activities in the software industry.

As ICT has only been recognised as a major source of economic and social change, official statistics on ICT are still under development. International organisations, such as the OECD and Eurostat, have worked together to develop common definitions, common methods and common surveys of ICT. The National Classification of Economic Activities up to the group level (the third level of aggregation) ensures the compatibility with the International Standard Industrial Classification of All Economic Activities (ISIC Rev. 3.1). We use for our purposes activity 72.2 – software supply and software consultancy as a proxy for software industry.

Our sample of enterprises for which we detected the year of establishment and the number of employees can be traced to the period 2002 to 2007. The total number of enterprises in 2002 was 764 and in 2007 it increased to 1430 (see Table 1). The total number includes both employer enterprises (with at least one employee) and the non-employer enterprises (enterprises without employees).

Year	Number of enterprises
2002	764
2003	892
2004	995
2005	1125
2006	1278
2007	1430

**Table 1.** Number of enterprises in the Croatian software industry in the period 2002-2007

Source: Financial agency database

The oldest enterprises in our sample were founded in 1989. Late 1980s are the time that we could mark as the beginning of a transition from a planned to a market economy. But the number of businesses established in 1989 which survived to date is small, only 5 of them. The second oldest cohort is the cohort 1990 that counts 27 surviving enterprises. Table 2 provides an overview of surviving enterprises by age cohort. Since we do not know the entry rate in the year of establishment it is difficult to make conclusions about the success of the cohort in terms of survival. However, nearly doubled number of enterprises in the period 2002 to 2007 confirms the previously mentioned claims of a small efficient size in the software industry in Croatia, absence of entry barriers, human capital intensity and probably the increase in demand for software applications and services.

Year of foundation	Number of survived enterprises in 2007
1989	5
1990	27
1991	27
1992	55
1993	54
1994	63
1995	15
1996	26
1997	20
1998	36
1999	28
2000	15
2001	51
2002	39

**Table 2.** Number of survived enterprises

Source: Financial agency database

We analyse enterprise size distribution as well as the evolution of the enterprise size distribution in two ways. Firstly we can analyse enterprise size distribution in different years. The second way is to

group enterprises according to the age criteria and see the changes in enterprise size distribution as they get older. We use the number of employees as a size proxy. We excluded the enterprises without employees from the enterprise size distribution analysis because from the social point of view only the employer enterprises (with at least one employee) contribute to the social and economical improvement, especially in the period of increasing unemployment rate. However, the excluded group of enterprises (non-employer enterprises) is significant, it counts about 20% of the whole population in 2002 and increases to 47% in 2007.

Year	N	Mean	Min	Max.	Std. Dev.
2002	604	4,74	1,00	94,00	7,84
2003	617	4,66	1,00	112,00	8,20
2004	608	5,40	1,00	118,00	10,67
2005	641	5,46	1,00	116,00	10,57
2006	698	6,14	1,00	296,00	15,58
2007	756	6,65	1,00	311,00	17,12

**Table 3.** Descriptive statistics on enterprise size in the period 2002-2007, enterprise size measured by number of employees

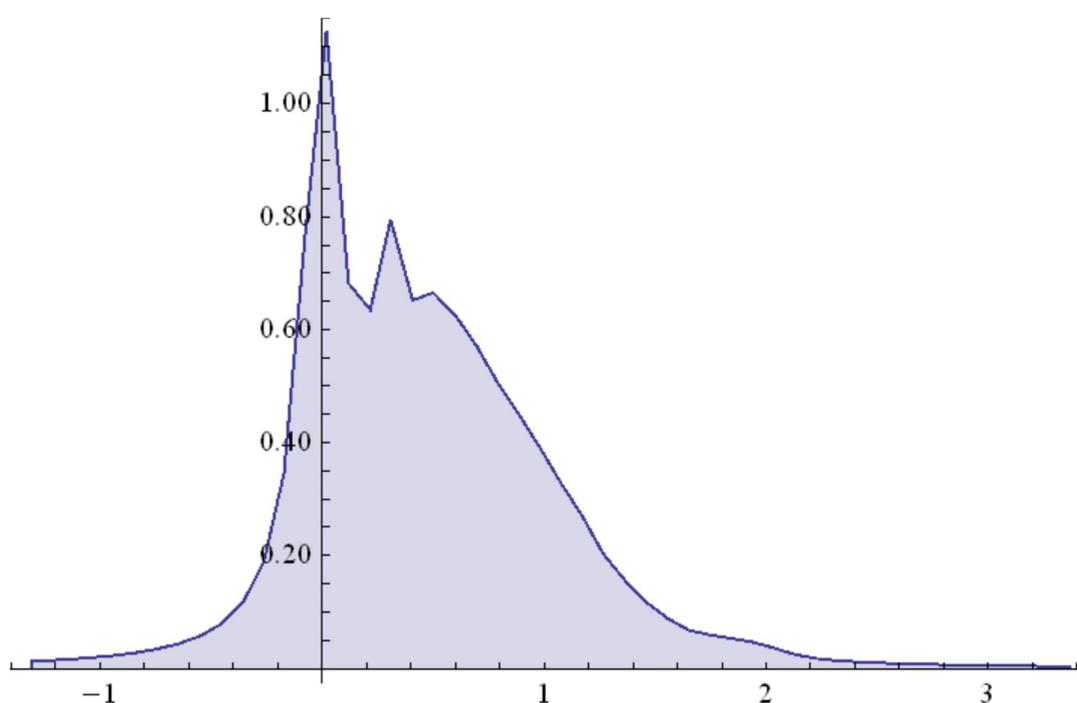
We notice that the number of employer enterprises is increasing (with exception of 2004). In 6 year long period the total amount of employer enterprises increased from 604 to 756, in this period 152 additional enterprises have appeared in the industry. It is also obvious that the average software enterprise has also become bigger, according to the mean value (from average size of 4,7 employees per enterprise in 2002 to 6,6 employees per enterprise in 2007). The reason for such trend is the mobility of enterprises in terms of change of their size. Several enterprises have grown rapidly and left behind the rest of the population. The average size is also influenced by the extreme values in the population, entry of enterprise with 311 employees in 2006 influenced the skewness and kurtosis significantly (Table 4).

Year	Skewness	Kurtosis
2002	6,10	51,77
2003	7,03	69,40
2004	6,18	47,18
2005	6,02	45,49
2006	11,21	180,53
2007	9,95	144,31

**Table 4.** Descriptive statistics on skewness and kurtosis in different years

Enterprise size distribution in observed industry is strongly right-skewed. It is indicated by the positive values of the skewness parameter. High values of the kurtosis indicators provide evidence of the existence of fat or heavy tails.

Figure 1 presents the kernel density estimate (following Silverman, 1986) of enterprise size distribution in the Croatian software industry in 2005. We use log values of enterprise size (measured by number of employees). Kernel density estimate is a smoothed version of the histogram. Figure reveals the existence of many micro- and small enterprises and just a few medium and large sized enterprises.



**Figure 1.** Kernel estimates of the density of enterprise size in 2005

The following analysis refers to the enterprise size related to the enterprise age. Population of enterprises that survived from 2002 to 2007 are grouped according to the age criteria (Table 4). It can be generally observed that average enterprise size increases with enterprise age. Since we excluded from our observation enterprises without employees, the smallest enterprises in our sample are those with at least one employed person. The prevalence of enterprises with one employee indicates the persistence of micro-enterprises category in the population of enterprises in the observed industry.

Age group	N	Mean	Mode	Frequency of Mode	Min	Max	Std. Dev.
All enterprises	755	6,64	1	270	1,00	311,00	17,13
Age ≤ 1	171	5,24	1	89	1,00	311,00	24,48
Age 2-4	171	7,40	1	55	1,00	110,00	16,82
Age 5-9	127	7,08	1	42	1,00	80,00	11,83
Age 10-15	226	6,09	1	74	1,00	134,00	12,90
Age ≥ 16	60	9,58	1	10	1,00	120,00	16,09

**Table 4.** Enterprise size distribution by age cohort, 2007.

Statistical data on skewness (Table 5) confirm previously mentioned claims that the initial size distribution of new enterprises is particularly right-skewed.

Age group	Skewness
Age ≤ 1	9,56
Age 2-4	4,66
Age 5-9	3,80
Age 10-15	6,45
Age ≥ 16	5,69

**Table 5.** Descriptive statistics on skewness and kurtosis according to the enterprise age group

Generally, statistical data confirm right-skewness of enterprise distribution and the existence of fat or heavy tails in the case of the Croatian software industry.

## CONCLUSIONS

Analysis of the population of enterprises in the software industry in Croatia shows that the sector is predominantly made up of micro enterprises. Micro-size is a persistent category, we notice that only one group of enterprises over 16 years is approaching the average size of 10 employees per enterprise. It is the group of enterprises aged 16 years and older. The study supports previous empirical research on the stochastic distribution related to enterprise size. Also in line with research is the existence of right-skewness and fat tails.

Since the distribution is analyzed based on enterprise size measured by only one measure: the number of employees, in the next step of research we should definitely make an analysis of the size distribution measured in total sales and profits.

The software industry in Croatia consists of a dynamic population that clearly characterizes the dynamic processes of entry, exit and mobility of enterprises, so that aspect of the business dynamics should be analysed as well as the growth process of the enterprises.

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**CHALLENGES OF THE EU AND THE NATIONAL SME POLICY:  
BETWEEN ADMINISTRATING, MANAGING AND GOVERNING**

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**Abstract**

*Due to the evident fact that the SME sector has become a dominant part of the EU economy, the SME policy is increasingly gaining importance. The complexity of the SME policy measures indicates the difficulties in implementing, controlling and managing the SME policy. This paper provides an overview and analysis of the measures and programs to support SMEs at an EU level and at the level of the Croatian economy. While governments in advanced economies are undergoing a period of rapid reform aimed at enhancing its efficiency and effectiveness, the Croatian government has to create the framework conditions for the development of the SME sector.*

**Key words:** *SME policy, European Union, Croatia*

**1. INTRODUCTION**

European politicians have recognized the importance of the social role of the entrepreneurs (owners of small and medium-sized enterprises). Therefore it is not strange that the policies supporting small and medium-sized enterprises (SMEs) began with the first elections in the European Parliament. Politicians are aware that entrepreneurs perform an important economic and social role: employment and self-employment, contribution to innovation, dynamic efficiency (as opposed to static efficiency of large firms) and competitiveness.

Policy support for small and medium-sized enterprises is not easy to create, and it also very difficult to control its implementation. Dannreuther (2007) also emphasizes the problem of the EU SME policy governance. The SME sector is heterogeneous, even in terms of enterprise size. The European SME definition is important for at least two reasons. The first one is to identify the micro, small and medium-sized enterprises interested in applying for grants or loans aimed at the SMEs, and the second one is to provide the appropriate information on which criteria are to be satisfied in order to benefit from specific legislative provisions for the SMEs (European Commission, 2005). Although there is a definition of micro, small and medium-sized enterprises, sectorial differences make small companies small in one sector or industry, and large in another sector or industry (due to the differences in minimum efficiency size, capital intensity, sunk costs, etc.). In addition, firms themselves have different motives and strategies, some companies are guided by a lifestyle strategy, some are focused on survival, and there are also those that implement innovation and growth strategy, use modern technology, boost growth (slower or faster) or have the intention to achieve growth. The need for reproducing the population of the firms through entry of new firms (in order to compensate for the relatively high failure rates of new businesses) requires effort and active participation of the policy.

According to the report of the European Commission for SMEs (Wymenga et al., 2011), in the European Union more than 19 million enterprises operate in the non-financial sector. SMEs make up

99.8%, while large enterprises make a minor part of the population: 0.2% (Table 1). It is evident that the typical company in the EU is a micro-enterprise. The number of micro-enterprises has a share of 92.1%, while small businesses make up 6.6% and medium-sized enterprises only 1.05% of the total number of enterprises. The average size of a micro-enterprise, measured by the number of employees, shows that micro-enterprises in the EU employ an average of 2 employees, indicating a decrease in the average size of micro-enterprises in relation to the previous reports. Aggregated data for the SME sector shows that this sector employs two-thirds of the employees in the non-financial sector: 87, 5 million employees were in SMEs, where the micro-enterprises employ nearly 30% of total employees.

	Micro	Small	Medium	SME	Large	Total
Number of enterprises (1 000)	19.200	1.380	220	20.800	40	20.840
Number of employees (1000)	38.910	26.610	21.950	87.460	43.260	130.720
Employeees per enterprise (1)	2	19	100	4	1.005	6

**Table 1.** The number of enterprises, number of employees, total sales and added-value in the EU economy

Source: De Kook et al. (2011, p. 28.)

At the same time, the productivity increases with the size of the enterprise. The lowest productivity measured in added-value is in micro-enterprises (Wymenga et al., 2011). The reasons for lower productivity of small and medium-sized enterprises could be lower capital investments, higher fixed labor costs and using less skilled labor compared to large enterprises.

## 2. WHAT DOES EU ACTUALLY DO AND WHAT HAS BEEN DONE UP TO NOW FOR THE SME SECTOR?

The EU adopts and implements horizontal and vertical measures to encourage SMEs. Horizontal measures are aimed at improving the general business environment, while the vertical measures focus on specific problems such as finance, education, etc. Since 2000, the EU has adopted several important documents related to SMEs. These are:

- the Lisbon strategy as a process that directs the SME policy,
- the European Charter on SME from Santa Feira,
- The Small Business Act (SBA) from 2008 based on the “Think small” principle.

The Lisbon Strategy is a process that gives guidelines to the European SME policy. The recent European strategy, Europe 2020, is the continuation of the Lisbon strategy. The European Charter on SME from Santa Feira has been accepted as a determinant for the development of small and medium-

sized enterprises. It consists of ten main principles: education and training for entrepreneurship, cheaper and faster start-up, better legislation and regulation, availability of skills, improving online access, getting more out of the Single Market, taxation and financial matters, strengthening the technological capacity of small enterprises, successful e-business models and top-class business support, stronger development, more effective representation of small enterprises' interests in the EU and on the national level (European Commission, 2001). Policy makers were expected to become aware of the special interests and needs of small businesses.

The EU recognized knowledge, technology and the creation of added-value as an advantage before the low-wage economies, and also documents the capacity of the SMEs for the growth and innovations as a way to prosperity. The Small Business Act which proclaims the principle "Think small first" is based on the needs of strengthening the SME sectors and has defined the following important tasks: to create an environment in which entrepreneurs and family businesses can succeed and in which they are rewarded for their success, to secure that honest entrepreneurs who are facing bankrupt quickly get another chance, to apply the "Think small first" principle means to take into consideration the characteristics of small and middle-sized businesses when designing laws and to simplify the current regulation, to make the public administrations a support for the needs of the SME, and particularly by promoting the e-government and one-stop-shop solutions, to adapt the tools of the public policy to the needs of the SME, to support the access to SME finances, especially risk capital, micro-loans and mezzanine financing and to develop a legal and business environment that supports the timely payment in commercial transactions, to stimulate SMEs to take advantage of the opportunities which are offered to them by the Single Market, to promote the improvement of the skills of the employees in SMEs and all forms of innovation, to enables the SMEs to turn ecological challenges into opportunities, to support and encourage SMEs to use the market growth outside the EU (European Commission, 2008).

Since it is difficult to establish a strict line between SMEs and entrepreneurship, we will mention the Green paper on Entrepreneurship in Europe, an important strategic document whose aim is to stimulate the growth and development of small and medium-sized businesses and to create a positive environment for entrepreneurship (European Commission, 2003). It has been pointed out in this document that solutions to encourage more people to become entrepreneurs have to be offered, and to create the conditions for the growth of companies.

In addition to the strategic guidance and writing of important documents to support the SMEs, the EU is, in practical terms, providing the SME sector with specific support. We will name some of the most important programs carried out by the EU: The Competitiveness and Innovation Program, known under the abbreviation CIP, was passed by the European Parliament and Council in October of 2006, for the period from 2007-2013 With the budget of approximately 3,6 billion Euros (European Union, 2006). The purpose of the program is to support innovational activities (including eco-innovations), to provide small and medium-sized businesses with a better access to finances, to secure the services for support of the business operations in the region, to encourage the better use of information and communication technologies, to help the development of the information society, to promote an increased use of renewable energies and the energy efficiency. The Entrepreneurship and Innovation Program (EIP) is the first component of the Framework Program for Competitiveness and Innovation with a budget of 2,17 billion Euros for the period from 2007-2013 (European Union, 2006). The target group for this part of the program are the SMEs in the start-up and in the development phase, and the aim is to ease their access to financial resources (the funds for the venture and seed capital, micro-loans for up to 25 000 Euros, loans, guarantees), to encourage them to implement entrepreneurship and innovation culture, to use innovative and ecological technologies, to coordinate their business with the

environmental policy and to use renewable energy sources, to improve their business with the use of ICT systems, to form clusters, to form public-private partnerships. Inside the CIP the High Growth and Innovative SME Facility (GIF) was launched. The funds are used to facilitate the launch (GIF 1) or to develop the business operation (GIF 2) of fast-growing innovative small and medium-sized businesses, as an indirect support for loan guarantees of small and medium-sized businesses – the SME guarantee mechanism - SMEG (European Union, 2007). In the framework of the cohesion policy instruments in the period from 2007-2013, the JEREMIE (Joint European Resources for Micro to Medium Enterprises) initiation was launched by the European Commission (The Directorate-General for Regional Policy) for the promotion of better financing in the development of micro, small and medium-sized businesses in the regions of the European Union (European Investment Fund, 2009) The JEREMIE initiation offers the EU member states the opportunity to use a part of the structural funds of the European Union (the European Regional Development Fund - ERDF).

The new Program for the Competitiveness of enterprises and SMEs, called COSME, has a budget of 2.5 billion Euros and its implementation is planned for the period from 2014-2020 (European Commission, 2011). It is actually the continuation of the CIP program. The objectives of the COSME program are: facilitating access of the SMEs to the finances, creating an environment favorable to business creation and growth, encouraging an entrepreneurial culture, increasing the sustainable competitiveness of EU enterprises and helping small businesses to operate outside their home countries and to improve their access markets. The expected outcomes of the program are: an easier access to finances for entrepreneurs and small businesses, higher rates of self-employment and business development as important sources of job creation. At the national level, it expects to achieve more competitive industries, a higher number of entrepreneurs and higher employment rates.

### **3. HOW TO MEASURE THE PERFORMANCE OF THE SME POLICY?**

The SME policy is made and carried out in the EU, as well as on the national level. Besides, the SME policy is linked to other policies: the employment policy, the social policy, the innovation policy, the industrial policy, and the entrepreneurship policy. At the same time, the SME policy is a collection of different measures. It can be a general support policy or a policy for rapidly growing businesses support and this can be also set up as the government's trade-off (Lilischkis, 2011). How to control the SME policy, then?

Even though the principles of the industrial policy and the support policy to the SMEs are different, as measures and instruments, it cannot be said that there is no link between them and that small and medium-sized businesses cannot feel the effects of the industrial policy. The industrial policy on the EU level acts on a sector by sector basis (eg. metal industry, automobile industry, shipbuilding, textiles industry, ICT industry). The industrial policy encompasses all government interventions that are focused on the economy (firms, industries, sectors) and influence the industrial structure of the economy and / or its change (Kandžija and Cvečić, 2010). The basic instruments of this policy are subsidies and tax facilities. The policies of SME support and the entrepreneurial policy helps the entrepreneurs to achieve competitiveness and flexibility, it gives him direct support through institutions, but there is also the ever present risk for the entrepreneurs and the possibility of failure. Through the industrial policy the risks brought by competition are spread across the whole society (the problem of the shipbuilding industry in Croatia and two decades of discussions whether it makes sense to separate so much money from the state budget in order to subsidize shipbuilding). The problem of the industrial policy is that it is uncertain whether all businesses deserve to be subsidized.

Different policies can operate simultaneously in one area. As an example we can mention the sectorial EU policy linked to information and communication technologies. Even though the sectorial policy, because of the distribution of businesses in favor of the micro, small and medium-sized businesses, inevitably in this policy enters the support policy for the SMEs, with the added feature of innovation policy characteristic due to the nature of the sector, but also with a special emphasis on businesses with high growth rates.

Also, there is a close connection and a partial overlapping of the SME policy and the entrepreneurship policy. Aernoudt (Table 2) gives a brief comparison of the SME policy and the entrepreneurship policy with the difference in causes of the formation of the policy, objectives, target groups, resources and focuses of the policies.

<b>Policy</b>	<b>SME</b>	<b>Entrepreneurship</b>
<i>Legitimizing</i>	Market failure	Lack of entrepreneurs
<i>Objectives</i>	To help SMEs with their relative disadvantages (compared to large enterprises)	Be undertaking (start a business, grow, mentality)
<i>Target group</i>	Businesses	Entrepreneurs
<i>Resources</i>	Financial (subsidies)	Mainly non-financial
<i>Focus on</i>	Business environment	Entrepreneurial culture

**Table 2.** SME and entrepreneurship policy: a comparison

Source: Aernoudt, R., European enterprise policy, according to Aernoudt (2007), <http://www.oecd.org/dataoecd/1/56/39745299.pdf>

According to Aernoudt, the SME policy would be more efficient in an entrepreneurial environment. Every level of society would have their task and thereby function:

- individuals – to consider entrepreneurship as a career option,
- enterprises – to adapt to change in order to survive and seize new opportunities
- society – to create a supportive environment where the entrepreneurial initiative and risk-taking is treated as valuable as well as the contribution of enterprises to society.

Since the effects or outcomes of the public sector are realized by a number of organizations, the government performance should not be measured on an organizational level but on the level of policy. The concept of efficiency in the public sector is based on a generally accepted "logic model" of performance in nonprofit and public organizations (Berman, 2006, p. 147), which, in its simplest form, can be showed through a logical sequence:

input → activity → output → outcome → goals.

This model seems to be a linear type function, but the reality is more complex than such a simple function. The outcomes and the effects are subject to influences that come with changes in the political environment. The first problem arises from the output-outcome relationship.

The disrupted relationship output-outcome stems from a number of reasons: the lack of market mechanisms, the politicians who overestimate or underestimate the outcomes, and citizens who inhibit achieving outcomes because of their reactions to government measures. Outcomes or effects are the most important criteria in assessing government performance (Bouckaert and Halligan, 2008). The type and level of outcomes are influenced by the social needs (in the moment of the economic crisis: unemployment and lack of growth). Needs of the society are the base for creating strategic and operational objectives of specific policies.

There are three levels on which it is necessary to analyze and provide support for the SMEs and entrepreneurs (Autio et al., 2007):

- micro-level (the entrepreneur and enterprise) with a focus on the motivation and skills of the entrepreneurs and to help enterprises overcome their resource disadvantages: capital, social capital, reputation, business expertise, technological expertise, innovation on the enterprise level, infrastructure,
- mezzo level (sector/industry): networks (innovation clusters, business networks, financial networks); opportunities (growing markets, new markets, international markets and public markets),
- macro level (national and EU level/environment): creating entrepreneurial culture, innovation and research programs and regulations (bureaucracy, bankruptcy laws).

Outputs are never an end in itself for the government. The most important goal is to achieve the trust of the citizens in all institutions and organizations, especially in public institutions and organizations. The relationship between the effects/outcomes and trust provides the second problem in the government policy (Bouckaert and Halligan, 2008).

The government has a limited amount of resources that it can spend on the SME policy and it attempts to achieve the economic and social welfare. The benefits from the SME policy could even be negative if the funds spent do not have a positive effect on the performance of the enterprise, if the enterprise would have behaved in the same way without the subsidies – the substitution effect (Lilischkis, 2011). The maximum return of the investment can be less than the total amount spent on incentives for SMEs, for example, due to the inefficiency of the administration. An effective but inefficient policy is inadequate, the effectiveness is considered to be the most important measures of performance.

#### **4. THE CROATIAN SME POLICY**

Figures show that the Croatian economy, as well as the EU economy, has become a micro-economy and that the “Think Small First” principle also makes sense in the case of Croatia. Table 3 shows that the share of SME enterprises has increased from 99% to 99.5% in nine years.

	2001.		2010.	
	Number of enterprises	%	Number of enterprises	%
Small enterprises	54.213		95.004	
Medium enterprises	2.203		1.379	
SME sector	56.416	99	96.383	99.5
Large enterprises	571	1	375	0.5
Total	56.987	100	96.758	100

**Table 3.** The enterprise size distribution in the Croatian economy: 2001 and 2010

Source: CEPOR (2011), p. 13, [http://www.cepor.hr/SME%godisnjak\\_final.pdf](http://www.cepor.hr/SME%godisnjak_final.pdf)>

Economic indicators (Table 4) show that the SME sector accounts for about half of the total Croatian output. It also employs about 2/3 of all employees (as in the EU). The crisis has probably affected the SME sector as the share of SMEs in the Croatian GDP has decreased by almost 2% from 2009 to 2010. The export share of large enterprises (almost 60%) is an obvious indicator that it is necessary to give support to the internationalization of the SME sector.

Indicator	Enterprise size					
	Small		Medium		Large	
	2009.	2010.	2009.	2010.	2009.	2010.
GDP (mil. EURO)	27.511.012	26.573.176	15.740.035	14.604.100	38.101.932	38.581.047
GDP (%)	33,8%	33,3%	19,3%	18,3%	46,8%	48,4%
Employment	417.979	415.320	166.916	157.147	300.394	287.341
Employment (%)	47,2%	48,3%	18,9%	18,3%	33,9%	33,4%
Export (mil. EURO)	2.034.310	2.409.751	2.335.603	2.527.198	6.405.218	7.084.360
Export (%)	18,9%	20,1%	21,7%	21,0%	59,4%	58,9%

**Table 4.** Enterprise size, GDP, employment and export in 2009 and 2010

Source: CEPOR (2011), p. 14, [http://www.cepor.hr/SME%godisnjak\\_final.pdf](http://www.cepor.hr/SME%godisnjak_final.pdf)

The Croatian government, faced with difficult economic conditions, adopts a strategy and set of measures in 2012 to give support to the SME sector and entrepreneurship. An amount of 100 million Euros will be delivered through the following programs: competitive entrepreneurship, loans and

guarantees, education for entrepreneurship, improvement of entrepreneurial infrastructures, EU programs and projects, institutional support to entrepreneurship development (Government of the Republic of Croatia, 2012a).

The strategy presents the general and the specific objectives as well as the expected outputs and effects over the three-year period (Government of the Republic of Croatia, 2012b). The final goal is to enhance the competitiveness of the Croatian entrepreneurship by supporting the creation of competitive, innovative and growing entrepreneurs. Specific goals, presented as an implementation of the Entrepreneurial impulse measure, can be achieved at a micro, mezzo and macro level. Micro-level measures are aimed at facilitating access to finances by loans and other forms of financing, education for entrepreneurship in the form of a formal educational system as well as in the form of life-long learning, effective entrepreneurial infrastructure, implementation of the investment supporting law. The mezzo-level goal is to enhance the international competitiveness. The goal of the macro-level is to improve the entrepreneurial culture and business environment.

The main problems of the all governments' strategies and measures up to now:

- problems of implementation and control,
- the lack of consistency and long-run planning.

Outputs that can be a proximate measure of the success of the program are: an increase in the number of enterprises, an increase in the share of entrepreneurs, increasing the TEA index (Total Entrepreneurial Activity index which presents the number of “nascent” and new entrepreneurs as a percentage of the population between 18 and 65 years of age), the number of loans, grants, investments, projects, number of participants in educational programs, etc. The outcomes of the government program are easy to detect: employment, self-employment, competitiveness, innovation and growth.

Despite all the previous failures of the government policy, there is a vital part of the economy that survives and exploits opportunities on the market. Survey evidence from countries in transition suggest that many enterprises are set up, survive and sometimes even grow *despite* the government, because of the creativity of individuals in mobilizing resources and their flexibility in adapting to hostile external environments (Smallbone and Welter, 2001).

## 5. CONCLUSIONS

To achieve the EU economy competitiveness, as well as in the Croatian economy, it is important to focus on a few things:

- facilitate the entry of new firms, but also allow the honest entrepreneurs in bankruptcy to recover as soon as possible and to start a new entrepreneurial venture,
- facilitate a position for growing businesses,
- provide support for the internationalization of SMEs.

It could be argued that the complementary policies aimed at small and medium-sized enterprises (SMEs general policy support, support for emerging companies, entrepreneurial policy) are necessary to empower the EU economy. Also, the policy should not be taken as a principle for favoring SMEs. Large companies also have an important function in the economy and its advantages.

It is not easy to find a model that would generate the highest innovation rates and the highest growth rates. Many factors influence innovation and growth: the size of the market, the stages of market development, the industries in which enterprises operate, etc. If all relevant factors are not studied and not monitored, policies that favor certain types of enterprises may have poor or no effects to the economy.

The role of the European Union, taking into account the relationship between centralization and subsidiarity, should be to resolve the problems that should be resolved at an EU level, such as joint venture capital market or enhancing opportunities for the internationalization of SMEs, creating a common market and placing a greater emphasis on the Enterprise Europe Network. Member States should find themselves the most appropriate policy in order to address the needs of their SME sector in the most acceptable way (Lilischkis, 2011).

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## INTEGRATION OF FINANCIAL MARKETS: PROBLEMS AND OPPORTUNITIES

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### Abstract

*At the present stage of globalization and increasing of competition is necessary to solve problems of the integration of financial markets. The goal of the paper consist in investigation of the mechanism of integration of national financial market to the global market and suggestion significant challenges in the current environment and the scheme of integrated financial market.*

**Key word:** *financial market, stock exchange, globalization, CIS, [EurAsEC](#), securities markets, the integration of financial markets*

### 1. INTRODUCTION

The global financial market is undergoing major changes. This is associated with the development of new markets, introduction of new instruments, consolidation, and consolidation of stock exchanges, changes in business principles. One of the main trends of financial institutions development lies in their internationalization.

The reasons for these processes are seen in the sharply increased globalization and consolidation of the financial business in context of increased competition. This article seeks to throw light on this relationship by first discussing the major problems that prevent the integration of financial markets, including the scheme of integrated financial market, as well as suggestions for their solution.

In spite of some economic and political differences, episodically arising between post-soviets countries, integration processes are gaining momentum. It is created Anticrisis Fund of the Eurasian Economic Community. Authorities and economic counterparts of the CIS countries are trying to work out common approaches to overcome the crisis. From this perspective, the crisis has given additional impetus to integration processes. No wonder in 2009 were signed the official agreement on the Common Customs Tariff and Customs Code. Also in April 2000 in Moscow, it was established the International Association of CIS Exchanges (IAE CIS) in order to coordinate efforts to the development of organized financial markets in accordance with international standards.

It is noted that certain infrastructure and legal basis of integration processes in CIS/[EurAsEC](#) has already been created. At the same time, the degree of integration of financial and currency markets does not meet the level of interaction between economies, capital flows and the population of the CIS countries. Particular attention is paid to the development of stock markets priorities, to the interaction of CIS Exchanges and to the prospects of the national currencies trading.

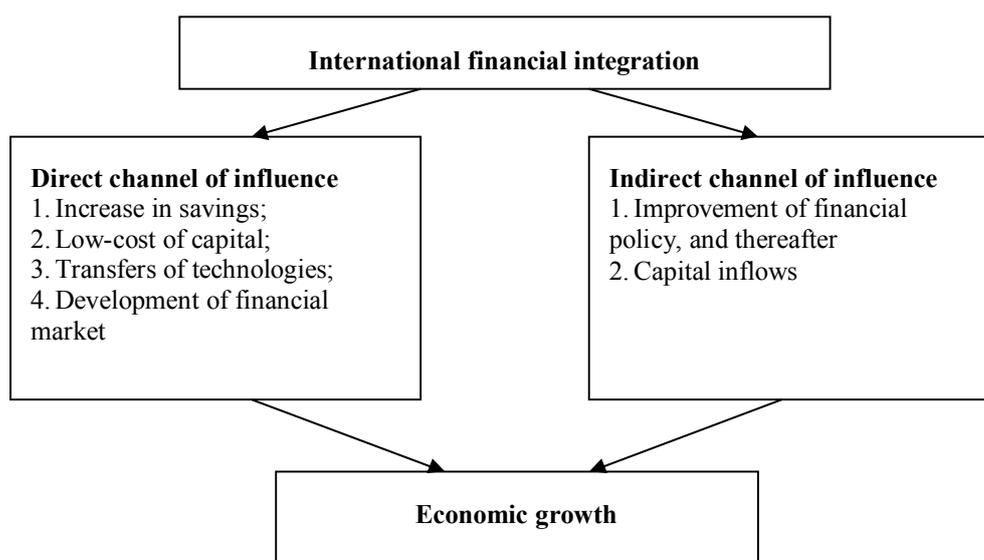
## 2. OPPORTUNITIES OF INTEGRATION OF FINANCIAL MARKETS OF RUSSIA AND KAZAKHSTAN

The intensity of the economic relations between Russia and Kazakhstan opens up possibilities for closer cooperation between national securities markets. So, it is important to improve, harmonize and unify of the legal conditions of issuance and circulation of securities, the activity of professional participants of the securities markets.

The purpose of the integration of financial markets of the CIS countries:

- growth of the investment potential of the participating countries, increasing liquidity and reducing the risks of stock markets;
- diversification of instruments, reducing the cost of capital;
- the development of transnational ownership.

The integration of financial markets of the CIS countries can be realized through direct channel and indirect channel as shown in Figure 1.



**Fig.1** Channels of influence of financial integration on economic growth

The financial crisis in 2008 significantly affected the dynamics and structure of the Russian and Kazakhstani securities market. Significant outflow of capital, aggravated macroeconomic problems (inflation, growth of industry, a large amount of external borrowing by the private sector, etc.) have led to a protracted decline in the late 2008 stock markets in Russia and Kazakhstan.

Formation of the securities markets of Russia and Kazakhstan happened almost simultaneously with the process of market economy formation. Fundamentals of the securities market were laid in the 90s, when under the influence of denationalization and privatization processes were set up joint-stock companies, brokerage firms, stock exchanges.

Almost simultaneously in both states has been developed legislation regulating the securities markets, and created the appropriate infrastructure, including stock exchanges, depositories and clearing organizations. Under the influence of various factors, including institutional building, introduction of legislation, carrying out social and economic reforms, the markets of these countries, subsequently, in addition common features, acquired its own characteristics and peculiarities.

Also, decline in the proportion of nonresidents' transactions, the share of private investors, decreased the activity of other categories of investors, including investment funds. Stock markets in Russia and Kazakhstan are leaders in the region, well ahead of absolute figures for other CIS states. In Belarus there is functioning the government securities market, but there is no substantial progress in the development of the corporate securities market. In Central Asia, organized securities market is underdeveloped, although in recent years demonstrates a positive trend.

Now the level of development of securities markets in Russia and Kazakhstan is still characterized by weak investor base. Many legal issues of the market are at discussion stage or elaboration, and therefore securities market participants are less protected than in developed markets. There is not developed derivatives market allowing risks insuring.

In Kazakhstan, the most active agents of the securities market, as well as in Russia, are the banks. They act as issuers of their own stocks, bonds, bills, depositary certificates and other securities, as well as investors, buying securities and carrying with them brokerage operations. Companies working in the retail sector and in the sphere of collective investments do not hide that they are focused on attraction in Kazakhstan free financial resources and further invest this money abroad. This approach does not carry the benefits of Kazakh economy, but creates a competitive environment, increasing the efficiency of the market.

Financial institutions of the CIS countries are increasing their presence in the markets of each other. The most active in foreign expansion in the CIS banks in Russia and Kazakhstan. The largest of them Russian - VTB, Sberbank and Alfa-Bank and Kazakhstan - BTA Bank, Kazkommertsbank and Halyk Bank. Unlike banks and investment companies, mutual presence of the stock market infrastructure institutions is still limited.

Kazakhstan organizations are interested in the Russian financial market, primarily as a mechanism to attract capital. Russian business is considering Kazakhstan's capital market more as a "bridge", which provides access to natural resources of the RK. Accordingly, if a significant part of Kazakhstan organizations interested in the withdrawal of its securities on the Russian market, Russian companies are not willing to provide.

For Kazakhstan's securities market's professional participants' priority sectors for investment are extraction of natural resources, financial institutions, energy and telecommunications. Russian market participants limit the scope of its interest in Kazakhstan, so they demonstrate interest to natural resource extraction and financial institutions.

Having said that, securities of Russian issuers are purchased not on Russian stock exchanges, but on international exchanges in the form of GDR and ADR. In current situation Kazakh issuers are not interested in the withdrawal of its securities on the Russian market - most of them listed on the

LSE. Immediate circulation of foreign securities on the Russian securities market is severely restricted by high level of requirements established by the law.

Pension funds, which before the crisis were the largest group of domestic investors, by virtue of the rules of investing have reduced their activity in the domestic securities market. Money of private pension funds or asset of executive companies can be considered as a potential source of Russian portfolio investment in securities of Kazakhstan organizations. However, to realize the opportunities provided by Russian law, it is necessary to form the corresponding mutual funds, including securities of Kazakhstani issuers. This is unlikely to happen soon, while the capital market of the RK is recovered from the effects of the global financial crisis or until the securities of the RK issuers will not be withdrawn on the Russian stock market capable of providing them with adequate liquidity.

Accumulative pension funds (APF) are active investors in the Kazakh financial market and foreign countries. However, in the near future we should not expect substantial investments to foreign countries, including in Russian securities. In the current period investing strategy of pension assets was changed in favor of increasing the share of government securities of the RK while simultaneously reducing investment in securities of foreign issuers.

From the three stock exchanges in the context of investment to the economy of another country Russian Stock Exchange (RTS) is most active. Today it only has a subsidiary in Kazakhstan (JSC "Commodity Exchange" ETS ).

Russian securities markets are showing interest in cooperation with Kazakh partners and would like to expand the list of tradable instruments on their facilities due to foreign securities.

Although a significant burden to facilitate interaction between members of an organized trade of both countries is entrusted to the stock exchanges, an important role in this process is given to the legislature. For example, both the stock exchanges and capital market professionals need to be an acceptable mechanism of nominal holding for foreign investors, the relevant legislation of both countries, as well as in the developed clearing obligations, including centralized.

An important element of the technology integration process should be recognized development and application of common technologies of electronic documents that would standardize and accelerate information exchange both between stock exchanges and between trading participants.

With this project, in fact, project for the Eurasian exchanges of agricultural products, raw materials and food being prepared at the initiative of the EurAsEC Integration Committee with the participation of Russian and Kazakh partners competes. As a base for the project is selected OJSC "Belarusian Universal Commodity Exchange".

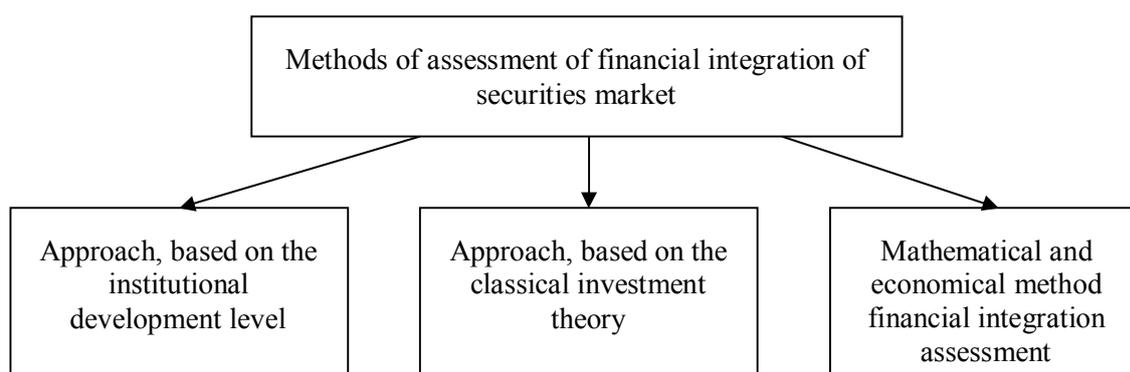
Over the past 10 years, both countries had done a lot of organizational work, but there is no efficiency integration, and a joint exchange area.

### **3. PROBLEMS OF INTEGRATION OF FINANCIAL MARKET OF THE CIS COUNTRIES**

In search of an answer to a question about the causes of low financial integration, which occurs on the background of trade cooperation, inter-connected infrastructure and close historical and cultural relations between the two countries can address to experience of Asian region. It is known, Asian countries are closely linked in trade, but the stock markets at the same time hardly interact. Bank for International Cooperation has analyzed the integration of stock markets in Asia. In the study, four

hypotheses were put forward regarding the factors that determine the level of interaction: 1) the geographical focus of investments; 2) the impact of trade; 3) the influence of profitability; 4) the impact of liquidity. The results showed that the lack of integration in the Asian markets is largely influenced by low liquidity and lack of development of financial systems in the region, causing investors to allocate funds to other financial centers.

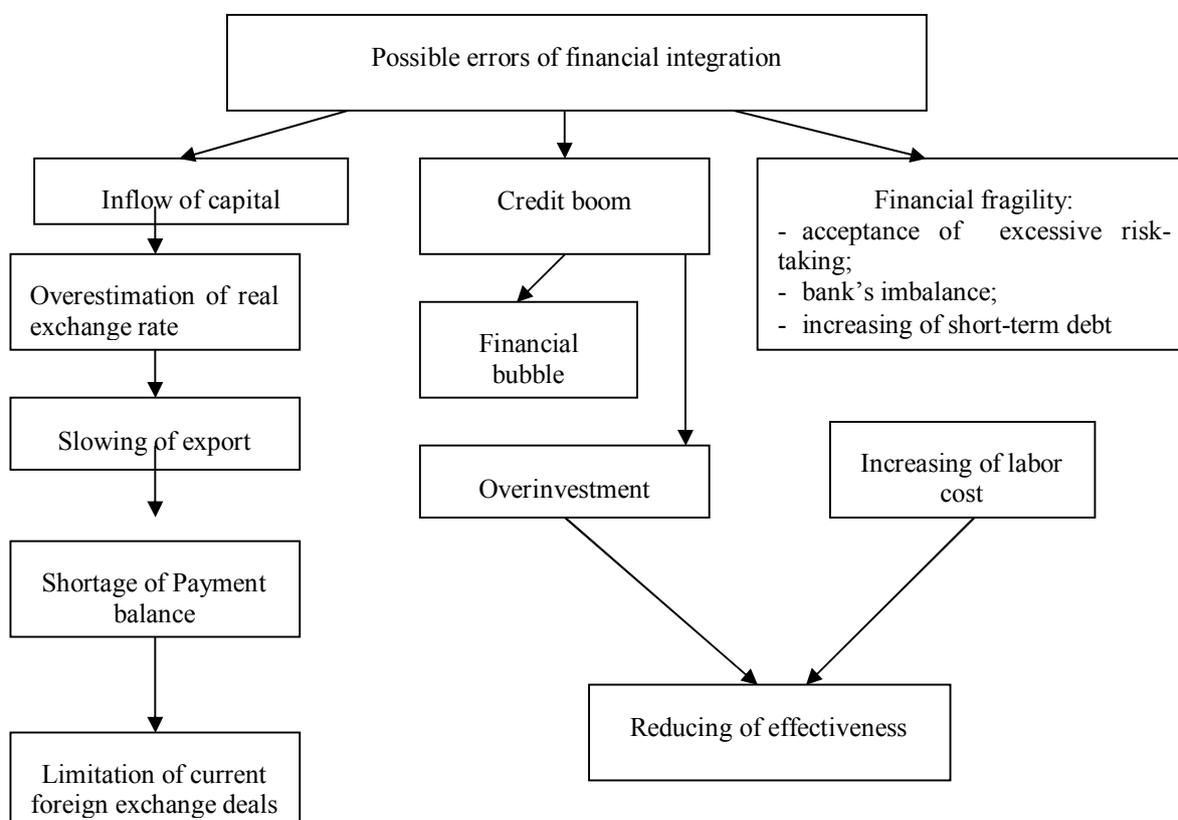
Assessment of the prospects of integration of financial markets of Russia and the RK, seems necessary stage of coordinated economic development of both countries, as well as other countries in the Eurasian Economic Community, which under present conditions is impossible be imagined without an effective financial policy and strengthen its relationship with the real sector of the economy. (Figure 2)



**Fig.2** Methods of assessment of financial integration of securities market

This kind of assessment requires in particular a comparative analysis of the legislative framework and regulatory systems of financial markets in both countries to identify the crucial differences between them, the elaboration of common approaches to solve common problems. Particular attention should be paid to the development of a consolidated infrastructure of financial markets, including [interrelated](#) trading, clearing and settlement systems of securities that generate technological opportunities for the free movement of capital.

Therefore, CIS countries should avoid mistakes of integration of financial markets which is clearly demonstrated by Figure 3.



**Fig.3** Possible errors of financial liberalization

The CIS countries are gradually moving towards financial liberalization and integration into the global system. However, this process is not unidirectional. Temporarily tightening of financial market regulation in order to suspend the withdrawal of capital, stock indices and national currencies stabilization was observed during the crisis. Therefore, the national financial systems of the CIS countries do not meet the prerequisites for a considerable external financial liberalization.

Banking systems of the CIS countries, that are the basis of the financial market, does not fully fulfill the function of the transformation of savings into investments. Although the pre-crisis financial systems of the CIS countries were gaining momentum, but could not become a full source of funding for the development of the real economy.

In the majority of region's countries' banking sector is the only of the most advanced segments of the financial system, because securities markets are characterized by low liquidity. The exception just the markets in Russia and Kazakhstan, before the crisis there was a significant growth of the participants' activity.

Foreign institutional investors are reluctant to work in the securities markets of the CIS countries, believing that the infrastructure in emerging markets is built mainly by short-term speculative and noninvestment operations.

Technological capabilities and the competition pressure make the stock exchanges go to international financial markets. Compared with Russia, Kazakhstan's securities market characterized by low secondary market liquidity of financial instruments, related mainly to the lack of such tools, underdeveloped market of derivative securities and the limited development of the stock market. Many Kazakh issuers have not yet willing to disclose financial information and prevent the executive company of external shareholders. These problems are inherent in the securities markets of CIS countries, which together with the legislative barriers have a negative impact on integration processes in the region.

As noted previously, that integration of currency markets does not correspond to the degree of integration of economies, capital flows and the population of the CIS countries. Today in national currencies of CIS countries the number of calculations is not to amount to much and use dollar and euro as world currency leads to increased costs of foreign trade activities, the deterioration of the mutual settlement of financial transactions, forcing economic entities of the CIS countries to keep additional amount in foreign currencies that connected with currency risk.

During the crisis, the need to abandon this practice has become even more vivid. Connectivity and the similarity of the economies of the CIS countries led to synchronization of economic cycles and comparability of impact of external shocks to their financial systems. So, fluctuations in the national currencies of CIS countries to each other were significantly less than their fluctuations against the U.S. dollar or the euro.

From a comparative analysis of the regulatory framework for counter movement of capital of the Russian Federation (RF) and the Republic of Kazakhstan (RK) in the form of securities market instruments implies that there are no insurmountable legal obstacles. Moreover, certain legal prerequisites for such a movement have already been created. However, the financial instability and the lack of embeddedness of capital markets of Russia and the RK into the global financial market in the form of a joint international financial center (IFC), they remain unclaimed.

So, exactly in these countries of EurAsEC - Russia and Kazakhstan - there are no explicit political and other obstacles to the integration of capital markets.

#### 4. THE CONCLUSIONS

The processes of globalization and modern trends in the internationalization of the financial infrastructure have a significant influence on the activity of financial institutions in the CIS countries. The existence of modern electronic stock exchanges facilities and the use of Internet technology greatly simplify the process of integration. Creating of alliances increases the liquidity of securities markets, and provides cost savings. The experience of the interaction of organized markets of CIS countries shows that their effective development requires serious improvement trade payment infrastructure.

However, some effort on the stock exchanges of technological standardization and harmonization of trade settlement is not enough consistent rules for admission of non-resident participants in the ethnic markets are needed. The successful implementation of integration projects is impossible without the active participation of the central national banks and other financial market regulators

of EurAsEC/CIS countries, and without prompt taking appropriate legal standards. Only with the support of all stakeholders – stock exchanges, participants, regulators - creation of a single financial space will lead to desired results; will facilitate cross-border payments in national currencies, the formation of market-based rates, the development of securities markets and the growth of investment activity in the CIS countries.

A prerequisite for such a coordinated development is the gradual mutual penetration of infrastructures and the financial markets of Russia and Kazakhstan. Increased interaction between the two capital markets is especially important in the context of the prospects of the Common Economic Space (CES) as a next step in the deepening of the Customs Union. This is due to the fact that the interaction between capital markets may become one of the bases of regional economic integration in general and the formation of cross-border financial infrastructure. The integration of financial markets will contribute to more effective use of excess savings in one case and to attract additional investment - in others. By overcoming the boundaries of national markets for issuers of financial instruments costs of attracting investments would be reduced for investors - will increase opportunities for diversification of investment portfolios and the risks of investing will be reduced. In addition, funds attracted through integrated capital markets of Russia and Kazakhstan and then other members of the SES can be used to finance the development of cross-border infrastructure projects in various sectors of the economy.

The main directions of development of financial markets - the participants must become:

- ensure mutual tolerance of professional market participants, including the mutual recognition of national regulators of securities markets – CIS licenses to engage in professional and other activities to be traded on exchanges of countries - CIS, and the introduction of remote access of investors to trade on the stock exchanges of those countries;
- ensure the admission of securities to trading on the stock exchanges of states - participants of CIS;
- standardization of clearing technology, risk management, product line;
- creation of integrated depository space (removal of obstacles in national laws and restrictions on opening deposit accounts of foreign nominee);
- recognition of the concept of a foreign nominee in the depository account property rights to foreign securities;
- creation of an integrated information environment of financial markets; harmonization of national legislation.

The results of these processes could be the formation of an integrated trading space in the securities market. Important tasks of the competent authorities on regulation of financial markets of the CIS countries - are:

- orientation of the regulatory activities in the financial market on the recommendations for regulation, control and supervision of the financial market, produced by international associations (G20, the Financial Stability Board, etc.);
- join the national regulators of the securities market to the Multilateral Memorandum of the International Organization of Securities Commissions;
- continued implementation of measures aimed at creating international (regional) financial centers in the states - members of CIS, including in Moscow.

On this basis, organizes its work and the Council of heads of government on regulation of the securities markets of the CIS countries, whose main task is to develop a harmonized approach and coordination of joint activities on the formation and development of an effective system of the CIS countries.

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**HISTORICAL REVIEW AND INFLUENTIAL FACTORS OF THE ELECTRICITY PRICE  
MOVEMENT FOR SELECTED COUNTRIES OF THE EUROPEAN UNION AND THE  
REPUBLIC OF CROATIA<sup>1</sup>**

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**Abstract**

*Research in this paper is focused on the historical review and comparison of the price movement of electricity for households in selected countries of the European Union and the Republic of Croatia. In this respect, especially are considered influential factors on the price movement of electricity of selected countries, such as the impact of liberalization of electricity market, the impact of specific characteristics of individual countries, the impact of electricity consumption, and other influential factors.*

**Key words:** *electricity price, households, historical review, influential factors, European Union, Republic of Croatia*

**1. INTRODUCTION**

The energy sector is the foundation of almost all economic activities, which gives it an exceptional strategic importance, and electricity is one of its most important forms. By technical-technological progress is imposed a daily requirement of using electricity as an irreplaceable energy source in a wide spectrum of human activity and life. Electricity is used in households, industry, services, transport, agriculture, and other. Security of electricity supply is the basic prerequisite of economic growth and development and improvement of living standard of a modern human. Its utilization affects the growth of national economy and conversely, the economy induces the level of demand for electricity.

One of the mechanisms of influence of the electric-power sector on economy and society as a whole are prices of electricity. From the aspect of consumer, they represent an integral part of production costs, for the industry sector, but also the living costs, for households. Price of electricity directly affects the electricity demand for needs of households, and for production needs of goods and services of numerous economic branches. Multiplicative activity of electricity price reflects on all activities of human work, causing major changes within the entire society.

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## **2. SIGNIFICANCE AND CHARACTERISTICS OF THE ELECTRIC-POWER MARKET AND PRICE AS ITS BASIC DETERMINANT**

Necessary assumption of normal functioning of the modern society and economy as a whole makes, among other things, but primarily, exactly the electricity. It appears as the main energy product in the industrialized society and a large number of human activities depend on its use, both at the household level and the economy (Li, Flynn, 2004).

Electric-power sector, as a subsystem of the entire energy sector, represents one of the most complex technical-technological systems in which different processes of electricity management take place (Udovičić, 2005). This relates to the core activities which are performed in the electric-power sector, which are generation, transmission, distribution and supply of electricity. The technological process in the electric-power sector begins with the use of available quantities (mostly natural forms) of energy such as coal, natural gas, biomass, water-power, wind energy or solar energy. Such forms of energy are transferred into electrical energy, and it is then from the producer, via transmission and distribution networks, lead to the end consumers. Finally, the electricity supply regulates relationships between suppliers and end users, or consumers.

Efficient and well developed electric-power sector makes possible the growth and incentive to economy, competitiveness of national economy, impacts on improving the living standard of population and development of society. Therefore, the fundamental purpose and objective of the electric-power sector is to ensure the quality delivery of electricity to end consumers, whether business subjects or individual customers, with optimal and acceptable electricity price for each of these two groups of consumers.

In determining the price of electricity and all other delivered forms of energy, it is deemed that should be met the following criteria (Kale, 2007):

- it is necessary to ensure the effectiveness and efficiency of business of (electric)power sector;
- end consumers, where are particularly significant economic entities, due to higher level of prices of individual forms of energy, should have a rational choice and the ability of more efficient energy usage;
- by variable relation of prices is necessary to avoid reorientation from one to another form of energy;
- it is necessary to enable an increase in own production and supply of energy;
- energy prices, or energy costs must not reduce the competitive ability of national economy in the world market.

As a dynamic category, like other products in the market such as oil, coffee or gold, the price of electricity is subject to daily changes. These changes relate, primarily, to the perception of market participants (producers, traders, suppliers of electricity) in relation to the supply and demand of this specific good. Since electricity cannot be stored, but the demanded quantity of electricity must be currently adjusted with the appropriate amount of the offered quantity, many factors influence the formation of equilibrium price and quantity. They may be different, such as current or future economic situation, change in prices of related products such as oil or coal, short-term and long-term weather conditions or tempests, natural disasters, the impact of policy on the pricing of electricity, and other (EDF Energy, 2009).

In general, volatility relates to the unpredictable fluctuations of various phenomena and processes observed during period in everyday life (Zareipour et al., 2007). Observing the volatility of electricity price, researches have shown that it usually decreases when the electricity markets get wider and develop, and when is increasing the market competition (Bask, Widerberg, 2009). The mentioned is often a result of deregulation and other comprehensive reforms of the electricity sector, and as confirmation of the same is emphasized the example of Nordic countries. Today, Finland, Denmark, Norway and Sweden are forming common electricity market where the electricity price is significantly more stable than it was the case before the integration processes, which means that today the Nordic electricity market is less price-sensitive to strong changes of the global economy.

### **3. INFLUENTIAL FACTORS OF THE ELECTRICITY PRICE MOVEMENT FOR HOUSEHOLDS IN SELECTED COUNTRIES OF THE EUROPEAN UNION AND THE REPUBLIC OF CROATIA**

In the Member States of the European Union, there is very clear and pronounced inequality in some basic categories and aspects of human life. The above is also reflected in electricity prices for households, such as the difference between the electricity price in France and Belgium or Spain, but also in those countries which are potential candidates for EU membership. This imposes the question, what is the major cause of inequalities of electricity prices: is it the cause the liberalization process, whether are certain specific features of each Member State, whether is the price movement of other energy sources from which the electricity is produced directly, or something else? Surely there is a specific causal connection between these factors and unequal electricity prices in the Member States of the European Union and in the Republic of Croatia as its future member, which interdependence is further analyzed in the continuation of paper.

First electricity markets in the EU have been established in the 1990s, but since there were significant differences in terms of ownership and functioning of the electricity sector, occurred a need for restructuring and harmonizing the electric-power industry. The result was the introduction of Directive 96/92 EC, by which were established common rules for generation, transmission, distribution and supply of electricity. Thus began the process of liberalization of electricity market of the then European Community. Basics of liberalization of the electricity market are based on the establishment of competition in generation and supply, and the free access to transmission and distribution network, with the aim of creating an internal market of electrical energy (Tominov, 2008). However, the liberalization of electric-power sector had not been developed by the expected pace. Due to the excessive number of modifications and amendments of existing Directive, 2003 was adopted the new Directive 03/54 EC which supposed to contribute to the dynamics of market opening, network access, the obligation of separation of operators of electric-power system, and other. Mentioned did not result in significant changes, as assumed, in general, nor in prices of electricity, among other things due to opposition of some Member States which did not want to relinquish control over their electricity prices. Countries which had been most resisted to the full opening of electricity market were France and Spain. France because it had a much favorable price of electricity, thanks to the large number of nuclear power plants and hydro power plants, than other EU countries, so French consumers did not want that free market, which would be achieved by full opening of electricity market, displace the cheap electricity. On the other side, the Spanish government brought a decision for a period of 14 years in which are prescribed favorable prices of electricity for their own (Spanish) consumers, due to which the Directorate General for Competition of the European Commission opened an investigation about the validity of that decision and discrimination that it causes, because it is considered that the

same violates free market competition (Tominov, 2008). In any case, it can be concluded that the process of liberalization of the electricity market is a long-term process which still in most countries is not completed. Different approaches of liberalization show great diversity in the implementation of electric-power reforms, and which differences arise from the intention to protect the economic and other interests of each Member State. Therefore, results of conducted reforms by no means cannot be satisfactory, as evidenced the fact that consumers have not yet received (promised) lower prices, but the opposite, creating of energy monopolies, prices rise from year to year, and is forming an increasing diversity of electricity prices among the EU Member States.

The price of electricity is greatly dependent on the location and living conditions of population of each country, on the degree of economic development, on the availability of other energy sources from which is possible to produce electricity, on ecologic awareness of electricity consumers, their level of education, but also on income level and many other influential factors.

In order to closer show and clarify the differences between prices of electricity, in the continuation of paper is showed the trend of electricity prices for households in selected Member States of the European Union and the Republic of Croatia since 1985 to 2011.

In Table 1 are shown the electricity prices for households (excluding taxes and other fees) for Belgium, Denmark, Luxembourg, France, United Kingdom, Spain, as members representing the EU, and the Republic of Croatia, as a future member of that integration. It should be noted that for France, Spain and the UK, electricity prices are available since 1991, while for the Republic of Croatia are available since 2005. Electricity prices are shown in euros per kilowatt hours, while the trend of electricity prices is shown in chain indexes (C.I.). Furthermore, for 2011, and since 1985 to 1990, the prices are shown only for the first half year, while since 1991 onward is calculated an average price of electricity based on two semesters of a year. Also, until 2007 was used the old methodology which was related to the ranking of the electricity consumption of households in the following way (<http://appsso.eurostat.ec.europa.eu/nui/setupModifyTableLayout.do>):

- annual consumption of electricity of household - 600 kWh
- annual consumption of electricity of household – 1.200 kWh
- annual consumption of electricity of household – 3.500 kWh
- annual consumption of electricity of household – 7.500 kWh
- annual consumption of electricity of household – 20.000 kWh.

Since 2008 onward is using the new methodology (except for Luxembourg and Croatia, where the new methodology was also used in 2007), which contains the following classes of electricity consumption for households (<http://appsso.eurostat.ec.europa.eu/nui/setupModifyTableLayout.do>):

- household consumption less than 1000 kWh
- household consumption that is greater than 1000 kWh, but less than 2500 kWh
- household consumption that is greater than 2.500 kWh, but less than 5.000 kWh
- household consumption that is greater than 5.000 kWh, but less than 15.000 kWh
- household consumption greater than 15000 kWh.

In Table 1, when showing electricity prices for households, were selected prices for consumption greater than 2500 kWh, but less than 5000 kWh by new methodology, and prices for annual electricity

consumption of household of 3500 kWh by old methodology. Through the both chosen classes are observed the "medium size" prices, i.e. the mean consumption of electricity, which also represents the most representative group of consumers. In this way, from the analysis are eliminated the extremes in electricity consumption, and just the average household is a consumer which describes the most common category of consumption. And, although in all selected countries are selected households of average electricity consumption, it is still possible to see differences in their electricity prices, both longitudinally, and in the same timing. In the continuation of paper is trying to perceive the causes of such disparities, or the various trends of electricity prices for selected EU Member States, and the Republic of Croatia.

Table 1: Electricity prices for households in selected countries of the European Union and the Republic of Croatia (€/kWh)

	<i>BEL</i>	<i>C.I.</i>	<i>DEN</i>	<i>C.I.</i>	<i>LUX</i>	<i>C.I.</i>	<i>FRA</i>	<i>C.I.</i>	<i>UK</i>	<i>C.I.</i>	<i>SPA</i>	<i>C.I.</i>	<i>CRO</i>	<i>C.I.</i>
1985.	0,1062	-	0,0617	-	0,0896	-	-	-	-	-	-	-	-	-
1986.	0,1051	99,0	0,0595	96,4	0,0863	96,3	-	-	-	-	-	-	-	-
1987.	0,1029	97,9	0,0520	87,4	0,0905	104,9	-	-	-	-	-	-	-	-
1988.	0,1035	100,6	0,0588	113,1	0,0910	100,6	-	-	-	-	-	-	-	-
1989.	0,1026	99,1	0,0667	113,4	0,0916	100,7	-	-	-	-	-	-	-	-
1990.	0,1081	105,4	0,0688	103,1	0,0958	104,6	-	-	-	-	-	-	-	-
1991.	0,1083	100,2	0,0668	97,1	0,0936	97,7	0,0947	-	0,1019	-	0,1165	-	-	-
1992.	0,1099	101,5	0,0682	102,1	0,0953	101,8	0,0971	102,5	0,1055	103,5	0,1200	103,0	-	-
1993.	0,1165	106,0	0,0638	93,5	0,1016	106,6	0,1023	105,4	0,0970	91,9	0,1117	93,1	-	-
1994.	0,1174	100,8	0,0623	97,6	0,1041	102,5	0,1037	101,4	0,0975	100,5	0,1063	95,2	-	-
1995.	0,1239	105,5	0,0617	99,0	0,1079	103,7	0,1012	97,6	0,0908	93,1	0,1068	100,5	-	-
1996.	0,1229	99,2	0,0644	104,4	0,1088	100,8	0,1022	101,0	0,0889	97,9	0,1085	101,6	-	-
1997.	0,1189	96,7	0,0635	98,6	0,1063	97,7	0,0979	95,8	0,1017	114,4	0,1040	95,9	-	-
1998.	0,1191	100,2	0,0672	105,8	0,1061	99,8	0,0952	97,2	0,1028	101,1	0,0946	91,0	-	-
1999.	0,1180	99,1	0,0680	101,2	0,1074	101,2	0,0939	98,6	0,0986	95,9	0,0922	97,5	-	-
2000.	0,1170	99,2	0,0717	105,4	0,1052	98,0	0,0921	98,1	0,1039	105,4	0,0895	97,1	-	-
2001.	0,1184	101,2	0,0798	111,3	0,1129	107,3	0,0914	99,2	0,1022	98,4	0,0859	96,0	-	-
2002.	0,1124	94,9	0,0854	107,0	0,1150	101,9	0,0923	101,0	0,1003	98,1	0,0859	100,0	-	-
2003.	0,1118	99,5	0,0908	106,3	0,1191	103,6	0,0890	96,4	0,0928	92,5	0,0872	101,5	-	-
2004.	0,1145	102,4	0,0911	100,3	0,1216	102,1	0,0905	101,7	0,0839	90,4	0,0885	101,5	-	-
2005.	0,1109	96,9	0,0945	103,7	0,1300	106,9	0,0905	100,0	0,0859	102,4	0,0900	101,7	0,0714	-
2006.	0,1130	101,9	0,1035	109,5	0,1390	106,9	0,0905	100,0	0,1037	120,7	0,0945	105,0	0,0766	107,3
2007.	0,1228	108,7	0,1117	107,9	0,1476	106,2	0,0921	101,8	0,1234	119,0	0,1004	106,2	0,0777	101,4
2008.	0,1560	127,0	0,1263	113,1	0,1417	96,0	0,0912	99,0	0,1462	118,5	0,1201	119,6	0,0880	113,3
2009.	0,1411	90,4	0,1181	93,5	0,1636	115,5	0,0908	99,6	0,1370	93,7	0,1338	111,4	0,0934	106,1
2010.	0,1455	103,1	0,1184	100,3	0,1441	88,1	0,0968	106,6	0,1350	98,5	0,1455	108,7	0,0932	99,8
2011.	0,1572	108,0	0,1263	106,7	0,1451	100,7	0,0994	102,7	0,1365	101,1	0,1597	109,8	0,0918	98,5

Source: processing of author according to Eurostat data (<http://www.eurostat.eu>)

Looking at Table 1, it can be concluded that France is achieving one of the lowest electricity prices compared to other shown states. In fact, France is the second country in the world behind the United States by the installed nuclear capacities, i.e. nuclear power plants. In the seventies of the 20th century, the French government has promoted the use of nuclear power plants for electricity

production in order to replace the electricity from import. In 2003 in France from nuclear power plants was produced 78% of the total electricity produced (<http://www.nuclearcounterfeit.com/?p=11607>). It should be emphasized that the French nuclear industry is characterized by low costs and high efficiency and low fees and taxes, which makes it competitive compared to other EU Member States, and thus enables it the low price of electricity. It should be noted that France is also the world's largest exporter of electricity with 18% of its total electricity produced, which is mostly exported to Germany, Holland, Italy and Great Britain. It is interesting to point out, that the price of electricity in France since 1991 to 2011 grew by only 4.9%, which further confirms the competitiveness of electricity price in France.

On the other side, the price of electricity in Denmark is heavily influenced by very high fees and taxes, which make up 56% price of electricity (which cannot be seen from Table 1, since electricity prices are shown excluding taxes and other fees), and that is the main cause of very high electricity prices in Denmark (<http://www.lovemoney.com/news/household-bills/gas-and-electricity/12993/the-cheapest-energy-in-europe>). Using renewable-energy sources, Denmark produces 20% electricity of the total electricity generation through wind power plants, and when weather conditions are ideal proportion rises to 40% (<http://www.eecroatia.com/obnovljivi-izvori/energija-iz-vjetra/u-danskoj-nikadadovoljno-vjetroelektrana/>). Costs of electricity production through wind power plants are predictable as opposed to variable prices of fossil fuels, which significantly affect the reduction of electricity price, and increased competitiveness of the Danish electric-power system.

If we considered the United Kingdom, it may be seen a large increase in electricity price in the period since 2006 to 2008, somewhat surprising because it is known that the United Kingdom is one of those EU countries which is the furthest progressed in the process of liberalization of electricity market. However, it seems that the restructuring and reforming of electricity sector, which is based on the market liberalization and privatization of electric-power companies, and the existence of greater competition and market openness, to their consumers has not brought the prosperity in the form of lowering prices of electricity. What is considered a major cause of increasing of electricity prices are high margins of six leading energy suppliers in the United Kingdom and inefficient tariff system for consumers, due to which was launched an investigation in 2011 (<http://www.energetika-net.com/vijesti/energetske-gospodarstvo/ogroman-rast-cijena-energije-u-britaniji-12697>).

The cause of increase of electricity prices in Spain is primarily in the so-called tariff deficit. Specifically, in the 1990s was carried out the regulation of electricity tariffs in Spain, by introduction of abnormally low tariffs, which led to a large decline in the price of electricity, while on the other side, the costs of electricity production were ignored. This situation has created a huge imbalance, because electric-power companies had to sell the electricity at a price that was considerably lower than the cost of production, creating a cumulative deficit of 14 billion euros. Recognizing this problem, for stop the further increasing of deficit, it was decided to increase electricity prices by 20%. However, in order to repay the accumulated tariff deficit, the price of electricity should be much higher in the next 15 years, i.e. should increase by approximately 35% (<http://www.economist.com/node/11632852>).

By examining the reasons which influence the imbalance between electricity prices of individual EU Member States, it can be concluded that electricity prices are primarily influenced by the specific characteristics of the electric-power sector of each Member State.

Finally, if we considered the electricity price trend of in the Republic of Croatia, although Table 1 provides significantly shorter time range of observation, it can be noticed that the price of electricity, with the significant increase in 2008, by decision to liberalize electricity sector (on July 1, 2008), is still significantly lower compared to prices of selected EU Member States. It is in rank with those in

France, which is unacceptable and unrealistic by all aspects of the competitiveness of this sector of economy. The reasons for such a low price of electricity should be sought in the underdeveloped and unstable Croatian electric-power market, lack of incentive for substantial investments, the unreadiness of consumers on demands of competitive market, and other.

#### 4. TREND OF THE TOTAL ELECTRICITY CONSUMPTION IN SELECTED COUNTRIES OF THE EUROPEAN UNION AND THE REPUBLIC OF CROATIA

Although usually the electricity price affects its consumption, it should be emphasized that also the electricity consumption can reversibly affect the electricity price trend. While electricity consumption represents the demand for electricity, the supply of electricity is determined by production costs resulting, primarily, from the price of production factors, i.e. energy resources. If we take into account that electric energy is largely produced from non-renewable sources of energy such as oil, natural gas or coal, whose prices are increasing due to less and less availability of energy resources, but also due to political conflicts, it is clear that electricity price is also rising. Increased consumption (demand) of electricity further implies an increase in electricity price. To meet the increased demand, it is necessary to build new power plants to produce additional quantities of electricity, which requires large capital investments and additional costs which are shifted on consumers, thus causing a further increase in electricity price. Considering above, the electricity consumption can indirectly affect the growth of electricity price.

Table 2: Movement of the total energy consumption in selected countries of the European Union and the Republic of Croatia (GWh)

	<i>BEL</i>	C.I.	<i>DEN</i>	C.I.	<i>LUX</i>	C.I.	<i>FRA</i>	C.I.	<i>GBR</i>	C.I.	<i>SPA</i>	C.I.	<i>CRO</i>	C.I.
1990.	57,984	-	28,361	-	4,149	-	302,230	-	274,432	-	125,799	-	-	-
1991.	60,516	104,4	29,242	103,1	4,211	101,5	321,362	106,3	281,048	102,4	128,637	102,3	-	-
1992.	62,583	103,4	29,742	101,7	4,231	100,5	330,327	102,8	281,469	100,1	130,769	101,7	-	-
1993.	63,300	101,1	30,158	101,4	4,385	103,6	332,598	100,9	286,131	101,7	130,683	99,9	-	-
1994.	66,447	105,0	30,760	102,0	4,644	105,9	337,493	101,5	284,264	99,3	136,965	104,8	-	-
1995.	68,448	103,0	30,882	100,4	4,996	107,6	342,850	101,6	294,722	103,7	140,911	102,9	-	-
1996.	69,876	102,1	31,682	102,6	4,907	98,2	355,834	103,8	309,366	105,0	147,182	104,5	-	-
1997.	71,829	102,8	31,876	100,6	5,057	103,1	355,458	99,9	311,196	100,6	159,028	108,0	-	-
1998.	73,960	103,0	32,043	100,5	5,292	104,6	367,437	103,4	315,678	101,4	165,173	103,9	-	-
1999.	74,508	100,7	32,180	100,4	5,495	103,8	374,959	102,0	322,744	102,2	177,252	107,3	-	-
2000.	77,542	104,1	32,454	100,9	5,775	105,1	384,903	102,7	329,420	102,1	188,459	106,3	-	-
2001.	78,142	100,8	32,565	100,3	5,843	101,2	395,777	102,8	332,722	101,0	200,953	106,6	-	-
2002.	78,447	100,4	32,515	99,8	5,904	101,0	393,486	99,4	333,401	100,2	205,510	102,3	-	-
2003.	79,732	101,6	32,370	99,6	6,182	104,7	408,400	103,8	336,218	100,8	217,898	106,0	-	-
2004.	80,609	101,1	32,971	101,9	6,393	103,4	420,160	102,9	338,946	100,8	230,669	105,9	-	-
2005.	80,202	99,5	33,464	101,5	6,152	96,2	422,771	100,6	348,675	102,9	242,222	105,0	14,417	-
2006.	82,606	103,0	33,793	101,0	6,614	107,5	426,925	101,0	345,229	99,0	256,466	105,9	15,079	104,6
2007.	82,898	100,4	33,476	99,1	6,695	101,2	426,015	99,8	342,657	99,3	262,233	102,2	15,384	102,0
2008.	82,686	99,7	33,117	98,9	6,595	98,5	432,736	101,6	342,168	99,9	268,731	102,5	16,137	104,9
2009.	77,255	93,4	31,393	94,8	6,114	92,7	417,955	96,6	322,717	94,3	252,986	94,1	15,511	96,1
2010.	83,311	107,8	32,065	103,2	6,603	108,0	444,088	106,3	328,318	101,9	260,578	103,0	15,862	102,3

Source: processing of author according to Eurostat data (<http://www.eurostat.eu>)

In the continuation of paper, Table 2 shows the trend of the total electricity consumption, both at the household level, and those for industrial consumers, in selected countries of the European Union and the Republic of Croatia (in gigawatt hours) since 1990 to 2010 year, and using chain indexes (C.I.) shows the relative changes in consumption trend in the current period compared to previous period.

According to data reported in Table 2, it can be seen that electricity consumption was growing in all countries in the observed period, except individual deviations and deviations in 2008 and 2009 due to the global economic crisis. Since it was increasing the electricity consumption, thereby was increasing its production and that indirectly affected on increasing the price of electricity for households.

How much the increase in electricity price in the observed period and for observed countries was affecting the change in consumption, or how much was the increased consumption (demand) of electricity contributed to the increase in electricity price, it cannot be accurately determined, but in the continuation of paper, from Table 3, it is possible to perceive a particular interdependence between these appearances.

Table 3: Comparative illustration of the increase in electricity price for households and total electricity consumption in selected countries of the European Union and the Republic of Croatia

Countries	Increase in electricity price for households (1990-2010)*	Increase in total electricity consumption (1990-2010)
Belgium	34,6%	43,7%
Denmark	72,1%	13,1%
Luxembourg	50,4%	59,1%
France	2,2%	46,9%
United Kingdom	32,5%	19,6%
Spain	24,9%	107,1%
Croatia	30,5%	10,0%

Source: processing of author according to data in Table 1 and Table 2

Note: For France, United Kingdom and Spain is shown the increase in electricity price since 1991 to 2010, while for Croatia is shown the increase of electricity price since 2005 to 2010.

Clearly there is some correlation between the electricity price for households and total electricity consumption in selected countries of the European Union and the Republic of Croatia, and although it appears that the increase in electricity consumption has affected the electricity prices, and not vice versa and as expected, that the electricity price contributed to the change in its consumption, it is clear that increase in electricity price, besides increased consumption, is influenced by a number of variables, among which are dominant costs of producing electricity and others, and also that on the change in electricity consumption does not affect only the electricity prices, but also a number of additional variables such as consumer income, prices of related goods, such as substitutes like renewable-energy sources, and other.

The correlation between variables in Table 3 certainly exists, since both the price and consumption of electricity has a tendency to rise, but the above should be taken with caution given the previously emphasized limitations. With these limitations, approximately the same tendency of increase in electricity price conditioned by an increase of consumption are indicating Belgium and Luxembourg, while more pronounced differences between consumption and price of electricity show France or Spain, but of the same direction, i.e. the sensitivity of less than one. Finally, the United Kingdom, the Republic of Croatia and Denmark, are showing trends of opposite tendency of sensitivity, so the increase in electricity consumption in these countries has caused, respectively, 2 times, 3 times, and even 6 times greater increase in electricity price in relation to growth of consumption. Without intention of further analysis of described phenomena, by this thesis and this work is opening up a huge area worthy of research and further study.

## 5. CONCLUSION

By comparison of electricity prices for households between particular states of the European Union and the Republic of Croatia, it can be concluded that electricity prices are not identical, nor uniform, but vary depending the degree of development of electric-power sector of particular country, and depend on a number of specific characteristics of an individual country as well as other factors such as the openness of electricity market, liberalization of the electricity sector, usage of renewable-energy sources, level of electricity consumption, and other. Price movement, as well as consumption, of electricity show large variations between countries and time periods.

In the Republic of Croatia price, as well as consumption, of electricity are also achieving a growth in the observed period, although prices are still below the level of electricity price of selected countries of the European Union. Of course, with a further convergence of Croatia to the European Union, we should expect a further increase in electricity price, which is not surprising given the demands of competitiveness and the necessity of compliance with the trends of large economies.

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**THE PERCEPTIONS OF HOSPITALITY SECTOR EMPLOYEES TOWARD EURASIAN  
TOURIST NATIONS' ATTITUDES AND BEHAVIOUR IN THE ANTALYA REGION**

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**Abstract**

*A consideration of the attitudes and behaviour of tourists is now more important than ever for tourism professionals. Identifying tourist profiles and therefore diversifying services according to tourist profiles is a topical issue nowadays. In formatting the features of hospitality properties or selecting the types of tourism to be provided and even constructing the facilities of a tourist region, defining tourist profiles is essential. When considering holiday tourism, Antalya is seen as a leading tourist-incoming city in both Turkey and Europe (with over 6 million incoming tourists in 2005). The incoming tourists to Antalya are mainly from European and the former Soviet Union countries. This study focuses on the general attitudes and behaviour of tourists from Eurasian countries as perceived by hospitality sector employees. The results of the study reveal significant differences among tourist attitudes and behaviour.*

**Key words:** *Behaviour, Attitudes, Antalya, Hospitality, Marketing*

**1. INTRODUCTION**

An understanding of tourist behaviour and attitudes is more important than ever these days for tourism professionals and academicians alike. The demand and consumption process of tourists are influenced by their attitudes and behaviour. Determining these attitudes and behaviour can be beneficial both for marketing purposes and the sustainability of tourism-related companies (Mohsin, 2005).

Marketing is not just attempting to sell a product to a market that does not have the capacity or interest to be stimulated (Coathup, 1999), but it is also important to study the market, the contemporary attitudes and behaviour of the buyers and their interest in a product in order to estimate potential demand (Mohsin, 2005). Keeping this in mind, can tourist attitudes and behaviour be a resource for marketing and market segmentation? If so, how do they relate to the other variables of marketing? Furthermore, do the attitudes and behaviour of tourists show differences in relation to their nationality? According to previous studies, cross-national differences do exist, and these have a significant impact on the behaviour of both consumers and marketing decision-makers. Previous tourism and hospitality studies have shown that travellers from different countries may have different preferences for, and expectations of, tourism and hospitality services (Yuksel, Kilinc and Yuksel, 2006). Nationality, social class, tourist role and benefit sought along with nationality are the most controversial segmentation variables for marketing according to Pizam and Sussman (1995). Mok and Armstrong (1998) claim in their study that tourists from the UK, USA, Australia, Japan, and Taiwan have different expectations of hotel services. Many researchers have found significant cross-national differences, not only on the general level of attitudes and behaviour, but also on the choice of destination. On the other hand, some researchers insist that nationality or country of residence cannot

be a sole discriminating variable in explaining differences initiated in the behaviour of tourists (Dann, 1993). It is clear that variables, such as gender, age, social class and revenue levels play an important role in regard to tourist attitudes and behaviour. However, the cultures and lifestyles of tourists at nationality and sometimes continental level may also be discriminators when considering the perceptions of tourist-incoming countries' hospitality service employees in the point of tourist attitudes and behaviour.

The purpose of this study (1) is to identify the perceptions of hospitality service employees concerning the general attitudes and behaviour of tourists from different nations while on vacation, and (2) therefore, to identify the tendencies of tourists from different nations for future planning and marketing purposes.

## 2. THEORETICAL FRAMEWORK

Tourist attitudes and behaviour in connection with certain variables have always been an important aspect of tourism research. These variables include destination choice, gender and age, complaint behaviour of tourist nations, customer satisfaction, and nationality itself. When considering destination choice related studies, some researchers (Baloglu and Uysal, 1996; Keng and Cheng, 1999; Kim and Lee, 2000; You et al., 2000; Wickens, 2002; Becken and Gnoth, 2004; Mehmetoglu, 2004) have focused on motivational factors and cultural differences as well as tourist typology while others (Debbage, 1991; Summers and Mc Coll-Kennedy, 1998; Ryan and Sterling, 2001; Mohsin, 2005; Nepal, 2008; Reichel et al., 2008) have chosen specific destinations and investigated tourist behaviour for that region. To illustrate, Mohsin (2005) in his study examines west Malaysians and their motives for choosing the Northern Territory of Australia for a holiday. According to the results of the study, respondents, who are mostly family oriented, enjoy mental relaxation and exploration on their vacations.

There are several studies based on gender and age on tourist attitudes and behaviour in the literature. The differences between the recreational preferences of men and women have an influence on motivation and behaviour (Kinniard and Hall, 1994, p.5). Gibson (1996) on the other hand, suggests that motivation of young men and women to holiday are different. Frew and Shaw (1999) point out the relationship among personality, gender and tourism behaviour in their study. Using Holland's theory of personality type, they found significant associations between gender, personality type and tourism behaviour of visiting tourists. Studying gender differences and young tourist behaviour, Carr (1999, 2002) states that men and women engage in different leisure activities in their home environment. He also claims that the leisure activities of young tourists show little differences when their genders are considered. Finally, Mehmetoglu (2006) implies in his study that independent and package tour visitors to northern Norway differ significantly in terms of gender, age, annual household income, trip expenditure and length of trip. Although gender and age based studies do exist in the literature with respected results, Norris and Wall (1994) claim that researchers have generally failed to analyse and present gendered data meaningfully as most studies concerning tourist behaviour ask the respondent's gender.

One other variable that correlates with attitudes and behaviour is complaint behaviour. Various categorisations on the complaint behaviour of tourists have been presented in the literature. In one of these, Rogers, Ross and Williams (1992) categorize consumer complaint behaviour alternatives into five areas: change future behaviour, private complaining, vocal complaint, third party and doing nothing. Johns and Gyimothy (2002) taking visitors to the Danish Island of Bornholm as subjects, they

identify two distinct tourist clusters as 'active' and 'inactive' in their study. The important differentiating factors between these clusters are; the importance accorded to amenity provision, nationality, age, activity participation, planning behaviour, attraction visiting behaviour, autonomy and gender. Lam and Tang (2003); on the other hand, identify four complaint behaviour types: personal and urging, bad-mouthing, complaint to management and publicising. Finally, Yuksel et al. (2006) explore the complaint behaviour of 420 tourists from Turkey, the Netherlands, Britain and Israel in their study. Taking the results into consideration, the authors claim that there are more differences than similarities in the complaint behaviour of hotel customers from the sample. Taking organized and semi-organized charter tour travellers from Norway to Mediterranean countries as a sample, Jacobsen (2000) demonstrates in his study that some tourists expressed anti-tourist attitudes because they believed common tourists were being perceived as foreigners who might carry social stigma. At this point, using the Means End Chain method for understanding the subtleties of tourist behaviour and any salient dimensions in their thinking can be useful as McIntosh and Thyne (2005) argue in their study.

Another variable that correlates with tourist attitudes and behaviours is customer satisfaction. Ryan (1995) points out that the attitudes, expectations, and perceptions of holidaymakers are significant variables in setting goals, influencing behaviour and determining final satisfaction (p.47). Chadee and Mattson (1996) identify cross-cultural differences when measuring customer satisfaction. Compared to Europeans, Asian respondents were found to derive lower levels of satisfaction for some experiences in their study.

Finally, Pizam examining the nationality variable of tourist nations in his several studies (Pizam and Sussman, 1995; Pizam and Reichel, 1996; Pizam et al., 1997; Pizam et al., 2002) claim with his colleagues that nationality differences play an important role in tourist attitudes and behaviour by including tour guides and sometimes undergraduate students as subjects.

The tourist attitudes and behaviour related studies in the literature, which correlates with variables, such as destination choice, gender and age, complaint behaviour of tourist nations, customer satisfaction, and nationality have certain common characteristics. As indicated above, many studies that take tourists as subjects and analyse their responses are available in the literature. However, this present study differs from the previous research, as its subjects are not tourists but hospitality sector employees and their perceptions regarding different tourist nations' attitudes and behaviour. Therefore, it seeks to explore observable general attitudes and behaviour of tourists from across Eurasia.

### 3. METHODOLOGY

#### 3.1. Sample

The subjects who participated in the present study were selected from the employees who worked in the accommodation companies of Antalya city in 2005 summer. 247 participants were pre-questioned in order to eliminate the inappropriate department employees (normally back-office staff do not communicate with consumers). Finally, 111 participants were selected as the sample by using "purposive sampling" method (Balci, 2005).

The European nations in the survey scale about whom the participants supposed to mention their perceptions were identified according to the number of visiting tourists to Antalya in year 2005. Statistically, more than six million foreign tourists visited Antalya in 2005 and only five countries' (Germany, Russia, Holland, Austria and Sweden) citizens represent almost five million out of the total

visiting tourists. As can be seen from the table 1, the possibility of encountering and hosting visitors from one of these five tourist nations is greater than encountering visitors from subsequent tourist nations.

Table 1. First five tourist generating countries to Antalya in 2005

<b>N=4821333</b>	<b>N</b>	<b>%</b>
Germany	2571274	53.33
Russia	1275016	26.44
Holland	496167	10.29
Austria	250063	5.19
Sweden	228813	4.75

### 3.2. Measurement

Perceptions of hospitality sector staff for the summer season of 2005 on different tourist nations' attitudes and behaviour were undertaken by a survey. The survey for the sample picks out perception related questions apart from the demographic questions. Pizam and Reichels' (1996) 'The effect of Nationality on Tourist Behaviour: Israeli Tour Guides' Perceptions' study and especially the items in the findings section of the study was considered primarily for developing the perception related questions. The survey instrument was also pilot-tested with ten tourism academicians. Taking the participants' opinion into consideration some items were omitted while some others were supplemented. Finally, 11 five-point scale items ranging from 1 (not agree at all) to 5 (strongly agree) were selected for the questionnaire. Reliability Analysis (Cronbach alpha) was applied for 11 perception-related questions and the value "a=0.766" was obtained as a reliability score. Ozdamar (1999, p.513) states that Cronbach Alpha is between 0&1, but if there is a negative correlation among the questions then Alpha would be a negative value.

## 4. FINDINGS

The descriptive profile of respondents is shown in table 2. As can be seen from the table, 54.2 percent of the respondents are male and 45.8 are female. It is also seen from the table that most of the employees worked in either front office or food & beverage areas (85.4 percent) when the departmental positions of respondents are taken into account. The rest of the employees are from housekeeping (7.8 percent) and animation (6.8 percent) departments.

To identify the difference amongst the respondents' perceptions on nations, a One Way ANOVA analysis is administered in table 3. The purpose is to understand the comparative perceptions of hospitality employees concerning tourist attitude and behaviour. The differences among the subject nations in item preference are also indicated in the table. For that reason, Scheffe and Tamhane tests were applied. Where the variances are not equal, Tamhane's T2 test is suggested for use (Yazıcıoğlu and Erdoğan, 2004, p. 87). As a result, five items including, 'generosity', 'cleanliness', 'entertainment inclination', 'alcohol inclination', and 'satisfaction with service' were tested by Tamhane's T2. For the other three items, which are 'politeness', 'food inclination' and 'gambling inclination', the Scheffe test

was used. According to the ANOVA and Post hoc tests, there was no differentiation of nations found for the items, 'shopping inclination', 'sport inclination' and 'daily tour participation'.

Table 2. Descriptive profile of respondents

<b>N=111</b>	<b>Mean</b>	<b>Frequency (%)</b>
<b>Age</b>	<b>24.6</b>	
<b>Gender</b>		
<i>Male</i>		<b>54.2</b>
<i>Female</i>		<b>45.8</b>
<b>Department</b>		
<i>Front Office</i>		<b>45.4</b>
<i>Animation</i>		<b>6.8</b>
<i>Housekeeping</i>		<b>7.8</b>
<i>Food &amp; Beverage</i>		<b>40</b>

Table 3. One way ANOVA analysis of tourist nations' attitudes and behaviour perceived by Respondents

	<b> Germans (a)</b>	<b> Russians (b)</b>	<b> Dutch (c)</b>	<b> Austrians (d)</b>	<b> Swedish (e)</b>	<b> F- Value</b>	<b> Sig.</b>
Generosity	2,81 <sup>b</sup>	2,23 <sup>a, c, d</sup>	2,91 <sup>b</sup>	2,84 <sup>b</sup>	2,72	8.380	,000*
Politeness	3,31 <sup>b, e</sup>	2,53 <sup>a, c</sup>	3,50 <sup>b, d, e</sup>	2,84 <sup>c</sup>	2,72 <sup>a, c</sup>	15.348	,000*
Cleanliness	2,99 <sup>b</sup>	2,44 <sup>a, c, d, e</sup>	3,28 <sup>b</sup>	3,33 <sup>b</sup>	3,32 <sup>b</sup>	20.732	,000*
Satisfaction with Service	3,76	3,40	3,81	3,45	3,58	8.225	,008*
Sport Inclination	3,25	3,48	3,45	3,41	3,40	7.472	,548
Entertainment Inclination	4,05 <sup>b, d</sup>	4,64 <sup>a, c, d, e</sup>	4,14 <sup>b, d, e</sup>	3,67 <sup>a, b, c</sup>	3,73 <sup>b, c</sup>	18.510	,000*
Gambling Inclination	3,44	3,90 <sup>d, e</sup>	3,41	3,20 <sup>b</sup>	3,01 <sup>b</sup>	5.412	,000*
Shopping Inclination	3,41	3,58	3,47	3,34	3,16	1.638	,878
Alcohol Inclination	4,74 <sup>c, d, e</sup>	4,76 <sup>c, d, e</sup>	4,10 <sup>a, b</sup>	3,90 <sup>a, b</sup>	3,82 <sup>a, b</sup>	34.528	,000*
Eating Inclination	3,98 <sup>c, d, e</sup>	4,14 <sup>c, d, e</sup>	3,43 <sup>a, b</sup>	3,35 <sup>a, b</sup>	3,39 <sup>a, b</sup>	12.492	,000*
Daily Tour Participation	3,67	2,90	3,75	3,51	3,64	3.687	,655

When the Scheffe and Tamhane test results are considered, there are significant differences observed in Table 3. According to the results, German, Dutch and Austrian tourists are perceived as being more 'generous' than Russian tourists. There are also significant differences among Dutch tourists and Russian, Austrian and Swedish tourists in the point of the subject item 'politeness'. Dutch tourists are perceived as being politer than Russian, Austrian and Swedish tourists, while Russians are perceived as being less polite than Austrian and Swedish tourists. For the item cleanliness, significant differences are found between Russian tourists and German, Dutch, Austrian, and Swedish tourists. In the light of the results, German, Dutch, Austrian and Swedish tourists are perceived as being cleaner than Russian tourists. Another significant difference occurs when the 'gambling inclination' is considered. Russians are perceived as being more inclined to gambling than Austrians and Swedish tourists. The final significance is the 'food inclination' as well as the 'alcohol inclination'. For these two items, German and Russian tourists are perceived as being food and alcohol lovers when compared with tourists from the other three nations by the hospitality sector employees.

It is possible to investigate the mean scores of the various nations' attitudes and behaviour perceived by respondents separately. When the highest mean scores of each item are measured, it could be claimed that Dutch tourists are perceived as the cleanest (3.28), the most generous (2.91), and the politest (3.50) of the compared nations. They are also more satisfied with the service they receive (3.81) and they participate in daily tours (3.75) more than tourists from the other four nations. The respondents are certain that the two items 'alcohol inclination' and 'food inclination' have the highest mean scores. In these high mean scores Russians have a 4.76 score for the 'alcohol addiction' and have a 4.14 score for 'food addiction'. Russian tourists also lead in 'entertainment inclination' (4.64), 'gambling inclination' (3.90), 'shopping inclination' (3.58) and 'sport inclination' (3.48) when mean scores are considered.

## 5. CONCLUSIONS AND LIMITATIONS

Marketing and market segmentation terms for today's tourism industry are turning out to be determinators at either micro level, such as hospitality companies' marketing, or macro level, such as regional and even national level marketing. Tourism professionals, including investors, state authorities, and academicians have been trying to identify the needs, expectations and tendencies of tourists. The fierce competition, especially in the holiday tourism market, pushes professionals to concentrate on specialization, such as investing in theme hotels, boutique hotels, and spa hotels. An important criterion for such a process is tourist attitudes and behaviour while on vacation. As mentioned in the study, tourist attitudes and behaviour in relation to other variables (e.g., gender, age), have been examined by many researchers. The similar objectives of all this research were to understand tourist attitudes and behaviour, and therefore to suggest that tourism professionals should take these into consideration when planning target markets.

As stated before in the study, Antalya is the leading holiday tourism city of Turkey. Approximately six million Eurasian people visit Antalya every year, and stay in the same accommodation for a week average. The tourist profile in Antalya, as well as in Turkey in general, has been changing in recent years. As a result of external factors impacting on the Turkish tourism industry (economic and politic crisis and suchlike), there have been fluctuations on the tourist arrivals from Western European countries such as Germany and Britain. In order to have more stable and permanent customers, Turkish tourism professionals have offered a proportion of their hotel capacities to states of the former Soviet Union. Although German tourist numbers are still higher than any other nation in Antalya, the rate has been changing every year in favour of former Soviet Republicans, especially Russians.

Moreover, the preference of the Turkish Riviera by Russian tourists is a kind of obligation. Many European countries have restricted the landing of Russian planes at their airports for the time being. With the technical improvement of Russian planes, such restriction at European airports may finish and that may negatively affect the demand by tourists for Turkey. On the other hand, the number of Russian tourists in Antalya is increasing every year. This issue brings out the complaint of other visiting tourists that German and British consumers no longer recommend Antalya hotels passionately in Trip Advisor\*, an important traveller review website.

Although classifying the general attitudes and behaviour of tourists according to their nations is relative, previous studies show that nationality is an important variable for attitude and behaviour. However, respondent prejudice toward certain tourist nations is sometimes unavoidable. Taking this into account, it would be over optimistic to generalize the survey results. On the other hand, disregarding the limitations, suggestions for the Antalya region accommodation companies are as follows:

\* Tourist nations who have been observed to have similar attitudes and behaviour could be targeted in the same market by hotel management.

\* According to tourist behavioural results in such areas as eating and drinking, some hotel managements may modify their pension applications in order to improve results of a yield management.

\* Finally, the long term tourism marketing policies have to be improved in the Antalya region in order to provide comfortable holidays for all visiting tourist nations by the tourism professionals. It has been observed in the region that some hotels concentrate on the majority tourist nation in the establishments and they organize the activities (animation, kids club etc.) considering the related nation. This could turn out to be a serious problem for a long period only because all tourist nations in resort hotels have one primary reason; entertainment. Therefore, the hotel managements have to control and explore the demand for entertainment, sport, shopping, and drinking interests of tourists from different nations; thus, vary the service offered for each tourist type.

This study is not without limitations. The number of German visitors is more than ten times greater than Swedish visitors (Table 1). It is clear that the respondents' ideas concerning German tourists would be more realistic than their ideas about Swedish tourists since the chance of encountering a German tourist is ten times higher.

Involving highly experienced and may be managerial staff as subjects, would be helpful in further studies. It could also be claimed that future studies measuring tolerance and gender-age variables, would contribute to the literature when they are utilized considering the limitations already mentioned.

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**INTERNAL AUDIT – INTERNAL CONTROL SYSTEM  
AND ORGANIZATIONAL STRUCTURE RELATIONSHIP**

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**Abstarct**

*An effective internal audit can only be possible if an effective control system exists, because the internal audit should work in affiliation with the management board. And an effective internal audit system is closely connected with the organization type and operation of the organizational structure. In an organization that meets transparency, accountability, responsibility and fairness principles adopted by the OECD (Organization for Economic Co-operation and Development), and that adopts corporate management, internal control and efficiency provided by the internal audit will be enhanced. Management is to conduct planning, organizing, coordination and control activities to enable an establishment to achieve its goal effectively. And this condition clearly shows that the effectiveness of the management function will be affected by the organizational structure in which management activities are to be conducted. This study approaches management, organization, corporate management, internal audit and internal control conceptually, within the scope of their objectives and components; and intends to reveal the relationship between those factors, theoretically.*

**Key words:** *Internal Control, Internal Audit, Corporate Management*

**1. MANAGEMENT AND ORGANIZATION**

Management practices arising from the activities devoted to ensure cooperation and coordination in a group, to achieve objectives in an effective and efficient way, emerged with the communal living (Baransel 1993). Although government management goes back to ancient times, management of establishments is a new concept. Several definitions about the management are present, according to scientists. According to economists management is one of the production factors along with nature, labor force and capital.

Production, in this concept, is essential for the maintenance of life. As a consequence, management is deemed to be successful to the extend it enhances the productivity and the ratability of the establishment. Those concerned with management science state that management is an authority system. Accordingly, the organization consists of two groups; managers and managed ones. The relationship between these two groups is the authority relationship. Where sociologists are concerned, management is described as a class and prestige system. In today's world, the success achieved through science and education is the basis for moving up in this class. The common point of these approaches is management's achieving definite objectives with the efforts of other people. The objective is a result desired to be reached. The existence of an organized group can be mentioned through the path to this objective. When talking about management what springs to mind is the senior level. But management is in question at several levels in each organization. In consideration of these statements, the following definitions can be presented. Management, in an establishment, is to arrange

the works attempted to reach an objective and is a process of directing a group to a common objective. In addition to this, management is to establish cooperation and coordination of individual and group studies, to conduct a common objective (Alpugan 1997).

Management is to execute tasks through the agency of other people and is the fulfillment of planning, organizing, command, coordination and control activities by an organization, regardless of being profit-oriented or nonprofit, to reach its objectives effectively and efficiently (Ataman 2009).

Management is to plan, organize, conduct and audit activities to reach the organization objectives economically and effectively (Alpugan 1997).

The organization concept is the second step of the management functions.

Organization addresses the tasks to be fulfilled in an organization, the persons who will fulfill those tasks, and several relations; systematically directs those components to the objectives of establishment; and aims to establish an orderly and constantly operating system. By developing management steps; authorities and responsibilities are assigned, relationships between statuses are organized, organizational bodies and departments are determined and communication links are established. Several different definitions on organization have been introduced by scientists and writers. According to Alvin Brown, organization is an organized and formed version of interdependent branches, each of which has a special function, operation or relation in general meaning. However, according to Chester I. Bernard (1886-1961), organization, in general, is a system of conscious activities or powers belonging to two or more people. Another definition defines organization as the structure representing the relationships between groups and individuals holding some duties, responsibilities and authorities within a body of activities, and who leagued together to reach an objective (Aytac 2004).

## 2. CORPORATE MANAGEMENT

Four main principles, which are introduced by the OECD (Organization for Economic Co-operation and Development) and are generally accepted, are available regarding corporate management (Ozyilmaz & Olcer 2008).

- **Transparency Principle:**

Transparency is the disclosure of adequate and righteous information regarding the company to related parties, in due time. Such information is in relation to the performance, financial situation, management and status of ownership of the institution.

- **Accountability Principle**

Accountability principle is to keep the interests of managers in parallel with and moving in the same direction as the interests of the company and shareholders. Corporate management should ensure strategic guidance for the company, as well as in time and effective audit of the management by the management board, and should ensure the management board to bear responsibility to account to the company and to the shareholders.

- **Responsibility Principle**

The responsibility principle is the convenience of the activities of the management of the establishment for the legislation, articles of incorporation and internal regulation. This principle also covers auditing in the same way.

- **Fairness**

Fairness is to have the corporate management treat all related right-holders equally regarding all procedures conducted by the corporate management. This principle envisages that all shareholders, including the minorities and foreign shareholders, are treated equally; the rights of the shareholders are vindicated; and the losses of shareholders are compensated, in case of any violation of their rights.

There is no model describing the best way for corporate management. The basis for this concept is expecting the establishments' to be transparent to their shareholders and stakeholders, to reflect the current situation of the establishment, to comply with the ethical principles and to be responsible (Kocel 2010).

Objectives of corporate management can be summarized as follows (Ozyilmaz & Olcer 2008):

- To ensure that senior management uses its powers and authorities to increase the interests of the stakeholders
- To protect the rights of the shareholders and satisfy the same at a high level,
- To ensure that company shareholders are treated fairly and equally,
- To protect and guarantee the rights of the stakeholders, directly related to the company, to protect the rights of minorities,
- To enlighten the public about the company activities and financial state of the company, to ensure transparency,
- To determine the responsibilities of the management board,
- To ensure that senior management of the company is responsible for shareholders and other stakeholders due to its decisions and actions,
- To create an atmosphere of trust from the point view of the investors making long term investments, to lower the cost of capital,
- To control the conflict of interests between the agent and shareholders.

The following points can be listed as the advantages gained by the companies adopting corporate management (Ozyilmaz & Olcer 2008):

- The companies, adopting corporate management, have more participatory and adaptable decision making processes. Managers, shareholders and the management board participate in the decision making process and this condition guarantees a more effective decision making process.
- Through participation, the generation of new ideas is facilitated.
- Corporate management is less dependent on individuals. The more reliable the process of placing the corporate management mechanism, the more successful the surveillance process will be.
- The risks of being exposed to failed company strategies and blunting the organizations, due to introversion and collusions to drive benefits, decrease.
- Corporate management makes an organization more accountable to its own markets.

### 3. THE CONCEPT OF CONTROL AND INTERNAL CONTROL SYSTEM

Internal audit is defined by AICPA (American Institute of Certified Public Accountants) - Committee on Auditing Procedure as all kinds of precautions and methods accepted and put into practice to protect the assets of an establishment, to guarantee the validity and reliability of financial information, to enhance the effectiveness of activities, and to encourage the commitment to established management policies.

In general, the entire policies and regulations, likely to ensure an establishment to reach its objectives, are called control (Ataman, Hacirustemoglu & Bozkurt, 2001).

The control concept emphasized in the above-mentioned definition does not reflect an action, instead it reflects a process which includes miscellaneous control points and which is defined by procedures. An internal audit system mediates the management function to be conducted, and has this function and ensures this function is put into operation. It is an instrument used by management, not a component substituting management.

The United States of America - COSO (Committee of Sponsoring Organizations of Treadway Commission) defines the internal audit system as a process developed to provide a reasonable assurance with regard to activity effectiveness and efficiency in establishments, reliability in financial reporting, and conformity with the related legislation; and as a process operated by the management board, managers and all other personnel (Yilanci, 2006).

Five inter-related elements are necessary to reach the objectives included in the definition of internal control. The five elements of the internal control system are control environment, risk appraisal, control-related activities, information and communication, and monitoring (Pehlivanli, 2010).

These elements are determined as follows by the COSO (Bozkurt, 2011):

#### **Control Environment**

Control environment, one of the main elements of internal audit, is about the organizational structure, modus operandi, and the method with which risks are approached.

- **Honesty and ethical values**

These values are defined by management, and are the basic elements of the control environment effecting the design, management and surveillance of the other elements under the internal audit system. Ethical and honest behaviors in an organization represent that the values determined by an establishment are implemented by and shared with personnel. Management of the establishment should remove incentive likely to direct personnel to dishonest and unethical or illegal activities and to ensure obedience to such rules.

- **Expertise**

The qualifications of personnel should comply with the qualifications necessary to conduct a task. Increasing numbers of unqualified personnel shows a defected control environment in an establishment. Internal auditors should sometimes report qualification, competence, consistency and inconsistency. In accordance with those reports several measures are taken to enhance personnel qualifications.

- **Management philosophy and operation type**

Factors such as risk perception of the management and the management's stand in terms of interpretations of tax and financial reporting rules are the outcomes of management philosophy and operation type.

- **Organizational Structure**

Planning ensures a framework for realizing plans, as well as control and monitoring activities, with which an establishment can reach its objectives. The structure of an organization may be classified as central and centrifugal in terms of product, activity and geographical factors, or as a matrix structure. Even though the organizational structure is a significant factor for control environment, no unaided structure can be assessed perfectly.

- **Diffusion of authority and responsibility by the management**

To conduct the activities of the establishment in an effective and efficient way, the segregation of duties principle should be taken into consideration while assigning authority and diffusing responsibilities to personnel.

### **Risk Appraisal**

Institutions and assets come under internal and external environmental based risks. These risks should be defined and their possibilities and effects should be appraised.

Risk appraisal is to define and analyze the risks likely to prevent an establishment from reaching its objectives. In today's world, establishments continue their operation in a dynamic environment where economy, industry, regulatory authority and activity conditions are in a constant state of flux. As a result of this, updating the risks regularly and when required is as important as defining them. Risk appraisal consists of three stages:

- "Effect of the Risk" representing the loss caused by the risky act is estimated.
- Possibility and frequency of risk is determined.
- Methods likely to be used to manage the risk and measures likely to be taken are appraised.

### **Control-Related Activities**

Control activities represent the measures taken for the risks likely to be faced before reaching the objective. Control activities are not the activities solely conducted by senior management; such activities are in question for each level and each functional unit in an establishment.

Authorization, validation, verification, conformity of the accounts, reviewing the performance of the activities and performance measures, conformity controls, assigning sequential numbers to documents, limiting the access to the sources and records and diffusing duties can be given as examples of control activities. Controls can be preventive or discloser in accordance with their qualifications.

### **Information and Communication**

Information required for personnel to fulfill their responsibilities should be kept in a definite format and should be ready to communicate. Maintenance and control of the activities of an establishment is possible through the reports generated through the agency of the information system. Information required for the personnel to make certain decisions is not solely establishment based, external information is also required. Effective communication in an organization should not be unidirectional;

it should be ‘top-down’, ‘bottom-up’, horizontal and vertical. Personnel fulfilling their responsibilities regarding control can only be possible with the clear and explicit control message of the senior management. In this sense, personnel may come to understand their roles in the internal audit system and how the system works in an interacting manner. Information and communication should not be deemed to be solely internal; parties outside the establishment, such as customers, regulatory authority and partners should not be ignored in this process. Annual activity reports and corporate management compliance reports are the most effective instruments in the communication with the parties outside the establishment.

### **Monitoring**

Monitoring is to review the design and functions of the performance, quality and controls of an internal audit system, and to evaluate the measures required to be taken. The monitoring process can be constant, separated and complex. Constant monitoring is performed while activities are being conducted. Regular monitoring activities conducted by the management and consultant and other monitoring activities conducted by the personnel working on the same task are two examples of constant monitoring. On the other hand, separated monitoring activities are the monitoring and control activities held generally by the internal audit unit or by people irrelevant to the personnel working on the task. The scope of separated monitoring depends on reliable initial risk appraisal activities and on the effectiveness of constant monitoring activities. Constant and separated monitoring types are used together in practice.

## **4. MANAGEMENT AND ORGANIZATIONAL STRUCTURE – RELATIONSHIP BETWEEN CORPORATE MANAGEMENT AND INTERNAL AUDIT SYSTEM**

Corporate management principles aiming for the ultimate success of an institute compose a general approach that corresponds to a series of fields, such as ethical rules, obeying the laws, environmental protection. As time progresses an inevitable gap come into existence between the legislation and practices, no matter how developed the legal infrastructure is and how flexible and how sensitive the regulation process is to developments, and therefore corporate management is needed. Attempts are made to close this gap with new legal regulations, but this process takes time. Corporate management regulations have significant roles in shortening this gap. Corporate management, the main objective of which is to observe the interests of all right-holders relevant to the company impartially, is a body of principles that shapes the relationship between company and right-holders as well as other beneficiaries, and that enables the right-holders to optimize their interests acquired in the company.

## **5. CONCLUSION**

An effective internal audit can only be possible if an effective control system exists. Internal audit units subordinated to management board enhances the effectiveness of the internal audit.

Therefore, the effectiveness of an internal audit system is in close relationship with the establishment's obedience with corporate management principles, along with its organizational structure. The more effective organized internal control system, the more enhanced the performance of internal audit will be and risks likely to be faced will decrease proportionately.

Internal control is a process required to be performed by everyone in an establishment. Internal control is an instrument used by management, but does not substitute the management. Such a control system should be constructed in the infrastructure of an establishment and should be settled in this sense.

On the other hand, an internal audit is an independent and objective confidence and consultancy activity that is implemented to develop and enrich the activities of an establishment. Internal audit assists an establishment to reach its objectives with a systematic and disciplined approach devoted to assess and develop the effectiveness of an establishment's risk management, control and corporate risk management processes. An internal audit should offer not only an independent and objective function, but also but also consultancy function.

Cornerstones of the ground on which an effective corporate management is to be constructed are senior management, management board, internal auditors, and independent auditors. Internal audit activity plays an important role in supporting a good corporate management. Risk management has a special position likely to assist in enhancing the establishment activities by assessing and developing the effectiveness of control and management processes.

In conclusion, adopting, or in other words, applying a corporate management concept containing an internal audit mechanism to be established within the scope of internal control system is in close relationship with the organizational structure of the establishment. As a type, organization is based on departmentalization principle in accordance with the world-wide most common function basis. In this organization type, based on basic hierarchical structure, senior management is at the top of the scheme and medium-low managers are placed in the lower parts of the pyramid. Organization usually consists of functional sub-units, such as engineering, research, production, accounting, management, finance and marketing. This organization type is based on the expertise, execution-consultation relations, control area, and authority and responsibility factors of the traditional organization concept. Experts' organization under the same leader is deemed to be easier, and managers are requested to be specialized in one branch (Cummings & Worley 1993).

#### **Advantages**

- Promotion opportunity for people with special abilities
- Increasing scarce sources and enhancing optimized use of sources
- Developing occupations for experts in bigger departments and enrichment
- Due to this system, a manager is able to assign a task for junior personnel in other departments without losing time for the operation of command system, and this accelerates the activities.

#### **Disadvantages**

- Routine duties, narrow horizons
- Encouraging a narrow perspective in managers
- Reducing communication and cooperation between units
- Several interdependence between units
- Responsibility determined in detailed results
- Unauthorization of those with commanding positions

- If one of the expert personnel leaves the job, this situation may cause some problems and a gap, because the works of expert personnel are embraced as principles.
- Determining responsibilities and auditing may become difficult.

The power of such organizations is the centralization of similar sources. This, at the same time, is the main weakness of the organization. So as far as the multi-projects are concerned, competition and conflict at senior level become inevitable. As a result, a functional unit gives priority to its interests and objectives, even if this situation is against the integrity of the organization. Internal audit may be deemed as a type of effective organization.

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**PROBLEMS OF IMPLEMENTATION CORPORATE SUSTAINABILITY IN THE NEW EU STATES ON THE EXAMPLE OF POLAND**

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**Abstract**

*The paper is devoted to the issue of implementation of the concept of sustainable development into the activities of enterprises in new UE states on the example of Poland. Explains what is meant by sustainable development of the company and how it can be measured. Discusses the key drives of sustainable development of enterprises.*

**Key words:** *sustainable development, sustainable development of enterprises, methods of enterprises' sustainable development assessment, factors of the sustainable development of enterprises*

**1. INTRODUCTION**

Sustainable development, understood as a method of the societies harmonious development without compromising the abilities of the future generations, has been described, on a rather large scale, from different perspectives. In most of the publications interpretation of the sustainable development is on a global or local scale (Kielczewski, 2008; Poskrobko, Dobrzański, 2007). Significantly less attention is put to the sustainable development in enterprises. While, an enterprise is a fundamental business entity which manages production and services at its own expense, and the success of sustainable development introduction depends, to a high degree, on an enterprise. The interest in the sustainable development at the enterprises level is connected with public expectations towards companies. It is commonly expected that at the present stage of the worlds economy, the aim of their existence will be connected with activities directed at environment protection, respect for labour rights, development of societies in which they act and other elements which contribute to a broad notion of corporate social responsibility. According to many experts, the ability of an enterprise to manage the issues not concerned with finance such as: environment protection, human resources or human rights is currently the major indicator of the enterprise's general management.

At present, the knowledge about level of enterprises' sustainable development is important for representatives of many environments, for example: investor who would like to put their money in such companies, governments looking to attract companies that will contribute to building their societies, managers who want to benchmark their company's sustainability performance, consumers and groups of citizens wondering which global brands to buy and employees who want to work for a global company they can be proud about.

The presented text is devoted to issues concerning relations between the sustainable development and an enterprise. The most emphasis has been put on implementation of the sustainable development by enterprises. The major subjects of concern are enterprises from the new EU members, while an

analysis concentrates on the example of Poland. The aim of this article is to give an answer to a question: what are the factors that determine the implementation of the sustainable development by these enterprises and what are the most important conditionings of this process.

## 2. NOTION OF CORPORATE SUSTAINABILITY

As far as it is commonly known what the sustainable development means on the global or local scale, the enterprises sustainable development may seem not to be a very clear and precisely defined notion.

The sustainable development is a human idea of global development which assumes common responsibility and solidarity of the present and future generations. Its purpose is to improve life conditions and social well-being with limited natural resources and taking into account long-term industrial development; however, the primary goal is the increase in social well-being. The purpose is to connect the economic and social development, as well as provide access to renewable and non-renewable sources with increase of life quality in clean environment. In theory, the notion of sustainable development is based on paradigm reversal to neoclassical economy which assumes that goods such as soil, air, waters, woods are unlimited. That is why they are called free goods, and they can be used in production process without limitations. According to the assumptions of the sustainable development, these goods became scarce goods, and they should be treated at least as the capital generated by a human being. The economic growth should ensure better exploitation of the resources and other natural riches, rational energy, work and ecological technology consumption, as well as protection of the natural and cultural heritage. The non-renewable resources should be exploited to a lesser degree, whereas the renewable resources (animal and vegetable) in a rate that follows from the time that is necessary for their reproduction. If we want to use a technical language, we can say that according to the notion of sustainable development, society can, to a certain extent, live from "interests" and not from "capital". According to International Institute for Sustainable Development and World Business Council for Sustainable Development, sustainable corporations means *adoption of such action strategy which meets its current needs and interest group connected with it, and at the same time protects, supports and strengthens human beings, as well as origin of resources which they will need in the future (Business.., p.1)*. As a result, enterprises have to undertake various tasks. It is shown by acting in an innovative way, taking charge in initiatives concerning equivalent development, claiming social responsibility for the conducted activity, raising the efficiency of ecological processes and procedures, implementing partnership solutions and taking into consideration the customers preferences (Adamczyk, Nitkiewicz, 2007). Therefore, the sustainable development means comprehensive operation with reference to the economy, society and environment; however, neither of these three areas is privileged in the enterprises activities. If a business puts too much attention to one of these areas, this may be detrimental to the enterprise's success.

## 3. PROBLEMS OF HOW MEASURE CORPORATE SUSTAINABILITY

Even though it is clear how the corporate sustainability should be understood, its assessment is not an easy task. Difficulty of measuring the corporate sustainability results not only from problem of how to assess the activities that have been taken into account from the above mentioned areas, but also meets with difficulties due to some other reasons.

- Firstly, it follows from the fact that the sustainable development is a notion that goes beyond the local environment and its effects can be considered in international or even global terms. Moreover, the

notion is not assumed to be used to assess an enterprise, while the complexity of sustainable development aims go beyond the frames of company.

- Secondly, the effects of sustainable development are evaluated much longer in time perspective than enterprise's activity. The purpose of the sustainable development is to guarantee fairness between generations, and its outcomes are supposed to be used by the future generations. In other words, the results of 'investment' in the sustainable development are long-term. Meanwhile, most of an enterprise assessment methods, even those conducted from the strategic perspective, take into consideration shorter time perspectives, while its activity is determined by primacy of the present over the future (Noga, 2007).
- Thirdly, the conduct of business activity requires operationalisation, while notion of the sustainable development cannot be formalised in an easy and universal way. Similarly to the changes in environment, the notion is fluent and changes with time by responding to new information, as well as to development of the social needs and priorities. That is why, for instance, Toyota, which marked four foreign plants as model for sustainable development, had to elaborate specific activities for each of them, taking into account peculiarity of each region and enterprise.
- Fourthly, the major obstacle for the assessment, and more specific the research of enterprises' sustainable development, is a difficulty to obtain broad data about significant group of enterprises. These data, especially in case of companies which operate in a very specific environment, are very often deliberately kept secret or disfigured in order not to allow them to be used against enterprise's objectives. Moreover, they are not so easily available as macroeconomic information which allows researchers to estimate the level of sustainable global economy. This information covers data on investment in clean energy projects, as well as governments expenditures on neutralization of carbon dioxide, environment and energy hedge funds (On the basis of this information, Worldwatch Institute prepared a report titled *The World Situation*.)

From the above mentioned reasons, assessment of the enterprises' sustainable development degree presents considerable difficulties. Most authors agree that there is still lack of universal and synthetic indicator which would allow people to specify level of the enterprises' sustainable development. The assessment is multidimensional, and in practice includes all aspects of running an enterprise.

### *3.1. Evaluation of the corporate sustainability based on efficiency measures*

Among the methods of enterprises' sustainable development assessment special attention should be paid to the assess based on efficiency measurement. This notion refers to economic efficiency which assumes comparison of inputs and outputs expressed in cash. With reference to the efficiency understood in this way, the notion has been extended by extra economic and extra technical aspects. This also refers to influence of an enterprise on closer and further environment. In relation to the traditional concept of efficiency, the notion loses its inner character and adopts more external dimension. The notion is interpreted with reference to economic, social, ecological and technological standards. With regard to difficulty to present all inputs and outputs from the above standards in the form of money, the notion assumes introduction of new non-financial indicators. The most popular method of the enterprises' sustainable development assessment, devised on the basis of these assumptions, is Data Envelopment Analysis (DEA), method used to measure Decision Making Unit (DMU) and based on measurement of inputs and outputs (Charnes et al., 1978).

### *3.2. Evaluation of the corporate sustainability in accordance with the authors of Global 100*

A list of the 100 most sustainable corporations in the world, called Global 100, was published for the first time during the World Economic Forum held in Davos, Switzerland. The authors of the list took into account company's achievements in environment, society and corporate governance. The list was initiated by Global Knights, a media company, and Innovate Strategic Value Advisors a leading research firm specializing in analyzing "non traditional" drivers of risk and shareholder value including companies' performance on social, environmental and strategic governance issues. The Global 100 has been announced every year since it was published in 2005.

According to the authors of this list, the social, environmental and managing factors, to a high extent, are connected with enterprises' financial results, and those companies which have higher management level in these areas gain advantage over their competitors faster and that later turns into good results within longer time. The enterprises from the Global 100 are recognised as sustainable because, in comparison to other companies, they are more capable to specify and manage environmental, social and governance (ESG) factors, which in turn determine their possibility and aspects of business risk. The selection process includes companies which at the end of a previous year received AAA rating grade for non-current liabilities ([www.global100.org](http://www.global100.org)).

### *3.3. Dow Jones Sustainability Index*

The Index was created on the basis of cooperation and connection of skills and experience of three partners: the author of Dow Jones Index, one of the most popular index in the world, STOXX Limited, leading provider of European indexes, and SAM Group, leading investment company for sustainability investments.

Dow Jones Sustainability Index is a classification of enterprises which include in their policies social and environmental goals. The place on the index depends on Corporate Social Responsibility (CSR) in which a major source of information is a [questionnaire](#) completed by companies and later checked by an external auditor from PricewaterhouseCoopers. The auditor takes into account various criteria and weightings from the economic, social and environmental development for the eligible company.

The criteria are selected by systematic assessment of the socially responsible corporations worldwide. In a selection process, company's documentation and media messages are analysed and, in the final stage, there is individual consultation with a company's representatives. The authors of DJSI intended that this index would provide the enterprises with economic assessment of their sustainable development strategy, management of the social responsibility and costs. It also connects enterprises that implement principles of sustainable development and investors that want to gain profits from the companies results ([www.sustainability-index.com](http://www.sustainability-index.com)).

## **4. FACTORS WHICH DETERMINE DIFFERENTIATION LEVEL OF THE ENTERPRISES FROM THE PERSPECTIVE OF SUSTAINABLE DEVELOPMENT**

It is impossible to discuss all factors which determine level of the enterprises' sustainable development. Whether an enterprise will manage to implement principles of the sustainable development, depends largely on business environment, and mostly on the industrial policy towards enterprises. In general, the aim of such policy is to encourage the enterprises to implement the policy of sustainable development. On the one hand, such policy can encourage to implement principles of the sustainable development (to sustainable production and consumption), while on the other hand,

this reduces its sustainability. The economic policy which supports sustainable development results in new companies and new business activities. If we analyse these issues with reference to new EU member states, such as Poland, there are at least a few groups of problems which should be taken into consideration while analysing an implementation stage of the enterprises' sustainable development.

- Firstly, this is policy and strategy of the European Union: the general one oriented to needs of the Union, both the old and the expanded, as well as the policy concerning the Union's environment. This means the policy and strategy conducted in an international and global context, as well as the one oriented to new member states and consisting in unfurling "sustainable development umbrella" over the new EU member states.
- Secondly, the EU members have their internal strategies, policies and activities, i.e. formulation of the sustainable industrial development principles.
- Thirdly, these are activities undertaken in an enterprise level (Zacher, 2005).

Obviously, there is feedback between the above mentioned stages because the economic policy gives enterprises possibilities to operate, and they in turn, through their activities, have influence on regulatory policy both in the European Union and in the member states.

#### *4.1. The European Union's policy and strategy in the field of formulating principles of the enterprises' sustainable development*

The new approach of the EU towards the sustainable development was presented in „The Fifth Environmental Action Programme” in 1993. This approach was based on the conviction that enterprises are not only a source of most environmental problems, but they also have to take part in solving these problems (Rok, 2004). “The Sixth Environmental Action Programme” adopted in 2000 by the European Council accepted series of detailed solutions such as: ecological tax, directives within the framework of good environmental management practices, or assumptions of integrated product policy which suppose that during designing, producing and recycling the environment should be taken into consideration. “Commission Staff Working Paper on Sustainable Industrial Development” (SEC (199) 1729) was one of the first documents which described general conditions of interaction between areas of the sustainable development and the industrial policy. Special emphasis was put in this document on a need to integrate three principles of the sustainable development, i.e. its economic, social and environmental aspects, as well as on the importance of economic and financial instruments in its implementation. In its attitude to principles of the sustainable development towards economic policy, the European Commission stated that this policy should be directed at the whole business environment in order to enable the enterprises; regardless of their size, administration and legal form, trade or localization; growth and development in a way that is compatible with the aim of the European Union, i.e. the sustainable development (*Challenges...*, 2000). Furthermore, this document underlines systematic representation of the economy and the role of an enterprise as its part. The major issue towards enterprises is understanding the needs of the sustainable development as the global aim and the role of an enterprises as the smallest element responsible for its achievement.

“The Strategy for Sustainable Development of the European Union” adopted in Gothenburg in 2001 assumes that many changes which are necessary to ensure the sustainable development can be effective only if they are made at the EU level, and the idea of the sustainable development is expressed in all sectoral policies (*Strategia...* 2001). Regardless of these type of regulations, connection of the sustainable development and policy towards enterprises still seems to be a conceptual challenge for the European Union. The major document in this field has become the strategy of sustainable consumption and production prepared by the European Commission. It

frequently happened that the Commission delayed publication of both strategies. It proves that the executive authority of the EU meets with difficulties to define its approach towards this complicated issue. The difficulty with publication the strategy of sustainable industrial development was resulted from many reasons, and mostly from considerable diversity of the enterprises which are a special category of business entities. Books which give answer to what is an enterprise and how it operates, include the major part of studies from economics and management, what is determined by various theoretical and practical reasons such as:

- different approach towards an enterprise which on the basis of various scientific disciplines displays its other aspect, and mostly sets the enterprise different tasks;
- significant diversity of paradigms and theories of an enterprise which even if analysed within one field of study, for instance economic science, would define its essence in a different way. For example, if we apply some simplification, the theories of an enterprise within the economic science are as follows: economic theories about an enterprise and an enterprise theory are found in management science (Gorynia, 2007). It is possible to mention a few different approaches only within economics. For instance, neoclassical model of an enterprise presumes that in the first place it is an entity which buys factors of production and changes them into goods or services for sale, while from the perspective of evolutionary economics enterprises try to adapt changing market conditions, as well as the expected economic shock and fluctuations. In management, there are also various ways of perceiving the enterprises, their aim, functions and tasks in management (Morgan, 2008).
- dissimilarity of an enterprise position depending on the country, despite of internal economic policy and the common European market. The distinctions appear between enterprises from the old and new EU member states.
- significant diversity of enterprises, when we talk about their size: sole enterprises and those that employ thousands of people, type: one- or multi-facility enterprises, status and form of ownership: (state-owned, private, collective and those that belong to local authorities, type of business activity: service oriented enterprises, including commercial, production and mixed;
- enterprises are dynamic organizations which are constantly changing as a result of various factors, from which the most important is the more significant role of service sector, broader market facilitation of the public sector, transfer of the ownership in the form of shareholder structure, as well as increasing role of knowledge in the contemporary economy. All of this causes that the enterprises enter into new areas in which they have never been yet, or they were present in a limited scope, for example educational, health or pension fund enterprises. Moreover, the enterprises adapt new forms both when we talk about their ownership, joint stock company, and the method of an enterprise's operation, virtual enterprises.

16 July 2008 the European Commission presented a package of programs, which are a part of the Sustainable Development Strategy designed to support products made in accordance with the principles set out in the Strategy, which is environmentally friendly and energy efficient throughout their lifecycle, and also increase awareness and demand potential recipients of such products. The document present the vision of these programs and to justify their use is the Commission's Communication to the European Parliament, the Council, the European Economic and Social Committee and the Action Plan on Sustainable Consumption and Production and Sustainable Industrial Policy.

Among the items on which the strategy of sustainable consumption and production in the EU can distinguish a group of policies and strategies, which include:

- Integrated Product Policy (IPP);
- Thematic Strategy on the Sustainable Use of natural Resources;
- Thematic Strategy on Waste Prevention and Recycling;
- Environmental Technologies Action Plan (ETAP);
- European Compliance Assistance Programme Environment & SMEs;
- Green Public Procurement (GPP);
- Eco-design of Energy Using Products;
- Eco-Management and Audit Scheme (EMAS);
- Ecolabel Scheme (*Communication... 2008*).

Both strategies and tools included in the package “Sustainable consumption and Production” may be the cause of beneficial changes in enterprises, because it will increase the market share of innovative technologies and products, while reducing negative environmental impact.

When talking about creating basis of the enterprises’ sustainable development it is necessary to assess, to a lesser degree, the role of project cofinanced by the European Union. If we take in to account all projects: transport and environment protection investments, subsidies for enterprises and farmers, assistance for education, health care, tourism and help for the unemployed, the value of their cofinancing from the EU funds calculated on one Polish citizen, according to data from Ministry of Regional Development, amounted 2363 PLN between 2004-2006 differing among regions. The Lower Silesian, West Pomeranian, Mazovia, Silesian and Pomeranian provinces received the biggest amount of more than 3.000 PLN, whereas the Opole, Podkarpacie, Malopolskie, Lubusz and Lublin provinces received only 1.700 PLN (Cieślak-Wróblewska, 2008). Therefore, one of the most important objective of the EU help was not achieved, i.e. reduction of gap between the richest and the poorest regions in Poland. On the contrary, the differences even deepened. This was a result of the money distribution method from which about 80 per cent was allocated by means of competition. In this situation, the strong provinces had more chances because, having better employees, investment and financial potential, they prepared better projects. It is also necessary to pay attention to the fact that due to the government’s policy all the central investments passed the Central Poland.

#### *4.2 Building of the enterprises’ sustainable development basis at the national level*

In Poland, the sustainable development became a constitutional law even before Poland joined the European Union. It can be found in Art.5 in the Constitution of the Republic of Poland (1997) which says: “The Republic of Poland (...) ensures environment protection by acting in accordance with the principle of sustainable development”. The fact that the principle of sustainable development was placed in the Constitution of the Republic of Poland causes that it forms basis for the whole Polish legal system, is superior to other legal acts and is taken into account while other laws are passed. Moreover, it sets policy for the public authority which point is an order to achieve the sustainable development. Apart from that, the Law of Environment Protection, which is in force in Poland, has been amended several times to adapt to changing needs (*Ustawa...*, 2001), and is based on the sustainable development definition from Brundtland Report (*Nasza...*, 1991). This form of regulation ensures cohesion between international resolutions and Polish legislation. The addressees of the

provisions of the law are not only natural person and business units which do not run business activities, but also enterprises. The law places the Polish legal order on the system founding rules. Whereas, the law implements the environment protection on the basis of comprehensive assessment principle, prevention principle, caution principle, “Contaminator pays” principle and sustainable development principle.

The notion of the sustainable development has been also written down in the following documents:

- “The Second National Environmental Policy” (*II polityka...*, 2000),
- Poland 2025. Long-term Sustainable Development Strategy (*Polska 2025*, 2000),
- National Strategy for Ecologically Sustainable Development for the years 2009-2012 with a view to the year 2016 (*Polityka...*, 2008).

In 2003-2007, thirty countries have developed national documents relating to the implementation of sustainable production and consumption (the national framework strategies and actions programs). In the EU were Belgium, Czech Republic, Finland, France, United Kingdom and Poland. Some of them are updated, or is part of new or existing policies. Adopted in 2003, the National Strategy for changing production and consumption patterns to promote implementation of the principles of sustainable development indicated the directions of the necessary changes that contribute to the restructuring of resource-intensive sector. In view on the fact that in every sector of economic activity there is untapped potential for innovation to manage aspects of sustainable development throughout the “live cycle” it may help stimulate grass-roots industry initiatives, particularly those involving whole supply chain (*Zrównoważona...*, 2011).

One of the major questions that can be asked with regard to building the sustainable industrial development at the national level, is a question about the sustainable condition of the Polish economy. If we assume that an indicator of the economy is dematerialization of production and consumption, then the Polish economy looks well enough. Comparative research concerning material input indicator including Total Material Input and Direct Material Input in Poland and Germany shows much greater consumption of metal and mineral resources, fossil fuels and mineral-derived resources in building industry in Germany than in Poland. This indicates that the Polish economy is much more sustainable than the German.

March 25, 2011, the Ministry of Economy held a meeting open process to develop a Vision for Sustainable Development of Polish Business (*Vision 2050. The New Agenda for Business in Poland*), whose objective is to determine the role that business has to play over the conditions for implementation of the development aspirations of present and future generations (*Wizja 2050*, 2011).

#### 4.3. Activities at enterprise level

From an enterprise perspective, involvement in the sustainable development takes form of several stages:

- 1) At first, enterprises try to cope with emitted pollution and exploitation of natural resources by treating them as operating costs;
- 2) Then, enterprises try to implement clean production programs in order to predict and avoid bearing these costs;
- 3) Finally, enterprises join improvement of the environment with economic benefits (eko-efficiency);

- 4) The most important stage of enterprise's involvement in the sustainable development is running business activity in such a way that an enterprise seeks for balance between three principles of the sustainable development: social, economic and ecological, assuming that sustainable management will include integrated activities in all these three areas.

In order to implement the above mentioned activities, enterprises can use various tools such as: audits, environmental, ICC's Business Charter for Sustainable Development or environmental management systems standard. The involvement of enterprises in the sustainable development and use of these tools will result in implementation of economic strategy, in which the sustainable development plays the major role (Adamczyk, Nitkiewicz, 2007, p. 74-75).

From the perspective of the sustainable development implementation, very useful can be a proposed strategy included in a report: "A New Mindset of Corporate Sustainability" and elaborated by experts from the United Kingdom, the United States, Spain, China and Singapore (Grayson et. al, 2010). According to the authors of the report, the achievement of sustainability goals does not require extensive re-engineering of the corporate structure. Instead, it requires conviction and vision at the very highest levels of the organisation so that a set of values coherent with corporate responsibility and sustainability are instilled throughout. On the basis of experience of such companies as: Cemex, Marks&Spencer or Shenzhen Water, academics developed a new approach towards the sustainable development named S<sup>2</sup>AVE (*Shareholders and Social Added Value with Environment Restoration*). Effectiveness of its implementation should be guaranteed by the following 10 steps:

1. Make innovating for sustainability a part of your company's vision.
2. Formulate a strategy with sustainability at its heart.
3. Embed sustainability in every part of your business.
4. Walk the talk: Staff and other stakeholders need to hear their leaders explain regularly what responsibility and sustainability mean for the business and the innovation possibilities they hold, and see the actual programs implemented.
5. Set up a body with the power to make sustainability matter. Findings show that the most effective sustainability committees fulfil the following purposes: consider, review, evaluate and supervise integrated environmental, social and ethical policies of the sustainable development, collaborate with management and advise Board of Directors on responsibility and sustainability issues.
6. Set firm rules: Establish a code of conduct on sustainability covering both your employees and other stakeholders in your business..
7. Bring your stakeholders on board: Identify all the stakeholders in your business – shareholders, employees, suppliers, customers, the communities in which you operate – and engage with them on thinking about sustainability.
8. Use people power: Ensure that sustainability is a clearly stated value at every stage of your people management process, whether it is advertising for staff, hiring, induction, performance appraisal, remuneration or promotion.
9. Join the networks: Keep contact with bodies dedicated to encouraging sustainable business such as World Business Council for Sustainable Development and other.

10. Think beyond reporting: align all business systems with the company's vision of sustainability: Sustainability should run through every core system, business systems, in an enterprise: evaluation of suppliers, customer relationship management – CRM or balanced scorecard.

The implementation of these 10 steps should guarantee that an organisation would become a sustainability-driven innovator.

## CONCLUSION

The purpose of this article was to show that the sustainable development depends on implementation of its ideas at an enterprise level. From the conducted analysis, the following conclusions can be drawn:

- There is close connection between progress in the sustainable development and conduct of enterprises in this matter. That is why, one of the indicators of progress in the sustainable development implementation should be enterprise sustainability level. Furthermore, analysis should include enterprises sustainability level in a given country, since it may be an informative indicator about effectiveness of the policy;
- In the progress of the sustainable development implementation, it is very important to overcome an awareness barrier, and mostly a conviction that the sustainable industrial development is contrary to the principles of effective management and implementation of the sustainable development principles does not allow enterprises to gain high profits. The exemplary enterprises analysed in the report titled "A New Mindset of Corporate Sustainability" and other works, show that implementation of the sustainable development favours innovative solutions that help to gain higher profits than before. That is why, the best measure of quality in an enterprise management should be the sustainable management;
- The status of the sustainable development implementation by the Polish enterprises requires further analysis. It seems necessary to conduct research in this matter because from the perspective of the sustainable development the existing classifications of enterprises perform their functions only to some extent. The classifications include only the most sustainable enterprises, but they do not provide any other important information, among other things, about the average level of sustainability. This may result in a dangerous situation that there will be 'two ways' in this matter. Since enterprises from the new EU member states, despite of making every effort, still will not have chance to be on the list of the most sustainable enterprises for a long time. However, we can expect improvement in this matter on the side of politics. The situation may improve due to bigger support on the part of the EU political economy, as well as policies created by the governments of the member states. This should take into account the fact that the sustainable development is not only an attractive idea solely for big corporations, but it should be moved to small and medium enterprises because only this, considering the fact that they account for most enterprises, guarantees success of this idea;
- From analysis of documents concerning the sustainable development follows that this notion is closer to political scientists, lawyers, economists and people who deal with environment protection than to specialists and advisers from the enterprise management. Very interesting results may bring the conclusions from the report "A New Mindset of Corporate Sustainability," transfer of research concerning the sustainable development on an enterprise level and undertaking an analysis of this problem from the management perspective;

- In the process of the sustainable development implementation it should be very useful to adapt considered strategies based on the tested patterns that come from enterprises which use, with success, the benchmarking sustainable development.

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**DEVELOPMENT OF MEDIA-RELEVANT HEALTH PORTALS  
IN THE CZECH REPUBLIC**

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**Abstract**

*Drug advertising regulation is currently very up-to-date topic. The control of advertising in the drug market affects the media development of the relevant health portals. Media-relevant health portals are created by media companies and promoted in their portfolio of communication channels. An amendment of law on Advertising regulation of drugs was introduced. We will focus on the pharmaceutical market and we will also look for the direction which politicians can move resources in to promote particular goods.*

*The main task of this article is the fact that the process of the treatment of the subject is in a different way than the published studies in this area. The other cause is that the area is evaluated by media view.*

**Key words:** Health, advertising, pharmaceutical market, healthcare reform

**1 ABBREVIATIONS**

Abbreviation		title	definition	formula
SÚKL		State Institute for Drug Control		
RU	number	visitors count (real users)	number of internet users (total or from CR only) who visited the given medium	
PV	number	page views	number of page views generated by visitors of the given medium	
Visits	number	visits count	number of visits generated by visitors on the given medium	
ATS rel.	time	average time spent per visitor (real user)	average time spent by a visitor on the given medium	ATS rel. = total time spent / visitors count
Visit duration	time	average visit duration	average time spent by a visitor on the given medium during one visit	Visit length = total time spent / visits count

**Table 1: Abbreviations**

**Source:** (NetMonitor - SPIR - Mediaresearch & Gemius 2012)

## 2 INTRODUCTION

One of the most important assumption of the society is the monitoring of the the development of the advertising market and then predicts the situation on the market in the future. Nowadays it is not enough to have the best product, but it is necessary to expand it to the target group. There is no exception on the Czech Republic pharmaceutical market.

Online advertising investment is affected by the drug advertising regulation. The government approves the next phase of healthcare reform, which should modify the current advertising drug market. The proposed measures should lead to a new division of expenditure on communication activities realized by pharmaceutical companies.

The control of advertising on the drug market affects the development of media–relevant health portals, which are created by media companies and promoted in their portfolio of communication channels. We will focus on the pharmaceutical market and we will also try to look for the direction, where the politicians can move the resources on advertising, thanks to the novel of the Advertising regulation Act. Nowadays, the PR activities are more preferred.

Theoretical rationales are focused on the media–relevant health portal in the part of segmentation and communication channels.

The analytical part is based on the pharmaceutical market in the Czech Republic. Segmentation determines 4 basic areas of the research. Media indicators are used for this analysis.

## 3 THEORETICAL RATIONALES

### 3.1 *Media–relevant health portal*

Media–relevant health portal is considered as a portal, which is included in the online environment audit of the project Netmonitor. The main task is to monitor attendance in the Czech Republic and is essential to evaluate online advertising market. Advertisers use it for making investment decisions. The portal, which is a part of the research, has more opportunity to be chosen by advertisers. Media corporations try to create these portals. They usually have a large number of portals in their portfolio and also other communication channels. They have occasions to promote particular portals for free across the portfolio and communication channels.

### 3.2 *The target audience determining and positioning*

The main task for the communication policy of the pharmaceutical companies is to define the target audience. We are in the field of international marketing, due to the structure of pharmaceutical companies and markets. If we translate the practical application into the theoretical background, we will have to primarily deal with the international segmentation of markets and identify groups of consumers, which will be targeted. As we can see later, the segmentation can be primarily defined by a legal environment.

Each company or more precisely the brand should be incorporated into the consumer memory with the benefits of the products. Consumers have to know exactly, why to buy each brand.

Especially Kotler and Keller (2007), the American authors, and Machkova (2006), the Czech author of the international marketing, have enriched the theoretical background.

### 3.3 Communication policy of pharmaceutical companies

The main area, we will focus on, is communication policy of pharmaceutical companies.

Primarily, it is important to look at the theoretical background of the communication channels a little bit closer. We will take into the account the section advertising for our purpose. The name of the subsection is called online advertising. The second category, which is crucial for this article, is marked as Public Relations.

Advertising	Sales promotion	Public Relations	Direct marketing
television	point of sale	press , tv, and radio releases	personal selling
print	gifts and prizes	internal communication	Counter sales
radio	trade fairs and exhibitions	publicity	Door-to-door
outdoor	samples, coupons and vouchers	press conference	trade fairs and exhibitions
indoor	Competition	information services	mail order
cinema	Points	sponsorships	telemarketing
direct mail	financial incentives	public events	teleshopping
online advertising	Tasting	training	direct mail
	exhibition stand	participation at conferences	online marketing

**Table 2: Communication channels**

Source: (Machkova 2006)

## 4 THE PHARMACEUTICAL MARKET WORLDWIDE AND IN THE CZECH REPUBLIC

The analysis is situated to the Czech Republic. Metys and Balog (2006) performed the practical research of pharmaceutical market and described the marketing in the pharmacy in the Czech Republic. Kadlecová (2011) have presented the result of the communication policy in the pharmaceutical area focusing on one company. The research showed for example that the selected pharmaceutical company has invested in congresses 38% of the communication budget.

First of all, we need to look at the context of the situation in the market in the Czech Republic. The table below contains the basic information relating to the Czech Republic and the pharmaceutical market.

<b>GDP per capita in purchasing power standards</b>	<b>2010</b>
Czech Republic	19 400
EU 27	24 400
Index GDP	0,80
<b>Czech Republic</b>	<b>March 2012</b>
Population	10 507 566
Internet population	6 330 228
Internet population / Population	60,24%
<b>Czech Republic</b>	<b>November 2010</b>
Population	10531927
Internet population	5982663
Internet population / Population	56,81%

**Table 3: Basic information relating to the Czech Republic and the pharmaceutical market**

Source:(ČSÚ 2012), (Eurostat 2012) and (NetMonitor - SPIR - Mediaresearch &amp; Gemius 2012)

Looking at GDP per car capacity, the Czech Republic is below the average EU 27. The scope of the internet population is important for further analysis. Internet population is measured by several institutions in the Czech Republic. Media relevant research is realized by SPIR (project Netmonitor) which is used in the next section as one of the arguments supporting the hypothesis. 60.24% of the population can be found on the Internet as it is mentioned in the table above. Can we address the whole internet population on the pharmaceutical market? We will look at in the other chapters.

We will look at the 2 main areas for the purpose of score the pharmaceutical market. First it is the area of chemical industry and the second main area is healthcare or medical regulation. And how is it with the pharmaceutical market in the Czech Republic? How is the Czech healthcare market in the international context?

	<b>2010</b>	<b>2010 (€)</b>
<b>Ministry of Industry and Trade of the Czech Republic</b>	CZK 30, 000 million	€ 1,186 million
<b>Czech Republic - EFPIA (ex-factory prices)</b>	CZK 47,924 million	€ 1,895 million
<b>World - EFPIA</b>	\$ 791,500 million	€ 597,043 million

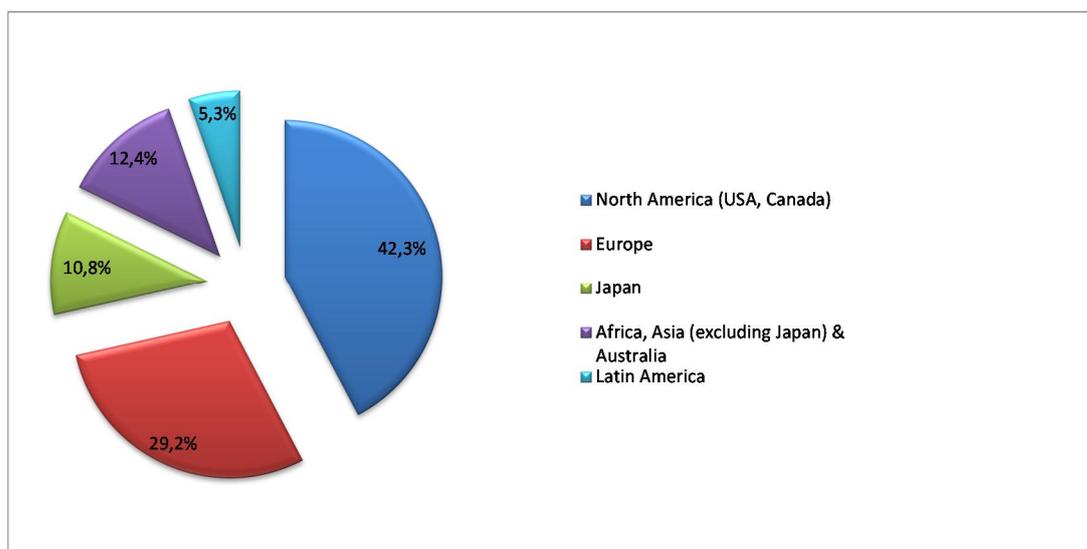
**Table 4: Pharmaceutical Market – Sales**

Note: Converted by yearly average exchange rate 2010 - Czech National Bank (1 EUR = 25,29 CZK)

Source: (EFPIA 2011) and (ČTK 2011)

The Previous table shows us that the income in the pharmaceutical industry worldwide reached almost 600 billion euros in 2010. According to the Ministry of Industry and Trade of the Czech Republic recorded the income in the Czech Republic in the range of over 1.1 billion euros.

Pharmaceutical companies, who operates in the Czech Republic, are mostly international companies therefore it is necessary to emphasize the international context and global distribution of income differs by region. It is an international marketing from the marketing perspective.



**Figure 1: The income by the areas**

Source: (EFPIA 2011)

This graph shows us that the largest share of the income on the pharmaceutical market was in North America. This market reached to 42.3% of global income. Europe market with 29.2% share of income was on the second place in the ranking.

## **5 SEGMENTATION AND TARGET GROUP OF THE PHARMACEUTICAL MARKET IN THE CZECH REPUBLIC**

Segmentation is the first step, which determines the subsequent advertising campaigns. Segmentation is performed in several ways, but we will focus on multi-dimensional segmentation in this case. The pharmaceutical market is highly regulated in the Czech Republic, so it means that the regulation is very important parameter in the segmentation. We will not concern on a specific company, but on a larger segment in this article. It means that we will consider the regulation as the main parameter for segmentation of first Instance. Moreover, the drug advertising has to be complied with the same advertising legislation as other markets. We can find a different kind of limitations. A detailed overview could be found in the instruction SÚKL (2011a), which prefers the legislation of advertising in the Czech Republic.

### 5.1 Online advertising and regulation

The Act, which is basic for segmentation, is the Act No. 378/2007 Coll., Law on Pharmaceuticals - § 39. SÚKL is responsible for the decisions about following categories.

Types of pharmaceuticals:

1. obtained with a prescription – RX
2. obtained without a prescription – Over-the-counter - OTC
3. obtained without a prescription including restriction – OTC incl. restriction

Is there a possibility of placing advertising format on internet portals by pharmaceutical companies (directly or indirectly)? Let's have a look below.

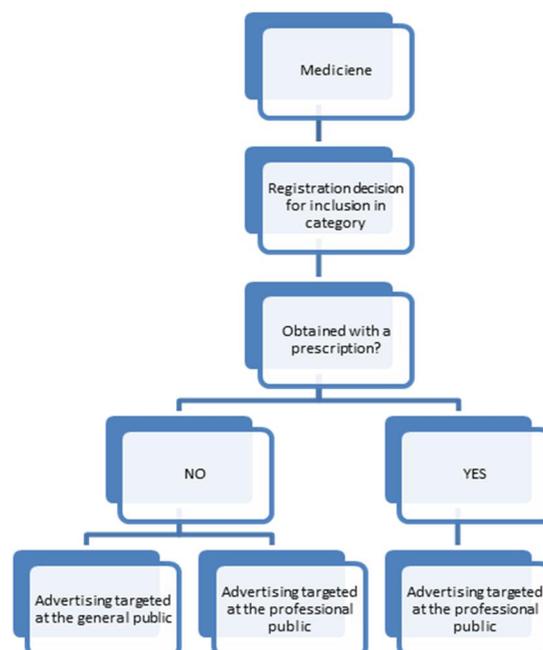
The next important aspect of segmentation is division of population into two groups divided by legislation and presented in the table below.

Population	
Professional public - These are Professional, who can prescribe (doctors) or supply medical products (pharmacist)	General public – the others

**Table 5: Division of population**

Source : Act No. 40/1995 Coll., § 2a and (SÚKL 2011b)

We can find the summary of the terms in the following figure.



**Figure 2: Summary of the terms**

The summary graph shows us that companies have permission to promote a product, which passes through the registration. If we go further, companies cannot target their advertising just on the general public, if the medicine is obtained only with a prescription.

We have defined the target group and now we will focus on how these regulations effects on the media market and undermines the development of health portals in the subsequent chapter.

## 6 NUMBER OF SITES IN THE CATEGORIES

The first argument is the number of media–relevant health portals. It is important to maintain the time sequence and the same period of time analysis, but media categories in project Netmonitor were wider before. For this reason, we will have a look at the category in the year 2012.

ID	Category	Number of Portals
1	Databases, catalogs	59
2	Entertainment and Games	50
3	IT servers, mobile phones, digital technologies	47
4	E-commerce	43
5	Hobby	39
6	Economy, finance, law	35
7	Women and fashion magazines	32
8	Travelling	32
9	Sport	31
10	Auto-moto	28
11	Social networks, teens servers, photogalleries	27
12	Real estates, servers about housing	23
13	TV, radio	23
14	Pregnancy and Parenthood	23
15	News	21
16	Health	17
17	Society magazines	12
18	Communication services	11
19	Tabloid magazines	9
20	Lifestyle magazines for men	7
21	HP of portals	6

**Table 6: Number of sites in the categories – March 2012**

Source: (NetMonitor - SPIR - Mediaresearch & Gemius 2012)

According to the table above, we have 17 Media-relevant health portals. This category Health was 16th in the ranking. We can not say that there are not any other portals, but we're talking about portals, which are audited and relevant for us from media perspective.

#### 6.1 *Portals for the professionals*

Advertising aimed for the professionals on the Internet need to contain, before a professional enter a page, a minimum of (SÚKL 2011a):

- Declaration of professionalism
- Confirmation that he / she is familiar with who is considered an expert
- Confirmation that he / she is familiar with the risks

#### 6.2 *Portals for General public*

The effort of the society is to provide educational information, but the authors must be careful here that such activity should not fulfill the section § 1 § 2 and § 5, paragraph 1 of Law No. 40/195 Coll. Regulation of advertising and amending and supplementing Act No. 468/1991 Coll. If this section would be fulfilled, the information could be the advertising. The using of indirect links is also prohibited. An indirect link such as ingredient, color, shape can identify the product and it is also prohibited.

The different and more detailed look at each category can be though the traffic. Health portals (the Health category) had the third lowest attendance (number of real users) in the relevant portals. The number of page views is the lowest at all categories. ATS was in the category also the lowest. Visit duration was the second lowest.

### 7 THE SPENDING ON THE ADVERTISING

Thanks to the regulation and the previous paragraphs, it is clear, that investments to the online advertising are lower than than the investments to the other categories. This happens despite the fact that it is considered as a very lucrative market.

In concrete terms, the pharmaceutical spend at the online advertising market got the 11th place of 15 places in this research.

The portals and health information are regulated, but the medicines are prescribed by the doctors and it is possible to target them by the portals, which are focused on the professionals. What could happen, if the politicians would regulate more activities of the companies in the PR and the Internet conditions remain the same?

### 8 WHAT WILL BRING THE NEW AMENDMENT TO THE SEGMENT?

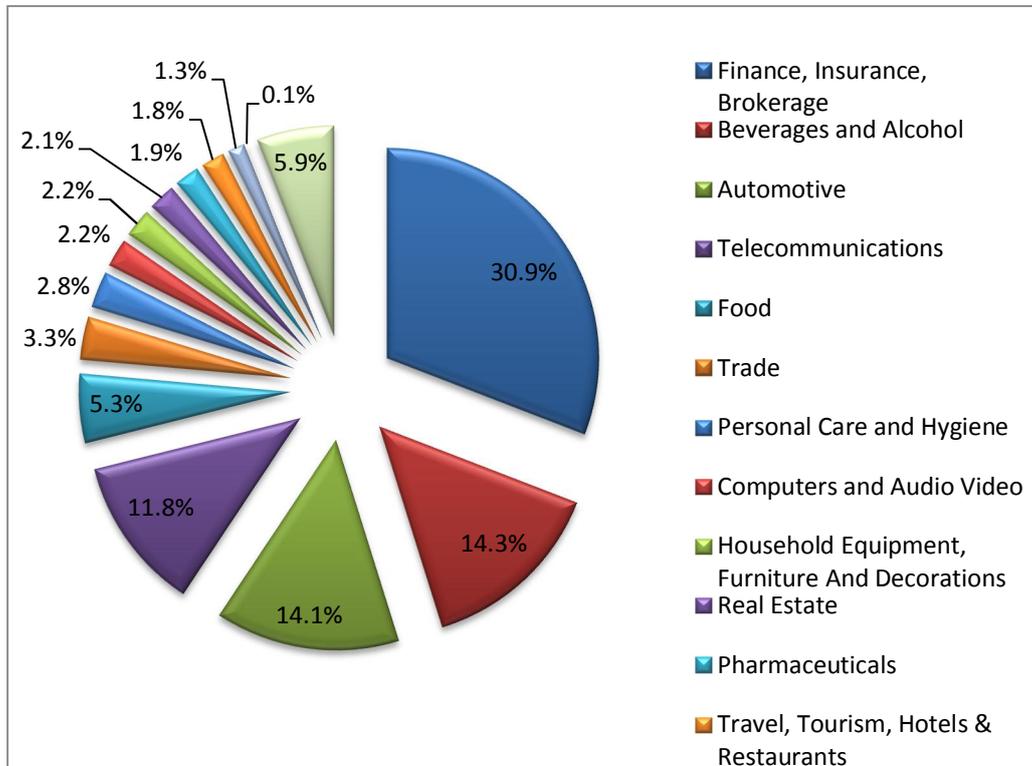
There are sponsoring regulations and compensation of the experts as it is prescribed by SÚKL UST-16 (SÚKL 2007). The Congress tourism is common these days. We could expect changes in the advertising regulation since 2013 on the basis of current developments in the government. The government approved an amendment to the drug advertising in recent days. The amendment should be approved in the next stage. For example Marketing & Media Server (ČTK 2012) informed about the amendment. The main task is clearer definition of the relationship between doctors, pharmacists and

pharmaceutical companies. The aim of the amendment is limiting the congress tourism, paid studies, contests and more. The amendment should be also applied to the family members, because they travel sometimes to the conferences with the physicians. Another area is the dietary supplements, which are presented as medicines.

ID	Category	RU month	PV month	ATS rel. Month	Visits month	Visit duration month
1	HP of portals	5 956 067	1 329 192 468	8:50:52	433 793 479	0:07:17
2	Databases, catalogs	5 317 572	513 864 742	1:27:06	93 803 178	0:04:56
3	Communication services	4 702 409	1 607 426 094	6:01:21	188 318 007	0:09:01
4	News	4 525 769	386 276 870	1:45:39	128 451 312	0:03:43
5	TV, radio	4 147 473	247 563 744	1:44:26	60 940 805	0:07:06
6	Social networks, teens servers, photogalleries	3 956 550	902 190 940	1:55:55	45 608 799	0:10:03
7	E-commerce	3 862 972	866 441 773	2:18:09	63 211 047	0:08:26
8	Tabloid magazines	3 700 649	342 301 247	1:20:43	89 855 120	0:03:19
9	Women and fashion magazines	3 599 299	192 105 546	0:43:51	44 866 256	0:03:31
10	Entertainment and Games	3 393 038	307 402 938	1:51:38	46 344 852	0:08:10
11	Economy, finance, law	3 361 323	101 924 345	0:35:19	38 152 295	0:03:06
12	IT servers, mobile phones, digital technologies	3 299 540	109 870 062	0:43:49	33 925 649	0:04:15
13	Society magazines	2 846 900	47 852 588	0:20:40	25 450 617	0:02:18
14	Sport	2 485 651	153 224 980	1:13:19	46 668 684	0:03:54
15	Travelling	2 129 808	40 533 130	0:16:18	11 692 404	0:02:58
16	Auto-moto	2 051 379	168 573 126	1:02:49	20 372 042	0:06:19
17	Real estates, servers about housing	1 984 671	150 502 571	0:47:49	15 061 272	0:06:18
18	Hobby	1 924 248	60 635 360	0:24:21	11 817 558	0:03:57
19	Health	1 150 081	11 704 858	0:09:37	4 640 588	0:02:23
20	Pregnancy and Parenthood	959 270	47 586 312	0:53:40	6 564 859	0:07:50
21	Lifestyle magazines for men	864 356	35 980 692	0:20:46	4 842 214	0:03:42

**Table 7: The attendance – March 2012**

Source: (NetMonitor - SPIR - Mediaresearch & Gemius 2012)



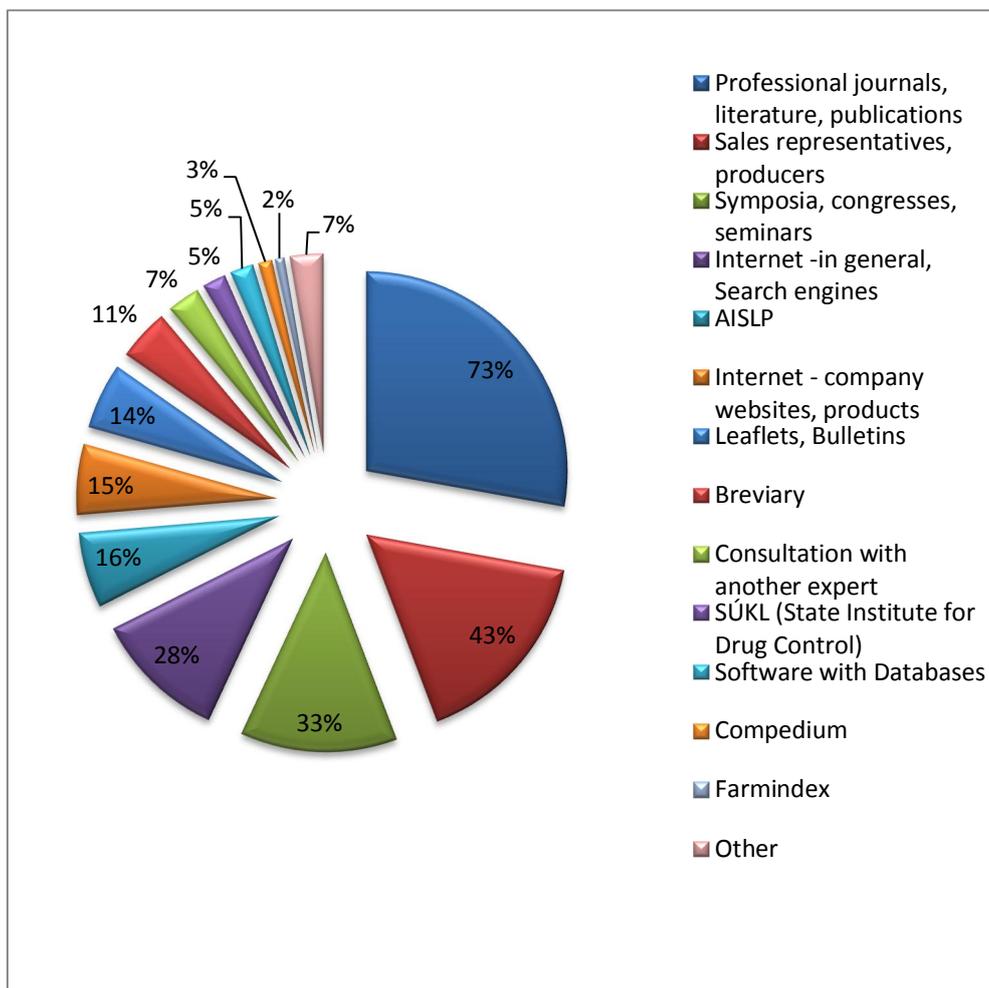
**Figure 3: Spending on the advertising**

Source: (Gemius 2012)

If we look at this in the view of marketing theory, it is a limitation of PR. Where the resources can move? Online marketing could be the possible way.

How much space is there? Pharmaceutical companies admitted that they organized 188 conferences for doctors during 9 months. Doctors were able to visit different destinations around the world for free. They refused to inform about the prices for congresses and specific names of doctors (Daňková, Keményová 2011).

According to a survey by the STEM / MARK, we can see where the doctors get their information about the medicines.



**Figure 4: where the doctors get their information about the medicines.**

Zdroj: (STEM/MARK 2011)

The survey showed us that the doctors use as the most frequent journals (73%), advices from the sales representatives (43%), conferences (33%) and the Internet is dividend here in two parts (28% and 15%). In conclusion, we could say that the PR and the Internet are the major categories based on research, as it was expected. It is good to mention that the professional journals tend to have a clone on the Internet on the first place.

## 9 CONCLUSION

The article was built on the thesis that the advertising regulation on the pharmaceutical market affects the development of the media-relevant health portals.

Media-relevant health portals are created by media companies and are promoted in the portfolio of communication channels.

An amendment of Act on Advertising regulation of drugs was introduced. We have focused on the pharmaceutical market and we also look for the direction, where the politicians can move the resources in for promoting particular goods.

We divided the communication channels in the theoretical section, where we choose two basic channels: online advertising and PR.

We introduced the pharmaceutical market, which had sales in the amount over EUR 1.1 billion in the Czech Republic in 2010. We set the possibilities of advertising, because it is important to separate the types of medical products and population. Regulation divides the population into the professional public and general public. Advertising, which can be target on the professional public, is prohibited under the certain conditions for the general public. On this basis, we set out 4 main parts of the analysis.

As the first area, we considered the number of media-relevant health portals. There were 17 health portals which were included in particular category. This Health category was 16th in the ranking from 21.

The second area was the number of real users of the portals of relevant health. The graph showed us the third lowest value of all 21 categories. 1,150,081 of real users attended the relevant health portals. The lowest values were also achieved in the ATS and PV indicators. The Internet population was 6,330,228 in the Czech Republic in March.

The third important area of the evaluation was the costs in each segment in the online area. The Study of Gemius showed us that the pharmaceutical segment in the Czech Republic is at the 11th place out of the 15 places between other categories such as Food, Trade, Computers and Audio Video. Lower cost was on the markets with Travel, restaurants and Clothing and Accessories.

The last area of the interest was the analysis of the possible future of the development. The government has approved an amendment of the drug advertising regulation, which could come into the force since 2013. The result should be higher regulation of the congress tourism. On the basis of the research by STEM / MARK, the doctors access the information about the medicines from 33% on congresses. Internet reached the value of 28% (the general part) and 15% of websites of companies and the products.

It will be interesting to wait the outcome of negotiations of the mentioned Act. We can say, that the regulation has contributed to the lower development of media-relevant health portals, but there is a possibility of the development in the future, thanks to the new regulation.

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**POTENTIAL THREATS OF THE CZECH PENSION REFORM**

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**Abstract**

*The annual regular deficit on the pension account of the Czech Republic has forced the Government to reform pension system and reduce the valorization of pensions. It is quite obvious that the main pillar pay-as-you-go financing is untenable with regards to demographic evolution. Therefore, the government comes with successive parametric modifications and also possible opt-out to the funded financing system which could seem to be suitable alternative because of its independency on the aging of the population and elongating lifespan. The proposed reform does not solve the problem of motivating middle-and high-income people in the first pillar. Moreover expenditure cuts will have drastic impact on the generation of retirees. The paper analyzes the reform actions and seeks the inspiration for optimal reform outside the Czech Republic.*

**Key words:** *pension reform, retirement, pay-as-you-go, social security*

**1. INTRODUCTION**

The unfavorable demographic situation: the increase in the life expectancy and increasing proportion of elderly in total population, thus increase in the total number of pensioners and decrease of economically active people adversely affect the balance on the pension account. In the current PAYG system number of contributors is dwindling whereas the number of recipients is growing. The proposed pension reform moves the part of the social insurance to the second pillar - private funded savings for retirement.

Pension System of the Czech Republic should therefore newly consist of three pillars.

The first pillar is the basic pension insurance, defined benefit pay-as-you-go system guaranteed by the state and mandatory for all economically active persons. In the current PAYG system working generation pays social insurance contributions, which are immediately redistributed to current pensioners. Contributions should be properly set up in order to avoid the deficiency of this system, but if this happens then must be cover from state budget, because the pensions are guaranteed by the state.

The highest possible social solidarity is applied in this method, because the tax burden rises with rising incomes and pension level in comparison with growing earnings declines. A worker with the above-average income pays more into the system, but receives relatively less than workers with lower incomes.

The big advantage of this method is the immediate distribution of benefits, when it prevents the loss coming from the inflation and of course a certain security of each individual in the retirement age. Problems may occur due to the demographic and political development, when government can amend the benefit calculation so that people have to rely on the current government promises that they do receive at least any pension benefits.

The second pillar, which is common in some EU Member States, is represented by private (employee) pension systems and its essence is in funding. Based on the voluntary decision between employer and employees employer establishes employee's pension fund. Both employee as well as employer then contribute to the fund, creating financial resources that will then serve as employee pension benefit and the additional income supplement when reaches the retirement age. The transfer of funds from the state pillar into the commercial sphere is called opt-out.

This pillar is characterized as voluntary, however, voluntary in terms of whether the additional system will be enabled or not. In some cases the emergence of the supplementary second pillar can be mandatory by the law. These are mainly countries with lower levels of basic pension insurance where private sector is highly developed. On the contrary voluntary participation in the second pillar is usually allowed in countries where the satisfactory level of basic pension system is secured.

The main purpose of this pillar is to increase the income of individuals so that they closer to the income level achieved during their working life. Another advantage, compared to the first pillar is the resistance against demographic influences, the independence on the state, each individual responsibility and intergenerational justice as it does not burden next generations with additional costs. On the other hand side deposits can be depreciated by inflation, reduced by financial crisis, uninsured funds are being siphoned off etc. Last but not least there is a problem of low-income groups who are unable to save themselves up for retirement.

Because the first pillar is based primarily on the principle of social solidarity and guarantees only a minimal pension, private third pillar has been established in many countries in order to save up own savings and secure the living standard in the retirement age. It is a voluntary supplementary, defined contribution and capital-funded pension pillar. Economically active citizens are creating personal accounts of their own reserves to finance their future pensions by relatively small portion of their earnings. Third pillar is characterized as a supplementary voluntary pension insurance with high state contribution.

In addition this system can be supported by the state e.g. through the tax concessions. Voluntary pension savings is from the state point of view a suitable tool for the financial market because the financial capital from the deposits can be used for other investments. Therefore properly designed pension savings system may be substantially beneficial to the development of a country's economy. The disadvantage of this system is like the second pillar, the risk of negative effects of inflation on savings. In addition, individual pension savings relationships are typically private relationships, so the state can intervene while creating an appropriate legal framework only but cannot affect the actual business policy of pension savings banks. This means that the system can negatively affected by financial market situation when the insurance providers can get into a difficult economic situation when will not be able to meet their obligations. In almost all the countries of Western Europe pension reforms are now taking place some way. These are changes with varying intensity, depth and focus, differing from state to state. Often it is a long-term process, where radical changes may occur or somewhere rather a political-smooth corrections of the current situation. The pension system may be changed as a whole system by the amendment of pillars or only some of parameters are being be adjusted.

Czech pension reform moves a portion of the funds from first PAYG pillar and intends to set-up a place them in the second pillar of private funded savings. Unfortunately this intention does not solve the deficit of the current pension account, so the government comes also with other measures parametric changes: retirement age shift, increase in the working period of required insurance, etc.

In order to stabilize the current (deficient) account balance the government also imposed limitation on the annual adjustment/increase of pensions in next three years. Thus decrease the current income of pensioners. The paper analyzes the impact of reform and setup of its steps. It also searches for reform inspiration outside the Czech Republic. The paper evaluates the proposed system and parametric reform steps and their impact on seniors.

#### *Decline in real pensions*

By the approval of amendment to the Pension Insurance Act, affecting the annual increase of pensions from 11 April 2012, Czech government decided to start saving more funds on the old generation - pensioners. Thus, the government is planning to save 9.5 billion CZK on pension benefits in 2013, approximately 16.1 billion CZK in 2014 and 22.1 billion CZK in 2015. In following three years, this act should save a total of 47.7 billion. Whereas annual pension increase rate was setup on 100% CPI plus one third real wages growth in the past, from 2013 this should be about a third of real wages growth and also one-third CPI only. The average state pension will be therefore increased only by CZK 156 CZK instead of 428 CZK in January 2013, by 90 CZK instead of 278 CZK in 2014 and finally by 137 CZK instead of 303 CZK in 2015.

The message is straight forward the government is trying to save wherever they can. Nevertheless for most of the retirees this information can be formulated that it will be necessary to secure financially themselves and not rely on state pension only. Besides this the current main pillar pension system in the Czech Republic, mandatory continuous financing, is regularly attacked by right-wing economists for its long-term financial unsustainability with regards to adverse demographic trends, which is expected in the Czech Republic as well as in other European countries. The annual pension account deficit exceeding 30 billion CZK and according to the demographic prediction we can expect that the proportion of pensioners on the total population gets doubled by 2040 in comparison. The compulsory retirement levy to the first pillar takes 28% of monthly gross salary of an employee, despite the high amount employee should not be relying on the state pension only.

#### *The reform of motivation*

E.g. Sweden encourages its citizens to save money for pension by hypothetical accounts where people can track how much money is already in there, though hypothetical<sup>2</sup>. Once the pensioner reaches the retirement age the full balance is divided to the monthly benefit according to the life expectancy. Germany motivates people to save money for retirement by pension points, setting the pension benefit level on the merit basis or Slovakia by the possibility of radical opt-out from the mandatory PAYG pillar.

How should the successful pension system work?

The best functional pension systems rely on three basic pillars but there must be also expansion of this three pillars view. Since the meeting of statutory requirements for entitlement to the state pension is getting harder, states provide also the social safety net to those who did not fully meet the statutory requirements. State should also stimulate people to retire without debts, house property and other assets can also play an important role in financial security and stability in retirement. The very crucial point is that pension schemes must be flexible to change over the time in order to maintain their sustainability.

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<sup>2</sup> PALMER E.: The Swedish Pension Reform Model: Framework and Issues, 2011, p.5

Comparison of the world's pension systems has been provided by Mercer's study<sup>3</sup>. The result is in the index evaluating the adequacy, sustainability and integrity of the pension system

The Dutch system has reached the highest value closely followed by Australia, Sweden and Canada. These four systems are based on a comparison much better than the pension systems in the UK, USA, Chile and Singapore. Australia has a well-functioning three-pillar system. Similarly, Canada has a well-integrated pension system, which is involved in both the public and private sector. Sweden is on track to transition from pay-as-you-go system to a fully defined-contribution system.

Country	Overall Index Value	Sub-Index Values		
		Adequacy 40%	Sustainability 35%	Integrity 25%
Australia	75.0	73.6	71.4	82.4
Brazil	58.4	71.0	27.3	81.7
Canada	69.1	74.1	55.8	79.7
Chile	64.9	53.1	67.8	79.8
China	42.5	48.1	30.6	50.1
France	54.4	73.6	30.7	56.8
Germany	54.2	63.5	36.4	64.4
India	43.4	37.3	39.4	58.8
Japan	43.9	44.1	28.4	65.2
Netherlands	77.9	75.9	70.8	91.4
Poland	58.6	64.3	40.7	74.5
Singapore	56.7	41.9	60.9	74.5
Sweden	73.4	67.7	75.4	79.9
Switzerland	72.7	70.4	67.7	83.5
UK	66.0	67.8	50.8	84.5
USA	58.1	58.7	54.4	62.5
<b>Average</b>	<b>60.6</b>	<b>61.6</b>	<b>50.5</b>	<b>73.1</b>

**Table 1: The Melbourne Mercer Global Pension Index**

Source: (Mercer<sup>4</sup> 2012)

The only real motivational factor of the Czech pension system is the third pillar where the number of contracts attacks the border of 5 million, half population of the Czech Republic. The reason can be found in the high state subsidy when participant receives CZK 50 state contribution from CZK 100 monthly savings contribution, deposits over CZK 500 then the maximum contribution of CZK 150, which is relatively high motivation for people to save money and increase their savings. Nevertheless this part of the system is set to a low amount and cannot substitute the first pillar.

<sup>3</sup> Melbourne Mercer Global Pension Index

<sup>4</sup> The Melbourne Mercer Global Pension Index compares retirement income systems around the world and rates them based on their adequacy, sustainability and integrity, table p.6, 2011

Participant's monthly contribution	Monthly contribution given by the State
CZK 100 to 199	50 + 40 % from amount over CZK 100
CZK 200 to 299	90 + 30 % from amount over CZK 200
CZK 300 to 399	120 + 20 % from amount over CZK 300
CZK 400 to 499	140 + 10 % from amount over CZK 400
CZK 500 and more	CZK 150

**Table 2: The state contribution by the participant's deposit**

Source: ( Law No. 42/1994 Coll. On pension insurance, as amended)

By the reform of the third pillar state contribution should newly amount to CZK 90 plus 20 percent of the amount exceeding CZK 300 from range CZK 300 to CZK 999 crowns should a amount to 90 crowns plus 20 percent of the amount exceeding CZK 300. Therefore, the new system is favorable for all who will save more than 600 crowns a month. While saving CZK 1,000 a month the state will contribute CZK 230 instead of CZK 150. So that the tightening of rules has the incentive to save higher amounts that would then significantly increase the pension. For the current pensioner's the income from pension funds is not so important because they did not have enough time to save up their resources as the third pillar has experienced quite recently in the last couple of years.

The solution could be then the "new" second pillar in the pension system, which should consist of individual accounts in private pension companies. As proposed they should be able to start accepting participants from 1 January 2013. People would voluntarily transfer 3% from the monthly levy – social insurance -to the PAYG system. The insurance now stands at 28 % of gross wage. The mandatory condition of this transfer will be additional 2% from wage to the second pillar. In fact the mandatory pension insurance will then rise even to 30% of earned income. By selecting the private company/fund people will have four options for people where to invest their money - with a different risk, but also with different level of revenue.

Unfortunately the prospects of reform tend to the result that the first state PAYG pillar will remain unchanged, only less money will flow in there. Although the motivation of the pension savings will be encouraged, the PAYG system deficit will not.

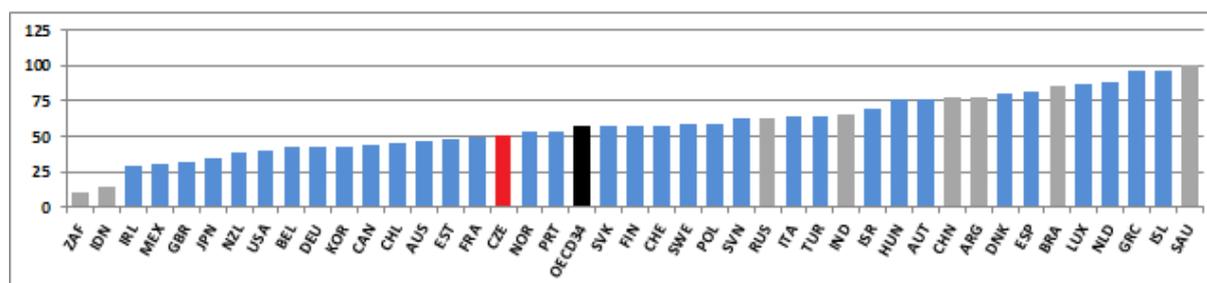


Figure 1: Median replacement rate at retirement - international comparison (in % of average wage in national)

Source: (OECD: pension models, 2011)

The average replacement rate at retirement (the ratio between pension and previous worker's salary) of the Czech Republic is slightly below the OECD average, pension benefit is constructed from fixed basic amount and variable percentage amount, based on the calculation:

$$SP = BA + \left( \frac{TIP * 1,5}{100} * CB \right) + \left( \frac{SAP * 1,5}{100} * CB \right)$$

Where SP = state pension

BA = basic amount (2270 CZK per month from 1.1.2012)

TIP = total insurance period from leaving school to the entitlement to a pension, in full calendar years

SAP = sum of additional periods of insurance (90 calendar days) - employment held after the entitlement to retirement pension

CB = calculation base, where the computational basis is taken into the consideration.

\* Computational basis is sum of monthly earnings reduced by reducing borders.

Reduction	Σ Monthly Earnings	2011	2012	2013	2014
1. Reduction Bracket	0-44% AW <sup>5</sup>	100%	100%	100%	100%
2. Reduction Bracket	44-116% AW	29%	28%	27%	26%
3. Reduction Bracket	116-400% AW	13%	16%	19%	22%
4. Reduction Bracket	more than 400% AW	10%	8%	6%	4%

**Table 3: Reduction brackets for pension calculation**

Source: ( Public Notice of Law 286/2011, Coll.)

However when we look at the replacement rate at retirement of middle and higher income classes, we start to realize the problem of motivation. Czech Republic is now situated on the bottom of the scoreboard (due to the excessive reduction - see Table 2). Unlike the aforementioned Sweden, Germany and Slovakia, the mandatory first pillar in the Czech Republic is very demotivating for its residents and does not fully reflect the principle of merit. Although this problem has already been addressed to the Constitutional Court and there is a gradual adjustment of reduction limits, now the merit principle should be driven again by 3 + 2% opt-out along the second pillar. This should bring a greater incentive to save higher amounts of money, increase pensions and replacement rate.

<sup>5</sup> AW = Average wage in Economy

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	Median earner	0,5	1	1,5		Median earner	0,5	1	1,5
<b>OECD members</b>					<b>OECD members (con'd)</b>				
Australia	52,6 (50.1)	73,3 (70.8)	47,3 (44.8)	38,6 (36.1)	Norway	52,9	63,4	53,1	41,7
Austria	76,6	76,6	76,6	72,3	Poland	59,0 (43.2)	59,0 (45.3)	59,0 (43.2)	59,0 (43.2)
Belgium	42,6	60,1	42,0	32,7	Portugal	54,4	63,3	53,9	53,1
Canada	48,5	76,6	44,4	29,6	Slovak Republic	57,5	57,5	57,5	57,5
Chile	48,4 (37.5)	60,0 (49.2)	44,9 (34)	41,8 (28.9)	Slovenia	62,4	64,3	62,4	62,4
Czech Republic	57,3	80,2	50,2	37,4	Spain	81,2	81,2	81,2	81,2
Denmark	84,7	120,6	79,7	66,1	Sweden	58,4	72,9	58,4	72,1
Estonia	50,9	60,2	48,0	44,0	Switzerland	59,3 (58.5)	65,2 (64.7)	57,9 (57.1)	40,9 (40.3)
Finland	57,8	66,4	57,8	57,8	Turkey	69,5	76,4	64,5	64,5
France	49,1	55,9	49,1	41,3	United Kingdom	37,0	53,8	31,9	22,6
Germany	42,0	42,0	42,0	42,0	United States	42,3	51,7	39,4	35,3
Greece	95,7	95,7	95,7	95,7	<b>OECD34</b>	<b>60,8</b>	<b>72,3</b>	<b>57,5</b>	<b>52,1</b>
Hungary	75,8	75,8	75,8	75,8	<b>Other major economies</b>				
Iceland	109,1	144,9	96,9	87,0	Argentina	81,1 (73.8)	90,7 (83.4)	78,1 (70.8)	73,9 (66.6)
Ireland	34,9	57,9	29,0	19,3	Brazil	85,9	85,9	85,9	85,9
Israel	85,3 (75)	100,1 (89.9)	69,6 (61.2)	46,4 (40.8)	China	82,5 (52.2)	97,9 (63.7)	77,9 (48.7)	71,2 (43.7)
Italy	64,5 (50.6)	64,5 (50.6)	64,5 (50.6)	64,5 (50.6)	India	72,4 (68.4)	95,2 (90.9)	65,2 (61.4)	55,0 (51.4)
Japan	36,3	47,9	34,5	30,0	Indonesia	14,1 (12.4)	14,1 (12.4)	14,1 (12.4)	14,1 (12.4)
Korea	46,9	64,1	42,1	31,9	Russian Federation	65,1 (57.9)	73,0 (65.9)	62,7 (55.5)	59,2 (52.1)
Luxembourg	90,3	97,9	87,4	83,8	Saudi Arabia	100,0 (87.5)	100,0 (87.5)	100,0 (87.5)	100,0 (87.5)
Mexico	46,3 (46.3)	57,5 (57.5)	30,9 (28.7)	29,6 (26.4)	South Africa	13,1	21,2	10,6	7,1
Netherlands	89,1	93,0	88,1	86,5	EU-27	63,1 (61.1)	70,3 (68.3)	61,8 (59.8)	58,4 (56.5)
New Zealand	47,8	77,5	38,7	25,8					

**Table 4: Replacement rate at retirement: comparison OECD states**

Source: ( OECD: Gross Pension replacement rates, 2011)

If we would look for the inspiration and motivation of the first pillar in the Swedish system, we find the benefits of motivation brought by a funded scheme (defined contribution system, personal accounts) and also security that brings the elimination of the risk of the potential loss from improper investment into the pension funds. People can check their current deposits at the pension account and so be prepared for the replacement rent at retirement.

In all the world developed countries the multi-sources pension system is a need. The state pension is only the one of them. The importance of the own savings is increasing. Therefore the sooner person starts saving the better situation will face in retirement. According to the Western Europe traditions private funds and life insurance companies also contribute on the retirement pension. Multi-sourcing of the pension will then be one of the biggest challenges of the Czech Republic in order to make the replacement rate at retirement higher.

*Starting point of the czech pension reform*

The reform of the pension system is one of the most discussed topics on the political scene in the Czech Republic in the last decade. Whether it was a left-wing or right wing government, none of them exceeded so far the limit of some partial parameter adjustments. From this point of view, the designed a 3 + 2% opt-out should be considered as a success. Moreover in the Czech conditions due to the financial difficulty of the whole system transition we cannot proceed with so significant shift between pillars as happened in the Slovakia. Reason for this moderation comes also from the political environment and fear of subsequent financial problems, which Slovakia faced after 9% opt-out from compulsory PAYG insurance to the private sector. Whether there is any shift from first pillar to the second private pillar, at the same time we will have to repay the hidden debt which hides in the system itself – funds that have already been spent.

From 3% respectively 5% opt-out we would not have exaggerated expectations, as the most of the income will still be drained  $\frac{1}{4}$  to state pay-as-you-go pillar. Besides that opting-out will also be voluntary, so we can only expect a transition of people with higher incomes, what could burden the first pillar even more. The levy of person who decides to join the second pillar of pension system will increase from 28% to 30% where we also assume that such a person will be voluntarily paying any additional percentage to the third pillar.

If we analyze the situation of the current active generation, we can always mention the merit principle, who saves more will have more in the retirement. Although this principle is not linear, the one who pays higher pension insurance then gets higher benefit. The same however does not apply to the current generation of retirees. Their pension calculations are fully dependent on the annual adjustment decided by the Government. Thus increase or decrease in their real income depends only on the government. Unfortunately, the Government of the Czech Republic in the amendment from April 2012 decided that the Czech retirees will get lower pension in the next three years. In our opinion the full price valorization of pensions should take place every year in order to secure the living standard of pensioners, while the possibility of the Government to change pensions by any other way should be restricted<sup>6</sup>.

## 2. CONCLUSION

Unfavorable demographic trends, decrease in natality and mortality, causing the aging of population, negatively affects the retirement system in lots of especially European countries as well as in the Czech Republic. This has devastating impact especially on the pension systems consisted mostly of the pay-as-you-go pillar where the growth in number of pensioners as well as the decrease in number of people in working age negatively affect the balance on the pension account.

The proposed reform of pension system in the Czech Republic will bring more responsibility for each individual for their financial situation in retirement. The importance of voluntary third pillar is rising so that it becomes an essential part of the system. Awaited key reform step - the introduction of a second funded pillar, on which citizens will be able to participate voluntarily and thereby agree to pay an additional 2% of their income, is scheduled from 2013. 3% respectively 5% opt-out is not radical in comparison with 25% transfer to the first pillar. As mentioned people will also be allowed to choose to fully stay in 1st pillar which remains unchanged. Therefore unchanged will be also the motivation of people staying fully in first pillar. Based on this is quite unlikely that pension reform will achieve a great success and even streamline or simplify the pension system. The inspiration for the first pillar of the reform can be found in Sweden in hypothetical personal accounts or in Germany in the pension points.

Pension insurance levy for medium and high income people are disproportionately high, absolutely (30% in second pillar + additional percent in the third pillar) and also relatively with comparison how much can these people expect from the state in the retirement. Replacement rate at retirement of 1,5 median is currently only 37,4%, which places Czech Republic on the bottom of scoreboard of OECD countries.

The reform also does not deal with the situation of current retirees, people who already receive pensions. Those who are mostly unable to work (extra years) then become victims of the costs saving

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<sup>6</sup> As stated in recommendations section in The Expert Advisory Forum's Final Report, 2010, page 12

in the first pillar, as mentioned in the case of valorization in next three years. Therefore replacement rate of current pensioners will get lower. Current retirees who have earned the most in their productive period will now suffer the most. The reform endeavour in the Czech Republic produces considerable concerns primarily to our pensioners, but not only them. Despite it is very important and beneficial that after many years of discussions the pension reform will finally happen.

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**STUDENT EMPLOYABILITY AND BRAIN DRAIN IN THE REPUBLIC OF MACEDONIA**

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**Abstract**

*Undoubted in its aspirations and future within the European Union, the Republic of Macedonia in 2003 has signed Bologna Declaration and clearly and without hesitation has undertaken a large number of higher education reforms in order to provide compatibility with other European education systems and to satisfy newly created demands on the labor market as well.*

*This year, Republic of Macedonia celebrates a decade since the Bologna Declaration. A decade of continuous reforms is a particularly long period, after which a review and detailed analysis of expectations and accomplishments is an anticipated step. In order to provide empirical data on results achieved after such complex and long-term reforms a comprehensive study of Macedonian higher education system was executed with the special focus on student employability as one of the most important Bologna goal. The study used official data from state institutions and included a separate research conducted on 981 students from public and private universities in the country.*

*The survey despite the relatively large number of positive results, unfortunately, revealed also some unfavorable trends such as rising percentage of unemployed people with higher education within the total number of unemployed and brain drain. In addition of this article are presented some potential brain drain-brain gain solutions for Macedonian universities.*

**Key words:** *Macedonian higher education institutions, Bologna Declaration, reforms, student employability, brain drain, practical experience, virtual enterprise.*

**1. INTRODUCTION**

In the last two decades, in Republic of Macedonia and in the world in general, great changes took place which undoubtedly entailed major challenges. After it gained independence in 1991, the Republic of Macedonia started a process of profound changes in the social order, which instigated a complete transformation of the entire manner matters functioned in so far. Borders got opened, trade liberalization took place, privatization of social capital began as well and market economy got introduced.

Along with the changes caused by political and economic transformation of the country after its independence, the great influence of world globalization processes induced border opening, greater people mobility, dynamics of changes, rapid development of technique and technology with special emphasis on IT technology. All these changes imposed the need for a complete structure redesign of Macedonian society.

Higher education was not immune to these occurrences. Social changes undoubtedly raised the need for its adjustment in order to secure a faster and more appropriate response to newly created

challenges in the environment. Universities faced with new and different demands, and acquired a new and far more emphasized role than ever before. Students were required to acquire new types of knowledge, think in a critical manner, develop entrepreneurial awareness and culture, and develop modern skills, flexibility, and ability to cope with future changes.

Universities were expected to offer solutions to present problems, anticipate future challenges, develop innovative solutions and behavior models that will secure a continuous social development in the proper direction.

Unfortunately, this was not a simple process. Although the Republic of Macedonia managed to resist the military conflicts that occurred in the nearby neighborhood and had a relatively peaceful independence process, it still failed to handle the transition well. As a consequence large number of organizations got closed, thousands of employees got laid off, and unemployment rate rocketed (record breaking in Europe), which reduced the state budget as the main source of funding for higher education.

All of this imposed the need for adopting a new mission and vision for the higher education, new strategic goals, designing a new organizational structure of universities, new curricula, new performance management methods or their new redesigned social role.

These changes were necessary in order for the higher education system of the Republic of Macedonia to take its role in the process of securing fundamental stability of the national economy, boost economic growth, strengthen public and private sector competitiveness, create an efficient legislative, and enforce high standards and values (Ministry of Education and Science, National Education Development Program, 2006, p. 17).

Internal transformation processes, as well as economic, political, cultural, ecological, and security challenges demanded for a closer international cooperation among countries in solving similar or joint problems, which undoubtedly pointed out the need to bring compatibility to education systems and to stimulate fast education globalization.

Undoubted in its aspirations and future within the European Union, the Republic of Macedonia clearly and without hesitation has undertaken a large number of higher education reforms which will enable such compatibility with other European education systems and satisfy newly created demands on the labor market as well.

### *1.1 Bologna Process in the Republic of Macedonia*

Several years prior to its official joining in the Bologna Process in 2003, the Republic of Macedonia undertook certain steps towards a faster adjustment of its education system to European systems, such as obliging universities to implement the ECTS and design their curricula in accordance to Bologna principles. Private initiative was enabled, thus many national or foreign private faculties and universities got established as well.

Respecting the national cultural values and characteristics of the existing higher education system, the implementation of Bologna goals aimed at increasing study efficiency, greater student and teaching staff mobility, greater education process quality, a more active student role in providing quality, and perhaps most importantly providing a better educational structure of the population and improving employability of graduates on national and European labor markets (Ministry of Education and Science, National Education Development Program, 2006, p. 265).

This year, the Republic of Macedonia celebrates almost a decade since the Bologna Declaration. Despite the fact that a great part of these reforms was complex, unpleasant and long-term, the country maintained its reform course, taking into consideration the benefits that are result from all actions undertaken.

A decade of continuous reforms is a particularly long period, after which a review and detailed analysis of plans and accomplishments is an anticipated step. Analyses of the Bologna process in the Republic of Macedonia have so far been made, but most often in the form of studies of precise and specific reform topics, such as the implementation of European Credit Transfer System (ECTS) (Pop-Ivanov and Velkovski, 2010), effects of dispersed studies (Popovski, 2010), academic and student mobility (Pop-Ivanov, Bozinovska, and Bozovik, 2010); or in the form of more complex analyses, which have been carried out long time ago, such as the analysis of good educational management capacity (Popovski et al, 2007) or the process of linking higher education with the labor market (Center for Research and Policy Making, 2009). What was missing was in fact a study of reform effects on higher education with the special focus on student employability as one of the most important Bologna goal.

## 2. RESEARCH METHODOLOGY

Motivated by the aforementioned situation, a decision was reached to execute a comprehensive study of higher education in the Republic of Macedonia, its current situation and results achieved after a decade of reforms. The study used official data from state institutions and included a separate research conducted on 981 students from public and private universities in the country. The research was conducted in the period of 26<sup>th</sup> March 2012 – 21<sup>st</sup> May 2012, with the help of a structured questionnaire. The Kwik Surveys free software was used to create, launch, and technically support this research. The experience of eminent experts relevant to this field of research, as well as several similar researches made by neighboring and other European countries were taken into consideration while creating this questionnaire. The group of 981 subjects (all of which are seniors or recently graduated students) encompasses 2.6% of the entire student population that falls into some of these categories, which is a fact that proves this research was made on a representative statistical sample.<sup>7</sup>

All criteria for proper and proportional representation of different gender students were met, along with the criteria for different educational profiles, private and public university students, students with different ways of financing their studies, and students with various GPA's, all of which confirms their actual percentage of these students within the Macedonian educational system.

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<sup>7</sup> According to data of the State Statistical Office of the Republic of Macedonia, the number of third or higher year students during the 2010/2011 study year equals 28 123, while the number of student graduates in 2010 equaled 9 944. This means that the research was executed successfully on a group of 981 out of 38 067 students and university graduates – all qualified for this research, which presents the percentage of 2.6%.

### 3. RESEARCH RESULTS

#### 3.1 Highly Educated Staff in the Republic of Macedonia

At present, highly educated employees make for 18.9% of the labor force in the Republic of Macedonia. It must be emphasized that this percentage is in a constant rise since 2003, and it is likely to remain unchanged in view of the actual trends in the education system, (Table 1.).

Table 1: Percentage of active highly educated persons in the total work force of the Republic of Macedonia in the period of 2008 – 2011 as opposed to year 2003

Year ⇒	2003	2008	2009	2010	2011/IV
Total workforce	860 976	919 424	928 775	938 294	937 326
% of active highly educated persons	10.8%	12.0%	14.3%	15.5%	18.9%

Source: Author's work using data from the State Statistical Office of the Republic of Macedonia published in *Statistical Annual of the Republic of Macedonia*, years 2011 and 2004 and in accordance to the Report on Labor Market Conditions in the fourth quarter of 2011, published on 23<sup>rd</sup> March, 2012

Compared to the neighboring and other more developed European countries, this percentage of highly educated staff is still relatively low. By comparison, nearly 33% of 30 – 34 year olds in the EU, 40% in the USA, and more than 50% in Japan own a university degree or an equivalent to it (EC Communications, 2010, p.12). This percentage in the Republic of Macedonia equals 17.1% (Table 2.).

Table 2: Percentage of 30 – 34 year olds who own a university degree or an equivalent to it in the EU and the Republic of Macedonia

Year ⇒	2006	2007	2008	2009	2010	2020 Goal
EU (27)	28.9%	30.0%	31.1%	32.3%	33.6%	40%
Macedonia	11.6%	12.2%	12.4%	14.3%	17.1%	40%

Source: In accordance to Eurostat data available on [http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=t2020\\_41](http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=t2020_41) (01.04.2012)

The continuous rise of the number of students is a positive trend which contributes to the improvement of this situation. There are nearly 65 000 students at present moment, followed by a rise in the number of higher education institutions (private and public) and number of academic staff (Table 3.).

Table 3: Overview of the number of faculties and higher vocational schools, students, and teachers in terms of academic years in the period of 2000 – 2011

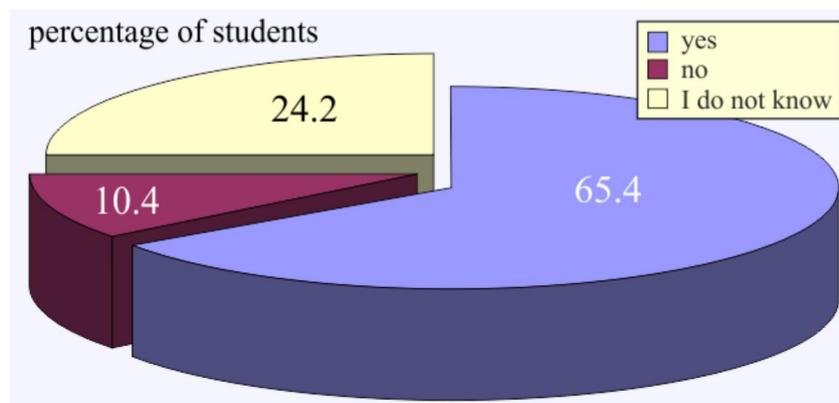
A academic year	Faculties and higher vocational schools (public and private)	Students (regular and part time)	Teachers (assistants not included)
2000/2001	31	40 246	1 495
2001/2002	30	44 710	1 561
2002/2003	30	45 624	1 519
2003/2004	30	46 637	1 568
2004/2005	39	49 364	1 674
2005/2006	40	48 368	1 670
2006/2007	46	57 011	1 671
2007/2008	81	64 254	2 028
2008/2009	99	63 437	2 182
2009/2010	107	57 894	2 057
2010/2011	116	63 250	2 276

Source: Author's work using data from the State Statistical Office of the Republic of Macedonia published in *Statistical Annual of the Republic of Macedonia for the year 2011* and in accordance to the *Report* no. 2.1.11.26 published on 4<sup>th</sup> November 2011 on enrollees in higher education institutions in the academic year of 2010/2011

Higher education used to be a privilege of few in the Republic of Macedonia, but nowadays it is available to everyone. Over the course of the last years a growing number of young people decided to enroll in university. According to data by the Ministry of Education and Science of the Republic of Macedonia, 96.5% of high school graduates became university enrollees in 2010 (as opposed to 85% in 2008, 64% in 2007, and 42% in 2006) (Ministry of Education and Science, 2008).

The research confirmed that majority of youth consider education as a ticket to better future. 65.4% of the students stated they plan to continue their studies in terms of M.Sc and Ph.D studies, while 24.2% said they still have not decided upon the question, and only 10.4% showed no intentions of continuing the studies (Chart 1).

Chart 1: Macedonian students who plan to continue their studies after graduation (in terms of M.Sc or Ph.D studies)



It would be too naïve to finish the analysis at this point and conclude that matters are moving in the right direction. Thus effort was made to identify the key reasons for this trend. Results pointed out that most probably the majority of young people enroll in the university to upgrade their education level, but a large number of them also use higher education studies as temporary refuge from the chronic unemployment problem. Thus, young people postpone employment and try to improve their employment chances in the future. One should not of course neglect the influence of the aggressive campaigning of the Macedonian Government for the benefits of higher education<sup>8</sup>, as well as the establishment of new public and private universities and faculties and a large number of dispersed studies in places which have so far not been university centers, all with the aim to bring education closer to young people.

A highly important detail kept occupying the interest of this analysis – the fact that the increasing number of university graduates within the total number of active population may result in a rise of the number of employed people (which is a welcomed option), but may also result in a rise of unemployed people (which is definitely not popular and least wanted trend in every society). This is the reason why a separate detailed analysis was conducted of each of these aspects.

The first step was to analyze the percentage of employed persons with higher education within the total number of employed in the Republic of Macedonia for the period of 2008 – 2011, compared to the situation in 2003, which is the year that the Republic of Macedonia joined Bologna process (Table 4.). As data points out, the number of employed persons with higher education is in a state of continual rise. Compared to 2003, numbers have almost doubled. The percentage of persons with higher education within the total employed population has also risen from 13.6% in 2003 to 21.1% in 2011, which is a positive trend of course.

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<sup>8</sup> *Knowledge is Strength, Knowledge is Power* is a present and ongoing example of a government campaign.

Table 4: Percentage of employed persons with higher education within the total number of employed in the Republic of Macedonia for the period of 2008 – 2011, compared to the situation in 2003

Year ⇒	2003	2008	2009	2010	2011/IV
Total number of employed persons	545 108	609 015	629 901	637 855	639 340
Employed persons with higher education	75 095	86 688	103 411	112 395	134 922
% of employed persons with higher education	13.8%	14.2%	16.4%	17.6%	21.1%

Source: Author's work using data the State Statistical Office published in *Statistical Annual of the Republic of Macedonia*, years 2011 and 2004 and in accordance to the Report on Labor Market Conditions in the fourth quarter of 2011, published on 23<sup>rd</sup> March, 2012

But, parallel to this trend, another trend emerges, one of a rising percentage of unemployed people with higher education within the total number of unemployed. The fact that the percentage of 7.8% in 2008 rose to 14.1% in the IV quarter of 2011 is especially worrisome (Table 5.). Just for comparison, in 2003 the percentage equaled barely 5.6%.

Table 5: Percentage of unemployed highly educated people within the total number of unemployed persons in the Republic of Macedonia in the period of 2008 – 2011

Year ⇒	2003	2008	2009	2010	2011/IV
Total number of unemployed persons	315 868	310 409	298 873	300 439	297 986
Unemployed highly educated persons	17 669	24 077	29 376	32 973	41 878
% of unemployed highly educated persons	5.6%	7.8%	9.8%	11.0%	14.1%

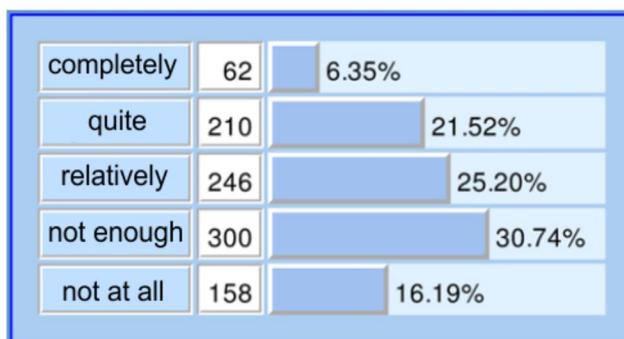
Source: Author's work using data from the State Statistical Office published in *Statistical Annual of the Republic of Macedonia*, years 2011 and 2004 and in accordance to the Report on Labor Market Conditions in the fourth quarter of 2011, published on 23<sup>rd</sup> March, 2012

More than half of the 41 878 unemployed persons i.e. 23 127 have a long-term unemployed status, which means they have been looking for employment longer than a year. This data is even more alarming. The longer these persons seek employment, the greater the risk of their unemployment due to knowledge and qualifications obsolescence and the fact they do not have the working experience that employers increasingly insist on. As time passes, these people age and it is even harder for them to compete with the new highly educated persons on the labor market.

In the end, there is a real risk that these people will not get the opportunity to ever enter the labor market or have to accept working positions they are overqualified for, thus annulling all the efforts they invested in their education (Center for Research and Policy Making, 2009, p. 25).

Student opinions correspond to the general labor market condition. Nearly 47% of them replied they were dissatisfied by post graduation employment opportunities, 25% said they are partially satisfied, and around 28% stated they were satisfied by employment opportunities (Table 6.).

Table 6: Degree of satisfaction by post graduation employment opportunities



According to students, the following are the most important reasons for insufficient employment opportunities: unfavorable labor market conditions (58.5%), lack of practical experience (23.5%), and improper knowledge and training acquired on the university (4%) (Table 7.).

Table 7: Most important reasons for insufficient employment opportunities of graduates



It is high time that relevant state institutions take serious steps towards investigating the reasons for this unfit situation. It is of crucial importance to determine whether this tendency comes as a result of the increasing number of (graduate) students in the state, replacing quality with quantity in education, the anemic labor market absorption power, or the mismatch of the quantity and profile of unemployed persons and/or their skills in relation to the actual needs of the labor market.

Failure to take fast, systematic and decisive measures to improve such unfavorable conditions of the Macedonian labor market and to solve the long-term unemployment of highly educated persons in the country, the Republic of Macedonia will face an even greater risk and unpredictable losses to the country and Macedonian families in particular. In fact, as research results already pointed out, majority of highly educated unemployed people will resort to postpone looking for job and enroll in

post graduate studies in hope to improve their chances of future employment.<sup>9</sup> But, provided that after the end of these studies (that span over a relatively short period of time, which is insufficient for any significant changes in work force demand on the market) the labor market situation does not change, these persons will face great disappointment, which after a certain period of time results in two (equally negative) alternatives: (1) underpaid posts without prospects, which these people are overqualified for (brain waste) or (2) emigration in search for a decent living (brain drain).

### *3.2 The Brain Drain Problem of the Republic of Macedonia*

Permanent and mass emigration of highly educated persons, known as brain drain is a highly negative occurrence i.e. loss of the most important and vital work force, which presents the backbone of future social and economic development and prosperity of each country. Highly educated work force migration is typical for all countries worldwide and receives a growing emphasis with the globalization process, but, it is its intensity and net effect that is of crucial importance.

Unfortunately, the current situation of the Republic of Macedonia on this plan is extremely tenuous. According to a World Economic Forum research presented in the Report on Global Competitiveness in 2010/2011 on the degree of brain drain throughout the world, Macedonia ranks 126 out of 139 countries worldwide (included in this research) which highlights its failure to retain the majority of highly educated and talented persons in the country (World Economic Forum, 2010, p. 451).

The most common highly educated person emigration reasons (relevant to Macedonia) fall into three groups (Eftimov, 2011, p.1):

- (1) Political and social reasons (political and safety risks, weak economic development, high unemployment rate, long-term transition process, everlasting status quo situation of the state in view of EU integration processes, insufficient or extremely small state budget portion dedicated to research and development, disregard to academic rights and freedom, political discrimination, lack of employment transparency, elitism in education);
- (2) Financial reasons (lower living standards, existential problems, relatively low salaries);
- (3) Occupational reasons (lack of modern equipment and literature, limited opportunities to attend symposiums and conferences, low scientific production, extremely slow improvements and dependence from mentors, insecurity of the work post, weak scientific information flow or scientific isolation, limited possibilities to work in own study field, insufficient alternatives for vocational education and specialization, unstimulating working conditions).

Based on a great number of empirical studies carried out in neighboring countries and the greater region, it may be concluded that the manner in which society treats science, the working conditions, and organization of scientific and research process, above the rest of economic reasons, present the greatest push factors or main emigration reasons despite intellectuals' great dissatisfaction from adverse financial conditions (salary and unfavorable existential conditions).

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<sup>9</sup> Even 65.5% of students stated they plan to further their education to M.Sc or Ph.D studies.

#### 4. POTENTIAL BRAIN DRAIN – BRAIN GAIN SOLUTIONS FOR MACEDONIAN UNIVERSITIES

It is no longer a dilemma whether knowledge and education are most important capital to invest in. On the other hand, accessibility and availability of a country's intelligence is the major resource that creates a nation's wealth. What alternatives does a country have in cases of unfavorable migration? Timely systematic measures must be taken, since they will result in improved future employment and working conditions for highly educated population, decrease the brain drain, and create favorable conditions for the return and swift integration into the society of emigrated highly educated persons.

Although, in comparison to neighboring countries, the Republic of Macedonia may be late in taking particular measures towards improving this adverse brain drain situation, 2011 marked the first step in this direction with the establishment of a national operative group comprised of eminent university professors, which will lead, guide, and control activities in the Stop Brain Drain 2013 – 2020 strategy, benchmark the best world Brain Drain – Brain Gain examples and coordinate maximum usage of brain circulation. Success and swift results are welcome and expected.

Fortunately, brain drain is a dynamic occurrence, which direction and intensity may significantly change by improving the social, economic, and political situation of the country. The brain drain trend may turn into brain circulation in Macedonia within a period of 5 – 7 years with the help of well planned measures of retaining human capital within the country and their proper execution.

What is missing is an extensive and continuous research of labor market needs and sharing of the results in order to adapt all educational policies.

In relation to micro level activities towards improvement of the brain drain situation, Macedonian universities may not have a substantial influence on labor market conditions, but they may significantly influence on student practical experience as second most important factor that determines their employability. They can enhance internship and training conditions and opportunities for their students by:

- making greater efforts in finding training and internship companies,
- creating a better organized practical teaching process,
- introducing the mentor and instructor mechanisms,
- requesting that students create their papers or graduation projects based on the knowledge and experience they have acquired while on internship in a certain company or institution, and
- awarding a certain number of ECTS credits for this purpose.

Students would in this manner have greater motivation and a more serious approach towards practical work; they would be able to link and test theoretical knowledge to the real world; and finally, they would acquire better practical experience and thus be more visible on the labor market.

As seen by afore presented research results, practical experience is an important factor that influences student employability. This is completely understandable if majority of employers look for academic achievements, personal characteristics, and practical experience in applicants. Having experience decreases organizational expenses for employee training and significantly shortens the process of introduction to the working post.

It must be emphasized that at some instances, despite the great efforts of university staff and management, limited market conditions obstruct the interest of Macedonian companies and institutions

in providing student internship. It seems that state institutions are not readily open for cooperation on this matter. In order to avoid such limiting factors, obtain quality internship opportunities, and enable students to acquire certain practical skills, some faculties resorted to innovative solutions.

Such practical and innovative solution applicable for most business and economic faculties, which are of greatest number in the Macedonian educational system, is virtual enterprise (computer simulation of the business matters of a real company or internship companies). This type of companies presents a quite efficient interactive study manner and mode of acquiring and enhancing business skills as preparation to working in real world companies. The virtual enterprise is a successful software program created to simulate activities that take place in real enterprises, such as accounting, financial management, marketing, sales and procurement, HR management, tax payment, etc. It is a successful educational method (in some countries even mandatory) for training business students and unemployed persons seeking employment. The program provides a real image of everyday business life and internal business processes, insight into foreign business relations and into all other business fields. The project encompasses 42 countries so far and serves as mandatory or additional mode of education for business students, and, lately, as training method of unemployed among the younger portion of the population (Eftimov, 2010, p.66).

The Student Stock Exchange project is a similar virtual solution that enables students to understand and learn the operations on real stock exchanges, gain experience, and use it in future real-life situations on the work post. The project is an educational internet application that uses fictional financial means made available to students to teach them how these systems work (<http://www.studentskaberza.com.mk/> 01.09.2010).

The students of Oxford University Faculty of Law created an interesting solution when they simulated a real trial process on the International Court of Justice in Hague on the name issue between the Republic of Macedonia and Greece, and a month before it actually happened, anticipated the exact court decision

The Faculty of Law at the State University in Tetovo started using a similar simulation of court trials for student training as well.

Students would in this manner have greater motivation and a more serious approach towards practical work; they would be able to link and test theoretical knowledge to the real world; and finally, they would acquire larger practical experience and thus be more visible on the labor market.

## 5. CONCLUSION

Research results conclude that Republic of Macedonia as a result of the complex reform process of the higher education system has achieved some relatively good results:

- Constant rise (almost double) of highly educated employees in the labor force in the Republic of Macedonia since 2003, which is the year when Macedonia joined Bologna process and this trend is likely to remain unchanged in view of the actual trends in the education system;
- The percentage of employed persons with higher education within the total number of employed in the Republic of Macedonia for the period of 2008 – 2011, compared to the situation in 2003, has almost doubled from 13.6% in 2003 to 21.1% in 2011, which is another positive trend of course.

- Positive trend of continuous rise of the percentage of high school graduates becoming university enrollees (42% in 2006, 64% in 2007, 85% in 2008 and 96.5% in 2010) followed by a rise in the number of higher education institutions (private and public) and number of academic staff;
- The research confirmed that 65.4% of the students plan to continue their studies in terms of M.Sc and Ph.D studies.

But, parallel to these trends, another trend emerges:

- Rising percentage of unemployed people with higher education within the total number of unemployed. The fact that the percentage of 5.6% in 2003, 7.8% in 2008 rose to 14.1% in the IV quarter of 2011 is especially worrisome;
- Even more alarming is the fact that more than half of the 41 878 unemployed persons with higher education i.e. 23 127 have a long-term unemployed status, which means they have been looking for employment longer than a year.

Failure to take fast, systematic and decisive measures to improve such unfavorable conditions of the Macedonian labor market and to solve the long-term unemployment of highly educated persons in the country, after a certain period of time will result in two (equally negative) alternatives: (1) with great disappointment these persons will take underpaid posts without prospects, which they are overqualified for (brain waste) or (2) emigration in search for a decent living (brain drain).

According to a World Economic Forum research presented in the Report on Global Competitiveness in 2010/2011 on the degree of brain drain throughout the world, Macedonia ranks 126 out of 139 countries worldwide (included in this research) which highlights its failure to retain the majority of highly educated and talented persons in the country

According to students, the following are the most important reasons for insufficient employment opportunities: unfavorable labor market conditions (58.5%) and lack of practical experience (23.5%).

Macedonian universities may not have a substantial influence on labor market conditions, but they may significantly influence on student practical experience as second most important factor that determines their employability. They can enhance internship and training opportunities for their students by making greater efforts in finding training and internship companies, creating a better organized practical teaching process, introducing the mentor and instructor mechanisms, and insisting that students create their papers or graduation projects based on the knowledge and experience they have acquired while on internship in a certain company or institution.

It must be emphasized that at some instances, despite the great efforts of university staff and management, limited market conditions obstruct the interest of Macedonian companies and institutions in providing student internship. In order to avoid such limiting factors, obtain quality internship opportunities, and enable students to acquire certain practical skills, some faculties should resort to more innovative virtual solutions. Such practical and innovative solution applicable for most business and economic faculties which are of greatest number in the Macedonian educational system, is virtual enterprise.

Universities should be able to prevent brain drain, at least a part of it. For that purpose they should ensure the development of their educational process, reinforce their competitiveness and rethink their investment in this sector. Special focus on development of specific practical skills will improve student employability, employers satisfaction, and ultimately will prevent loss of the most vital and

important work force, which presents the backbone of future social and economic development and prosperity of each country.

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**STRATEGIC FLEXIBILITY IN INTERNATIONAL INTERMEDIATE TRADE  
WITH HANSEATIC PRINCIPLES.**

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**Abstract**

*The purpose of the paper is to research, whether trading enterprises are able to adapt more flexibly to challenges in the sales- and procurement markets than manufacturing enterprises. The questions were asked: is intermediate trade on the basis of the principles of the Hanseatic merchants a possible business strategy in our present time? In the paper three hypotheses are developed and empirically tested. In order to check the factuality and sustainability of the hypotheses a questionnaire with multiple choice-answers were designed. Recipients of the questionnaire were owners, managers and executive board members of manufacturing enterprises. As a result, 87% of the participants believe, that intermediate trade strategy could be even more successful in our time than it was in the Hanseatic time.*

**Key words:** *strategic flexibility, international trade, Hanseatic principles.*

**INTRODUCTION**

While enterprises in the fields of production and services have been studied in the scientific literature extensively, very little attention has been paid to trading enterprises in these publications (Jones, 1998: p.1). In addition, the accomplishments of trading enterprises are often underestimated, not recognized or even rejected. The negative image of trading enterprises is rooted in the occidental Christian tradition which, in comparison to the production of goods, did not have a high regard of trade (Gümbel, 1985: pp.28). The fact that such a tradition could develop is actually surprising, since history has proven over and over that trading is the key to wealth. For example, when the city of Florence grew to one of the largest and most prosperous cities in Europe during the 14<sup>th</sup> and 15<sup>th</sup> centuries, the key figures in the economic rise were merchants and not manufacturers (Brucker, 1984: p. 68.) The merchants of the Hanseatic League are another example. They were the dominant economic power in Europe for more than half a millennium. This economic dominance came into being randomly, but was the result of numerous efficiency-enhancing personal character qualities and principles. Among other things, this meant that the merchants of the Hanseatic League limited themselves to intermediate trade and did not engage in their own manufacturing. While the medieval Hanseatic League with all its specific structures and cultural conditions cannot be brought back to life today, we can, nevertheless, pose the question as to whether the principles of the Hanseatic League could serve as the basis for a trading strategy nowadays.

## 1. MANUFACTURING AND TRADING ENTERPRISES

Enterprises can be categorized into manufacturing, trading, and service enterprises. In the following, only the first and second categories are relevant.

A classical manufacturing enterprise is a productive unit which produces goods by applying a combination of production factors (floor space, work force, capital). In order to manufacture products, a more or less capital-intensive production facility is needed. The setup requires financial resources in the form of equity and outside capital. This capital is then committed in the medium or long term and is therefore not available for other short-term investments in the enterprise. Besides the commitment of the capital, another reason for certain inflexibilities in typical manufacturing enterprises result from the fact that they need very specific production plants and machines for the manufacture of specific goods. These plants cannot be changed into more suitable alternatives later without a loss in value. This is commonly referred to as irreversibility (Henry, 1974: p.1006).

In contrast, an intermediate trading enterprise is a productive unit which is characterized by the intermediation of goods. Several characteristic forms exist, such as broker or reseller (Casson, 1998: p.24). A constituent feature of a trading enterprise is the fact that no goods are manufactured and, thus, there is no need for a capital-intensive production facility (Ellis, 2010: p.18). Hence, intermediate trading enterprises have two advantages: They do not need such a high capitalization and the capital does not have to be committed in the medium or long term as is the case with manufacturing enterprises. Furthermore, trading enterprises face no or almost no risk of possible losses of value by investments in specific production plants.

During macroeconomic crises, such as the one in 2009 or others in times of intensifying competition, repeated calls and recommendations for more flexibility in enterprises can be heard from various sides (Meffert, 1985: p.121). It is argued that flexibility will be the only means of mastering economic challenges successfully. However, there is usually no clear reference as to the meaning of this flexibility and no distinction is made between production enterprises and trading enterprises. Scholars define flexibility as the ability of an enterprise to respond to uncertain future changes in the market and production conditions in a fast and targeted manner (Nagel, 2003: p.10).

- If enterprises are *reactively* flexible, they only have the ability to adapt to changes in the environmental system.
- If enterprises are *actively* flexible, they have the ability to influence processes in the enterprise in times when disturbances in the environmental system occur in such a way that the objectives of the enterprise can still be achieved.
- If enterprises are *proactively* flexible, they have the ability – on the basis of an installed early warning system – to anticipate future disturbances in the environmental system and thus, the processes in the enterprise can be adapted in time. Simultaneously, they can participate in shaping the whole change process (Damisch, 2002: pp.43).

Acting and reacting in a flexible way requires that enterprises have a *scope for action* available. There is a need either for alternative actions to transform the organizational and process structure or for the possibility to optimize measures that have already been taken (Damisch, 2002: p.49).

In addition, enterprises need a *willingness to take action*. On the one hand, this means that the necessary personnel are provided and measures are initiated. On the other hand, the already existing measures can be supported continually. This requires, in particular, the ability to relinquish traditional patterns of behavior and to make decisions even in uncertain circumstances (Nagel, 2003: p.12).

Finally, flexibility goes hand in hand with a certain degree of *speed of action*. This is so because scopes of action can only be used successfully by enterprises. Moreover, they are only valuable if they are used at the right time. If a certain measure is implemented too late, it might not be possible any longer to fend off a developing danger or to fully avail of an emerging opportunity (Damisch, 2003: p.49).

In this context, the term *strategic flexibility* is often used. For example, Jacob (1989: p.18) defines *strategic flexibility* as the ability of an enterprise to adapt to changed framework conditions by changes in the production program and product range. This will enable the enterprise to still make use of those market opportunities that remain from the original ones, while at the same time being able to fully exploit the new opportunities emerging from the changed framework conditions. However, strategic flexibility does not have an end in itself (Burmam, 2002: p.58). It must serve the long-term increase in the enterprise value as an overall objective (Amram/Kulatilaka, 1999: p.95).

A detailed examination of the increasing demand for flexibility in enterprises reveals changes in the entrepreneurial environment that are the cause of this demand. In the past, such changes could still be predicted with some degree of certainty. Thus, enough time remained for both the amortization of the capital that had been committed and for the decision makers to redirect the focus of their enterprise. However, the changes in times of globalization are characterized by fast and almost unpredictable, stochastic and sometimes erratic changes. These changes can be categorized into challenges with regard to the (sales) market and challenges with regard to the procurement market.

- Concerning the challenges in the area of the *sales market*, we can mention the liberalization of markets, increasing market transparency, hyper competition in the market places, and shorter life cycles of products (Damisch, 2002: p.66).
- Concerning the challenges in the area of the *procurement market*, we can mention the high volatility in the raw material and upstream market, problems concerning the acquisition of financial resources, and problems in the implementation of foreign investments (No author, 2005a and No author 2005b).

These changes in the environment of an enterprise meet with a situation within the enterprise that is characterized by a certain degree of inflexibility or irreversibility. Once a manufacturing enterprise has decided on its entrepreneurial objectives and has acquired the necessary production facilities, the enterprise has made its commitment for a certain time period. If the enterprise wants to avoid a situation where the acquisition of the production facilities has to be written off as a failed investment, it will have to maintain the production process for a certain time period, and thus, it will be restricted in its flexibility. The scope of flexibility depends on the level of the investment sum in relation to the total capital of the enterprise. If the enterprise has invested a large sum, it will only be able to influence the variable costs by adjusting the production volume. Selling the production equipment is usually only possible by accepting a reduced price, which can lead to substantial losses for the enterprise, since the invested sum was high in relation to the total capital. If the enterprise invested a small sum in relation to the total capital, the scope for flexibility would remain higher since the losses incurred through the sale of the production equipment will not have such a strong effect. However, the danger in this case is the following: if the investment was too moderate to begin with, due to a better cost structure the enterprise might be squeezed out of the market by competitors. A rather unique problem could occur, if the acquired resources are of a very specific type and therefore cannot be used by anyone outside the enterprise, they would thus have to be considered as sunk costs (Damisch, 2002: pp.69). The case of sunk costs is the most restrictive one to the scope of flexibility and, from a perspective of flexibility, enterprises should avoid it.

The changes in the economic environment pose enormous challenges for enterprises – on the one hand, their profits are squeezed by rising costs on the procurement market and, on the other hand, by falling prices due to the competition in the sales market. If in addition discontinuities occur, as happened in the crisis year 2009 when demands suddenly collapsed, many enterprises face tremendous difficulties to adapt to the new conditions in their environment quickly. Therefore, it is not surprising that many enterprises had to digest heavy losses in this crisis year. Empirical studies show, however, that not all enterprises were equally affected. As an example, the Daimler AG in Germany – a classical manufacturing enterprise – had to digest losses of € 2.6 billion. (No author, 2010a). On the other hand, trading enterprises such as ALDI could maintain their profit level in 2009 (No author, 2010b). It is important to understand why trading enterprises could keep their profits stable in 2009, while production enterprises had to deal with heavy losses. One suggestion would be that trading enterprises can adapt to the challenges with more flexibility with regard to the procurement and sales markets. It is precisely this question this empirical study deals with. In addition, the question is raised as to whether intermediate trade – in the same way the Hanseatic merchants did very successfully in medieval times over a period of more than 500 years – could be a strategy that would allow a more flexible response to market opportunities. Enterprises could do without the extensive and capital-intensive manufacturing plants and be more flexible in responding to market developments. Thus, the purpose of this paper is twofold. On the one hand, the research focus is to examine whether trading enterprises can adapt to challenges with more flexibility. On the other hand, it will be examined whether intermediate trade could serve as a strategy to response to market opportunities.

## 2. HYPOTHESES

Today, entrepreneurial trading is not performed on the premise of security regarding the impending changes in the environment but on the basis of uncertain framework conditions (Trigeorgis, 1999: p.3). Enterprises have to deal with the challenges imposed on them by the procurement and sales market. A typical manufacturing enterprise, however, needs a production facility in order to produce goods. Once the decision for the purchase of these production facilities has been made, it cannot be cancelled easily without causing additional costs. Such a decision is irreversible. Due to their business model, trading enterprises have the advantage that they do not need extensive production facilities

Hypothesis 1:

Trading enterprises can deal more flexibly than manufacturing enterprises with the challenges regarding the procurement and sales market.

Typical manufacturing enterprises hold extensive production facilities in order to manufacture. These production facilities are financed with equity and borrowed capital. This capital is then committed in the medium or long term and is therefore not available for short term alternatives, e.g. its use for market opportunities. This results in a certain degree of inflexibility. Intermediate trading enterprises can avoid such inflexibility since they do not need an extensive production facility and thus their capital is not committed in the medium or long term.

Hypothesis 2:

Intermediate trade with goods is a strategy that allows a flexible response to market opportunities.

The concept of intermediate trade was practiced with great success by the merchants of the Hanseatic League during the Middle Ages for more than 500 years. In the case of the Hanseatic merchants, the following attributes were considered essential: a distinct business sense, market orientation, organizational talent, entrepreneurship, entrepreneurial courage, ability to cooperate, reliability and fairness in doing business, common sense regarding the economy and technology, distinct acumen for profitable businesses, a desire to investigate and conquer new markets, observance of a strict code of honor and a high sense of responsibility (Rieger, 2007: p.410).

Hypothesis 3:

International intermediate trade based on Hanseatic principles is a flexible and promising strategy for our present time.

### **3. METHODOLOGY OF THE RESEARCH**

#### *3.1 Sample selection and data collection*

In order to check the factuality and sustainability of the above hypotheses, an online questionnaire with multiple-choice answers was designed. The answers were intended to reflect the accurate and applicable facts and circumstances. Recipients of the questionnaire were owners, managers and executive board members of manufacturing enterprises. In the summer of 2010 the questionnaires were sent out to 778 enterprises, of which 669 were answered. To ensure that only owners, managers and executive board members of manufacturing companies participated in the survey, two exclusion questions were used in the questionnaire.

The first question dealt with the type of enterprise the respondent was managing. The following three categories were available: manufacturing enterprise, trading enterprise and service enterprise. Among the 669 answered questionnaires 132 came from respondents who either worked for a manufacturing enterprise or in their own manufacturing enterprise. The remaining 537 participants were excluded from the survey, because they are no addressee of the questionnaire.

The second question concerned the position of the respondent in the enterprise. The following options were available: owner, manager, executive board member or "others". Among the 132 participants, 17 were owners, 21 were managers and 17 were board members; 75 held a different position in their enterprise. In the following stage of the survey only the 17 owners, 21 managers and 17 board members were permitted to participate. The remaining participants were excluded from the survey, because they are no addressee of the questionnaire. A total of 55 participants remained in the survey, all of whom completed the questionnaire.

#### *3.2 Results of the questionnaire*

Since the first two questions had the function to exclude those participants the survey was not aiming at, the analysis starts with the third question in the survey. This was intended to provide information about the current business situation and the profit situation of the enterprise. 22% answered that the business situation was excellent, the production facilities were working at full capacity and the profit situation was excellent, too. 51% responded that the business situation was good, the production facilities were working to capacity, but the profit situation needed improvement. 18% valued the business situation as satisfactory and the production facilities as sufficiently used, and thus maintained they could make ends meet. 9% of the respondents stated that the business situation was unsatisfactory

and the production facilities were not sufficiently used. They declared to find it impossible to talk about profits.

Question 3

**How would you assess your current business situation?**

Total number of participants: 55

			Answer
12	22%	A	Excellent, our production facilities are working to capacity, the profit situation is excellent.
28	51%	B	Good, our production facilities are well used, the profit situation has room for improvement.
10	18%	C	Satisfactory, our production facilities are generally working to capacity, so we can make ends meet.
5	9%	D	Unsatisfactory, our production facilities are not used enough and there is no way to talk about profits.

Question number 4 intended to clarify the financing of the production facility in the enterprise. It was of particular interest whether the investment for the production facility had already been completed or whether the enterprise had to take out a loan to finance of the production facility – and whether the loan was still in the process of being paid off. 45% of the enterprises stated that the production facility had been paid for completely and thus a possible economic downturn could be dealt with. Another 45% made investments partly with their own equity and partly with borrowed capital. In the case of an economic downturn, these enterprises would need to cut costs. Finally, 10% stated that investments in production facilities were financed through cash flow and with borrowed capital. The latter enterprises did not know whether the investment costs would be at least amortized or whether they would turn out profitable at all.

Question 4

**Your enterprise is a manufacturing enterprise. Which of the following descriptions is applicable to you?**

Total number of participants: 55

			Answer
25	45%	A	Our enterprise has extensive production facilities, but this is no problem since the facility has been paid for completely and is therefore no financial burden. An economic downturn cannot cause any problems for our enterprise as we have sufficient reserves to survive economically tough times.
25	45%	B	Our enterprise owns an extensive production facility. It has expanded over the years. It has been financed partly by equity- and partly by borrowed capital. In the case of an economic downturn we have to act fairly quickly in order to reduce our costs, e.g. through introducing short-time work etc., in order to help the enterprise to make ends meet.
5	9%	C	Our enterprise owns extensive production facilities. Our sales markets constantly demand new products; therefore, it is difficult for us to adapt our production facilities. This requires high

			investments. In addition, we invest a high percentage of our cash flow, and besides that, we depend on borrowed capital. We do not know whether our investments will ever be amortised or whether we will be able to generate profits. But we do not have any other choice if we want to survive in the market place.
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Question 5 aimed at clarifying whether the enterprises surveyed were affected by sales market-related challenges totally or to some extent, e.g. shorter product life cycles, strong competition in the sales markets, increasing market transparency and liberalization of markets. 76% of the respondents stated that they were affected in a negative way by the above factors. 24% did not see any effects on their business operations through these factors.

Question 5

**Are shorter product life cycles, strong competition in the sales markets, increasing market transparency and liberalisation of markets challenges by which your enterprise is totally or partially affected in the sales market?**

Total number of participants: 55

			Answer
42	76%	A	Yes
13	24%	B	No

Question 6 clarifies whether the enterprise is affected by challenges in the procurement market totally or partially – e.g. high volatility in the raw material and procurement markets, problems with borrowing capital and problems with implementing foreign investments. 67% of the participants stated that they were faced with these problems. For the remaining 33%, these problems did not exist.

Question 6

**On the other hand, are high volatility in the raw material- and procurement market, borrowing foreign capital and problems in the implementation of foreign investments challenges that your enterprise faced in the procurement market? Is your enterprise totally or partially affected by this?**

Total number of participants: 55

			Answer
42	67%	A	Yes
13	33%	B	No

Question 7 first cites one example for each – a manufacturing and a trading enterprise – and then compares the two: While the Daimler AG had to digest a loss of € 2.6 billion in 2009, the trading enterprise ALDI maintained its profit in 2009 at the same level as in the previous year. Now the respondents were asked whether they believed that trading enterprises could adapt more easily to challenges in the sales and procurement markets – challenges such as those in 2009. 85% of the respondents answered that they believed this was the case, whereas 15% did not believe it.

Question 7

**Many manufacturing enterprises had to digest high losses during the past year. For example, the Daimler AG had to digest € 2.6 billion losses in 2009. On the other hand, trading enterprises, e.g. ALDI, could maintain their profit level in 2009. Do you believe that trading enterprises can adapt more easily to challenges related to the sales- and procurement market – challenges such as those in 2009?**

Total number of participants: 55

			Answer
47	85%	A	Yes
8	15%	B	No

Question 8 dealt with the medium and long term commitment of capital for production facilities in manufacturing enterprises. The managers of enterprises were asked whether they would prefer, in the interest of their enterprise strategy, that this capital is committed for a shorter time period and thus allow them more flexibility. 76% of the enterprise managers would prefer more flexibility and answered the question with “Yes”, while 24% answered the question with “No”.

Question 8:

**Your enterprise owns an extensive production facility. This production facility was financed by equity- and borrowed capital. This capital is now committed in the medium or long term and is not available for alternative use in the short term, e.g. to make use of opportunities in the market. This type of commitment is the cause for certain inflexibilities in manufacturing enterprises. Would you argue, in the interest of the strategic orientation of your enterprise, for a shorter commitment of this capital, which would thus allow you a more flexible response to market developments?**

Total number of participants: 55

			Answer
42	76%	A	Yes
13	24%	B	No

Question 9 asked whether the representatives of the enterprise had already reflected on the setup that would be necessary for their enterprise so that the afore-mentioned inflexibilities of manufacturing enterprises could be avoided. Of the respondents 80% answered with “Yes” and 20% with “No”.

Question 9

**Have you reflected on the setup that would be necessary for your enterprise in order to avoid the afore-mentioned inflexibilities in manufacturing enterprises?**

Total number of participants: 54

			Answer
43	80%	A	Yes
11	20%	B	No

Question 10 aimed at finding out whether the respondents could imagine that intermediate trading with goods instead of manufacturing goods could be the way to avoid these afore-mentioned inflexibilities 80% of the respondents said “Yes” and 20% “No”.

Question 10

**Could you imagine that one could avoid this inflexibility with the intermediate trade of goods instead of the manufacture of goods as the enterprise would not need extensive production facilities, and the capital would not be committed in the medium or long term, thus allowing the enterprise to respond very flexibly to market developments?**

Total number of participants: 55

			Answer
44	80%	A	Yes
11	20%	B	No

Question 11 intended to clarify whether the participants could imagine that the concept of intermediate trade used very successfully by the Hanseatic merchants in the Middle Ages for more than 500 years could be useful for enterprises nowadays. 76% could imagine so and 24% could not.

Question 11

**The concept of intermediate trade was practiced by the merchants of the Hanseatic League in the Middle Ages very successfully for more than 500 years. For the Hanseatic merchants certain attributes such as a distinct business sense, market orientation, organisational talent, entrepreneurial spirit and entrepreneurship, ability to cooperate, reliability and fairness in doing business, economic and technical common sense, keen acumen for profitable business opportunities, a desire to explore and conquer new markets, adhering to a strict code of honour and a high sense of responsibility played an important role. Can you imagine that the concept of intermediate trade, used by the merchants of the Hanseatic League, could serve as a model for a successful business strategy for you and your enterprise in the present time?**

Total number of participants: 55

			Answer
42	76%	A	Yes
13	24%	B	No

Question 12 asked the enterprise managers whether they could imagine that the above described intermediate trading strategy of the Hanseatic merchants could be even more promising in our present time than in the Hanseatic times, since now search costs are much lower than in the past. 87% answered this question with “Yes” and 13% “No”.

Question 12

**Could you imagine that the above described intermediate trading strategy of the Hanseatic merchants could be even more successful in our present time than it was in the Hanseatic**

**time since search costs are much lower due to modern communication methods, big production- and price differences exist between various countries and fast and efficient transport means are available with fewer trade barriers?**

Total number of participants: 55

			Answer
48	87%	A	Yes
7	13%	B	No

### 3.3 Analysis

The first hypothesis was tested with questions 5, 6, 7 and 8. It turns out that the formulated challenges concerning the procurement and the sales market apply to 76% (question 5) and to 67% (question 6) of the enterprises. Of those who were asked, 85% even stated that trading enterprises could more easily adapt to the challenges than manufacturing enterprises (question 7). Thus, the content of hypothesis 1 that trading enterprises can adapt more flexibly to challenges with regards to the procurement and sales market than manufacturing enterprises is confirmed.

The necessary capital for the acquisition of the production facilities is committed in the medium or long term and is therefore not available for short term alternative use in the enterprise, which leads to a certain inflexibility in manufacturing enterprises. When asked whether they would – in the strategic interest of the enterprise – plead for a shorter commitment of the capital and thus allow for more flexibility in responding to market developments, 76% answered “Yes” (question 8). Among the participants already 80% reflected on the necessary setup of their enterprise, in order to avoid the inflexibility described in manufacturing enterprises.

Question 9 was applied to test hypothesis 2. Of the managers of manufacturing enterprises, 80% can imagine that intermediate trade with goods instead of the manufacture of goods could be the way to avoid exactly the inflexibility described in manufacturing enterprises. In this case, the enterprise would no longer need an extensive production facility and would not need to commit its capital in the medium or long term. Therefore, it would be able to respond very flexibly to market developments. This confirms hypothesis, namely the assumption that intermediate trade with goods is a strategy that allows a flexible response to market opportunities.

Question 11 aimed at testing hypothesis 3. 76% of the enterprise managers can imagine the concept of intermediate trade, as was practiced very successfully by the Hanseatic merchants, to serve as a model for a successful business strategy in the present time. Of the survey participants, 87% believe that an intermediate trade strategy can be even more successful in our time than it was among the Hanseatic merchants, since search costs are much lower now. Thus, hypothesis 3 could also be confirmed, namely the point that international and intermediate trading on the basis of the Hanseatic principles is a promising strategy for the present.

### 3.4 Discussion

The purpose of the survey was to research examine, whether trading enterprises are able to adapt more flexibly to challenges in the sales and procurement markets than manufacturing enterprises. Furthermore, the following question was asked: Is intermediate trade on the basis of the principles of the Hanseatic merchants a possible business strategy for our present time – a strategy that allows a flexible response to opportunities in the market?

Of the survey participants, 76% and 67% are affected by the challenges in the procurement and sales markets respectively and 85% are of the opinion that trading enterprises can adapt more easily to these challenges than manufacturing enterprises. With regard to the strategic focus of their enterprise, 76% of the survey participants would prefer that the capital currently committed to the production facilities was not committed for such a long time, since this would allow the enterprise to respond more flexibly to market opportunities. 80% already thought about the necessary setup of their enterprise that would allow them to avoid the inflexibility which results from the commitment of invested capital into production facilities. 80% can imagine that intermediate trade with goods could be a strategy to avoid this inflexibility and enable them to respond flexibly to market opportunities. Among the participants questioned, 76% can imagine that the concept of intermediate trade can serve as a model for a successful business strategy for enterprises in our present time. Furthermore, 87% of the participants believe that the intermediate trade strategy could be even more successful in our time than it was in the Hanseatic time.

The results of the survey confirm the correctness of all three hypotheses. This is definitely a remarkable result, since the survey was conducted on owners, managers and board members of manufacturing enterprises. One would expect managers of manufacturing enterprises to contemplate future strategies within their own economic scope of activities, namely that of manufacturing enterprises. This is even more so, since literature assumes that the manufacturer is superior to the trader and that the trader has to worry constantly that his or her service might not be needed anymore and thus will arrive in a “trader’s dilemma”. Consequently, trading should actually not be attractive any longer (Ellis, 2005: p.376). However, the results of the survey reveal a totally contrasting picture. Among the participants surveyed, 76% anticipate becoming traders and apparently do not have any concerns that they might end up in the “trader’s dilemma”. They consider the advantages resulting from this as significantly outweighing any disadvantages. In particular, the avoidance of the inflexibilities described in manufacturing enterprises and the possibility to respond flexibly to market opportunities appears to be an important argument for the surveyed participants in favor of a trading strategy.

The results of the survey confirm the assumption that trading enterprises can adapt to challenges in the sales and procurement markets more flexibly than manufacturing enterprises. The survey has also demonstrated that intermediate trade can be a strategy that permits a flexible response to market opportunities. Thus, intermediate trade is a flexible and promising strategy for our present time. Among the survey participants, even 78% believe that an intermediate trading strategy can be more successful in our present time than it was during the time of the Hanseatic League. This appears quite realistic since search costs are much lower today than they were during the time of the Hanseatic League, due to modern communication methods. In addition, big production and price differences exist between various countries, and transport means are faster and more efficient with considerably lower trading barriers now than in the time of the Hanseatic League. These arguments make intermediate trade look very attractive. However, to make an intermediate trade strategy successful, more research is needed. In particular, the practical application has to be researched, as well as the products and markets suitable for intermediate trade. Research is also needed on how the individual intermediate trade enterprise should be structured and organized, and on the skills and qualifications that should be available.

#### 4. SUMMARY

For more than half of a millennium the Hanseatic merchants were the dominating economic force in Europe. This economic dominance was no coincidence, but rather the result of numerous efficiency-enhancing personal characteristics and principles. Moreover, the exclusive focus on intermediate trade was an important component of the success. This survey has shown that international intermediate trade on the basis of the Hanseatic principles is a promising business strategy for our present time. Especially, the possibility to respond flexibly to market opportunities is a strong argument for this type of business strategy.

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**HUMAN CAPITAL AS THE SOURCE OF COMPETITIVENESS  
OF FOOD INDUSTRY ENTERPRISES**

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**Abstract**

*Human capital is regarded as an essential factor in economic growth and competitiveness of economies. The positive relationship between human capital and improving the competitiveness occurs particularly in the center. In this study, therefore, attention has been paid to the importance of human capital in shaping the competitiveness of the food industry in Poland. The analysis shows that companies with foreign capital more efficiently, compared to companies with Polish capital use of employees and are more competitive. The overall improvement in the efficiency of human capital in the last decade shows the steady growth rate of labor productivity in the food industry enterprises.*

**Key words:** *human capital, competitiveness, food industry*

**1. INTRODUCTION**

Competitiveness of enterprises is tightly linked to the change of the paradigm of economy based on production into the paradigm of knowledge-based economy. Powell and Snellman (2004, p.201) says that the position of material resources (particularly raw materials) is substituted by knowledge. The knowledge does not possess material nature, but it applies to the people and their creativity and entrepreneurship based on innovation. As a consequence of the above, the role of innovation and innovativeness as the base for building competitiveness of enterprises is increasing. This is confirmed by the studies by Barsh J. et al. (2008, pp.37-46) indicating that the highest-level managers believe that in the nearest future innovation will be one of the major growth factors for enterprises.

Schumpeter (1960, p.104) introduced the notion of innovation to the economic sciences for good. That author formulated five definitions for understanding innovation as new combinations of different natural components and productive power of man, that is development of a new product or floating to the market products possessing new characteristics, introduction of a new production method, opening of a new sales market, obtaining a new source of raw materials, implementation of new organization of some industry, e.g. establishment of a monopoly or liquidation of it.

Contemporary definitions of innovation, however, assign more importance to information and knowledge in innovative activities. For example, in the Polish Government document “*Direction of increasing innovativeness of the economy during the years 2007-2013*” (2006, p.6), innovation is defined as the ability and motivation of entrepreneurs for continuous search for and use in practice of the results of scientific research and research and development works, new concepts, ideas and inventions. In the strategy "Europe 2020" the first of three key priorities is "smart growth" that is, basing economic development on knowledge and innovation. As a consequence, human capital play the key role in the innovative activities of enterprises.

The concept of human capital was introduced by William Petty (1690) in the fifteenth century. A particularly intense period of research on human capital was recorded in the 60 twentieth century, through the work of Mincer (1958, pp.281-302), Schultz (1961, pp.1-17) and Becker (1964). Modern theories of economic growth also treat human capital as an important determinant of economic development and competitiveness. Human capital is associated with level of education or more broadly to a set of qualifications, acquired in the course of work. According to the OECD definition of human capital, it is the knowledge, skills, competencies and attributes embodied in a person to facilitate the creation of individual, social and economic welfare (Keeley, 2007, p.29). Wider recognition of human capital presents Ziółkowski (2006, pp.17-18), according to which the general assets of the entity to enable improvement or maintenance of its position in different systems, not only economic but also social, cultural or political. These assets enable different interests, values and goals. Sopińska (2010, p 84) indicates that a common feature of intellectual capital, irrespective of the accepted criteria for classification and aggregation, is the creation of knowledge by both individual employees and by teams of people. The author is referring to the complementary relationship between knowledge and human capital. Knowledge resources, creating intellectual capital, are both input and outcome of the process of creating knowledge in the enterprise.

## **2. KNOWLEDGE IN BUILDING INNOVATIVENESS AND COMPETITIVENESS OF ENTERPRISES**

The new theory of growth forms the theoretical concept of the innovative system. Romer (2000, pp.149-169) says that endogenous technical progress is the basic factor influencing economic growth according to it. In endogenous theories the employees are treated as the element capable of influencing and creating changes in the production process. As a consequence, human capital and knowledge as well as the employees' learning process are assigned an immense role in the productivity increase (Gawlikowska-Heuckel, 2002, p.63). On the other hand, it is said that endogenous progress is the result of the investments made by enterprises in research and development, i.e. the investments tightly linked to the level of education and knowledge of the employees. It is worth noticing the fact that the issue of knowledge in the enterprise is in most cases situated in two areas: innovation and personal policy. In the area of personal policy the issue of knowledge, however, cannot be treated only as a narrowly understood education of employees, i.e. as mainly adjustment of their qualifications to new technologies. The contemporary problem of knowledge as the factor determining innovation and competition is seen in a wider and more comprehensive way (Tuziak, Tuziak, 2004, pp.513-527). Niedzielski and Rychlik (2006, p.51) say that according to the model of spiral innovation process (fig. 1) both competitive advantage and innovativeness are the results of enterprise activities (its development).

In that context it is worth noticing, as indicated by Pytel and Strzelecka (2008, p.509), that knowledge is considered as the intellectual capital that should form the base for organizational values. Then, managing knowledge is a process encompassing also cultural values, which are linked to knowledge sharing and values of the enterprises. According to Selvarajan et.al. (2007, pp.1456-1470) the best human resources management practices should be focused on growth of employees' empowerment because then they can be the stimulus for business innovation increase. It seems particularly important in the new, open model of innovation, which is based first of all on exchange of knowledge, both internal and external.

Assuming knowledge for the determining factor of innovation and competitiveness of enterprises Poczowski (2007) draws attention to the fact that employees should also be the "employees of

knowledge". In the innovative activity determining gaining competitive advantage by the enterprise, employees of that type play the most important role. Davenport (2007) says that those are the people representing high level of specialist knowledge, education and experience. Additionally the major goals of their work include creation, proliferation and practical utilization of knowledge. Abstractive thinking and low level of routine also characterize them. They possess the internal need for updating the knowledge, they report the need for autonomy, trust, evaluation of work, the need to understand the context, the need of learning through experience, they are aware of the necessity of exchanging their thoughts with experts. Employees of knowledge, however, in most cases are people in short supply in the labor market. Skrzypek (2009, p.145) also adds that in case of employing an average employee an important role is played by the enterprise organizational culture. He points out that if the enterprise has highly elaborate organizational culture, it allows the employee increasing competences in the field of creativity and entrepreneurship. By the same, it contributes to improvement of the situation in the enterprise as frequently the level of advancement of the skills in creativity and strengthening the entrepreneurial attitudes determine the success of the organization.

Developing creativity influences creative thinking and acting, which translates usually into competitiveness and innovation. It is even said straight forward about innovation focused organization culture (*Spoleczne...*2007). In such an enterprise the employees are generally characterized by critical attitude to limiting formal rules and they do not support rigidly determined frameworks of operation. This means they show characteristics of knowledge employees. That critical attitude to formalization creates bases for creativity of employees representing an important component in winning the competitive position. Creative thinking is not limited to the analysis of market needs and adjustment of own products/services to them. It is understood as creating the needs and formulating trends. Innovative organization culture favors such forms of creativity among employees that also express in the forms of promotion of enterprise image, new operational patterns, creating original solutions of problems hindering work or active search for and obtaining of possibilities of financing the innovations from various sources.

In enterprises there are many methods for proliferation of knowledge among the employees. In case of the methods for creating knowledge we can talk about the so-called knowledge, both obscure and evident, transfer. That first knowledge is aggregated in individual individuals in the form of education, qualifications – which can be generally referred to as competences. Karwowski (2004, pp.6-8) says that its transfer is not simple and that knowledge should be managed carefully so that it does not “fall into the unauthorized hands”. It is difficult to capture and copy by others. The evident knowledge consists of databases, strategies, procedures, reports and instructions that can be easily copied by others. This type of knowledge is maintained, easily transferred to other units, common and its transport is simple.

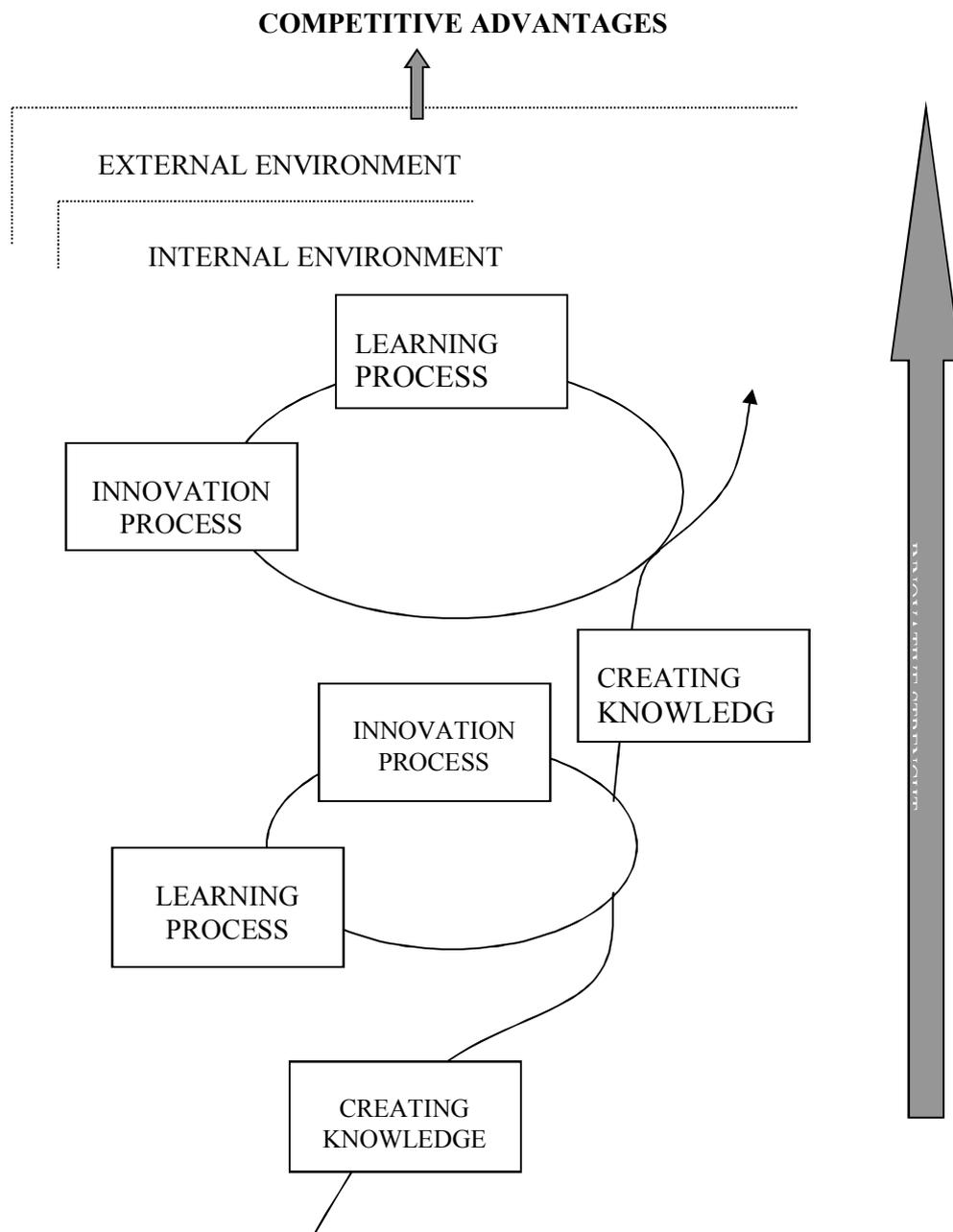


Fig. 1. Spiral model of innovation process

Source: Pytel M., Strzelecka A. 2008. Knowledge management in the aspect of creation of work potential of an enterprise of the 21st century, [w:] Management 2008 in Times of Global Change and Uncertainty, University of Presov, Presov Slovakia, p. 509.

Numerous studies have been conducted on methods of creating and expanding knowledge. Zwolińska-Ligaj (2005, pp.672-685) confirmed that in the group of entrepreneurs covered slightly more than a half tried to improve their qualifications in enterprise management on current bases. The forms they applied in upgrading their skills were highly diversified. Nevertheless a group has formed of such forms that were used the most frequently – it included studying of professional literature, participation in industry trainings or courses on changes in legal regulations. It can be noticed that the first of the methods for obtaining knowledge depends to a significant extent on the individual characteristics of a given individual while the others can result to a wider extent from the decisions of the third parties, e.g. managers. Unfortunately among the organizations covered only fewer than 10% of the entrepreneurs saw the necessity for organizing training for lower and higher level employees. The results of other studies conducted among Polish entrepreneurs confirm that training courses represent the most frequently applied form of knowledge building. They can assume different forms. One of them is providing training within the company and by the people employed in it. External training courses (frequently commercial), as a consequence requiring allocation of larger funds, represent another form. In the innovative activities, as indicated by the studies by Koszarek et al. (2008 pp.40) those were external training programs during which more experienced persons conveying knowledge to new employees training them in performance of functions transferred to them. This for sure is a more economic form of conducting training.

Enterprises less frequently invested in external training of commercial character. Using paid training always involves high costs (representing a particularly large burden for micro enterprises) and most frequently entrepreneurs opted for incurring such expenditures only when acquiring certain skills was required by the situation – legal regulations or implementation of a new technology. Some of the enterprises indicated participation in free off charge training programs organized by manufacturers of equipment and materials interested in pushing their products. The respondents pointed at the limited offer of commercial training programs and of those subsidized from public funds. They are often of low specialization character (e.g. foreign language education, computer operation). Another weakness of training courses is that those providing specialist knowledge are organized by few entities in Poland – participation in them would require additional costs in the form of expenditures for transport and would limit the scale of enterprise operations because of the employees who participating in training would have to be absent from work temporarily.

It is worth adding that with the development of ITC technology utilization e-learning is becoming an increasingly popular method applied for training courses. According to the estimates by the Gartner Group<sup>10</sup> even up to 75% of expenditures on knowledge management are expenditures on computer hardware and software as well as communication infrastructure while just 25% are devoted to development of soft aspects of knowledge management. Distant teaching, by securing uniform didactic process builds not only uniform knowledge and skills but also uniform standards of corporate behaviors or communication, which has significant influence on organization culture or, e.g. uniform customer service standards even in territorially scattered organizations. Remote teaching represents also one of the best developed communication environments securing, thanks to high technologies, contacts that are both personal and group bases increasing the level of knowledge of the employees.

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<sup>10</sup> [www.asseccobs.pl](http://www.asseccobs.pl)

### 3. HUMAN CAPITAL IN DEVELOPING COMPETITIVENESS OF FOOD INDUSTRY ENTERPRISES

Structural determinant of the economy of the European Union countries, including Polish, is a very important food industry. The EU food and drink manufacturing sector is the largest (in 2009 accounted for 12.9% of the turnover of the sector) and a leading employer (employing 13.5% of those working in industrial enterprises). Another factor determining the importance of the food industry in the EU is its leading position in international trade - share of world food exports of these countries was 18.6%, they are also a leader in the export of highly processed foods (Supporting ... 2011, p.5).

Similar importance of food industry in the national economy takes place in Poland. The value of industry sales in 2009 amounted to 17% of total sales of industrial enterprises and the employment of nearly 420 thousand people, decided on the employment of about 18% of employees of industrial enterprises in the country. According to Szczepaniak (2011, pp.13-14) the value of food trade in 2010 increased by almost 20%, which exports to unprecedented levels of 13.5 billion euros and imports to 10.9 billion euros. The food industry, as a stable employer, a manufacturer and exporter, is therefore a key economic sector in many European countries. Consequently, the potential and competitive position of food and drink sector has a substantial impact on the international competitiveness of industrial enterprises. The basis for sustained competitiveness of the sector should and can create human capital.

Human capital is one of three components of intellectual capital, which also includes market capital and organizational capital. Market capital of the enterprise means its market focus, i.e. the ability to satisfy the needs and expectations of consumers. This involves, among others, identification of sales and supply markets needs, market segmentation and the choice of the market niche resulting from it, satisfying the needs of the selected market segment, flexible reacting to changes in clients' needs, offering the consumers the products with preferred by them relation of price to quality, brand building and promotion system development.

Organizational capital, frequently underestimated, is the source of competitive advantage. It is represented by rationalization of the enterprise organization process. That process involves setting appropriate targets and tasks to be carried out, choice of means and objects of work (machines, devices, raw materials and materials, information). Coordination of attainment of the selected targets at all levels of enterprise operation represents a very important component of that process. Accelerated changes in the environment of the enterprise cause that managers must skillfully transform and restructure the resources available in the future competitive potential. This also covers changes in organization of the enterprise towards its streamlining and improvement. It is worth highlighting that, as indicated by the studies by Neilson et al. (2009), organizations achieving success had carried out restructuring changes in the field of streamlining the decisions and flows of information within the first step. Importance of those factors is confirmed by studies conducted among Polish managers, which attribute key importance to internal communication limiting stresses within the organization (Grzebiech, 2009). The components of intellectual capital specified are undoubtedly linked directly to the human capital, which determines them.

Human capital encompasses, among others, employing employees with appropriate competences, making the payroll levels dependent on the results of work, systematic improvement of competences of the employees, creating opportunities for development and advancement. Pointing at the change in the paradigm of approach to the employees, Pulić (2004) concludes that shifting the employees from the "costs" to the "investments" represents almost Copernican breakthrough in the economic relations concerning creating value, and by the same building lasting competitive advantage. Competences of

employees are defined in the management literature very frequently and in different ways because they are subject of interest to researchers representing numerous scientific disciplines. The most frequently listed components of employees' competences are still the knowledge, skills (talents), personal characteristics, attitudes, behaviors and experience (Walkowiak, 2004).

Education is one of the components of knowledge. It belongs to the so-called hard competences, i.e. competences that refer to the areas of work in which a given individual is competent, which means that the individual satisfies the expectations concerning the effects of work performed. "Hard" competences also mean the ability of applying the knowledge held to various aspects of the work performed for the purpose of obtaining the required effects (Armstrong, 2011).

The level of education of employees has direct influence on the effects of operations of a food industry enterprise. In the enterprises that are more advanced technologically and produce more processes food products the level of education of the employees is higher than in the other enterprises (Szczepaniak 2005, pp. 27-37). Manufacturers of finished products employed the largest proportion of people with tertiary and secondary education, more specialists in marketing and quality systems or in state of the art production technologies, information sciences, food hygiene and safety. High level of human capital was one of the factors in undertaking effective innovation activities – all the enterprises declared introduction of technological innovations in the form of new technologies of processing the products, new technologies of secondary processing, new methods of confectioning and packaging of products during the recent years. Manufacturers of finished goods also implemented the highest numbers of changes streamlining the organizational structures. Those activities were reflected in the increase in labor productivity and profitability of production as well as in improvement of the current financial liquidity, which improved their competitiveness in the market. Szczepaniak (2008, pp. 131-159) points out, however, at unfavorable phenomena increasing the gap in the level of competence of intellectual capital between the domestic entities and the transnational corporations. Transnational corporations operate in food industry as a very important source of competition and they consider intellectual capital development, in particular human capital, to represent highly important target. Chechelski (2008, p.210) points out that modern human resources management in transnational corporations caused that those enterprises use the employees much more effectively compared to the companies with Polish capital and are more competitive. Higher wages and development opportunities in transnational corporations additionally cause outflow of people with higher qualification from domestic companies to them and as a result unfavorable widening of the gap in management between those two groups. Noticing the importance of human capital as the source of competitive advantage by transnational corporations causes that sectors of food industry dominated by global corporations are more competitive in the international market. Domestic companies still use their price advantage but competing on price comes to the end and is highly susceptible as the base for competing. In the process of competition an increasing role is played by establishing the obscure for the competitor (intangible) resources assuring long-term competitive advantage. Here we can include the intellectual capital, which the domestic food producers should consider more and more in searching for the sources of competitiveness. Wiatrak (2005, p.25) formulates even the thesis that the existing status of development of the economy, its low innovativeness and ability to compete are the consequences of insufficient support with knowledge and intellectual capital.

Increase in importance of human capital, as a factor of competitiveness of Polish food industry was particularly visible following Poland's integration with the European Union. Free access to the European Union market proved favorable for Polish food industry. Accession to the European Union caused not only more than 2.5-fold increase in agricultural-food exports but also almost four-fold increase in the balance of trade (Urban et al., 2010, p.31). European integration not only contributed to

the increase in exports, but it also has not resulted in flooding the Polish market with imported food. Food producers in Poland proved exceptionally active and effective in the markets of other Member States and as a consequence strengthened their position in the expanded European market. That significant increase in foreign trade in agricultural-food products after Poland's accession to the European Union was influenced, in addition to such obvious reasons as opening the markets and unrestricted trade between Poland and the European Union countries, by good preparation of Polish food economy for membership in the Union, including the high level of competence of both the managements and the line employees.

A measure for assessing the human capital may be economic efficiency measured by the value of sales per employee. In the years 2000-2010 has been a systematic increase of this indicator. In 2010, it amounted to 357.0 thousand zł and was almost 2-fold higher than 2000 (Mroczek, 2011, p.34). Particularly marked improvement in labor productivity occurred after the Polish accession to the EU. Free trade was therefore one of the driving forces to improve the effectiveness of human capital in the food industry. It is worth mentioning that the improvement in labor productivity occurred, although in a different scale, in all branches of food industry. Own research (Juchniewicz 2012, pp.62-76) also indicate that the rate of change in labor productivity were strongly correlated with the rate of growth of total factor productivity (TFP). This confirms that labor productivity growth was mainly due to the increased technical equipment of work, or as a result of substitution of labor by capital. However a smaller effect on productivity growth had a "non-investment" technical progress, which confirms the capital intensive nature of the food industry. Improved labor productivity, associated mainly with better equipment in the food industry machinery and equipment, has also been noted in studies Adamczyk (2008, pp.95-106) and Gołasia (2010, pp.30-50).

A significant increase in labor productivity and the level of technical equipment of employed was the basis for improving the competitive capacity and capabilities of the food industry to compete on the EU market. International comparisons indicate that labor productivity in Poland in 2008, amounting to 150.9 thousand euro, compared with the countries of the former EU-15 is about 50% less. The highest productivity was recorded in Ireland - 439.9 thousand euro, the Netherlands - 366.7 thousand euro and Belgium - 317.6 thousand euro (Mroczek, 2011, pp.104-105). This indicates the distance that separates the food industry in Poland from entities located in these countries. Thus improving the efficiency of human capital in Polish enterprises of food industry is crucial, in terms of increasing the long-term competitive potential.

## CONCLUSION

Low costs and prices of products offered as well as the increasing awareness in implementation of competition on quality are the source of competitive advantage of Polish food producers. In the long-term perspective the success of the enterprise is, however, dependent to the highest extent, on the level of human capital, which determines the ability of taking innovation focused actions and establishing lasting competitive advantage. Sectors of food industry dominated by global corporations see much more clearly than the domestic enterprises the importance of human capital as the source of competitive advantage creating the bases for higher competitiveness in the international market. This should be the signal to be considered by producers in search for the factors determining the competitive advantage of food industry enterprises. As a result, it can contribute to reducing the gap between the level of effectiveness of human capital in Poland in comparison with EU leaders.

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## FINANCIAL LEVERAGE MODELS VERSUS BANKRUPTCY ENTERPRISES

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**Key words:** financial leverage, bankruptcy, second chance policy

### 1. INTRODUCTION

In the context the recent last financial crisis and its implications for enterprises and banks there has been an increase in the importance of rehabilitation of economic entities; new solutions of rehabilitation processes are being searched for. In Poland there is an ongoing discussion regarding bad legislation in the field of regulating rehabilitation processes and bankruptcy. “A second chance” from a broad perspective means not only a reengagement of an entrepreneur in a new economic entity after his first failure, but also rehabilitation and restructuring of an enterprise facing a threat of bankruptcy – under a rehabilitation process; according to the Polish law there are two types of rehabilitation processes, one conducted under the civil law and the second with a court engagement that acts upon *Law on Bankruptcy and Reorganization* (“Ustawa prawo upadłościowe i naprawcze”; u.p.u.n). The policy of “a second chance” is recommended by the European Commission.

In the literature there is no clear definition of the process of an enterprise rehabilitation, in contrast to numerous definitions of restructuring. The latter cannot be treated as a synonym for rehabilitation, as it is a broader concept; while in the EU documents the name of the restructuring rehabilitation is used. In Polish literature, synonymous to recovery processes are also the concepts of company’s rehabilitation or rehabilitation processes. Briefly, the process of rehabilitation can be defined as the restoration of long-term solvency.

The thesis of the article is as follows: institutional arrangements to support rehabilitation processes in Poland are inadequate, including a limited availability of financial leverage. Hence, the most commonly used procedure is a bankruptcy one.

The process of a company’s recovery is not only a legal procedure, it is also an economic process, management process, and finally also a social process. Hence, it is important to analyze this issue from a broad variety of perspectives.

### 2. THE COSTS OF BAKRUPCY VERSUS THE POLICY OF “A SECOND CHANCE”

Analyses and publications often stress the need for processes of recovery rather than bankruptcy. The costs of the repair process are often lower than these of bankruptcy, but one cannot generalize due to the different ratios of losses to remaining assets of the company, the cost of access to capital, etc. Undoubtedly, bankruptcy entails a number of social costs; there are severe consequences for customers.

Considering the costs of bankruptcy one should consider two accounting dimensions, namely:

1 / operational costs of an administrative receiver,

2 / social costs of bankruptcy.

In literature different approaches to the classification of the social costs of bankruptcy are used. Most stress the consequences for households and small and medium sized businesses.

E. Altman divide costs arising from the financial difficulties of enterprises into direct and indirect ones. This author stresses the "sometimes considerable direct costs incurred by the debtor due to external legal services, accounting, consulting as well as internal legal costs."(Altman 2007, p.48) The cost of experts may be a burden. Fees paid to consultants working on the bankruptcy of Enron probably exceeded \$ 1 billion. (Altman 2007, p. 79) Altman includes in the indirect costs all profits that were lost or not achieved; for example, many companies encounter a drop in sales and revenue, because customers do not want to pursue a transaction with a company in crisis. (Altman 2007, p. 80) A company in crisis is also exposed to additional costs such as higher interest rates on loans and credits.

The evaluation of a complete and fair account of such costs is very difficult and most items can only be based on estimation.

“A second chance” from a broad perspective means not only a reengagement of an entrepreneur in a new economic entity after his first failure, but also rehabilitation and restructuring of an enterprise facing a threat of bankruptcy – realised under a rehabilitation process.

New EU regulations and institutional arrangements are neither implemented nor popularized in Poland. The European Commission approach to bankruptcy cases can be considered revolutionary, because bankruptcy is to be a last resort if all forms aid for entrepreneurs have been exhausted. Moreover, despite bankruptcy, the entrepreneur should - with the support of various institutions have a second chance - a chance to re-operate.

Basic legal and advisory instruments established by the EU are set out in the following documents:

- Communication from the Commission to the Council, the European Parliament, European Economic and Social Committee and the Committee for the Regions "Overcoming the stigma of business failure - for a second chance"(Komisja Wspólnot Europejskich, 2007),
- "Community guidelines on State aid for rescuing and restructuring firms in difficulty " (Komisja Wspólnot Europejskich, 2004),
- The Directive of the European Parliament and the Council on the reorganization and winding up of credit institutions (Directive 2001/24/WE).

Furthermore, in many countries in the EU there operates a network supporting processes of enterprise rehabilitation - Enterprise Europe Network. EEN is an extensive network (numbering 600 organizations and four thousand consultants) providing among others information and advice to companies facing bankruptcy and entrepreneurs who survived bankruptcy and decide to start a business again.

The European Commission believes that a more supportive environment for businesses at risk of bankruptcy can prevent their failure. Highlighting the problem of negative effects of business failure and its negative reception by society would help to make the best of human creativity in Europe, encourage entrepreneurship and promote innovation and job creation. (Komisja Wspólnot Europejskich, 2007)

In the guidelines of the European Commission the definition of a firm in difficulty was formulated and it is very broad. (Komisja Wspólnot Europejskich, 2004) Before, European definition of companies threatened with bankruptcy did not exist, however for the purpose of the Guidelines for the European Commission - it was established that a business is threatened, if it is unable, whether through its own resources, or with the funds it is able to obtain from its owners (shareholders) or creditors, to stem losses which, without outside intervention by the public authorities, will almost certainly condemn it to going out of business in the short or medium term.

Even when conditions listed above are not met, the company may be considered at risk, particularly when there are usual signs, such as increasing losses, diminishing turnover, growing inventory, unsold excess capacity, declining cash flow, mounting debt, rising interest charges and falling or nil net asset value. (Komisja Wspólnot Europejskich, 2004)

In the light of the Guidelines cited a newly created firm is not eligible for state aid for rescuing and restructuring, even if its initial financial position is precarious.

In Poland, the number of bankruptcies is relatively small; however there is a large percentage of companies going bankrupt without undergoing bankruptcy proceedings (due to lack of funds) and the number of procedures of enterprise recovery is very small. (Mączyńska 2010, p. 435-446) This is probably the implication of poor design of insolvency proceedings in *Law on Bankruptcy and Reorganization* and the lack of sufficient leverage to support the process of company recovery. (Masiukiewicz, 2010)

### 3. INSTRUMENTS TO SUPPORT PROCESSES OF ENTERPRISE RECOVERY

Restrictions on the decision-making in a company pursuing a process of recovery occur in these areas (Mączyńska, 2010) (Masiukiewicz, 2010):

- legal restrictions,
- restrictions on access to financing current operations,
- recommendations and expectations of owners,
- adverse changes in the behavior of customers and suppliers,
- time pressure (resulting in the need for quick and sometimes intuitive decisions),
- disclosing false information and creative financial reporting,
- high-risk operating conditions,
- adverse changes in economic environment.

In practice of recovery action, there are many decision-making dilemmas (Masiukiewicz, 2011), among others:

- the dilemma of information sincerity versus the imperative of company rehabilitation,
- the dilemma of social responsibility versus additional profit,
- the dilemma of fair reward versus the primacy of the cost-cutting approach,
- the dilemma of corporate social responsibility versus efficiency of operations, and others.

In these situations, there is a typical manager's dilemma; one has to choose between an effective business without ethics and ethics without a business. When considering the above matters the boards of companies usually stand alone, taking into account that hiring a consulting firm of a *company doctor* kind is expensive. It is particularly important to provide periodic financial assistance for the bankrupt company that has a chance to get out of trouble. (Altman, 2007), (Masiukiewicz, 2010)

### 3.1 Bank support tools

In most cases, the role of a bank financing the company in the process of reorganization is crucial. Generally, without the help of the bank restructuring and rehabilitation of a company has little chance of success. It can therefore be assumed that in almost every case a bankrupt company needs financial support for the program of recovery.

The bank that is cooperating with the company may also use different strategies to deal with situations of a crisis on the client's need for a process of recovery. In practice, there are four possibilities: (Masiukiewicz, 2011)

- placing immediate maturities of the loan status and their recovery (as a consequence, this may mean acceleration of bankruptcy),
- passive role in the process of recovery; incidental action taking (such as temporary suspension of interest payments, the exchange of information with other lenders to the company, sale of the liabilities to another bank, etc.),
- active participation in the restructuring of the company and exploiting of a range of financial instruments and organizational tools,
- refraining from any action, waiting for developments.

From the standpoint of the efficiency of the process of recovery, what is the most desirable is the active role of the bank. It has at its disposal a variety of financial instruments to support the process (Masiukiewicz, 2011), i.e.:

- continuation of restructuring of hitherto debt (debt conversion, partial redemption of the debt installments, re-negotiation of installments burdens, securitization, and others),
- granting the company another loan,
- consolidation of loans and advances from other banks,
- requesting participation in the meetings of the board and general meetings,
- the contractual debt guarantee by strategic shareholders, secured on the shares,
- consulting on financial restructuring.

**Table 8. Examples of bank actions toward a company's debt restructuring**

Type of liability	Conversion of overdue debt into new capital	Remission	Securitization	Prolonging the maturity of the debt	Lowering the interest rates or commissions	Foreclosure of some assets in exchange for unpaid debt
Principal	+	+	+	+	-	+
Interest	+	+	-	-	+	+
Commissions	-	+	-	+	+	-

Source: the author's research based on the analysis of operations of banks sanitised by receivership in the following banks: Bank Częstochowa S.A., Bank Spółem S.A., Bank Wschodni S.A., Bank Przemysłowy S.A.

When implementing a restructuring model, various techniques of changing credit conditions are used (Table 8). They all must, of course take into account, the capabilities of the client; especially those that

derive from cash flow projections. There were cases when the bank had to renegotiate the terms of restructuring when the situation of the customer did not improve.

Typically, an important issue for the customer is the reduction of interest charges. For example, the Industrial Bank SA in Lodz (Bank Przemysłowy SA w Łodzi) in almost 56% of cases has lowered interest rates or even forgone the interest temporarily (the variant used, among others when the loss of value of the loan collateral occurred) for the benefit of their customers.

Tax provisions including any waivers as a taxable income of the enterprise constitute a significant obstacle to debt restructuring; tax law requires urgent changes.

### *3.2. Other support institutions*

Besides banks, there are a number of institutions that can and should support the processes of enterprise rehabilitation. Unfortunately, the key institutions supporting entrepreneurship in Poland mainly deal with healthy businesses. Polish Agency for Enterprise Development (Polska Agencja Rozwoju Przedsiębiorczości), Industrial Development Agency (Agencja Rozwoju Przemysłu), the National Economy Bank (Bank Gospodarstwa Krajowego), the Chamber of Small and Medium Enterprises (Izba Małych i Średnich Przedsiębiorstw) and others, have the potential, which in part could be used in the processes of rehabilitation in the economy. Guarantees funds, both the state one (administered by Bank Gospodarstwa Krajowego) as well as regional ones are only interested in dealing with successful businesses.

In Poland there is no developed structure of consulting firms - *company doctors*, which would support recovery programs. And there is no national restructuring fund, which together with the bank would provide financing in a form of “the survival capital” for companies in crisis. A small fund supporting the processes of bankruptcy, which is at the disposal of the a Minister of the Treasury - does not solve the problems.

Tax authorities have an important role in the restructuring process, but usually their policy is to immediately recover the taxes. Polish tax legislation does not expressis verbis provide for tax exemptions for businesses (as well as financial institutions) implementing programs of recovery. However, the legislature ensured a way of escape, which is very little known and rarely used. Namely, if a company is threatened by bankruptcy, and received an order for enforcement of tax arrears and its request for their redemption was rejected, it may request a suspension of implementation of the decision claiming that it is in companies major interest to do so.

The goal of prohibiting the implementation of the tax (Article 224 & 2 Polish Tax Act) is the temporary protection of the taxpayer against the decision he challenges until its final verification. In the past, some tax authorities, unfortunately, felt that it depends solely on their discretion to grant such a postponement. Fortunately, the tax authority is now obliged to suspend the implementation of decisions not only at the direct request of the taxpayer, but it can also do this ex officio - if only it is in an important interest of the taxpayer or the public interest.

In 2008 an entrepreneur was refused to suspension of the implementation of the tax. The taxpayer in the application demonstrated a substantial interest, which was the risk of a loss of financial liquidity and the market in which he was operating and even a threat to the existence of his family. However, the tax office did not agree to suspend the decision - on grounds, namely that the suspension of the decision depends on administrative discretion of the tax office. In addition, Tax Chamber confirmed the correctness of this reasoning. (Łabno, 2008) However, Regional Administrative Court in Krakow ruled on the subject that if the conditions of an important interest of the taxpayer or the public interest

are fulfilled a tax authority is obliged to suspend the implementation of the decision. For example, an interest must be equivalent to the probability of cessation of business operations due to loss of liquidity.

Unfortunately, despite such a state of the law, certain tax authorities continue to claim a right to discretion to withhold the payment of the tax due, even if the facts regarding the matter are clearly in favor of stopping the execution. (Masiukiewicz, 2010)

#### 4. EVALUATION OF THE EFFECTIVENESS AND EFFICIENCY OF FINANCIAL LEVERAGE MODELS

The management of the company's finances is driven by the desire to obtain long-term liquidity - ensuring solvency. Hence, there is a need for effective management of current assets, which affects the formation of long-term assets and ensures the development and therefore an increase in shareholder value. (Krajewski, 2010) Diligent studies not only help companies find the causes of troubles but also enable the design of future activities in the recovery program and become a planning tool. Liquidity management (its level is sometimes more important than the profit itself) must be based on continuous monitoring of changes and forecasting.

The selection of a method of the process of recovery, based on a certain financial leverage, should be preceded by an analysis of the effectiveness. The analysis of the options of the effectiveness of rehabilitation process (and subsequently the analysis of deviations from the plan during implementation) should be performed based on a set of carefully selected financial measures. In addition to traditional measures such as ROA, ROE, return on cost, level of equity and debt, carry-forward losses one can apply additional specific measures of assessment which are shown below.

A basic method in this regard is the comparative analysis of the cash flow for various regulatory pathways estimated in the recovery program – by means of DCF. Discounted cash flow model (DCF) used for the selection of a rehabilitation process, can be described as follows:

$$ZWNPF_n = \sum_{t=1}^m \frac{NCF_t}{(1+d)^t}$$

**Where:**

ZWNPF<sub>n</sub> – discounted net value of cash flow estimation for method n,

NCF<sub>t</sub> – net cash flows for the year t of the estimation,

T – number of years of estimation,

D – discount rate,

N – number of rehabilitation method.

Source: The authors' own research

A comparative study, answering the question which method gives the maximum surplus of ZWNPF – requires defining the number of years when the leverage will be used, the discount rate d, and finally defining a cash flow forecast.

A sensitivity analysis of the financial forecasts contained in the recovery program is needed. Usually one conducts such an analysis in regard to market conditions (e.g. changes in interest rates, demand and others). An important criterion for choosing the method of financial rehabilitation is an assessment of the risk of volatility of ROA. ROA volatility risk can be estimated for the sub-periods of the analysis, for the different line of business (active operations) and for changes of the structure of refinancing. ROA volatility risk index is calculated as follows:

$$RR = \frac{E(ROA) + CAP}{\sigma ROA}$$

**Where:** RR – ROA volatility risk index

eROA - expected value of ROA (estimation)

CAP – relation of shareholders capital to assets

$\sigma$  ROA – ROA standard deviation

Source: Hannan T. H., Hanweck G.A. *Bank Insolvency Risk and the Market for Large Certificates of Deposit*, Journal of Money, Credit and Banking, no. 5/1988

ROA sensitivity to changes in the structure of refinancing seems particularly relevant for a program of bank rehabilitation, because of the uncertainty surrounding the trust of customers and suppliers as well as access to capital to finance further activities.

An important issue is to determine the number of years and the amount of the restructuring loan needed for the recovery process of a business. According to this criterion, in theory, any company regardless of the level of losses can be repaired; provided the arrangement and obtaining of the adequate amount of the loan is possible. However, this situation would not be economically justified, as a bankruptcy has a function of purifying the economy.

The model of balance sheet loss coverage with the use of leverage, assuming a loss generation for another two years from starting the rehabilitation process, is as follows:

$$\sum_{m=1}^{n-1} S_m + S_{1,2} - K(1+r)^n + O_n + P - Z_{n+2} = 0$$

**Where:**

S – loss in a year m; m - the number of years in the past with a loss ,

1,2 – losses in two first years of the rehabilitation process,

n (1...z) – duration of the rehabilitation process with the use of a restructuring loan maturing in n years,

K – the amount of the restructuring loan,

r – agreed interest rate for n period; that is a compounded rate of return from operating assets of the company,

Z<sub>n+2</sub> – profits in consecutive years starting from third year of the process,

On – interest paid to the creditor in n period,

P – fees paid to the creditor in n period.

Source: The authors' own research

If the amount of carry-forward losses is known, and a maximum period of the rehabilitation loan and its cost of service are known, the weighted average rate of return on bank's assets and projected profits in subsequent years (from the third year in the above-presented model) are known - it is possible to calculate the required amount of the loan covering the losses in the years of the rehabilitation process, namely:

$$K = \left[ \sum_{m=1}^{n-1} S_m + S_{1,2} + O_n + P - Z_{n+2} \right] x \frac{1}{(1+r)^n}$$

**Where:** designations like above

Source: The authors' own research

Deviations from the financial plan during the rehabilitation period and deviations from the whole volume of sales represented across the sector can be analysed with the use of volume elasticity indicator. (Suarez, 1991) Volume elasticity allows assessing both the degree of the rehabilitation program realisation and the degree of the adjustment to changes in market demand. A formula for the indicator computation for a three-year period as follows:

$$EW = \sqrt{\frac{(R_1)^2 + (R_2)^2 + (R_3)^2}{3}}$$

**Where:**

EW- volume elasticity of credits or deposits,

Rn – the ratio of a maximum volume to minimum volume in a given year,

n – consecutive years chosen to computation

Source: Suarez F.F., Cusumano M. A. Fine Ch. F. *An Empirical Study Advantage for Small Firms*, Strategic Management Journal no. 12/1991

To assess the effectiveness of the financial leverage that was used in a rehabilitation process it is vital for creditors to compute a liability retrieval coefficient. During a rehabilitation process all liabilities should be settled and paid in 100% unless due to negotiations a partial remission was accorded (such a remission is also a form of financial leverage allowed by creditors). This coefficient/ratio can be also a criterion on the basis of which one can choose a rehabilitation method for a company. Net liability retrieval coefficient can be computed with the following formula:

$$WOWN_n = \sum_{i=1}^n \frac{OW_i}{(1+r)^i} : [WO - WOxm] x 100$$

**Where:**

WOWN - Net liability retrieval coefficient,

OWi – required liabilities,

m – a percentage of liabilities remission,

i – a consecutive year of an estimation,

r – discount rate

Source: The authors' own research

To conclude, the financing model of each rehabilitation process differs subject to the implication of several factors, which derive from the expectations of stakeholders in the process. What seems the most realistic and efficient for the future is the model with active participation of especially dedicated government funds that would support the rehabilitation processes.

## 5. RECAPITULATION

New paradigms in management of a rehabilitation process in enterprises and guidelines of the European Commission call for a reform of recent institutional solutions that support a rehabilitation process. The implementation of a rehabilitation process was impossible in Polish reality due to lack of financial leverage availability for bankrupts. In Poland the following actions are needed:

- a change of legislation acts regulating rehabilitation processes (“Ustawa prawo upadłościowe i naprawcze”), with the use of French experience and legislative solutions providing bankrupts with numerous rehabilitation models to choose from,
- establishing a catalogue of legitimate financial instruments (financial leverage) that would support a rehabilitation process,
- a change of taxation regulations adverse for companies conducting a rehabilitation process,
- augmentation of the engagement of both government capital and mezzanine funds in a rehabilitation process.

An idea of “a second chance” implemented in the EU countries is well-grounded and its validity is supported by the recent international subprime crisis experiences.

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**ESTONIAN OPINION ON BUSINESS AND PROFESSIONAL ETHICS\***

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**Abstract**

*Accounting and business ethics can be examined and explored from a number of perspectives. This study analyses the opinion of Estonian practitioners and students on the place and role of business and professional ethics. In this paper authors analyse the results of the survey, which consisted of 15 statements and was concluded among the students of the Tallinn University of Technology and accounting practitioners, 381 responses were collected in the process. The present study examined strengths and weaknesses of various statements. The survey discovered that in Estonia people are familiar with business ethics but there should be more attention paid to this issue especially in mass media as one of the weakest arguments was the one about general opinion of business ethics in Estonia. The survey has also shown that there is not much interest toward business ethics in Estonia, which may be caused by the fact that this subject is considered of low importance in Estonia and no scandals have been related to ignoring the principles of business or accounting ethics so far. These findings emphasize that business and professional ethics definitely merit special attention and the educational institutions should make it the compulsory course, especially for the students specializing in business management, economics, finance and accounting*

**Key words:** *accounting, business ethics, Estonia, ethics, professional ethics.*

**INTRODUCTION**

Business and professional ethics became a matter of great public interest and concern after the Enron Case, as the question was not just orientation of the accounting profession but the place and function of professional ethics in the society. For many years traditional approach to business was the one expressed by Milton Friedman that the main purpose of business was to make money. However, in the last years it seemed that public attitude has been shifted from making profit to corporate social responsibility which encouraged many researchers to link ethics to Corporate Social Responsibility (CSR) (Quarter, Mook and Richmond, 2002) and sustainability, making the companies to report about their performance against key social, ethical and environmental dimensions of their behaviour and impact. (Zadek, Pruzan and Evans, 1997).

Professional and business ethics can be examined and explored from a number of perspectives, some of which have religious routes while the other are of philosophical or sociological approach. One approach is to study relationship between ethics and religion, the other is the philosophical approach, which examines accounting and business ethics from the teleological and deontological position. This approach is also

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known as the “Golden rule” formulated by Maxwell (2003) by summing up all the issues of professional and business ethics in one phrase “treat people as you want them to treat you”. The third approach is to explore relationship of professional ethics to individual, contextual and issue attributes (Jones, 1991; Bachelard, 1994; McPhail and Walters, 2009). These approaches have gained much attention and growth over the last few centuries.

## REVIEW OF LITERATURE

Several studies have been carried on business and accounting ethics, but only few of them try to establish the place of professional ethics in the modern business world and whether students and practitioners believe it to be really required and valid today. The most comprehensive and exciting studies have been made by Boland (1982) who discusses the commercialization of the accounting profession, Mitchell and Sikka (1993), who claim that audit is becoming more dependent on attracting new perspective clients by decreasing the quality of services. Roberts (2001) reveals that professional status is becoming less useful than commercial one and that accounting profession is becoming less professionalized. However, some authors oppose this point of view and clearly identify that growing importance of the CSR and appearance of social and environmental accounting in high school curricula, presents a significant challenge to both accounting and business ethics, and adds professional responsibility to the accounting profession (Gray, 2001).

Numerous studies take philosophical perspectives and try to explain professional ethics in the context of deontological ethics, represented by categorical imperative of Immanuel Kant (MacIntyre, 1982), an attempt to work out the universal law of ethical behaviour based on the reason principle, while others claim that accountants seem to have teleological mode of thinking as while getting their degree or during professional practice they get exposed to a teleological ethics (Mc Phail, Gorringer and Gray, 2004). Many books dedicated to political moral philosophy would like us to treat accounting profession as a part of a national political structure and therefore the accounting ethics should be also considered to protect rights and interests of the particular group of a society. While social literature is trying to give professional ethics wider meaning as serving interests and protecting the rights of various groups of stakeholders.

Growing number of studies inspired by works of Levinas (1993), whose conception of ethics was based on the responsibility concept of all people being responsible for each other, and Bauman (1993) examine relationship between professional ethics and religion, influenced by the Genesis and the question of “Who I Am?” by concentrating on the story of Cain killing his brother Abel as well as the answer to the famous question of “Am I my brother’s keeper?”. But, unfortunately, most of these studies seem to ignore another very important moment of this particular story that one starts to behave non-ethically by not behaving ethically – “If you do what is right, will you not be accepted? But if you do not do what is right, sin is crouching at your door; it desires to have you, but you must master it.” (Genesis, Chapter 4).

A large number of articles and surveys were devoted to the relationship between professional ethics and individual, contextual and issue attributes (McPhail and Walters, 2009). Individual attributes and ethical behaviour have been explored in studies of Borkowski and Urgan (1992), Arlow (1992) and Radtke (2008), who discovered dependence of ethical behaviour on gender, whose works support the opinion that females are more ethical than males. Numerous studies explored the problem of relationship between professional ethics and age, while works of Trevino (1992) and Serwenek (1992) suggested that professional behaviour is largely influenced by age. While these researches confirm that

individual attributes have high influence on a person in making professional decisions, many studies also show that the importance of contextual attributes cannot be neglected. Arnold, Bernardi, Neidermeyer and Schmee (2007) studied the effects of country and culture on perceptions of appropriate ethical actions and found that national culture impact is much more significant than the one of the corporate culture. Many researchers also point to the fact that ethical decision-making of a particular person may change a lot when he becomes a part of the “groupthink” (Sims 1992). This phenomenon has given a birth to social analysis of understanding and managing human social behaviour, by studying changes in ethical performance of an individual upon employment by a certain company. Some researchers also claim that professional behaviour is largely affected by situational ethics (Jones, 1991).

Many researchers emphasize the necessity of a professional code of conduct and even claim that no profession can survive without it (Abbot, 1988) and that the main characteristic of a certain profession should be code of ethics (Claypool, Fetyko and Pearson, 1990). This survey to some extent replicates some of the above mentioned studies but also analyses the opinion of Estonian professionals and students on the place and role of business and professional ethics in the modern business world.

### **Hypotheses Statement**

Not enough attention is being paid nowadays to business ethics in Estonia. This applies not only to educational institutions, but also the state. People seem to be more motivated by material rather than ethical values in doing business. Therefore state should pay much more attention to the principles of ethics and introduce a compulsory course on ethics at colleges and universities for students specializing in economics, finance, business and accounting.

## **SURVEY RESULTS**

### **Methodology**

The survey consisted of 15 statements that included 10 main and 5 additional statements about business ethics. Each argument represents an opinion about business ethics, where respondents were asked to rank each opinion from 1 to 5 in order to express their agreement or disagreement with each statement. Such method of ascribing quantitative value to qualitative data made it amenable to statistical analysis. In the first part of the survey a score of 1 represented strong agreement and 5 – strong disagreement, whereas for the second part 5 statements a score of 1 represented strong disagreement and 5 – strong agreement with the statement.

The survey was concluded among the students of the Tallinn University of Technology, accounting and practitioners, 381 responses were collected in the process. This information was compiled and analysed based on gender, age, student status and education. Table 1 shows the result of this analysis makeup of the survey.

Table 1.

Demographic Data of the Survey.

Status	Sample
<b>Students &amp; Practitioners</b>	
BA students	65
MA students	228
Practitioners	88
<b>Total</b>	<b>381</b>
<b>Major</b>	
Accounting	188
Business & Economics	150
Other	43
<b>Total</b>	<b>381</b>
<b>Gender</b>	
Male	97
Female	284
<b>Total</b>	<b>381</b>
<b>Age</b>	
< 25	139
25–35	134
36–45	76
> 45	32
<b>Total</b>	<b>381</b>

## GENERAL FINDINGS

In the Tables 2 and 3 there are listed all 15 statements for both parts of the survey as well as the mean score for each statement. The average score of 1.99 for the first 7 arguments part demonstrated that in general people seem to agree with the idea that business ethics is not just a moral code of conduct, but also an important tool for making managerial decisions as all respondents seem to be familiar and aware of business ethics definition and meaning (score 1.48) and strongly disagree with the statement that consistent financial problems justify unethical behaviour (score 4.28). It is also worth mentioning that respondents have expressed a high interest towards business ethics (score 1.99). In the second part of the survey they show a strong belief (score 4.15) of the necessity of business ethics in everyday business activities. Respondents also agreed that business ethics largely depended on business industry (score 2.28) and that not enough attention has been drawn to this matter in Estonia so far (score 1.77).

Table 2.

Total Sample Mean Scores by Statement for the First Part of the Survey (1 = strongly agree; 5 = strongly disagree)

No.	Statement	Score
1	The term business/professional ethics is familiar.	1.48
2	There should be more focus on business ethics in Estonia, especially in mass publicity.	1.77
3	Competition must always be honest and ethical.	1.97
4	So called "industrial espionage" (gathering data on your competitors) requires you to be ethical.	1.99
5	The subject of business/professional ethics should certainly be a required course in a college/university curriculum.	2.28
6	Business ethics interests you.	1.97
7	Business ethics is definitely affected by the industry.	2.45
	<b>Average</b>	<b>1.99</b>
8	If you notice that most of your colleagues are behaving unethically, you do the same.	4.25
9	Consistent financial problems justify unethical behaviour.	4.28
10	You behave unethically regardless of financial situation, because you can't get very far with ethics in modern business.	4.28
	<b>Average</b>	<b>4.27</b>

The results of Table 3 clearly indicate that there is an equal opinion regarding current high importance of business/professional ethics in a modern business world and considered the good reputation of the workplace a matter of a high importance.

The strongest arguments which gained total agreement and support from the respondents were the ones asking to rank professional ethics at work and the one stating that non-ethical behaviour during employment is a seldom occasion. Participants of the survey also claimed to be familiar with business/professional ethics and quite independent in their behaviour as claiming that in case their colleagues demonstrate unethical behaviour they would not support it.

Among the weakest arguments turned out to be the one related to the implementing of business ethics compulsory course in college/university curriculum (score 2.28), which may be explained by the fact that respondents claimed to be familiar with business ethics and consider everyone to be of the same opinion, therefore they do not find it necessary to pay more attention to this subject

Table 3.

Total Sample Mean Scores by Statement for the Second Part of the Survey (1 = very low, 5 = very high)

No.	Statement	Score
1	Which of the following is the most important: a) short-term benefit from unethical behaviour (1) b) good reputation of your workplace (5). Options 2-4 are also accepted.	4.50
2	Importance/necessity of business ethics in modern business world.	4.15
3	Your professional ethics at work.	3.99
4	Your opinion of business ethics in Estonia.	2.72
	<b>Average</b>	<b>3.84</b>
5	How often do you behave (are forced to behave) unethically at work? (Very often – 5, never – 1)	1.76

## GENDER DIFFERENCES

Numerous studies in business and accounting ethics are dedicated to the question of dependence of ethical behaviour on gender. While works of Arlow (1991) and Stanga and Turpen (1991) do not confirm the existence of gender difference in business ethics, works of Borkowski and Urgan (1992) state that women tend to behave more ethically at workplace than men. There have been also made statements that women seem to treat codes of professional and business ethics with higher respect and it should be rational to employ more women for work at large accounting companies as a wise solution of the ethical problems (Radtke, 2008). This approach based on the opinion that women are less likely to be part of the „old-boy network”, they may not be sensitive as men to their status in the workplace and that since the very childhood they choose game with fewer rules and are less likely to play by the rules if they don't think the rules are right. (McPhail and Walters, 2009).

Table 4 and Table 5 show the scores for each statement divided by gender category. These scores indicate that women seem to be more familiar with business ethics (score 1.45 compared to 1.58) and more interested in business ethics (score 2.22 compared to 2.69). They also seem to be more confident in choosing proper behavior in unethical situations and think that business ethics should be taught in colleges and universities on a compulsory basis, while men would rather disagree with this statement. Men also seem to care less than women about ethics in case of getting important business information (scores 2.43 and 1.89 respectively) or entering into a business competition (scores 2.33 and 1.88 respectively). It is also important to note that both groups agree that there should be focus on business ethics in Estonia (score 1.80 and 1.76 respectively). The results of the second part of the survey indicate that in Estonia women care more about good reputation of the workplace than men (scores 4.60 and 4.21 respectively) and also rank the requirements of business ethics in the modern world higher than men (scores 4.23 and 3.95 respectively). It is also worth mentioning that both men and women were not of a very high opinion of business ethics in Estonia (scores 2.69 and 2.73 respectively), but ranked high the professional ethics at work (score 4.00 and 3.97 respectively).

Table 4.

Comparison of Male and Female Scores for the First Part of the Survey (1 = strongly agree, 5 = strongly disagree)

No.	Statement	Male	Female	Score larger by	
				Male	Female
1	The term business/professional ethics is familiar.	1.58	1.45	0.13	
2	There should be more focus on business ethics in Estonia, especially in mass publicity.	1.80	1.76	0.04	
3	Competition must always be honest and ethical.	2.12	1.91	0.21	
4	So called "industrial espionage" (gathering data on your competitors) requires you to be ethical.	2.33	1.88	0.45	
5	The subject of business/professional ethics should certainly be a required course in a college/university curriculum.	2.70	2.14	0.56	
6	Business ethics interests you.	2.69	2.22	0.47	
7	Business ethics is definitely affected by the industry.	2.23	2.53		0.30
	<b>Average</b>	<b>2.21</b>	<b>1.98</b>	<b>0.23</b>	
8	If you notice that most of your colleagues are behaving unethically, you do the same.	3.94	4.36		0.42
9	Consistent financial problems justify unethical behaviour.	4.25	4.29		0.04
10	You behave unethically regardless of financial situation, because you can't get very far with ethics in modern business.	4.02	4.36		0.34
	<b>Average</b>	<b>4.07</b>	<b>4.34</b>		<b>0.27</b>

### Comparison of Student and Practitioners Scores

The survey sample consisted of graduate and undergraduate students and business practitioners. Table 6 and Table 7 show the mean scores for each group for all 15 statements. Overall, these results explicitly reflect that undergraduate students feel more comfortable in the "ethics area" than the graduate ones and show less cases of unethical behaviour, while the graduate students seem to be less interested in business ethics and that ethics should be taught as a required course in colleges and/or universities. At the same time graduate students tend to require more attention to be drawn to business ethics in Estonia (scores 1.87 and 1.98 respectively) seem to be of a higher opinion about business ethics in Estonia (scores 2.74 and 2.62 respectively), while the undergraduate ones are more concerned about ethical and honest business competition (scores 1.98 and 2.13 respectively) than the graduate ones.

It is also worth attention that practitioners expressed the highest belief that competition should be

always honest and ethical (score 1.52) and that industrial espionage requires person to be ethical (score 1.66), which in authors' opinion is mainly explained by the fact that in their everyday work they have already faced negative results caused by unethical behaviour in such situations as well as because their personal professional experience have made them more cautious and careful while students seem to be more concerned with the final result and believe that "the end justifies the means".

Table 5.

Comparison of Male and Female Scores for the Second Part of the Survey (1 = very low, 5 = very high)

No.	Statement	Male	Female	Score larger by	
				Male	Female
1	Your professional ethics at work.	3.97	4.00	0.03	
2	Importance/necessity of business ethics in modern business world.	3.95	4.23	0.28	
3	Which of the following is the most important: a) short-term benefit from unethical behaviour (1) b) good reputation of your workplace (5). Options 2-4 are also accepted.	4.21	4.60	0.39	
4	Your opinion of business ethics in Estonia	2.69	2.73	0.04	
	<b>Average</b>	<b>3.71</b>	<b>3.89</b>	<b>0.18</b>	
5	How often do you behave (are forced to behave) unethically at work? (Very often – 5, never – 1)	1.94	1.70	0.24	

Table 6.

Comparison of Student and Practitioners Scores for the First Part of the Survey (1 = strongly agree; 5 = strongly disagree)

No.	Statement	BA	MA	Pr
1	The term business/professional ethics is familiar.	1.42	1.57	1.30
2	There should be more focus on business ethics in Estonia, especially in mass publicity.	1.98	1.87	1.57
3	Competition must always be honest and ethical.	1.98	2.13	1.52
4	So called "industrial espionage" (gathering data on your competitors) requires you to be ethical.	2.02	2.11	1.66
5	The subject of business/professional ethics should certainly be a required course in a college/university curriculum.	1.98	2.64	1.56
6	Business ethics interests you.	2.20	2.56	1.89
7	Business ethics is definitely affected by the industry.	2.48	2.32	2.77
	<b>Average</b>	<b>2.01</b>	<b>2.17</b>	<b>1.75</b>
8	If you notice that most of your colleagues are behaving unethically, you do the same.	4.28	4.18	4.41
9	Consistent financial problems justify unethical behaviour.	4.18	4.21	4.52
10	You behave unethically regardless of financial situation, because you can't get very far with ethics in modern business.	4.25	4.17	4.57
	<b>Average</b>	<b>4.24</b>	<b>4.19</b>	<b>4.50</b>

Table 7.

Comparison of Student and Practitioners Scores for the Second Part of the Survey (1 = very low; 5 = very high)

No.	Statement	BA	MA	Pr
1	Your professional ethics at work.	3.72	4.01	4.14
2	Importance/necessity of business ethics in modern business world.	4.14	4.10	4.32
3	Which of the following is the most important: a) short-term benefit from unethical behaviour (1) b) good reputation of your workplace (5)? Options 2-4 are also accepted.	4.55	4.41	4.67
4	Your opinion of business ethics in Estonia	2.62	2.74	2.75
	<b>Average</b>	<b>3.76</b>	<b>3.82</b>	<b>3.97</b>
5	How often do you behave (are forced to behave) unethically at work? (Very often – 5, never – 1)	1.80	1.76	1.75

### Comparisons Based on Age

Numerous studies have discovered that people seem to become more ethical as they get older (Ruegger and King, 1992; Rest, 1983; Serwenek, 1992), and one of the main factors supporting these findings becomes the reason that life experience makes people more cautious and more law-abiding. As with age people seem to take different ethical issues from the personal approach, which largely depends on feeling comfortable with obeying rules and laws existing in the state and in the society.

Young people seem to be more risk-prone and ready for new challenges which often involves “business for money” conception and promotion of hedonism philosophy, the main idea of which is to get maximum pleasure and benefit for one avoiding any pain. Therefore one should do his best to get maximum prevalence of pleasure over pain, which in practice is interpreted as making and spending money for services and products that bring satisfaction and enjoyment. This in turn leads to neglect of business and professional ethics in cases of gathering vital information or entering into a business competition.

In Estonia the difference in the opinions of several generations is very wide due to historical factors. Collapse of the Soviet system in early 1990s caused significant changes not only in Estonian political and economic system, but in the national culture of the country too. Soviet culture was dismissed by the new national value system, which made great impact on the individual ethical behaviour. Studies of Babakus (2004) revealed that age makes difference in being more or less ethical, which he claimed to a large extent being affected by culture, Jakubowski et al. (2002) reveal the reflection of national differences in the national codes of professional accounting ethics in various countries. Karnes et al. (1990) also state that different nationalities have different opinions on ethical and unethical issues. However, some studies seem to argue with this thesis by stating that responses of students in different countries to different ethical statements were quite similar (Lysonski and Gaidis, 1991), and that culture and national value factor have minimal impact on the ethical behaviour of an individual (Whiple and Swords, 1992).

Tables 8 and 9 show the results of score comparisons by age. The differences are quite significant for statements regarding ethical behaviour in case of business competition and industrial espionage and

the compulsory course of business ethics embedded into college/university curriculum. Young generation under the age of 25 seems to care less about ethics when it comes to business and profit, and they express the lowest requirement of business ethics in the modern business world. It is also obvious that they expressed the least agreement with the statement that business ethics should be a compulsory course in colleges and universities (score 2.71), while people older than 45 strongly agreed with this statement (1.50), which in authors' opinion may be explained by the fact that due to their age older people had been involved in ethical conflicts and faced the need to obtain knowledge and skills in business ethics. People at the age of 45 and older showed the strongest belief that consistent financial problems should not justify unethical behaviour (score 4.50), while people under the age of 25 seemed to be the most sceptical and expressed the lowest rank for this statement (score 4.21). It is also worth mentioning that the group of respondents older than 45 seemed to be most interested in business ethics (score 1.84), think that more attention should be paid to the business ethics in Estonia today (score 1.50) and that this subject should be included into college/university curriculum (score 1.50). At the same time they strongly disagree (score 4.63) that unethical behaviour of their colleagues would force them to behave the same way and they also expressed a very strong disagreement with the fact that today a person would not get very with ethics in a business world (score 4.72). These scores may be partly explained by the fact that older people have more strong moral principles influenced by their experience and different situations at work. Authors would also suggest that the oldest group of respondents have a strong belief that people should treat the others as they want to be treated themselves and consider this postulate to be natural for a human being and not inspired or developed by courses at the college/university or a mass media campaign.

Table 8.

Comparison of Scores by Age for the Second Part of the Survey (1 = very low; 5 = very high)

No.	Statement	< 25	25–35	36–45	> 45
1	Your professional ethics at work.	3.94	4.08	3.95	3.91
2	Importance/necessity of business ethics in modern business world.	4.08	4.11	4.24	4.47
3	Which of the following is the most important: a) short-term benefit from unethical behaviour (1); b) good reputation of your workplace (5)? Options 2-4 are also accepted.	4.37	4.53	4.62	4.63
4	Your opinion of business ethics in Estonia	2.79	2.70	2.62	2.72
	<b>Average</b>	<b>3.80</b>	<b>3.86</b>	<b>3.86</b>	<b>3.93</b>
5	How often do you behave (are forced to behave) unethically at work? Very often – 5, never – 1)	1.74	1.71	1.82	1.97

Table 9.

Comparison of Scores by Age for the First Part of the Survey (1 = strongly agree, 5 = strongly disagree)

No.	Statement	< 25	25-35	36-45	> 45
1	The term business/professional ethics is familiar.	1.58	1.55	1.26	1.28
2	There should be more focus on business ethics in Estonia, especially in mass publicity.	1.95	1.76	1.59	1.50
3	Competition must always be honest and ethical.	2.24	1.98	1.67	1.41
4	So called "industrial espionage" (gathering data on your competitors) requires you to be ethical.	2.11	2.05	1.87	1.53
5	The subject of business/professional ethics should certainly be a required course in a college/university curriculum.	2.71	2.29	1.80	1.50
6	Business ethics interests you.	2.69	2.34	1.91	1.84
7	Business ethics is definitely affected by the industry.	2.11	2.51	2.64	3.16
	<b>Average</b>	<b>2.20</b>	<b>2.07</b>	<b>1.82</b>	<b>1.75</b>
8	If you notice that most of your colleagues are behaving unethically, you do the same.	4.19	4.17	4.34	4.63
9	Consistent financial problems justify unethical behaviour.	4.21	4.22	4.41	4.50
10	You behave unethically regardless of financial situation, because you can't get very far with ethics in modern business.	4.12	4.24	4.43	4.72
	<b>Average</b>	<b>4.17</b>	<b>4.21</b>	<b>4.39</b>	<b>4.62</b>

### Comparisons by Major

Tables 10 and 11 show the breakdown of scores by major, significant differences in responses were shown in several cases. We can figure out that accounting students seem to be the most familiar (score 1.41 compared to 1.58 and 1.42) and the most interested in business ethics (score 2.18 compared to 2.49 and 2.51). They also have strong confidence that there should be more focus on business ethics in (score 1.69 compared to 1.80 and 2.02). Business & Economics students have shown the weakest score for the argument stating that ethical behaviour is an essential attribute of industrial espionage (score 2.08) and that competition should be always ethical and honest (score 2.11), it seems that being competitive in a certain business industry overcomes ethical postulates. In the second part of the survey the significant difference was the one which demonstrated that students specializing in Business & Economics found business ethics in modern business world less important than the other students (score 4.03 compared to 4.21 and 4.35). Also important was the fact that students specializing in Business & Economics seemed to be express the least concern on good reputation of the good reputation of the workplace, while accounting students were of the lowest opinion of business ethics in Estonia.

Table 10.

Comparison of Scores by Major for the First Part of the Survey (1 = strongly agree, 5 = strongly disagree)

No.	Statement	Accounting	Business & Economics	Other
1	The term business/professional ethics is familiar.	1.41	1.58	1.42
2	There should be more focus on business ethics in Estonia, especially in mass publicity.	1.69	1.80	2.02
3	Competition must always be honest and ethical.	1.88	2.11	1.81
4	So called "industrial espionage" (gathering data on your competitors) requires you to be ethical.	1.93	2.08	1.98
5	The subject of business/professional ethics should certainly be a required course in a college/university curriculum.	2.17	2.45	2.16
6	Business ethics interests you.	2.18	2.49	2.51
7	Business ethics is definitely affected by the industry.	2.49	2.47	2.19
	<b>Average</b>	<b>1.96</b>	<b>2.14</b>	<b>2.01</b>
8	If you notice that most of your colleagues are behaving unethically, you do the same.	4.26	4.17	4.51
9	Consistent financial problems justify unethical behaviour.	4.27	4.25	4.40
10	You behave unethically regardless of financial situation, because you can't get very far with ethics in modern business.	4.35	4.18	4.30
	<b>Average</b>	<b>4.29</b>	<b>4.20</b>	<b>4.40</b>

A great number of professional studies were made in order to explore the nature of a single professional group being more or less ethical than another, which may be caused by the educational background. Works of Jeffrey (1993) and Arlow (1992) pointed out that ethical development of accounting students is higher than of the students with different specialization. While some studies discovered that the accounting and business education has a negative influence on students ethical development (Lane, 1988; Mayer, 1988; Gray et al., 1994), which is caused by simplifying the role of business as a generator of goods, services and profit (Loeb, 1991). After the Enron case this problem gained much interest among professional organizations, mass media and academic staff, therefore we thought that such survey of Estonian opinion will be worth attention and analysis. The results of such comparison of scores between accounting students and students studying business & economics are presented above in two charts. These results show that accounting students behave unethically at workplace slightly more often than the other respondents (score 1.80 compared to 1.72 and 1.51), which may be explained by the fact that they demonstrated the lowest score for argument asking for their opinion of business ethics in Estonia (score 2.70 compared to 2.73 and 2.81).

Table 11.

Comparison of Scores by Major for the Second Part of the Survey (1 = very low; 5 = very high)

No.	Statement	Accounting	Business & Economics	Other
1	Your professional ethics at work.	3.96	3.92	4.37
2	Importance/necessity of business ethics in modern business world.	4.21	4.03	4.35
3	Which of the following is the most important a) short-term benefit from unethical behaviour (1) b) good reputation of your workplace? (5). Options 2-4 are also accepted.	4.54	4.39	4.67
4	Your opinion of business ethics in Estonia	2.70	2.72	2.81
	<b>Average</b>	<b>3.85</b>	<b>3.77</b>	<b>4.05</b>
5	How often do you behave (are forced to behave) unethically at work? (Very often – 5, never – 1)	1.86	1.73	1.47

## SUMMARY AND CONCLUSIONS

The study examined strength and weaknesses of various statements that, in our opinion, have been the most worth attention and determine the place of business and professional ethics in modern world. Many of these arguments were dictated by the nowadays situation in business world and growing importance of social aspect of economy, the others have long history and are more of the philosophical matter. The survey discovered that in Estonia people are familiar with business ethics but there should be more attention paid to this issue especially in mass media as one of the weakest arguments was the one about general opinion of business ethics in Estonia. The survey has shown that there is not much interest toward business ethics in Estonia, which may be caused by the fact that this subject is considered of low importance in Estonia and no scandals have been related to ignoring the principles of business or accounting ethics so far. Results have also shown that that there is a quite strong belief that in several industries business ethics is of a little importance. However, the strongest argument was the one that highly ranked the necessity business ethics in today business and the importance of the good reputation of workplace.

These findings have various implications. First, they emphasize that the hypothesis stated by the authors is proved and that if the government and the state would like to make companies socially responsible and to achieve more transparency in business as well as to avoid financial frauds it should make business and professional ethics items of a high priority. Second, business and professional ethics definitely merit special attention in the mass media and the educational institutions should make it the compulsory course, especially for the students specializing in business management, economics, finance and accounting.

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**APPLICATION OF THE ANALYTIC HIERARCHY PROCESS TO OPTIMIZE THE  
STRUCTURE OF RUSSIAN INDUSTRY BY THE TYPE OF ECONOMIC ACTIVITY**

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**Abstract**

*This paper substantiates the necessity of using multi-criteria approach to determine the optimal structure of Russian industry. To calculate the optimum correlation of the types of economic activities the Analytic Hierarchy Process is used. The authors also determine the degree of deviation of the actual industrial structure from the optimal one.*

**Key words:** *industry structure, types of economic activities, the Analytic Hierarchy Process, pairwise comparisons, the index of consistency.*

Sustainable industrial growth is a priority in the economic policy of the state. Positive dynamics of aggregate output suggests increasing the economic potential of the country, expanding the production possibilities of the society, and it serves as the basis for welfare growth of its citizens. However, the qualitative aspect of economic growth reflected in the structure of the industrial production is no less important.

Certain types of economic activity are characterized by different indicators of labor input and profitability, innovation and investment activity, social and ecological safety. Therefore, changes in the proportions of industrial production involve changes in most spheres of the society. Structural policy is a significant factor in the economic development of the country. Thus the development of a scientific approach to determine the optimal structure of industry in Russia is an important task of the research.

Structure analysis of Russian industry in 2009, presented in Table 1 shows that the largest specific weight of the volume of products shipped goes to extraction of fuel and energy mineral resources. This type of economic activity makes 20.55%. As for production and distribution of electric power, gas and water (13.81%), coke, petroleum products and nuclear materials (12.05%), metallurgical production and fabricated metal products (10.84%), they also take the greatest part of the structure of Russian industry, and present the industries manufacturing the products with low degree processing. Prevalence of these types of economic activities is explained by their high profitability. For instance, profitability level of the extraction of fuel and energy minerals amounts to 27.8%, manufacture of coke, refined petroleum and nuclear products - 25.9%, metallurgical production and fabricated metal products - 14.0%. On the other hand, economic activities with low efficiency constitute a small share in the industrial structure of Russia. This is the textile and clothing manufacture, wood processing and production of wood products, manufacture of rubber and plastic products. Similar relationship is traced between the amount of wages and the proportions of industrial production. Hence, in terms of profitability and wage the structure of Russian industry may be considered as optimal one.

However, the additional information provided in Table 1 indicates that the most cost-effective and highly paid activities are characterized by low rates of employment and adverse impact on the environment. Thus, the extraction of fuel and energy minerals, whose volume of products shipped is 20.55%, provides jobs for only 5.58% of the total employment in the industry. Production and consumption waste for this type of economic activity accounts for 1,984.9 million tons, more than half of all industrial waste. The remaining extracting industries account for 31.97% of the waste with the specific weight of the products shipped 2.51%. Manufacture of coke, refined petroleum products and nuclear materials is characterized by an acceptable level of environmental pollution, however, it shows a significant deviation between the percentage of products shipped (12.05%) and the proportion of employees (1.05%).

Table 1. Basic indicators of organizations in Russia by the type of economic activity for 2009

Type of economic activity	Volume of products shipped		Average annual number of workers		Average monthly wage, in rubles	Level of profitability, %	Generation of production and consumption waste	
	mln., rubles	specific weight, %	thousand people	specific weight, %			mln., tons	specific weight, %
Extraction of fuel and energy mineral resources	4, 537.7	20.55	590.5	5.58	41, 568.3	27.8	1, 984.9	58.67
Extraction of mineral resources, except for fuel and energy	553.3	2.51	324.3	3.06	24, 064.1	31.0	1, 081.6	31.97
Production of foodstuff including beverages and tobacco	2, 822.1	12.78	1, 343.5	12.69	15, 653.1	11.2	25.1	0.74
Textile and clothing manufacture	155.8	0.71	336.5	3.18	9, 020.5	5.4	0.2	0.01
Manufacture of leather, leather products and footwear	34.8	0.16	57.8	0.55	10, 073.2	7.3	0.1	0.00
Wood processing and manufacture of wood products	214.2	0.97	276.3	2.61	10, 947.2	-0.8	5.0	0.15
Pulp and paper industry; publishing and printing activities	499.0	2.26	361.8	3.42	17, 707.1	8.1	5.3	0.16
Production of coke, petroleum products and nuclear materials	2, 661.5	12.05	111.6	1.05	37, 963.7	25.9	1.5	0.04
Chemical production	1, 061.7	4.81	441.2	4.17	19, 428.7	10.1	20.6	0.61

Manufacture of rubber and plastic products	375.0	1.70	259.4	2.45	13, 850.6	5.8	0.1	0.00
Manufacture of other non-metallic mineral products	683.3	3.09	596.0	5.63	16, 053.7	6.7	12.1	0.36
Metallurgical production and fabricated metal product manufacture	2, 393.2	10.84	997.7	9.42	17, 946.3	14.0	174.6	5.16
Manufacture of machinery and equipment	801.6	3.63	901.2	8.51	17, 009.6	7.6	1.8	0.05
Manufacture of electrical, electronic and optical equipment	816.6	3.70	824.2	7.79	17, 360.4	7.8	0.6	0.02
Manufacture of transport vehicles and equipment	1, 119.4	5.07	1, 041.7	9.84	17, 367.8	1.7	1.9	0.06
Other production	303.5	1.37	286.5	2.71	12, 543.1	4.1	2.7	0.08
Production and distribution of electric power, gas and water	3, 049.6	13.81	1, 836.5	17.35	21, 554.2	7.6	65.3	1.93
TOTAL	22, 082.3	100.00	10, 586.7	100.00	X	X	3, 383.4	100.00

This analysis shows that it is impossible to single out any one criterion to develop the structural policy of the state. The methodology based on profitability and wages, will inevitably lead to further strengthening the position of extracting industries. The consequence can be an unstable economic situation, the lack of perspective for long-term development, and the emergence of threats to national security. Using the criterion of employment will lead to an increase in the share of labor-intensive industries with low levels of technological innovation. Attention to the environmental component results in under-utilization of productive capacity and the weakening competitive position in the global economy. Therefore, optimizing the industrial structure of Russia should be based on the use of multi-criteria method. There is an urgent need for a comprehensive, systematic, balanced approach designed to ensure industrial growth in the interests of various actors of the economy, which aims at finding a compromise between the development of production and preservation of favorable environmental conditions, between the emergence of a strong state and maintaining a high standard of living. It is the Analytic Hierarchy Process developed by the famous American scientist Thomas Saaty that enables the implementation of the principles stated above.

Let us consider the possibility of applying this method to find the optimal structure of industry in Russia. The solution of the problem can be divided into several stages.

Stage 1. Structuring the problem as a hierarchy.

Within this stage it is necessary to present the problem as a multilevel hierarchical structure that reflects the influence of various factors on the decision-making process, their relationship and subordination (Fig. 1).

The first level of the hierarchy presents the main goal of the study - determining the optimal industrial structure in Russia. Achieving this goal is considered from the standpoint of the interests of various actors, traditionally highlighted in the economic theory as households, firms and the state. They form the second level of the hierarchy. Then the indicators of the quantitative and qualitative aspects of the functioning of various activities follow. Based on the anticipated goals of economic actors and the content of the published annual statistical information the criteria of employment, wages, profitability and the environment are identified on the third level of the hierarchy. The fourth level is presented by the types of economic activities that make up the industrial sector of the economy of Russia.

Stage 2. Prioritizing elements of the fourth level of the hierarchy in relation to the third level elements.

At this stage, it is required to assess successively each element of lower levels hierarchy by the degree of its influence on the higher level. As a universal tool for setting priorities Thomas Saaty proposes using pairwise comparisons, the results of which are presented in a matrix form.

If  $C_1, C_2, C_3, \dots, C_n$  is the set of elements of a hierarchy level, then the results of pairwise comparisons  $(C_i, C_j)$  will form a square matrix of  $n \times n$  dimension, presented in Table 2.

Table 2. Pairwise comparisons matrix

Indicator	$C_1$	$C_2$	$C_3$	...	$C_n$
$C_1$	1	$a_{12}$	$a_{13}$	...	$a_{1n}$
$C_2$	$1/a_{12}$	1	$a_{23}$	...	$a_{2n}$
$C_3$	$1/a_{13}$	$1/a_{23}$	1	...	$a_{3n}$
...	...	...	...	...	...
$C_n$	$1/a_{1n}$	$1/a_{2n}$	$1/a_{3n}$	...	1

Comparison of the influence degree is always done for the object standing in the left column with respect to the object standing on the top line. For example, the number written in the cell  $(C_1, C_2)$ , indicates that  $C_1$  is preferable to  $C_2$   $a_{12}$  times. The matrix diagonal forms unities, as the comparison of the element with itself yields equal value.

Pairwise comparisons below the main diagonal represent the inverse values of comparisons written above the main diagonal. For example, if cell  $(C_2, C_3)$  is represented by the number  $a_{23}$ , then the position  $(C_3, C_2)$  is automatically filled with the value  $1/a_{23}$ .

To quantify the prevalence of one object over another Thomas Saaty developed the fundamental scale presented in Table 3.

Setting the priorities  $C_1, C_2, C_3, \dots, C_n$  means finding the principal eigenvector of the matrix with subsequent normalization of its values. To do this, one should multiply the  $n$  elements of each row and extract the root of the  $n$ -th degree, i.e., calculate the geometric mean of each row. To normalize the numbers obtained all the components of the eigenvector should be consistently divided into the total

amount of components. The obtained values represent the preferences of the objects located at some level of the hierarchy with respect to the higher level.

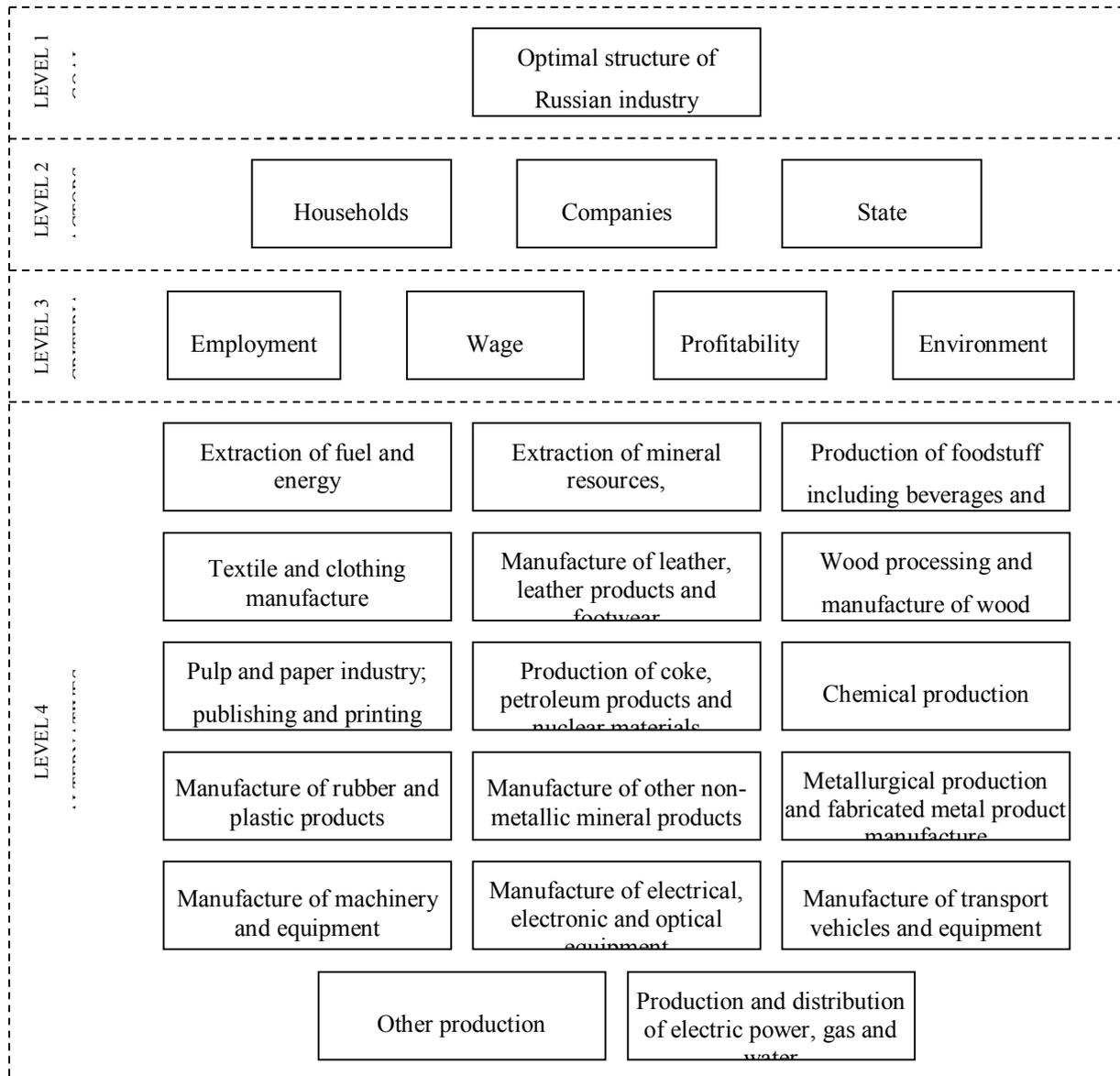


Figure 1. Task hierarchy of finding the optimal structure of industry in Russia

To assess the consistency of judgments used in setting priorities, we must calculate the maximum eigenvalue of the matrix of pairwise comparisons. Multiplying the matrix  $A = (a_{ij})$  by the vector of priorities gives a new vector. After dividing each component of the new vector to the corresponding component of the vector of priorities we have a vector the average arithmetic of which represents an approximation to the number of  $\lambda_{max}$  (maximal eigenvalue).

Table 3. Fundamental scale

Degree of importance	Identification	Explanation
1	Equal importance	Two actions are making the same contribution to achieving the goal
3	Some predominance of the importance of one action over the other (weak significance)	Experience and judgment give a slight preference for one action over another
5	Substantial or strong importance	Experience and judgment give strong preference for one action over another
7	Very strong or obvious importance	The preference of one action over another is very strong. Its superiority is clear
9	Absolute importance	Evidence in favor of the preference of one action over another is highly preferable
2, 4, 6, 8	Intermediate values between adjacent scale values	The situation when a compromise is needed

Deviation from the consistency can be expressed by the index of consistency, which is calculated by the formula:

$$IC = \frac{\lambda_{max} - n}{n - 1},$$

where:  $IC$  – the index of consistency;

$\lambda_{max}$  – the maximum eigenvalue of the matrix;

$n$  – the dimension of the matrix.

The ratio of consistency is determined by:

$$RC = \frac{IC}{RI},$$

where:  $RC$  – the ratio of consistency;

$IC$  – the index of consistency;

$RI$  – random index (Table 4).

The ratio of consistency less than or equal to 0.1 is considered to be acceptable. Otherwise, the judgments are to be reviewed and all the above procedures are repeated.

Let us return to our main issue at this stage - to prioritize the elements of the fourth level of the hierarchy in relation to the elements of the third level.

Table 4. The values of the random index

Dimension of the matrix	1	2	3	4	5	6	7	8	9	10
Random index	0.00	0.00	0.58	0.90	1.12	1.24	1.32	1.41	1.45	1.49

We start with the criterion of "Employment". To describe it the actual data on the average number of employees of organizations by kinds of economic activity are used. Availability of statistical information ensures maximum objectivity of the process and simplifies the calculations. However, using the absolute value of the average number of employees will result in a distortion of priorities and the establishment of preference for the kinds of economic activity, where a high level of employment is a consequence of large volumes of production. To resolve this deficiency one should calculate labour intensity rates for each element of the fourth level of the hierarchy as follows:

$$LI = \frac{ANE}{VOP},$$

where: *LI* – labour intensity;

*ANE* – average number of employees of organizations;

*VOP* – volume of own production (works, services) shipped.

After normalization of the calculated values of the labour intensity we obtain the desired vector of priorities of economic activities by the criterion of "Employment" (Table 5).

Table 5. The calculation of priorities vector by the criterion of "Employment"

Type of economic activity	Average annual number of workers, thousand people	Labour intensity	Vector of priorities
Extraction of fuel and energy mineral resources	590.5	0.1301	0.0092
Extraction of mineral resources, except for fuel and energy	324.3	0.5861	0.0416
Production of foodstuff including beverages and tobacco	1, 343.5	0.4761	0.0338
Textile and clothing manufacture	336.5	2.1598	0.1534
Manufacture of leather, leather products and footwear	57.8	1.6609	0.1180
Wood processing and manufacture of wood products	276.3	1.2899	0.0916
Pulp and paper industry; publishing and printing activities	361.8	0.7251	0.0515
Production of coke, petroleum products and nuclear materials	111.6	0.0419	0.0030
Chemical production	441.2	0.4156	0.0295

Manufacture of rubber and plastic products	259.4	0.6917	0.0491
Manufacture of other non-metallic mineral products	596.0	0.8722	0.0620
Metallurgical production and fabricated metal product manufacture	997.7	0.4169	0.0296
Manufacture of machinery and equipment	901.2	1.1243	0.0799
Manufacture of electrical, electronic and optical equipment	824.2	1.0093	0.0717
Manufacture of transport vehicles and equipment	1,041.7	0.9306	0.0661
Other production	286.5	0.9440	0.0671
Production and distribution of electric power, gas and water	1,836.5	0.6022	0.0428

Calculation of the priorities for the rest of the criteria is made according to the same scheme. And the priorities for the criterion "Wage" will be calculated by normalizing the data on average monthly gross wages of employees of organizations by kinds of economic activity. To determine the vector of priorities for "Profitability", data on the profitability level of the products sold and the produce (works and services) by the type of economic activity are to be normalized. Priorities by the criterion of "Environment" are determined using data on waste production and consumption. To do this, the absolute values of production and consumption waste must be converted to the rates of production waste capacity which are calculated by the formula:

$$WC = \frac{PCW}{VOP},$$

where:  $WC$  – waste capacity;

$PCW$  – production and consumption waste;

$VOP$  – volume of own production (works, services) shipped.

As waste capacity is a negative characterization of economic activity, calculating the priorities, you must first calculate the inverse vector of values, and then normalize the resulting numbers.

As a result of the above calculations we get the priorities of the elements of the fourth level of the hierarchy in relation to the elements of the third level, which are presented in Table 6.

Table 6. Vectors of priorities for economic activities

Type of economic activity	Vector of priorities by "Employment"	Vector of priorities by "Wage"	Vector of priorities by "Profitability"	Vector of priorities by "Ecology"
Extraction of fuel and energy mineral resources	0.0092	0.1299	0.1533	0.0002
Extraction of mineral resources, except for fuel and energy	0.0416	0.0752	0.1710	0.0001
Production of foodstuff including beverages and tobacco	0.0338	0.0489	0.0618	0.0117
Textile and clothing manufacture	0.1534	0.0282	0.0298	0.0813
Manufacture of leather, leather products and footwear	0.1180	0.0315	0.0403	0.0363
Wood processing and manufacture of wood products	0.0916	0.0342	-0.0044	0.0045
Pulp and paper industry; publishing and printing activities	0.0515	0.0553	0.0447	0.0098
Production of coke, petroleum products and nuclear materials	0.0030	0.1186	0.1429	0.1852
Chemical production	0.0295	0.0607	0.0557	0.0054
Manufacture of rubber and plastic products	0.0491	0.0433	0.0320	0.3914
Manufacture of other non-metallic mineral products	0.0620	0.0502	0.0370	0.0059
Metallurgical production and fabricated metal product manufacture	0.0296	0.0561	0.0772	0.0014
Manufacture of machinery and equipment	0.0799	0.0531	0.0419	0.0465
Manufacture of electrical, electronic and optical equipment	0.0717	0.0542	0.0430	0.1421
Manufacture of transport vehicles and equipment	0.0661	0.0543	0.0094	0.0615
Other production	0.0671	0.0392	0.0226	0.0117
Production and distribution of electric power, gas and water	0.0428	0.0673	0.0419	0.0049

Stage 3. Prioritizing elements of the third level of the hierarchy in relation to the elements of the second level.

At this stage, it is required to determine the degree of preference for each criterion, located on the third level of hierarchy in relation to business entities.

The calculation of the vector of priorities for households, companies and the state is presented in tables 7, 8 and 9.

Table 7. The calculation of the vector of priorities for households

Criteria	Employment	Wage	Profitability	Environment	Own vector	Vector of priorities
Employment	1	3	9	5	3.4087	0.5651
Wage	1/3	1	7	3	1.6266	0.2696
Profitability	1/9	1/7	1	1/5	0.2374	0.0393
Environment	1/5	1/3	5	1	0.7598	0.1260

Table 8. The calculation of the vector of priorities for companies

Criteria	Employment	Wage	Profitability	Environment	Own vector	Vector of priorities
Employment	1	1/5	1/9	1/3	0.2934	0.0456
Wage	5	1	1/5	3	1.3161	0.2045
Profitability	9	5	1	7	4.2129	0.6545
Environment	3	1/3	1/7	1	0.6148	0.0955

Table 9. The calculation of the vector of priorities for the state

Criteria	Employment	Wage	Profitability	Environment	Own vector	Vector of priorities
Employment	1	7	9	3	3.7078	0.5824
Wage	1/7	1	3	1/5	0.5411	0.0850
Profitability	1/9	1/3	1	1/7	0.2697	0.0424
Environment	1/3	5	7	1	1.8481	0.2903

Stage 4. Prioritizing elements of the second level of the hierarchy in relation to the main goal and the calculation of global priorities.

At this stage it is necessary to determine the degree of influence of each economic entity on the main goal of the study. Depending upon country's political and economic situation, its traditions and customs the actors' impact on the decisions may be different. Within the task considered, we assume that each of the subjects of the economy has the same impact, so the vector of priorities will be (0.3333; 0.3333; 0.3333).

After determining the priority of each level of hierarchy in relation to the higher level, the global vector of priorities is computed. To do this, you first need to assess the priorities of economic activities in relation to economic entities. They are calculated as the sum of the priorities of the elements of the fourth level of the hierarchy in relation to the elements of the third level and the priorities of the third level elements in relation to the elements of the second one (Table 10).

Then the priorities of economic entities are consolidated in a single vector by finding the arithmetic mean of the priorities of households, companies and the state. Values of the found vector indicate the desired result - an optimal industrial structure in Russia.

Table 10. Calculation of priorities of economic activities for economic actors

Type of economic activity	Vector of priorities for households	Vector of priorities for companies	Vector of priorities for the state
Extraction of fuel and energy mineral resources	0.0463	0.1273	0.0230
Extraction of mineral resources, except for fuel and energy	0.0505	0.1292	0.0379
Production of foodstuff including beverages and tobacco	0.0362	0.0531	0.0299
Textile and clothing manufacture	0.1057	0.0400	0.1166
Manufacture of leather, leather products and footwear	0.0813	0.0416	0.0836
Wood processing and manufacture of wood products	0.0614	0.0087	0.0574
Pulp and paper industry; publishing and printing activities	0.0470	0.0438	0.0394
Production of coke, petroleum products and nuclear materials	0.0626	0.1356	0.0716
Chemical production	0.0359	0.0507	0.0263
Manufacture of rubber and plastic products	0.0900	0.0694	0.1473
Manufacture of other non-metallic mineral products	0.0507	0.0378	0.0436
Metallurgical production and fabricated metal product manufacture	0.0351	0.0635	0.0257
Manufacture of machinery and equipment	0.0670	0.0464	0.0663
Manufacture of electrical, electronic and optical equipment	0.0747	0.0561	0.0894
Manufacture of transport vehicles and equipment	0.0601	0.0261	0.0614
Other production	0.0508	0.0270	0.0467
Production and distribution of electric power, gas and water	0.0446	0.0436	0.0338

Comparative analysis of the actual structure of the industry in 2009 and the optimal one is shown in Table 11.

The tables show that the Russian economy is characterized by its great unevenness with strong predominance of some types of economic activities and weak development of others. For instance, 20.55% of products shipped go to the extraction of fuel and energy minerals, whereas its optimal value should be lower by 13.99 points. Large deviations are also observed in the production and distribution of electric power, gas and water (9.74 points), food products, beverages and tobacco (8.81 points), metallurgical production and fabricated metal products (6.70 points). Meanwhile, such activities as the manufacture of rubber and plastic products, textile and clothing manufacture, manufacture of leather, leather products and footwear, are characterized by low rates of production and sales, whereas the AHP has prioritized these industries.

Thus, the results of the study clearly show the existing imbalances in the industry in Russia. The structure of the aggregate output is lopsided, and it is manifested in the predominance of economic activities that are preferred by the companies, while the interests of other economic entities are practically not taken into account. Application of the AHP to determine the optimal structure of the industry allows to solve this issue comprehensively, considering various factors and the needs of a wide range of participants. Results of the research conducted can be used to select the top priority areas of investment, to identify economic activities that require government support most, and to determine the vector of strategic development of the economy.

Table 11. The structure analysis of Russian industry

Type of economic activity	Actual structure	Optimal structure	Deviation
Extraction of fuel and energy mineral resources	20.55	6.55	-13.99
Extraction of mineral resources, except for fuel and energy	2.51	7.25	4.75
Production of foodstuff including beverages and tobacco	12.78	3.97	-8.81
Textile and clothing manufacture	0.71	8.74	8.04
Manufacture of leather, leather products and footwear	0.16	6.89	6.73
Wood processing and manufacture of wood products	0.97	4.25	3.28
Pulp and paper industry; publishing and printing activities	2.26	4.34	2.08
Production of coke, petroleum products and nuclear materials	12.05	8.99	-3.06
Chemical production	4.81	3.76	-1.04
Manufacture of rubber and plastic products	1.70	10.22	8.52
Manufacture of other non-metallic mineral products	3.09	4.41	1.31
Metallurgical production and fabricated metal product manufacture	10.84	4.14	-6.70
Manufacture of machinery and equipment	3.63	5.99	2.36
Manufacture of electrical, electronic and optical equipment	3.70	7.34	3.64
Manufacture of transport vehicles and equipment	5.07	4.92	-0.15
Other production	1.37	4.15	2.78
Production and distribution of electric power, gas and water	13.81	4.07	-9.74

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**THE EFFECT OF SERVICE QUALITY ON CUSTOMER SATISFACTION:  
A RESEARCH IN PUBLIC AND UNIVERSITY HOSPITALS IN TURKEY<sup>11</sup>**

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**Abstract**

*The main aim of this research was to determine which elements of service quality had the effect of raising patient satisfaction to a higher level. The research was exploratory, with all data collected by means of a questionnaire. In Kars province in Turkey two State Hospitals (Public and Maternity) together with the University Hospital provided a convenience sample of some 265 outpatients to whom the questionnaire was administered, and then all data analysed. In brief, the findings of the research show that even though the elements of service quality identified as 'investigatory services', 'services received prior to examination' and 'the physical surroundings' may vary according to the type of hospital concerned, patient satisfaction would seem not to change regardless of the type of hospital involved. However, the aspects of service quality identified as 'services received prior to examination' and 'the physical appearance of surroundings' did affect patient satisfaction; whilst the elements designated as 'medical services', 'investigatory services' and 'services associated with registration' would not seem to affect patient satisfaction.*

**Key words:** Service quality, customer satisfaction, hospital, Turkey, Kars

**1. INTRODUCTION**

Nowadays, companies find themselves struggling within a continuously rising cycle of competition and, whether they lie within the manufacturing or service sectors, must make great efforts to ensure their advantage over competitors, and thus increase their market share. (Yavaş et al, 1997: 217–223). Hospitals and health institutions have found themselves forced to pay more attention to service quality, and to differentiate within service provision, in order to ensure sustainability of existing resources and survival within an increasingly competitive environment. It would seem the focus on service quality arises from the fact that it can be controlled, and from the customers' perspective, it provides an indication of their value. From this it follows that different methods of measuring service quality have been developed and continue to grow. This work examines data collected in Kars State Hospital, Kars Maternity Hospital and Kafkas University Hospital, on the effect of aspects of service quality on patient satisfaction.

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## 2. SERVICE QUALITY AND ITS EFFECT ON CUSTOMER SATISFACTION

Quality is something everyone feels they understand, but would also seem to be a concept which, when examined from all possible points of view, is impossible to define. (Edvardsson, Thomasson & Qvretveit, 1994: 77; Gümüšoğlu et al, 2007:38). When customers have paid for a service, and that service has been delivered, they should be able to give their own impressions of the quality of the service they have received. Gronross (1984) states that service quality can be entwined with customers' perceptions and expectations, and for service managers to ensure outcomes of lasting value, the first step they should take is to introduce measurement of service quality. Consequently, it would seem possible to state that the concept of service quality should embrace the needs and expectations of the customer, aligned to core characteristics of the service, and by degrees the service will acquire a sense of ownership with respect to its quality (Esin, 2002). The main components of service quality can be listed as: the service delivery environment and its appearance; timeliness of service delivery; expertise of those involved in delivery; offer of continuous service; and other factors such as reliability, accuracy and flexibility. Thus quality of health services should be defined, and perceived as being based upon, patient satisfaction throughout the different stages from the patient's initial contact, followed by diagnosis, treatment and care; at all times service quality should play a key role. At the same time consideration should be given to what happens whilst the patient is waiting: the courtesy and consistency of staff; accessibility of service; whether or not the correct service is presented at the first attempt; how staff respond to and solve unexpected problems; and if the service is delivered on time and completely; all of these play an important role within service quality (Tarım, 2000).

In the context of service quality measurement SERVQUAL, and other similar tools have been developed (Parasuraman, Zeithaml & Berry, 1985; Yılmaz, 2007). According to Parasuraman, Zeithaml & Berry (1985, 1988) SERVQUAL measures 5 characteristics of service quality: reliability, assurance, tangibility, empathy and responsiveness (Parasuraman et al, 1988. p23).

In the current climate of competition for patients, high on the agenda of all health managers must be the need to satisfy patients, and thus ensure that they will return to the hospital when necessary in future. Ensuring patient satisfaction by meeting their needs and expectations, should result in the desired outcome. In general, patient satisfaction can be seen as meeting the expectations of a given patient, or providing a given service which fits with the patient's perception. (Tarım, 2000; Kavuncubaşı, 2000: 291). Elements of patient satisfaction such as the actual patient, the staff involved, and characteristics of the physical surroundings and environment can all be linked. Consideration should also be given to factors such as the patient's age, level of education, income, profession, gender, language, religion, race and family situation, all of which socio-demographic indicators can play an important role in the context of patient satisfaction. Equally, service delivery personnel and physical conditions can also affect satisfaction with the service. Patient satisfaction is one of the most important factors in health service quality. Patient satisfaction is one of the basic outputs of health services which should be scrutinised throughout the health service delivery process, thus ensuring all possible benefits (Demir, 1999:3). According to Önsöz et al (2008:33) patient satisfaction can be measured by asking questions based on the physical condition of the hospital; on satisfaction with staff involvement; on satisfaction in general; on whether or not they would use the hospital again; whether or not they would recommend the hospital to others; and on what has been the most and least satisfying aspects of their hospital experience. Without doubt, it would seem clear that the importance of measuring patient satisfaction has now been established. Latterly, it would seem that the subject of patient satisfaction has attracted even more attention, and work on its measurement has become even more widespread, in both the public and private health sectors (Hayran, 2005). To give a guarantee of quality, or other similar assurance, patient satisfaction must be demonstrated. (Walker et al, 1998:

193). In recent years, especially in developed countries such as the USA and Great Britain, patient satisfaction features high on the list of outcome criteria drawn up by Health Ministries (Walker, 1998; Williams, 1994).

When conducting research within the service sector, in many other fields as well as the health sector, it would seem that successful management within any such sector plays a critical role (Yağcı, 2006: 218). An individual's past experiences, be they positive or negative, will be passed on to friends and acquaintances; expectations may find their way into all forms of media; age, gender, level of education, social circumstances, the state of an individual's health or lack of same; a medical diagnosis and the patient's own personal perceptions of his/her state of health can all effect patient satisfaction (Forbes & Brown, 1995: 737; Lin, 1996). Tükel et al (2004) produced a model based on factors effecting patient satisfaction, when they investigated measured levels of satisfaction in patients following discharge, after in-patient treatment in the General Surgical Wards of one hospital. Yağcı & Duman (2006) researched the characteristics of perceptions of quality within the outpatient clinics of hospitals, and then investigated the relationship between the type of hospital involved and generic patient satisfaction. They concluded that patient satisfaction was greatly affected in state hospitals by the services encountered prior to examination, together with the appearance of the physical surroundings; in private hospitals all aspects of the service had equal impact; and in university hospitals critical factors were the medical services, meeting of personal needs, investigatory services and appearance of physical surroundings. Önsöz et al (2008) investigated levels of patient satisfaction, and factors which influenced such levels, amongst in-patients at Marmara University Medical Faculty Hospital. They concluded that the two most important factors affecting general levels of satisfaction were the condition of the patients' rooms and the skill of the doctors. Özmen's (1990) 'work revealed that patients with low expectations and little relevant knowledge were the most satisfied, whilst those with knowledge of their condition or higher expectations were less satisfied. Zaim & Tarım (2010) applied SERVQUAL measures within Turkey's public hospitals and collected data on patient satisfaction under five headings. These were reliability, assurance, tangibility, empathy and responsiveness. They also asked patients whether or not they were satisfied with the services they had received, and focused on patients' satisfaction with the hospitals in general, rather than with the hospital management or the doctors. Devebakan & Aksaraylı (2003), carrying out research in a private hospital in Izmir, examined the relationship between patients' demographic characteristics and their evaluation of service quality. Their results showed that older patients deemed the service quality to be more positive than younger patients; those of lower educational levels were more satisfied than their more educated counterparts; higher earners showed more satisfaction than those on lower incomes. In the same research work a modified version of the SERVQUAL measures was applied to the hospital services, and the most important aspects of service quality for patients were shown to be 'reliability' and 'trust'.

### 3. RESEARCH METHODOLOGY

The aim of this research was to examine the effects of elements of service quality on patient satisfaction. Specifically the work aimed to produce an empiric study of the effects on patient satisfaction within the health sector, of elements of service quality (services received prior to examination, medical services, meeting individual patient needs and investigatory services, together with physical appearance of surroundings). This research arose from the fact that in Kars province, in the east of Turkey, health services are underused with inhabitants travelling to the nearest city, Erzurum, to receive treatment for even the most basic health issues. Hence it was predicated that if

aspects of service quality in local institutions were investigated, weaknesses would be identified and could be addressed, resulting in higher levels of patient satisfaction and increased usage of local health services. Research took place in the State, Maternity and University Hospitals in Kars province. The research was based upon a questionnaire with 33 questions on service quality (Yağcı & Duman, 2006) together with 4 questions on patient satisfaction derived from the literature (Önsöz et al, 2008) and a total of 265 questionnaires were completed (*by patients attending outpatient clinics*). As this research is considered to be exploratory it was decided to use a convenience sample rather than a random sample.

Hypotheses used in this research are set out below:

- **H1:** There are differences in aspects of service quality in different types of hospital.
- **H2:** Patient satisfaction varies in different types of hospital.
- **H3:** Aspects of service quality have a positive effect on patient satisfaction.

#### 4. EMPIRICAL RESULTS

##### 4.1. Demographic Characteristics

The sample of 265 patients taking part in this research comprised 107 in the Maternity Hospital, 61 in the State Hospital and 97 in the University Hospital. The subjects were 191 female and 74 male. The age range was 0-29 years, 123; 30-45 years, 79; and 46 years and over, 63.

##### 4.2. Validity and Reliability

To test the validity of this research peer review and factor analysis were carried out. The service quality questionnaire scored 94% on the Kaiser-Meyer-Olkin (KMO) test and the Bartlett test produced a significance of .000. When service quality was considered in terms of 5 factors and varimax rotational factor analysis applied to aspects of service quality, the total variance was 72.826. The 5 factors were, in order of application, medical services (F1); meeting personal needs and investigatory services (F2); services received from nurses and administrative personnel prior to examination (F3); services relating to appointment-making and registration prior to examination (F4); physical appearance of surroundings (F5). Of the total 33 questions administered, 5 (questions number 10,11,12,24,30) were removed from the final analysis because they would seem to have had an adverse effect on the weight of factors and reduced reliability. In terms of patient satisfaction KMO was 82% and Bartlett significance .000. When varimax rotational analysis was applied with patient satisfaction as the only factor the total variance was 81.01.

At the conclusion of factor analysis, for which questions had been grouped in line with factors, those groups which produced an eigen value greater than 1 were then collected according to responses, and reliability testing applied to reveal dependencies. Thus every single variable and mean relationship between questions was evaluated to test the internal consistency of the measures. This showed that the reliability of the elements designated medical services (F1), meeting personal needs and investigatory services (F2), services received from nurses and administrative personnel prior to examination (F3), services relating to appointment-making and registration prior to examination (F4) and physical appearance of surroundings (F5) were, in the same order, 0.95; 0.90; 0.90; 0.85; 0.82. The reliability of the patient satisfaction measure was 0.92. Finally the application of Cronbach's Alpha coefficient of reliability confirmed the reliability of the factors, and this was further reinforced by the relevant literature which would seem to accept 70% and above (Nunnally, 1978; Altunışık et al, 2004, p.115;

Saruhan & Özdemirci, 2005, p.118). As can be seen, the content of the questionnaire and its administration, together with the measures chosen in the context of the health sector, can all be said to meet required conditions for validity and reliability.

#### 4.3. Means

Following factor analysis the aspects of quality service mean scores were as follows: medical services (F1) 5.39; physical surroundings (F5) 5.05; meeting personal needs and investigatory services (F2) 5.00; appointment-making and registration services prior to examination (F4) 4.29; services received from nurses and administrative personnel prior to examination (F3) 4.24. The mean score on patient satisfaction was 4.47. Thus it would seem that the most important aspect of service quality is 'medical services' and these should be evaluated for all patients in the clinic in terms of necessary treatment and care, bearing in mind the vital role of correct diagnosis and appropriate treatment. It would also seem important to ensure that patients can contact the doctor when necessary, that they receive accurate information about their condition, and that they are given good advice to follow after discharge. Other aspects of the doctor-patient relationship such as doctors' choosing which patients to treat, how they behave towards patients and how any follow-up is handled would also seem crucial in this context. When a patient visits the doctor s/he expects that doctor to arrive at a correct diagnosis and prescribe the correct treatment. For this reason correct diagnosis and treatment play such an important role in service quality. In second place was the element 'physical appearance of surroundings (5.050) which for a hospital should mean creating a calm, relaxing environment together with, for those who stay as in-patients, rooms which are clean and well-equipped, all of these feeding into effects on service quality. The final place was taken by 'services received from nurses and administrative personnel prior to examination which scored (4.244).

#### 4.4. Correlation Analysis

The Table below sets out the results of factor analysis on the relationship between the elements of service quality.

**Table 1: Correlation Analysis**

VARIABLES	F1	F2	F3	F4	F5	PS
F1 (Medical services)	1					
F2 (Meeting personal needs and investigatory services)	.669**	1				
F3 (Services received from nurses and admin. personnel prior to examination )	.554**	.637**	1			
F4 (Services relating to appointment-making and registration prior to examination)	.634**	.721**	.640**	1		
F5 (Physical appearance of surroundings)	.544**	.591**	.505**	.593**	1	
PS (Patient satisfaction)	.536**	.566**	.574**	.568**	.581**	1

\*\*  $p < 0.01$

As can be seen from Table 1 which ranks the relationship between variables, the highest ranking is between 'meeting personal needs and investigatory services' (F2) and 'services relating to appointment-making and registration prior to examination' (F4); and the lowest ranking is between 'services received from nurses and admin. Personnel prior to examination' (F3) and 'physical appearance of surroundings' (F5).

4.5. Difference Analysis

Whether or not the type of hospital concerned had an impact on aspects of service quality and patient satisfaction was also investigated, and the results can be seen in the Table below. From this it can be seen that whilst Hypothesis 2 is rejected, Hypothesis 1 should be accepted for the elements 'meeting personal needs and investigatory services' (F2), 'services received from nurses and administrative personnel prior to examination' (F3) and 'physical appearance of surroundings' (F5).

**Table 2:** Difference Analysis by Type of Hospital

Dependent Variable	Independent Variable (Type of Hospital )	N	Mean	S.D	F Value	p Value
F1 (Medical services) <b>(H1 REJECT)</b>	Maternity	107	5.35	1.37	0.45	0.64
	State	61	5.29	1.87		
	University	97	5.5	1.32		
F2 (Meeting personal needs and investigatory services) <b>(H1 ACCEPT)</b>	Maternity*	107	<b>4.84</b>	1.39	3.854	<b>.022</b>
	State	61	4.8	1.7		
	University*	97	<b>5.31</b>	1.13		
F3 (Service received from nurses and admin. personnel prior to examination) <b>(H1 ACCEPT)</b>	Maternity	107	4.25	1.18	3.881	<b>.022</b>
	State*	61	<b>3.9</b>	1.4		
	University*	97	<b>4.44</b>	1.06		
F4 (Service related to appointment-making/registration and waiting for examination) <b>(H1 REJECT)</b>	Maternity	107	4.78	1.46	2.273	.105
	State	61	4.78	1.69		
	University	97	5.18	1.31		
F5 (Physical appearance of surroundings) <b>(H1 ACCEPT)</b>	Maternity*	107	<b>4.65</b>	1.58	8.387	<b>.000</b>
	State	61	5.05	1.57		
	University*	97	<b>5.5</b>	1.25		
PS (Patient Satisfaction) <b>(H2 REJECT)</b>	Maternity	107	2.67	1.76	1.27	0.28
	State	61	4.56	1.87		
	University	97	4.64	1.63		

\* Post hoc analysis revealed meaningful differences according to the source of the group.

The University Hospital would seem to be better than the Maternity Hospital in terms of 'meeting personal needs and investigatory services', but this could be because the University Hospital has fewer patients and thus is better able to meet their needs and provide a higher quality of service. Indeed, it would seem that owners of a social security green card will not go to the University Hospital unless they are specifically sent there. In the context of 'services received from nurses and administrative personnel prior to examination' the University Hospital again would seem to offer a higher quality of service than the State Hospital. However, as above, the University Hospital's nurses and administrative personnel deal with fewer patients and thus the quality of service is raised. The University Hospital would also seem to score higher than the Maternity Hospital for 'physical appearance of surroundings', but this could be because the building is new, in-patient rooms have only 2 or 3 beds, and the rooms are clean, light and airy. Lower levels of service quality at the Maternity Hospital could be connected to the fact that the hospital is crowded with 8 – 10 beds per room, the building is old, it is hard to reach from the city centre, and has a great number of outpatients on a daily basis, the vast majority of whom are babies, children and pregnant women. Consideration should also be given to anecdotal evidence showing that the number of doctors at all three hospitals is inadequate, that much of their work is routine services delivered between stated times, that the doctors in the hospitals are mostly young and inexperienced, and when a post becomes vacant it can be some considerable time before it is filled. Consequently at all three hospitals 'medical services' show no differences. Furthermore all three hospitals reveal 'appointment-making and registration services prior to examination' to be the same. To register at any of the three hospitals the patient must appear at the hospital in person, it is not possible to register by telephone, hence waiting times following registration mean that sometimes the patient cannot be seen by a doctor on the same day, but services received during registration, appointment-making and waiting prior to examination showed no differences between hospitals.

A difference analysis on demographic variables was also carried out. This revealed that gender, level of education and income had no meaningful effect on elements of service quality or patient satisfaction. However, the age variable, whilst making no difference to aspects of service quality, did show a meaningful effect on patient satisfaction (F:3.340; p:0.037). Post hoc testing gave the following differences between two groups of patients: 'age 29 and below' (N:123; M: 4.29) together with 'age 46 and above' (N:63; M:4.96) from which it would seem that the group 'age 46 and above' experience greater satisfaction than patients in the group 'age 29 and below'.

#### *4.6. Regression Analysis*

Analysis was also carried out to determine which elements of service quality had an affect on patient satisfaction and the tables below give the results in 'General' terms and also 'By Type of Hospital'. These show that the H3 hypothesis should be accepted for 'service received from nurses and administrative personnel prior to examination' and for 'physical appearance of surroundings'.

According to the regression analysis that was carried out, the elements of service quality having an effect on patient satisfaction were 'services received from nurses and administrative personnel prior to examination' (F3) and 'physical appearance of surroundings' (F5). Thus it would seem that the nurse-patient relationship has a significant effect on patient satisfaction, and health workers in general should conform to expected norms of attitude and behaviour, ensuring they act professionally, displaying appropriate skills, and are seen to be courteous, compassionate and take an interest in their patients. The time prior to examination by a doctor, when the patient is waiting, looking at equipment and hospital workers, would seem to have an effect on patient satisfaction. In particular, consideration should be given to the period following registration, and prior to meeting with a doctor, during which

the patient, and any family members/friends accompanying him/her, may have to complete further bureaucratic processes, with a surfeit of requests for information, in a place crowded with people forming long queues. Furthermore, after this phase the amount of time during which the doctor actually delivers medical services to a patient can seem very short. Patients who go to a hospital do so with the express intention of seeing a doctor, and waiting in a crowded space can skew their perceptions of the hospital concerned. If seeing the doctor can be made quick and easy, this will naturally raise the level of general satisfaction. On another issue, financial constraints often lead to the physical appearance of surroundings in many hospitals being somewhat lacking. All too often buildings seem old and in need of repair and maintenance, there is insufficient equipment and the hospital personnel's appearance can also leave much to be desired. If issues such as these are not addressed, and improvements attained, they will have an effect on patient satisfaction.

**Table 3:** General Regression Model

<b>Dependent Variable:</b> General Satisfaction Level	Beta	p- value	Adjusted R <sup>2</sup>	F- value	p-value
F1 (Medical services) (H3 REJECT)	0.15	0.05	0.466	47.064	0.000
F2 (Meeting personal needs and investigatory services) (H3 REJECT)	0.11	0.24			
F3 (Services received from nurses & admin. personnel prior to examination) (H3 ACCEPT)	0.35	0			
F4 (Appointment-making and registration services prior to examination) (H3 REJECT)	0.13	0.14			
F5 (Physical appearance of surroundings) (H3 ACCEPT)	0.32	0			

Separate regression analysis was also carried out on each of the hospitals involved, which revealed the elements of service quality having an effect on patient satisfaction for the three different types of hospital. Results are set out in the Table below.

**Table 4: Regression Model By Type of Hospital**

Dependent Variable: General Satisfaction Level		Beta	p- value	Adjusted R <sup>2</sup>	F- value	p-value
<b>Maternity Hospital</b>						
F1 (Medical services)		-.039,	.746			
F2 (Meeting personal needs & investigatory services)		.037	.767			
F3 (Services received from nurses & admin. personnel prior to examination)		.579	.000	0.521	24.042	0.000
F4 (Services related to appointment-making & registration prior to examination)		.200	.115			
F5 (Physical appearance of surroundings)		.392	.000			
<b>State Hospital</b>						
F1 (Medical services)		.133	.368			
F2 (Meeting personal needs & investigatory services)		.463	.006			
F3 (Services received from nurses & admin. personnel prior to examination)		.104	.461	0.703	29.452	0.000
F4 (Services related to appointment-making & registration prior to examination)		.189	.226			
F5 (Physical appearance of surroundings)		.158	.343			
<b>University Hospital</b>						
F1 (Medical services)		.223	.122			
F2 (Meeting personal needs & investigatory services)		-.019	.926			
F3 (Services received from nurses & admin. personnel prior to examination)		.500	.015	0.251	7.428	0.000
F4 (Services related to appointment-making & registration prior to examination)		-.047	.774			
F5 (Physical appearance of surroundings)		.232	.140			

For the Maternity Hospital it would seem that 'services received from nurses and administrative personnel prior to examination' (F3) together with 'physical appearance of surroundings' (F5) both had a positive effect on patient satisfaction. There is no doubt that nursing services are an important factor in patients' hospital experience, and their associated sense of satisfaction or dissatisfaction, and thus the impact of nursing personnel, and their effect on and behaviour towards patients, should be considered as one of the basic elements within patient satisfaction. The importance of quality nursing services and their impact on patient satisfaction would seem to be clear, in that nurses spend most time with patients, meeting various of their needs; plus responsibility for the individual patient's on-going health, and any necessary rehabilitation, will lie with the nurses and administrative personnel in the first instance. If physical and social conditions in the hospital could be tailored to give an individual the feeling that s/he is 'at home' then it would seem a rise in satisfaction would follow. Furthermore, if patients could be given the comfort of feeling 'at home' in the hospital, together with appropriate information and a feeling that they are valued, they would certainly be more trusting of the treatment and care they are given, and have an increased awareness of the health personnel charged with delivery. In the context of the Maternity Hospital consideration should be given to the fact that the patients are women, who may not be ill, but are there to give birth to a child, and hence they are psychologically disposed to show higher levels of patient satisfaction when compared with genuinely ill patients in other hospitals. In the State Hospital it would seem that 'meeting personal needs and investigatory services' (F2) has a positive impact on patient satisfaction. In the State, Maternity and University Hospitals there is a wide range of technical services used to support diagnosis: radiology, scanning, taking of samples and laboratory services; hence it could be the plethora of such services results in an impact on service satisfaction. In the University Hospital 'services received from nurses and administrative personnel prior to examination' (F3) would seem to have a positive effect on patient satisfaction. It is possible that the recently established University Hospital, with lower numbers of day patients and outpatients, and nurses and other personnel dealing with lower patient numbers when compared to the other two hospitals, can thus deliver a higher level of nursing care which has an impact on patient satisfaction.

## 5. DISCUSSION AND IMPLICATIONS

It would seem clear that health services in Kars province are unsatisfactory and thus patients travel to the nearest city outside the province, Erzurum, for even the most simple of health issues. Thus it is necessary to raise the level of local patient satisfaction, by clearly defining elements of service quality and instigating measures to correct the current situation, for which this research could be used as a basis to address a problematic reality. The results of this research show that elements of service quality can have a positive impact on patient satisfaction (H3 Accept), that the type of hospital can effect different aspects of service quality (H1 Accept) but the type of hospital would not seem to make a difference to overall levels of patient satisfaction (H2 Reject). Finally the Table below shows which aspects of all the hospitals seem to be satisfactory, and which are in need of further development.

In terms of elements of service quality the Maternity Hospital would seem to be satisfactory for 'services received from nurses and administrative personnel prior to examination' (F3) and 'physical appearance of surroundings' (F5). However, 'medical services' (F1), 'meeting personal needs and investigatory services' (F2) and 'services relating to appointment-making and registration prior to examination' (F4) would all seem to be unsatisfactory. The State Hospital is deemed satisfactory for F2 but fails to meet the standard for F1, F3, F4 and F5. Finally the University Hospital is satisfactory for F3 only, and unsatisfactory for F1, F2, F4 and F5. With regard to F1 it could reflect the fact that

patients have limited opportunities, or no opportunity whatsoever, to consult the doctor of their choice. The reality is that the doctors usually choose the patients they will see, and time constraints mean the time they spend with an individual patient is severely limited.

**Table 5: Aspects of service quality seen to be satisfactory/unsatisfactory**

Length of stay in hospital	Maternity Hospital		State Hospital		University Hospital	
	Short stay	Satisfactory	Unsatisfactory	Satisfactory	Unsatisfactory	Satisfactory
	F3-F5	F1-F2-F4	F2	F1-F3-F4-F5	F3	F1-F2-F4-F5
Long Stay	All		All		All	

Consequently, whilst it is not possible to exclude medical services as a factor within general satisfaction in the state hospital system, it is an element that requires extremely careful investigation. However, the perceived unsatisfactory nature of F5 at the State and University Hospitals could simply be attributed to a lack of funding sources, resulting in the hospital site, its vehicles and other requisites appearing to be below the accepted standard. This situation could result in service quality having no effect on patient satisfaction. There have been many other research projects carried out in which such factors as type of lighting, heating, cleanliness, air flows, ease of finding the location, condition of waiting rooms, external appearance of site, nature of bureaucratic practise in the hospital, waiting times and hospital catering have been shown to have an impact on patient satisfaction. (Kavuncubaşı, 2000:291; Yılmaz, 2001:69). It would seem that all aspects of hospitals' physical appearance could benefit from improvement.

Individual characteristics of health workers can affect patient satisfaction. Personnel demonstrating courtesy and kindness, and taking an interest in their patients, together with observable skills and experience (F3) in the health services they are supplying, will have a positive effect on service quality. Consequently it would seem that to improve standards amongst personnel at the State Hospital, their working hours need to be clearly defined and their workload reduced. Furthermore, hospital personnel who come into direct contact with patients, are dependent on regular training in the context of the services they are expected to provide. In many situations an individual's health needs are known, and by simply discussing such needs and providing further information, health personnel can give the patient a sense that s/he is valued. Work has been carried out in this context, which shows that merely talking to the patient about the direction their treatment will take, and giving them further information, can result in a rise in the patients' trust of health personnel, and an increase in their sense of satisfaction. (Uz et al pp.13-118, Williams 1993 pp.28-331, Yılmaz 2001 pp.7). Alongside this, information programmes for patients can be implemented. In this country many institutions have successfully introduced a philosophy of 'Towards Total Quality' which also needs to be adopted in the hospitals in Kars. From the point of view of the institutions involved this work should be carried out, and it would be advantageous to create a dedicated team for its application. For the long term, achieving satisfactory levels for all elements of service quality within all hospitals, should feature high on the list of strategic planning outcomes. In the short term different hospitals need to apply their own priorities. Businesses naturally try to use their unique advantages to overcome competition. Whilst using such advantages can have an impact in the short term, at the same time weaknesses can be addressed and preliminary work undertaken towards a longer term strategy. (Yağcı et al 2006 pp:218-238). Furthermore, from the institutions' viewpoint patient satisfaction is extremely important, lying within their framework of objective criteria which must be attained by continuously establishing parameters, striving to improve service quality and ensure successful treatment. A patient who is satisfied with hospital services, having received good care and successful treatment, contributes to the sense of achievement at the hospital. Such a patient, having initially arrived at the hospital in a worried, negative condition leaves, following a positive experience, with renewed faith in the hospital and its services. Both patients and health workers want and need to feel valued, and to achieve this there should be continuous research and evaluation, leading to implementation and development.

## 6. LIMITATIONS AND FUTURE RESEARCH

On examining the limitations of this research it would seem limited by being confined to the health sector, when service quality also applies to other sectors, and also by virtue of the fixed time period during which data was collected. Constraints of time and finance decreed that the data analysed here was collected in one month (April) during 2011. In the context of future work on service quality, it would seem appropriate to carry out similar work in hospitals in other provinces and compare the results. Finally, the work could be extended beyond the outpatients attending clinics studied here, to cover in-patients and/ or emergency admissions.

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**FINANCIAL EFFICIENCY ANALYSIS OF A HIGHER EDUCATION INSTITUTION IN  
TURKEY BY DATA ENVELOPMENT ANALYSIS APPROACH: THE CASE OF  
LANGUAGE EDUCATION CENTER (TÖMER) OF ANKARA UNIVERSITY**

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**Abstract**

*Ankara University TÖMER, a landmark institution of Turkey, utilizes latest, contemporary technologies in the teaching of Turkish and foreign languages and in designing teaching techniques. In this study, the comparative efficiency measurement for the 10 different branches of Ankara University TÖMER has been carried out by the inputs and outputs of each branches for 2009-2011 period by means of Data Envelopment Analysis, a linear programming based model. Technical, pure and scale efficiencies of teaching branches of TÖMER have been determined via CCR model by Charnes et al. (1978) and BCC model by Banker et al. (1984). The relative CCR and BCC efficiencies have been evaluated for TÖMER branches. Finally, considering the actual and projected weights of decision variables, we have also evaluated the potential improvement rates of the variables in the CCR and BCC models. The DEA analyses have revealed that all TÖMER branches in 2011 have displayed better efficiencies compared to that of 2009 by CCR and BCC models.*

**Key words:** *Efficiency Measurement, Data Envelopment Analysis, Educational Finance, Turkey.*

**1. INTRODUCTION**

Academicians and practitioners have a great deal of interest on performance analyses, efficiency and productivity since these are used as measurement tools while making comparisons. When studies related to performance measurement are analyzed, more than one method is seen. As a result of the studies, generally qualitative data sets are turned into quantitative data sets by applying certain methods, thus having more objective results. In literature there is more than one method when it comes to efficiency studies. These methods are separated into two groups; parametric methods and non-parametric methods. When literature studies are analyzed it can be seen that non-parametric methods are used more often. The reason behind is that parametric methods are applied under assumptions and can unable to explain existing situations fully. Non-parametric methods do not require assumptions when data set is considered, thus such methods are more attractive to researchers.

Data Envelopment Analysis (*DEA*) is generally used in hospitals (Banker et.al., 1986), restaurants (Banker and Morey, 1986), health care institutions (Smith and Mayston, 1987), junior high schools (Thanassoulis and Dunstan, 1994), universities (Athanasopoulos and Shale, 1997; Johnes and Johnes, 1993), professional basketball leagues (Alp and Gölcüklü, 2000), banks (Cingi and Tarım, 2000) while setting the efficiency levels.

Besides, DEA is one of the most commonly used mathematical programming technique among non-parametric methods (Karacabey, 2001).

DEA is a useful method to determine similar decision making units' relative efficiency levels. It has some sort of linear programming characteristic. This method is generally used in analyzing educational institutions' efficiency results.

Ruggerio (1996) has argued that his paper suggests incorporating programming results into a second-stage multivariate regression analysis. For illustrative purposes, this technique is applied to analyze New York State school districts.

Waxman et. al. (1997), investigated the achievement of test scores and school demographic data were used initially to determine the efficiency and effectiveness ratings of 167 elementary schools from a large urban school district in the south central region of the United States America.

Ng and Li (2000), examine that utilizing data from 84 key Chinese higher education institutions. It is found that research performance of institutions across regions has improved, although the institutions as a whole have remained inefficient from 1993 to 1995.

Grosskopf and Moutray(2001) analyze the changes in performance for Chicago high schools between 1989 and 1994 following the introduction of site-based management in 1988. They modeled the change upon the focus on decentralized control following Grosskopf et.al. (1999), and used cost indirect output distance functions to model decentralized control.

Abbott and Doucouliagos (2003) make a study of non-parametric techniques which are used to estimate technical and scale efficiency of individual Australian universities.

Kuaha and Wonga (2011) measure that assessing the efficiency of universities is Vital for effective allocation and utilization of educational resources.

Ankara University TÖMER is a landmark institution of Turkey that utilizes latest, contemporary technologies in the teaching of Turkish and foreign languages and in designing teaching techniques. In the framework of educational finance, analyzing the financial efficiency levels of TÖMER Branches has of great importance.

The number of students who learn Turkish in TÖMER Head Offices and Branches in the educational year 2010-2011 in Turkey has reached 20.401 including Government grantees. Foreign language classes for the senior personnel in Public Institutions who will be sent for Basic Training and Specialization Training of European Communities Research and Implementation Center of our university have also continued.

In this regard, the goal of this study is to analyze the financial efficiencies of the 10 branches of TÖMER comparatively for the period in 2009-2011. We have investigated the financial efficiencies of the mentioned education branches in terms of technical, pure and scale efficiencies.

The paper is organized as follows: The operational and technical figures regarding the TÖMER branches are given in part one. Besides, the DEA technique has been mentioned the second part. The empirical results have been given in the third part. General results and evaluations have been made in the last part of the paper.

## 2. CURRENT STATUS OF TÖMER

Foreign language education centers are of great importance in education systems. However, most of the universities have various education centers within their academic establishments. Turkey plays an important role in foreign language education area. In this respect, Ankara University, a leading European University that has core competences in social sciences, health sciences, education and engineering etc., involves a landmark foreign education center, known as TÖMER, since 1984.

In the educational year 2010-2011, TÖMER provided education in 13 foreign languages in addition to Turkish. Language teaching activities have continued with great attendance at TÖMER branches in 7 cities; in addition to which, courses of diction and rhetoric, speed reading and creative writing and English courses for primary school students have also been opened.

The operational figures of TÖMER branches for 2009–2011 period have been illustrated in Table 1.

**Table1: Operational Figures of TÖMER Branches in 2009-2011 period.**

DMU's	Personel Expenditure (USD)	Current Expenditure (USD)	Investment Expenditure (USD)	Number of Instructors	Number of Classroom	Number of Student	Contribution Margin to the University (USD)
Antalya Branch	1.229.552	799.324	3.300	23	386	11.823	232.926
Alanya Branch	390.785	412.328	2.908	6	178	4.664	40.773
Bursa Branch	1.264.019	1.336.537	13.858	24	573	19.777	300.401
İstanbul Branch	2.029.912	1.516.127	4.311	51	711	19.471	565.184
İzmir Branch	1.595.274	1.223.070	14.232	41	746	19.194	342.384
Kadıköy Branch	300.969	237.396	644	21	237	2.938	85.062
Kızılay Branch	3.351.045	2.696.806	119.943	86	1.440	39.052	767.509
Samsun Branch	620.648	978.461	8.669	15	422	14.248	265.902
Trabzon Branch	374.506	254.915	15.783	9	144	3.178	47.211
T.Hilmi Branch	2.411.583	1.492.792	24.652	42	638	16.100	397.082

As can be seen from the Table 1, total of expenditure of TÖMER branches has remained the same. The total expenditure of TÖMER remain equal level, personal expenditure has decreased by 4.617.034 \$ and reached to 4.414.391\$ at the same period, current expenditure and investment expenditure have decreased respectively by 3.550.068\$ and 38.604, reached to 3.718.108\$ and 126.458\$. Besides, total

of the expenditure has been 24.724.351\$ and contribution margin of the university has been 3.044.435\$ during 2009-2011. The share of the total expenditure on personnel expenditure is 55%, investment expenditure 1% and current expenditure 44%. Contribution margin of the university has afforded 12% of the total expenditure.

### 3. LITERATURE REVIEW

#### 3.1. DEA Models in Financial Efficiency Analysis

DEA is a nonparametric and a linear programming technique which has been used to compare the technical efficiency of relatively homogeneous sets of decision making units (*DMUs*). The theoretical consideration of technical efficiency has existed in the economic literature since Koopmans (1951) defined technical efficiency as a feasible input/output vector where it is technologically impossible to increase any output without simultaneously (Ruggiero, 2000).

Later, Farrell (1957) divided efficiency concept into two parts which are technical efficiency and allotment efficiency. While Farrell defines efficiency for only one output, DEA defines efficiency for multiple outputs.

Developed by Charnes et al. (1978), DEA was originally being intended for the use in public sector and nonprofit DMUs such as educational institutions and health services. Banker et al. (1986) employed DEA for the evaluation of hospitals, restaurants (Banker and Morey, 1986) and universities (Athanasopoulos and Shale, 1997).

Basso and Funari (2000) have employed DEA models to measure performance of 47 Data Envelopment Analysis (DEA) is a relatively new “data oriented” approach for evaluating the performance of a set of peer entities which convert multiple inputs into multiple outputs.

Moreno and Tadeballi (2002)’s study examined the total number of graduates in each university, and the total number of graduates in four or five year courses in each university.

Jinanjua (2010)’s study shows that there were 16 Provinces which reached DEA form of efficiency. The performance of each Province’s college education S&T innovation did not have obvious correlation with their economic development level.

DEA is a relatively new “data oriented” approach for evaluating the performance of a set of peer entities which convert multiple inputs into multiple outputs. In DEA, efficiency score is defined as the ratio between a weighted sum of outputs and a weighted sum of inputs:

$$\text{Max } v_k y_{kp} / u_j x_{jp} \quad (1)$$

where,

$y_{kp}$  = amount of output  $k$  produced by  $DMU_j$ ,

$x_{jp}$  = amount of input  $j$  utilized by  $DMU_i$ ,

$v_k$  = weight assigned for output  $j$ ,

$u_j$  = weight assigned for input  $j$ .

By means of DEA, we can identify which units are efficient and which are not; what the unit of reference is for the inefficient ones; which units present constant or variable returns to scale; which units have slack inefficiency; and what the situation objectives for each of the inefficient DMUs.

DEA is a non-parametric technique that does not require any theoretical model as measurement benchmarks. Instead DEA measures how well a fund performs relative to the best set of funds within the declared objective category (Murthi et al.1997).

DEA models can be classified into two categories which are based on orientation. The output-oriented models refer to the capacity of a DMU to achieve the maximum volume of production (*output*) with the available inputs, while the ability to maintain the same capacity of production using a minimum of inputs is known as the input-oriented model. Input-oriented efficiency scores range between “0” and “1”, and whereas output-oriented efficiency scores range between “1” to infinity; in both cases, “1” is efficient (Coopers et.al, 2006; Coopers et al. 2000).

### 3.2. CCR Model

The two fundamental DEA models are the Charnes, Cooper, Rhodes (*CCR*) model and the Banker, Charnes, Cooper (*BCC*) model. According to both models a DMU is considered as efficient if technical efficiency corresponds to “1” ( $TE = 1$ ). On the other hand, if TE score is less than “1”, it points to what extent a DMU should reduce inputs to be able to produce its level output as efficient as technically efficient DMUs (Fandel, 2003).

Bessent, Bessent, Elam and Long (1984), examine that a large-scale application of management science was employed by 25 independent public school districts, members of the Educational Productivity Council (*EPC*) formed in 1981. Ray’s 1991 study combines DEA with regression modeling to estimate relative efficiency in the public school districts of Connecticut. Factors affecting achievements are classified as school inputs and other socio-economic factors. DEA is performed with the school. Noulas and Ketkar’s study conducted in 1998, measures the efficiency of public schools for the state of New Jersey using the DEA method; it also examines the effect certain socio-economic factors on efficiency.

In this paper we offer a simple exposition of the neoclassical production theoretic foundations of Data Envelopment Analysis. The concepts of technical efficiency (*both input- and output-oriented*), scale efficiency, and cost efficiency are explained and the corresponding DEA models are described in detail.

In their study, Montoneri, Lin, Lee and Huang (2012) have applied DEA to explore the quantitative relative efficiency of 18 classes of freshman students studying a course of English conversation at a university in Taiwan from the academic year of 2004 to 2006.

The assumption of constant returns to scale (*CRS*) is valid when proportional variation in inputs results the same proportional variation in outputs if DMUs operate with optimal scale and the combination of inputs is constant. Coopers et. al (2006) and Coopers et. al (2000) formulate the input oriented CCR model as follows:

$$\begin{aligned} & \text{Max } u' y_i && (2) \\ & \text{s.t.} \\ & v' x_i = 1 \\ & u' y_i - v' x_i \leq 0 \quad (i=1, \dots, n) \\ & u, v \geq 0 \end{aligned}$$

The model runs “n” times in identifying the relative efficiency scores of all DMUs. Each DMU selects input and output weights that maximize its efficiency score. In general, a DMU is considered to be efficient if it obtains a score of “1” and a score of less than “1” implies that it is inefficient.

### 3.3. BCC Model

An alternative model was offered by Banker et.al (1984) who extended the CCR model to assess pure technical and scale efficiencies of units. As mentioned before, the models with CRS assume that an increase in inputs will result in a proportional increase in outputs. However, due to some reasons DMUs may not operate in an optimal scale so that, this proportional variation at input levels can cause different proportional variation at output levels. Hence an analysis of technical efficiencies of DMUs regardless of scale sizes would be more appropriate in evaluating portfolio performance (Coopers et.al, 2006).

Bates’s 1993 study has undertaken an analysis based on the results for the Local Education Authorities of England in the early 1980s. Mizala, Romaguera and Farren (2002)’s research assesses the technical efficiency of schools in Chile, to determine the capacity of schools to generate the maximum.

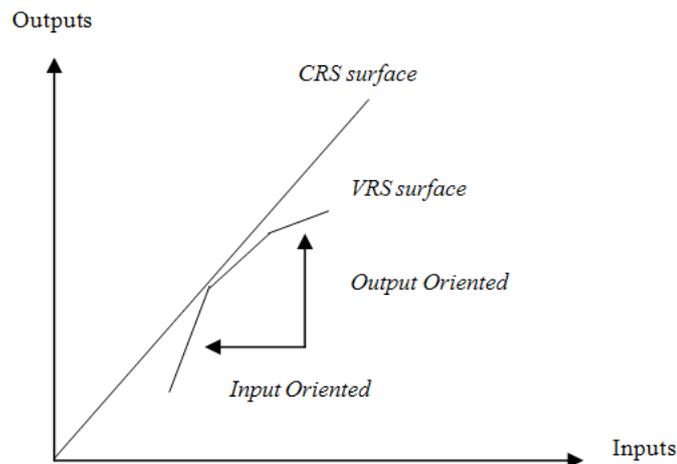
Banker, Janakiraman and Natarajan (2004)’s study applies these methods to test for the presence of allocative inefficiency in Texas school districts over 1993–99, and analyze shifts and trends in both technical and allocative inefficiencies over time for different regions. However, Barrientos and Boussofiane (2005) state that the BCC model has an additional restriction which is called the convexity constraint. Besides, the sum of the mentioned multipliers should add to “1”. Coopers et.al (2006) and Coopers et.al (2000) formulate the input oriented BBC model as in the following equation

$$\begin{aligned}
 &\min_{\theta, \lambda} \theta && (3) \\
 &\text{s.t.} \\
 &\theta x_i - X\lambda \geq 0 \quad (i=1, \dots, n) \\
 &Y\lambda \geq y_i \\
 &\sum \lambda = 1 \\
 &\lambda \geq 0
 \end{aligned}$$

Besides, the Figure 1 summarizes the characteristics of the both DEA models and illustrates the differences between the CCR and BCC models (Coopers et.al, 2006).

The models with CRS envelopment surface assume that an increase in inputs will result in a proportional increase in outputs. However, it is rare for markets to function in an ideal way. There will always be financial limitations or imperfect competitive markets where increased amounts of inputs do not proportionally increase the amount of outputs obtained. In order to account for this effect, the DEA model for variable- returns-to-scale (BCC) was developed which allows an increase in input values to result in a non-proportional increase of output levels. The VRS surface envelops the population by connecting the furthest DMUs, including the one approached by the CRS surface. Therefore the BCC model envelops more data and efficiency scores are bigger than or equal to scores of CCR.

In BCC model, total technical efficiency can be classified as pure technical efficiency and scale efficiency. To calculate scale efficiency, the technical efficiency measures under both CRS and VRS assumptions should be measured. If there happens to exist a difference between the scores of TE under CRS and VRS for a certain DMU, the difference indicates that the DMU is scale inefficient (Coopers et.al, 2006).



**Fig.1 Envelopment Surface and Orientation for the DMUs.**

Scale efficiency can be calculated by dividing the total technical efficiency by pure technical efficiency. Coopers et.al (2006) and Coopers et.al (2000) formulate the scale efficiency for the DMUs as in the following equation.

$$SE = TE_{CCR} / PTE_{BCC} \quad (4)$$

If the scale efficiency corresponds to 1, then the DMU is scale efficient. However, if the scale efficiency is smaller than “1” ( $SE < 1$ ), then combination of inputs and outputs are not scale efficient.

#### 4. EMPIRICAL STUDIES

##### 4.1. The Methodology

We have made financial efficiency analysed of TÖMER Branches for 2009-2011 period. However, we have analyzed 9 TÖMER branches in 2009 and 10 TÖMER branches in 2010 and 2011. The total expenditure can be divided into three groups: personnel expenditure, current expenditure and investment expenditure, in order to compare three expenditures and contribution margins of the university.

Main goal of empirical study is to determine TÖMER's activity measurements between 2009-2010 according to DEA technique developed by Charnes etc. (1978) and Banker etc. (1984).

Decision making units (*DMU's*) has been selected as 10 Branches of TÖMER. TÖMER branches that has been submitted to the DEA analysis are as follows: *Antalya Branch, Alanya Branch, Bursa Branch, İstanbul Branch, İzmir Branch, Kadıköy Branch, Kızılay Branch, Samsun Branch, Trabzon Branch and Tunalı Hilmi Branch.*

On the other hand, in DEA technique, literature studies are considered while determining the inputs-outputs. Using input variables such as cost and number of teacher; and output variables such as mathematics, reading and writing are implemented by the CCR model developed by Bessent et.al. (1984). Input variables such as classroom teachers per pupil, support staff, administrative staff per pupil; and output variables such as mathematics score, language arts score, writing score and reading score are applied by the CCR model by Ray (1991). In addition, the input variables which are capital, labour, fuel and material; and much of output variable which is cost are performed by the BCC model by Ray and Chen (2009).

Moreover, Davutyan et. al. (2010), have determined input variables that are classroom teachers per pupil, support staff, administrative staff per pupil, number of teachers, number of classrooms in a given province, average score attained on a nationwide high school entrance examination, standard deviations of the quantitative and standard deviations of the verbal scores, much of output variables that are the number of high school, students in each province, the average quantitative and verbal.

Kuah and Wong (2011), have specified input variables - number of academic staff, number of taught course student, average student' qualifications and university expenditures - and much of output variables such as the number of graduates from taught courses, average graduates' results, graduation rate% and graduates' employee rate% in the CCR model.

In this study, input and output variables have determined similarly to the study carried by Glass et. al. (2006). In education output, education quality evaluation results are measured by number of students. Input side consists of academic personnel in universities, other staff, research supports, and capital spending. As a result, policies are created and discussions have been done regarding the existing policies. This article is defined by considering the following variables. In this regard, the input and the output variables used in the analyses are as follows:

**Input Variables:** *Personel Expenditures (USD), Current Expenditures (USD), Investment Expenditures (USD), Number of Instructors (Contractual and Permanent), Number of Classroom*

**Output Variable:** *Contribution Margin to the University (USD)*

Descriptive statistical information regarding the 10 Branches of TÖMER for the DEA analyses in 2009-2011, is presented in Table 2.

**Table 2. Descriptive Statistics of TÖMER**

Statistics	Inputs					Output
	Personel Expenditures	Current Expenditures	Investment Expenditures	Number of Instructors	Number of Classroom	Contribution Margin to the University
Average	467872,2	377508,9	7182,784	31,413	576,344	104980,5
Median	434076,0	383268,284	1604,3	23	573	100802,0
Standard Dev.	323334,4	239076,6	19127,9	24,168	388,162	74349,9
Range	1124377	909672,6	104069,2	80	1451	261237,9
Max	1181971	978776,1	104069,2	86	1525	268069,2
Min	57594,1	69103,5	0	6	74	6831,2

#### 4.2. The Results of CCR Model Analysis

CCR model assumption has been accepted at the first part of the analysis. We have applied linear programming model as shown in Equation 2 for branches and we have determined the technical efficiency branches of TÖMER. The 2009-2011 period results of CCR model are given in Table 3.

**Table 3. The Results of CCR Model Analysis for TÖMER Branches for 2009-2011.**

DMU	CCR Scores		
	2009	2010	2011
Antalya Branch	0,821	<b>1,000</b>	0,960
Alanya Branch	0,153	0,206	0,922
Bursa Branch	0,776	0,840	<b>1,000</b>
İstanbul Branch	<b>1,000</b>	<b>1,000</b>	<b>1,000</b>
İzmir Branch	0,697	0,710	0,812
Kadıköy Branch	NA	<b>1,000</b>	<b>1,000</b>
Kızılay Branch	0,790	0,745	0,802
Samsun Branch	<b>1,000</b>	<b>1,000</b>	<b>1,000</b>
Trabzon Branch	0,695	0,676	0,264
T.Hilmi Branch	0,635	0,683	0,770
Average	0,730	0,786	0,853

In Table 3, according to CCR analyses for 2009, for the TÖMER Branches, we have determined technical efficiency levels of the 2 TÖMER branches are equal to "1", in addition in CCR analysis in 2010 are equal to, we have determined technical efficiency levels of the 4 TÖMER branches are equal

to “1” and moreover in CCR analysis in 2011 are equal to, we have determined technical efficiency levels of the 4 TÖMER branches are equal to “1”, so that these branches are determined to be “*technically efficient*” in 2009-2011. It should be noted that TÖMER Kadıköy Branch has been submitted to efficiency analysis for 2010-2011 period since this DMU had started to operate in 2010.

#### 4.3. The Results of BCC Model Analysis

At the second part of the DEA analysis, variable returns to scale assumption has been accepted and the formula in Equation 3 has been applied to all funds and pure efficiency levels of all mutual funds have been determined. Table 4 presents the pure technical efficiency levels branches of TÖMER. The results of BCC model for the period between 2009 and 2011 are given in Table 4.

**Table 4. The Results of BCC Model Analysis for TÖMER Branches**

DMU	BCC Scores		
	2009	2010	2011
Antalya Branch	0,851	<b>1,000</b>	<b>1,000</b>
Alanya Branch	0,336	0,265	<b>1,000</b>
Bursa Branch	0,903	0,850	<b>1,000</b>
İstanbul Branch	<b>1,000</b>	<b>1,000</b>	<b>1,000</b>
İzmir Branch	0,735	0,714	0,950
Kadıköy Branch	NA	<b>1,000</b>	<b>1,000</b>
Kızılay Branch	<b>1,000</b>	<b>1,000</b>	<b>1,000</b>
Samsun Branch	<b>1,000</b>	<b>1,000</b>	<b>1,000</b>
Trabzon Branch	<b>1,000</b>	<b>1,000</b>	<b>1,000</b>
T.Hilmi Branch	0,688	0,708	0,786
Average	0,835	0,854	0,974

On Table 4, according to BCC analyses for 2009, for the TÖMER Branches, we have determined pure technical efficiency levels of the 4 TÖMER branches are equal to “1”, in addition in BCC analysis in 2010 are equal to, we have determined technical efficiency levels of the 6 TÖMER branches are equal to “1” and moreover in BCC analysis in 2011 are equal to, we have determined technical efficiency levels of the 8 TÖMER branches are equal to “1”, so that these branches are determined to be “pure technically efficient” between 2009 and 2011.

It also indicates that when Kadıköy Branch was opened in 2010, it was effective between 2010 and 2011 in BCC model. On the other hand, the pure technical efficiencies have found higher efficiencies rather than technical for the TÖMER Branches in the period between 2009 and 2011.

#### 4.4. The Scale Efficiency Results for the TÖMER Branches

The technical and pure efficiencies of TÖMER Branches have been evaluated on the basis of the CCR and BCC assumptions. The scale efficiency of a DMU can be evaluated by dividing the total technical efficiency by pure technical efficiency. If there is a difference between the scores of TE under CRS and VRS assumptions for a particular DMU, the difference indicates that the DMU is scale inefficient.

The scale efficiency results of TÖMER Branches for the period between 2009 and 2011 are illustrated in Table 5.

**Table 5. The Scale Efficiency Results of the TÖMER Branches**

DMU	SE		
	2009	2010	2011
Antalya Branch	0,964	<b>1,000</b>	0,960
Alanya Branch	0,453	0,778	0,922
Bursa Branch	0,859	0,988	<b>1,000</b>
İstanbul Branch	<b>1,000</b>	<b>1,000</b>	<b>1,000</b>
İzmir Branch	0,949	0,994	0,855
Kadıköy Branch	NA	<b>1,000</b>	<b>1,000</b>
Kızılay Branch	0,789	0,745	0,802
Samsun Branch	<b>1,000</b>	<b>1,000</b>	<b>1,000</b>
Trabzon Branch	0,695	0,675	0,264
T.Hilmi Branch	0,924	0,965	0,980
Average	0,848	0,914	0,878

In Table 5, according to scale efficiency analyses for 2009, for the TÖMER Branches, we have determined scale efficiency levels of the 2 TÖMER branches are equal to “1”, and we have found out scale efficiency levels of the 4 TÖMER branches are equal to “1” both for 2010 and 2011.

On the other hand, as a result of the DEA, for both the CCR and BCC models between the variables for inputs and outputs for further development of the required operational figures are summarized in Table 6.

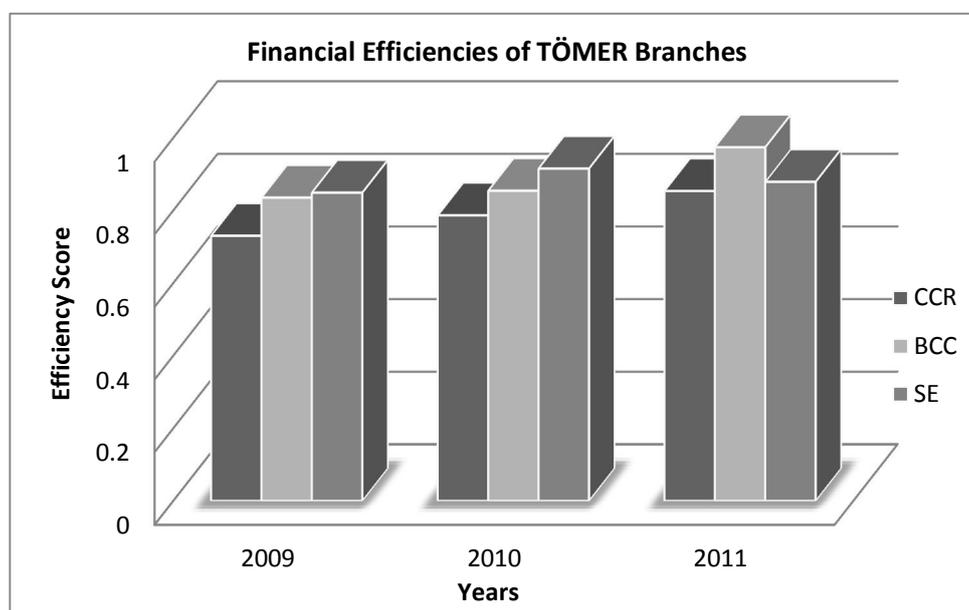
**Table 6. The Average Improvement Ratios for the CCR Model and BCC Model.**

Input and Output	CCR Model			BCC Model		
	2009	2010	2011	2009	2010	2011
Personel Expenditures	-0,093	-0,090	-0,108	-0,079	-0,043	-0,027
Current Expenditures	-0,036	-0,051	-0,070	-0,112	-0,029	-0,034
Investment Expenditures	-0,387	-0,138	-0,408	-0,211	-0,144	0
Number of Instructors	-0,046	-0,019	-0,081	-0,045	-0,010	-0,044
Number of Classroom	-0,043	-0,091	-0,040	-0,057	-0,040	-0,018
Contribution Margin to the University	0,864	0,586	0,369	0,341	0,372	0,036

In Table 6, accordingly 2009 results regarding the CCR analysis is given. We have shown that the inputs should be reduced by ratios of between 3,60% to 38.70%, whereas the output is name of contribution margin of the university should be raised by the ratios of 86.4%. 2010 results show that the inputs should be decreased by the ratios of between 1.90% and 13.8%. On the other hand, the output is name of contribution margin of the university should be raised by the ratios of 58.6%. Therefore, 2011 results display the inputs should be reduced by ratios of between 4.0% and 40.8%. In spite of that the output is name of contribution margin of the university should be raised by the ratios of 36.9%.

On the other hand, Table 6 indicates the average improvement ratios within the context of BCC analysis. In this context, according to the BCC model results for 2009, the inputs should be reduced by the ratios of between 4.5% and 21.1%, whereas the output is name of contribution margin of the university should be raised by the ratios of 34.1%. 2010 results show that the inputs should be decreased by the ratios of between 1.0% and 14.4%, whereas the output is name of contribution margin of the university should be raised by the ratios of 37.2%. Therefore, accordingly, 2011 results display the inputs should be reduced by ratios of between 0% and 4.4%. In spite of that the output is name of contribution margin of the university should be raised by the ratios of 3.6%

In this consideration the input value should be decreased whereas the output value should be increased. It can be concluded that according to the results of the CCR, BBC and SE models, mostly the input and output values of the TÖMER Branches have found changed for immediately. It has found out a definite increase with time in the financial efficiencies of the branches between 2009-2011 years in terms of CCR and BCC models. On the other hand, SE is fluctuated. The related efficiency diagram is given in Figure 2.



**Fig. 2 Comparison of DEA Efficiencies of TÖMER in 2009-2011 Period.**

As shown in Figure 2, it has been found that TÖMER branches have demonstrated higher financial efficiency scores in respect of BBC model and CCR model from 2009 to 2011. Branches have demonstrated 16,9% efficiency increase 2011 in terms of CCR analysis, continuously 16,6% efficiency increase 2011 in terms of BCC analysis. However Branches have shown 3,4% efficiency increase 2011 in terms of SE analysis. In addition, the average efficiency scores have also been taken into consideration. Since we analyze the mentioned scores;

- 55.56% of TÖMER Branches in CCR model, 55.56% of TÖMER Branches in BCC model and 66.77% of TÖMER Branches in SE for 2009,
- 40% of TÖMER Branches in CCR model, 60% of TÖMER Branches in BCC model and 70% of TÖMER Branches in SE for 2010,
- 60% of TÖMER Branches in CCR model, 80% of TÖMER Branches in BCC model and 70% of TÖMER Branches in SE for 2011

demonstrated higher performance in comparison to the average efficiency score. Therefore, in 2010 and 2011 all branches have support better efficiencies 2009 by CCR and BCC model.

## 5. CONCLUSION

In this paper, the DEA models have been applied to the TÖMER in order to assess the performance of branches between 2009 and 2011. Then, the financial efficiencies of TÖMER Branches have been analyzed. DEA is a worthy mathematical programming technique, and it is applied to determine the technical and pure technical efficiencies of the similar DMUs. However, similar DMUs have been chosen in the empirical study. The inputs and outputs have been determined carefully to reflect the DMUs in the best possible way. The efficiency of the TÖMER Branches has been evaluated and has been compared by DEA technique. Technical and pure technical efficiency levels of the TÖMER Branches have been evaluated by output oriented DEA models.

The study includes the analysis of 9 TÖMER Branches in 2009 and 10 TÖMER Branches in 2010 and 2011. Based on the measurements of both CCR and BCC models, TÖMER Branches have shown superior performance when compared to their performance between 2009 and 2011. Inputs used for comparison are “*personnel expenditures, current expenditures, investment expenditures, number of instructors and number of classroom*”, and much of output used for comparison is contribution margin to the university.

2009 results for CCR model indicate that two branches (*İstanbul and Samsun*) have full efficiency. It means that branches are equal to “1”. Three Branches (*Antalya, Bursa and Kızılay*) have efficiency above the average efficiency value of 0.73 but also below the “1”, so these do not have full efficiency below the average. In addition, 2010 results for CCR model indicate that four branches (*Antalya, İstanbul, Kadıköy and Samsun*) have full efficiency. Only one Branch (*Bursa*) does not have full efficiency. The efficiency level of the remaining five branches (*Alanya, İzmir, Kızılay, Trabzon and Tunalı Hilmi*) is below the average. Moreover, 2011 results for CCR model indicate that four branches (*Bursa, İstanbul Kadıköy and Samsun*) have full efficiency. Four Branches (*Antalya, Alanya, Kızılay and Tunalı Hilmi*) do not have full efficiency. The efficiency level of the remaining two branches (*İzmir and Trabzon*) is below the average.

On the other hand, according to BCC model, 2009 result shows that four branches (*İstanbul, Kızılay, Samsun and Trabzon*) have full efficiency. Two branches (*Antalya and Bursa*) do not have full

efficiency. The efficiency level of the remaining three branches (*Alanya, İzmir and Tunalı Hilmi*) is below the average. Also, 2010 results for BCC model indicate that six branches (*Antalya, İstanbul, Kadıköy, Kızılay, Samsun and Trabzon*) have full efficiency. The efficiency level of the remaining four branches (*Alanya, Bursa, İzmir and Tunalı Hilmi*) is below the average. Besides, 2011 results for BCC model indicate that eight branches (*Antalya, Alanya, Bursa, İstanbul Kadıköy, Kızılay, Samsun, Trabzon and Samsun*) have full efficiency. The efficiency level of the remaining two branches (*İzmir and Trabzon*) is below the average.

As a consequence, TÖMER branches have increased their financial efficiency levels between 2009 and 2011 on the basis of both CCR Model and BCC Model. Besides, we can also conclude that DEA method is a worthy mathematical modelling tool for educational finance managers in evaluating the efficiencies of educational branches of the universities.

## 6. ACKNOWLEDGEMENT

We would like to thank TÖMER officials, Ms. Fatma Demir & Mr. Ercem Erkul for their valuable comments and suggestions to the present paper.

### 1. Appendix 1: CCR Model Results of TÖMER Branches in 2009-2011.

CCR-O												
DMU	2009				2010				2011			
	Score	Projecti on	Differen ce	%	Score	Projecti on	Differen ce	%	Score	Projecti on	Differen ce	%
<b>Antalya Branch</b>	<b>0,82</b>				<b>1,00</b>				<b>0,96</b>			
Personel Expenditures	424096	333487	-90610	-0,21	435871	435871	0,00	0,00	369585	220970	-148615	-0,40
Current Expenditures	301264	287904	-13360	-0,04	275269	275269	0,00	0,00	222792	222792	0	0,00
Invest. Expenditures	3195	1499	-1696	-0,53	0	0	0,00	0,00	105	105	0	0,00
Number of Instructors	21	21	0	0,00	23	23	0,00	0,00	23	14	-9	-0,37
Number of Classroom	457	457	0	0,00	393	393	0,00	0,00	386	372	-14	-0,04
Contribution Margin	90794	110557	19762	0,22	78027	78027	0,00	0,00	64105	66800	2695	0,04
<b>Alanya Branch</b>	<b>0,15</b>				<b>0,21</b>				<b>0,92</b>			
Personel Expenditures	138274	120692	-17582	-0,13	135746	103485	-32262	-0,24	116765	95396	-21369	-0,18
Current	13291	127763	-5147	-0,04	15483	108098	-46736	-0,30	124585	99906	-24678	-0,20

Expenditures	0				4							
Invest. Expenditures	1073	670	-403	-0,38	1012	1012	0	0,00	824	20	-804	-0,98
Number of Instructors	7	7	0	0,00	7	7	0	0,00	6	6	0	0,00
Number of Classroom	193	193	0	0,00	178	139	-39	-0,22	178	169	-9	-0,05
Contribution Margin	6831	44767	37936	5,55	7106	34463	27357	3,85	26836	29093	2257	0,08
<b>Bursa Branch</b>	<b>0,78</b>				<b>0,84</b>				<b>1,00</b>			
Personel Expenditures	43407 6	370511	-63565	-0,15	43480 1	283397	-151404	-0,35	395142	39514 2	0	0,00
Current Expenditures	49854 5	411435	-87110	-0,17	45071 7	450717	0	0,00	387276	38727 6	0	0,00
Invest. Expenditures	2913	2162	-752	-0,26	10944	5808	-5137	-0,47	0	0	0	0,00
Number of Instructors	21	21	0	0,00	22	22	0	0,00	24	24	0	0,00
Number of Classroom	615	615	0	0,00	578	519	-59	-0,10	573	573	0	0,00
Contribution Margin	10963 7	141307	31670	0,29	10129 1	120595	19304	0,19	89473	89473	0	0,00
<b>İstanbul Branch</b>	<b>1,00</b>				<b>1,00</b>				<b>0,23</b>			
Personel Expenditures	66088 5	660885	0	0,00	71120 0	711200	0,00	0,00	657827	49177 4	-166053	-0,25
Current Expenditures	43767 1	437671	0	0,00	46374 6	463746	0,00	0,00	614710	44384 8	-170862	-0,28
Invest. Expenditures	2249	2249	0	0,00	1472	1472	0,00	0,00	591	591	0	0,00
Number of Instructors	45	45	0	0,00	43	43	0,00	0,00	51	36	-15	-0,30
Number of Classroom	750	750	0	0,00	709	709	0,00	0,00	711	711	0	0,00
Contribution Margin	19228 3	192283	0	0,00	18953 5	189535	0,00	0,00	33366	14510 8	111742	3,35
<b>Izmir Branch</b>	<b>0,70</b>				<b>0,71</b>				<b>0,81</b>			
Personel Expenditures	53412 5	534125	0	0,00	55329 9	553299	0,00	0,00	507850	49639 6	-11453	-0,02

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Current Expenditures	468674	438112	-30562	-0,07	383268	383268	0,00	0,00	371128	371128	0	0,00
Invest. Expenditures	3087	2275	-811	-0,26	7035	1586	-5449	-0,77	4110	1123	-2987	-0,73
Number of Instructors	37	34	-3	-0,08	38	34	-4	-0,11	41	41	0	0,00
Number of Classroom	705	705	0	0,00	694	572	-122	-0,18	746	546	-200	-0,27
Contribution Margin	120256	172430	52174	0,43	107452	151265	43812	0,41	114676	141212	26536	0,23
<b>Kadıköy Branch</b>	<b>0,70</b>				<b>1,00</b>				<b>1,00</b>			
Personel Expenditures	N.A.	N.A.	N.A.	N.A.	57594	57594	0,00	0,00	243375	243375	0	0,00
Current Expenditures	N.A.	N.A.	N.A.	N.A.	69103	69103	0,00	0,00	168292	168292	0	0,00
Invest. Expenditures	N.A.	N.A.	N.A.	N.A.	0	0	0,00	0,00	644	644	0	0,00
Number of Instructors	N.A.	N.A.	N.A.	N.A.	7	7	0,00	0,00	21	21	0	0,00
Number of Classroom	N.A.	N.A.	N.A.	N.A.	74	74	0,00	0,00	237	237	0	0,00
Contribution Margin	N.A.	N.A.	N.A.	N.A.	16763	16763	0,00	0,00	68299	68299	0	0,00
<b>Kızılay Branch</b>	<b>0,79</b>				<b>0,75</b>				<b>0,80</b>			
Personel Expenditures	1091221	1091221	0	0,00	1181971	1181971	0,00	0,00	1077853	1077853	0	0,00
Current Expenditures	831382	831382	0	0,00	886648	886648	0,00	0,00	978776	919891	-58885	-0,06
Invest. Expenditures	11715	4303	-7412	-0,63	4159	4159	0,00	0,00	104069	1657	-102412	-0,98
Number of Instructors	82	72	-10	-0,13	81	76	-5	-0,06	86	82	-4	-0,05
Number of Classroom	1525	1366	-159	-0,10	1402	1273	-129	-0,09	1440	1440	0	0,00
Contribution Margin	268069	339425	71356	0,27	247205	331644	84439	0,34	252235	314423	62189	0,25
<b>Samsun Branch</b>	<b>1,00</b>				<b>1,00</b>				<b>1,00</b>			

Personel Expenditures	254975	254975	0	0,00	127184	127184	0,00	0,00	238489	238489	0	0,00
Current Expenditures	300873	300873	0	0,00	427823	427823	0,00	0,00	249766	249766	0	0,00
Invest. Expenditures	1584	1584	0	0,00	7035	7035	0,00	0,00	50	50	0	0,00
Number of Instructors	14	14	0	0,00	14	14	0,00	0,00	15	15	0	0,00
Number of Classroom	444	444	0	0,00	434	434	0,00	0,00	422	422	0	0,00
Contribution Margin	100822	100822	0	0,00	92348	92348	0,00	0,00	72733	72733	0	0,00
<b>Trabzon Branch</b>	<b>0,70</b>				<b>0,68</b>				<b>0,27</b>			
Personel Expenditures	118236	92439	-25797	-0,22	127184	98539	-28645	-0,23	129086	115158	-13928	-0,11
Current Expenditures	72773	72773	0	0,00	78737	66560	-12177	-0,15	103406	93877	-9529	-0,09
Invest. Expenditures	1073	377	-696	-0,65	249	249	0	0,00	14461	207	-14254	-0,99
Number of Instructors	6	6	0	0,00	6	6	0	0,00	9	9	0	0,00
Number of Classroom	150	118	-32	-0,21	131	100	-31	-0,23	144	144	0	0,00
Contribution Margin	20321	29227	8905	0,44	18012	26652	8640	0,48	8878	33292	24414	2,75
<b>Tunali Hilmi Branch</b>	<b>0,64</b>				<b>0,68</b>				<b>0,78</b>			
Personel Expenditures	880979	764026	-116953	-0,13	852184	750601	-101582	-0,12	678420	528704	-149715	-0,22
Current Expenditures	505976	505976	0	0,00	489438	489438	0	0,00	497378	420661	-76717	-0,15
Invest. Expenditures	11715	2600	-9115	-0,78	11332	1553	-9779	-0,86	1604	1022	-582	-0,36
Number of Instructors	66	52	-14	-0,21	53	45	-8	-0,14	42	42	0	0,00
Number of Classroom	937	867	-70	-0,07	870	748	-122	-0,14	638	638	0	0,00
Contribution Margin	141236	222291	81055	0,57	136619	200035	63416	0,46	119227	152139	32912	0,28

Appendix 2: BCC Model Results of TÖMER Branches in 2009-2011.

BCC-O												
DMU	2009				2010				2011			
	Score	Projec.	Diff.	%	Score	Projec.	Diff.	%	Score	Projec.	Diff.	%
<b>Antalya Branch</b>	<b>0,851</b>				<b>1,000</b>				<b>1</b>			
Personel Expenditures	424096	338287	-85809	-0,202	369585	369585	0	0,00%	435871	435871	0	0,00%
Current Expenditures	301264	281467	-19797	-0,066	222792	222792	0	0,00%	275269	275269	0	0,00%
Invest. Expenditures	3195	1646	-1549	-0,485	105	105	0	0,00%	0	0	0	0,00%
Number of Instructors	21	21	0	0,000	23	23	0	0,00%	23	23	0	0,00%
Number of Classroom	457	457	0	0,000	386	386	0	0,00%	393	393	0	0,00%
Contribution Margin	90794	106631	15837	0,174	64105	64105	0	0,00%	78027	78027	0	0,00%
<b>Alanya Branch</b>	<b>0,336</b>				<b>1,000</b>				<b>0,265</b>			
Personel Expenditures	138274	118236	-20038	-0,145	116765	116765	0	0,00%	135746	128844	-6902	-5,08%
Current Expenditures	132910	72773	-60137	-0,453	124585	124585	0	0,00%	154834	118878	-35955	-23,22%
Invest. Expenditures	1073	1073	0	0,000	824	824	0	0,00%	1012	1012	0	0,00%
Number of Instructors	7	6	-1	-0,143	6	6	0	0,00%	7	7	0	0,00%
Number of Classroom	193	150	-43	-0,223	178	178	0	0,00%	178	167	-11	-6,44%
Contribution Margin	6831	20321	13490	1,975	26836	26836	0	0,00%	7106	26814	19709	277,36%
<b>Bursa Branch</b>	<b>0,903</b>				<b>1,000</b>				<b>0,850</b>			
Personel Expenditures	434076	346632	-87444	-0,201	395142	395142	0	0,00%	434801	288292	-146509	-33,70%

Current Expenditures	4985 45	331763	- 166782	- 0,3 35	3872 76	387276	0	0,00 %	4507 17	4377 33	-12984	- 2,88 %
Invest. Expenditures	2913	1734	-1179	- 0,4 05	0	0	0	0,00 %	1094 4	5500	-5444	- 49,74 %
Number of Instructors	21	21	0	0,0 00	24	24	0	0,00 %	22	22	0	0,00 %
Number of Classroom	615	513	-102	- 0,1 66	573	573	0	0,00 %	578	510	-68	- 11,79 %
Contribution Margin	1096 37	121474	11838	0,1 08	8947 3	89473	0	0,00 %	1012 91	1191 58	17867	17,64 %
<b>İstanbul Branch</b>	<b>1,000</b>				<b>0,332</b>				<b>1,000</b>			
Personel Expenditures	6608 85	660885	0	0,0 00	6578 27	499426	- 158401	- 24,08 %	7112 00	7112 00	0	0,00 %
Current Expenditures	4376 71	437671	0	0,0 00	6147 10	427808	- 186902	- 30,40 %	4637 46	4637 46	0	0,00 %
Invest. Expenditures	2249	2249	0	0,0 00	591	591	0	0,00 %	1472	1472	0	0,00 %
Number of Instructors	45	45	0	0,0 00	51	31	-20	- 39,95 %	43	43	0	0,00 %
Number of Classroom	750	750	0	0,0 00	711	597	-114	- 16,04 %	709	709	0	0,00 %
Contribution Margin	1922 83	192283	0	0,0 00	3336 6	100426	67060	200,9 8%	1895 35	1895 35	0	0,00 %
<b>Izmir Branch</b>	<b>0,735</b>				<b>1,000</b>				<b>0,714</b>			
Personel Expenditures	5341 25	534125	0	0,0 00	5078 50	507850	0	0,00 %	5532 99	5532 99	0	0,00 %
Current Expenditures	4686 74	394951	-73723	- 0,1 57	3711 28	371128	0	0,00 %	3832 68	3832 68	0	0,00 %
Invest. Expenditures	3087	2041	-1045	- 0,3 39	4110	4110	0	0,00 %	7035	1439	-5596	- 79,55 %
Number of Instructors	37	35	-2	- 0,0 45	41	41	0	0,00 %	38	34	-4	- 9,34 %
Number of Classroom	705	654	-51	-	746	746	0	0,00	694	569	-125	-

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Classroom				0,0 72				%				17,97 %
Contribution Margin	1202 56	163721	43465	0,3 61	1146 76	114676	0	0,00 %	1074 52	1504 80	43027	40,04 %
<b>Kadıköy Branch</b>	<b>0,000</b>				<b>1,000</b>				<b>1,000</b>			
Personel Expenditures	N.A.	N.A.	N.A.	N.A. .	2433 75	243375	0	0,00 %	5759 4	5759 4	0	0,00 %
Current Expenditures	N.A.	N.A.	N.A.	N.A. .	1682 92	168292	0	0,00 %	6910 3	6910 3	0	0,00 %
Invest. Expenditures	N.A.	N.A.	N.A.	N.A. .	644	644	0	0,00 %	0	0	0	0,00 %
Number of Instructors	N.A.	N.A.	N.A.	N.A. .	21	21	0	0,00 %	7	7	0	0,00 %
Number of Classroom	N.A.	N.A.	N.A.	N.A. .	237	237	0	0,00 %	74	74	0	0,00 %
Contribution Margin	N.A.	N.A.	N.A.	N.A. .	6829 9	68299	0	0,00 %	1676 3	1676 3	0	0,00 %
<b>Kızılay Branch</b>	<b>1,000</b>				<b>1,000</b>				<b>1,000</b>			
Personel Expenditures	1091 221	109122 1	0	0,0 00	1077 853	107785 3	0	0,00 %	1181 971	1181 971	0	0,00 %
Current Expenditures	8313 82	831382	0	0,0 00	9787 76	978776	0	0,00 %	8866 48	8866 48	0	0,00 %
Invest. Expenditures	1171 5	11715	0	0,0 00	1040 69	104069	0	0,00 %	4159	4159	0	0,00 %
Number of Instructors	82	82	0	0,0 00	86	86	0	0,00 %	81	81	0	0,00 %
Number of Classroom	1525	1525	0	0,0 00	1440	1440	0	0,00 %	1402	1402	0	0,00 %
Contribution Margin	2680 69	268069	0	0,0 00	2522 35	252235	0	0,00 %	2472 05	2472 05	0	0,00 %
<b>Samsun Branch</b>	<b>1,000</b>				<b>1,000</b>				<b>1,000</b>			
Personel Expenditures	2549 75	254975	0	0,0 00	2384 89	238489	0	0,00 %	1271 84	1271 84	0	0,00 %
Current Expenditures	3008 73	300873	0	0,0 00	2497 66	249766	0	0,00 %	4278 23	4278 23	0	0,00 %
Invest. Expenditures	1584	1584	0	0,0 00	50	50	0	0,00 %	7035	7035	0	0,00 %
Number of Instructors	14	14	0	0,0 00	15	15	0	0,00 %	14	14	0	0,00 %
Number of Classroom	444	444	0	0,0 00	422	422	0	0,00 %	434	434	0	0,00 %

Contribution Margin	100822	100822	0	0,000	72733	72733	0	0,00%	92348	92348	0	0,00%
<b>Trabzon Branch</b>	<b>1,000</b>				<b>1,000</b>				<b>1,000</b>			
Personel Expenditures	118236	118236	0	0,000	129086	129086	0	0,00%	127184	127184	0	0,00%
Current Expenditures	72773	72773	0	0,000	103406	103406	0	0,00%	78737	78737	0	0,00%
Invest. Expenditures	1073	1073	0	0,000	14461	14461	0	0,00%	249	249	0	0,00%
Number of Instructors	6	6	0	0,000	9	9	0	0,00%	6	6	0	0,00%
Number of Classroom	150	150	0	0,000	144	144	0	0,00%	131	131	0	0,00%
Contribution Margin	20321	20321	0	0,000	8878	8878	0	0,00%	18012	18012	0	0,00%
<b>Tunali Hilm Branch</b>	<b>0,688</b>				<b>1,000</b>				<b>0,708</b>			
Personel Expenditures	880979	735544	-145435	-0,165	678420	678420	0	0,00%	852184	739800	-112383	-0,13
Current Expenditures	505976	505976	0	0,000	497378	497378	0	0,00%	489438	489438	0	0,00%
Invest. Expenditures	11715	3891	-7824	-0,668	1604	1604	0	0,00%	11332	1635	-9697	-0,86
Number of Instructors	66	51	-15	-0,221	42	42	0	0,00%	53	45	-8	-0,15
Number of Classroom	937	884	-53	-0,056	638	638	0	0,00%	870	751	-119	-0,14
Contribution Margin	141236	205431	64195	0,455	119227	119227	0	0,00%	136619	193038	56419	0,41

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**ENTREPRENEURIAL CULTURE AS A PREREQUISITE FOR THE FORMATION  
OF INNOVATION DRIVEN ORGANIZATION**

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**Abstract**

*The paper analyzes entrepreneurial culture as a factor that influences realization of business excellence. In modern times this distinct competitive advantage is extremely difficult to achieve if a company is not entrepreneurially oriented. That means meeting prerequisites necessary for continuous innovation as the source of competitive advantage. Support and development of innovation presupposes favorable work environment, adequate human resources management, entrepreneurially oriented organizational culture and a balance between individual initiative and cooperative behavior.*

**Key words:** *organizational culture, corporate entrepreneurship, business excellence, stakeholder approach*

**1. INTRODUCTION**

Companies' business strategy is increasingly evolving into a strategy of innovation which helps to prepare and support innovative processes that lead to business excellence. This evolution or tendency to change is not accidental. It is the result of major changes in business environment that affect changes in objectives, strategies and internal processes within company. These changes in the external business environment can be seen in several areas, but primarily refer to technological changes (rapid development of new technologies and greater difficulty in protecting intellectual property rights) (Morris, Kuratko and Covin, 2008). Change in economic environment (unpredictability of prices, costs, exchange rates, interest rates and business cycles) is the second major change. Competitors also reported significant changes (appearance of highly innovative competitors, competition from non-traditional sources with non-traditional tactics). In the labor area scarcity of skilled workers is present as employees are becoming increasingly mobile and less loyal. Scarcity occurs in the area of resources as well. Clients are becoming more demanding and complex and markets are more fragmented and more segmented. There are also changes in the law-making in the economic sphere and regulations. Changes are more aggressive, while on the other hand free and fair trade and strong environmental regulation are emphasized. Finally, the process of globalization brings daily changes that impose new imperatives in front of the business world.

Turbulent changes affect the company and its internal structure, management and competitive advantage. These processes mean opening new opportunities for business ventures, but also the inevitable interruption of some of the current activities. In order to adapt to new circumstances company has to have some essential characteristics: innovation, proactive approach, adaptability,

flexibility and speed. All these features give the company a new quality and lead to entrepreneurial orientation, which is a key source of sustainable competitive advantage. Rejecting the conventional business practices also means creating necessary conditions for continuous innovation, because it is a major source of continuous improvement. For successful implementation of innovations, very special entrepreneurial context is required. The above changes in the environment and internal business processes must be taken into account while implementing various theoretical concepts into business practices in order to achieve business excellence.

Since the competition rules are constantly changing and competitive advantage is rapidly becoming obsolete, successful businesses today have found a solution in a continuous process of innovation and implementation of "creative destruction" (Stopford and Baden-Fuller, 1994). Therefore, innovation, proactiveness, and risk taking are the main characteristics of modern enterprises in which employees invest their knowledge and skills to develop new products, services, and open new business opportunities which constantly generate competitive advantages.

## 2. CORPORATE ENTREPRENEURSHIP AND INNOVATION

The appropriate definition of entrepreneurship in modern terms is the creative ability to initiate new ideas, concepts and creation of new enterprises and business ventures. Entrepreneurship has certain common features, regardless of scope, as evidenced by the introduction of the entrepreneurial process levels: (a) opportunity identification, (b) concept development, (c) resource determination and acquisition, (d) venture introduction and development and (e) entrepreneurial venture harvest. The differences between corporate and traditional entrepreneurship can be seen in the attitudes, motivation, time horizon, responsibility, risk propensity, skills and work style of corporate businesses (Morris, Kuratko and Covin, 2008).

Corporate entrepreneurship refers to the explanation of entrepreneurial activity in the medium and large enterprises, and includes the creation, development and implementation of new ideas, while innovation may represent new products and services, administrative procedures and production processes. Jennings and Lumpkin (1989) observe corporate entrepreneurship through its basic forms relating to the creation of new business opportunities within existing enterprises, transformation or rejuvenation of a business organization which can express the innovation process, including new solutions of old problems, and refers to attempts to change the rules under which competition operates. Furthermore, Guth and Ginsberg (1990) note that corporate entrepreneurship consists of two key phenomena: creation of new business ventures within existing companies, and organizational transformation through redefining business strategy and strategic renewal. Zahra (1991) observes corporate entrepreneurship as a set of formal and informal activities aimed at creating new business opportunities in existing businesses in the form of new products, services, process innovation, and creating new markets.

Lumpkin and Dees (1996) highlight five organizational aspects of entrepreneurial orientation: autonomy, innovativeness, risk-taking, proactiveness and competitive aggressiveness. Covin and Miles (1999) suggest that there are two elements that define an entrepreneurial organization; (a) innovation - introduction of new products, technologies, systems and processes and (b) sustainable high performance or radical improvement of competitive situation. The purpose of all organizational redefinitions, renewals and rejuvenations is to achieve competitive superiority, or as we have defined it in the previous section - business excellence. Since corporate entrepreneurship refers to the creation of new business ventures within existing organizations and organizational transformation through

strategic renewal it is necessary to highlight the main aspects of corporate entrepreneurship (Antoncic and Hisrich, 2003).

- *New ventures and new businesses (main aspect)*. Creation of new venture is the main characteristic of corporate entrepreneurship because it leads to the creation of new businesses within existing company. New ventures can lead to the formation of autonomous and semi-autonomous departments which can exist as a part of an organization or outside its boundaries in the form of a newly created enterprise (spin out). The main difference between these two aspects of corporate entrepreneurship is reflected in the fact that the results of new ventures can be seen in the formation of new departments or enterprises (spin out), while the aspect of new businesses applies only to the entry to new businesses by an existing organization, without creating a new organizational entities.

- *Product, service and process innovativeness*. This aspect relates to the innovation of products and services through the development of technology. Therefore, innovativeness of products and services primarily differentiates from the innovativeness of processes through the segment related to the technological development of the manufacturing process. Thus, corporate entrepreneurship involves development of new or improvement of existing products, services, production methods and procedures.

- *Self-renewal* (willingness and commitment to the transformation of the key ideas on which the company is based on). Represents the aspect that relates to the organizational transformation based on the redefinition of key ideas upon the company was founded on. Moreover, this aspect has connotations associated with the strategic and organizational changes, and includes strategy redefinition, reorganization and systemic changes that lead to the increased business flexibility and adaptability.

- *Proactiveness*. This aspect of corporate entrepreneurship refers to orientation and willingness of the top level management to undertake initiative. Therefore it is related to the readiness of the company to lead, to become a market leader and not to follow competitors in crucial business segments such as the introduction of new products/services, manufacturing technologies and administrative techniques.

- *Risk taking*. This aspect has its roots in the early definitions of entrepreneurship. Even Cantillon defined the entrepreneur as an individual who is inclined to take risk for profit making activities. Schumpeter has also defined risk-taking as a basic element of entrepreneurship (Kolakovic, 2006). Therefore, risk-taking represents the possibility of business failure and the loss of invested resources related to the rapid and brave new entry business decisions.

- *Competitive aggressiveness*. Competitive aggressiveness refers to the company's propensity to compete with its rivals. Entrepreneurial posture can be reflected in the company's tendency to aggressively compete with industry rivals (Covin and Slevin, 1991). This aspect can be also seen as the organizational willingness to take a leading role in the market and a dominant position against competitors. In addition, it is necessary to distinguish competitive aggressiveness and proactiveness. Their essential difference is reflected in the fact that proactiveness refers to the response on the perceived market opportunities, while competitive aggressiveness is associated with responding to the threats of the competitors.

The extent to which corporate entrepreneurship will be realized and the ways in which will be manifested depend on factors that can be grouped into four areas: external environment, strategic leadership, working environment and company results (Morris, Kuratko and Covin, 2008). Intensity of company's entrepreneurial orientation is a combination of the degree of entrepreneurship (which refers

to the extent to which entrepreneurial activities are innovative, proactive and risky) and the frequency of entrepreneurship (the extent to which entrepreneurial ventures are common).

Previous analysis has shown that corporate entrepreneurship and successful entrepreneurial orientation can significantly increase the company's competitive position and value added, and that the innovation is a crucial aspect of the entrepreneurial process. Creativity and innovation are critical for the success and survival of the company. However, innovation is not a simple concept to define. Although innovation represents something unique or different, it is important to clarify the difference between invention and innovation. Ahuja and Lampert (2001) consider it necessary to distinguish between invention and innovation, not only for the conceptual reasons but for the practical reasons, as well, which relate to security and creation of new discoveries. Inventions represent development of new ideas or the act of creation, while innovation is related to the commercialization of inventions. Other authors explain this relationship quite differently (Burns, 2005). Innovation is something original and the realization of this originality may include invention (which is just an extreme and more risky form of innovation) and the development of innovative processes. However, for something to represent successful entrepreneurial innovation (innovation in economic sense of the word) it has to be related to the consumer demand and market opportunities and has to become business reality. In this way, innovations are connected with market opportunities which allow generation of competitive advantage for the company. Therefore, innovation can be seen as a broader concept than invention, since inventions do not have to achieve commercial success and because innovation is not necessarily a product of research and development activities, which is an essential aspect of invention.

Zimmerer and Scarborough (2008) distinguish creativity and innovation. Creativity is the ability to develop new ideas and to discover new ways to test the basic problems and opportunities. Innovation is the ability to apply creative solutions to these problems and opportunities to enhance and enrich people's lives. Thus, innovation is realized creativity, i.e. it represents the transformation of new ideas in business practice. Entrepreneurs are those who discover and do new things or existing things in new ways. They create new ideas and transform them into business practice, creating added value, although they may not be in both functions in each case. Based on these elaborations, we can offer an acceptable, general, definition of innovation: it describes a range of organizational activities associated with the movement of new conceptual ideas to products and services offered on the market (Jones, 2005). A broader and more detailed classification of certain aspects or forms of innovation can be summarized as follows (Johnson, 2001). Innovations refer to:

1. Any change in the range of products and services of an organization is on the market - it is clearly understandable form of innovation.
2. Any change in the application of products or services beyond its original purpose. (In a different direction from its original market)
3. Any change in the market that product or service is implemented in a different way.
4. Any change in the way the product or service developed differently from its original execution and logistics design.
5. There is also a special category of innovation that focuses on the manner in which the organization performs the basic business model development, i.e. in a different way than their current or previous business model (a new way of governance, new organizational culture, etc.).

These forms of innovation show that creativity and innovation have entrepreneurial context, and refer to person or group which creates innovation and transform it into business practice. Innovation includes creativity, but it requires businesses and entrepreneurs in order to connect with market conditions.

### 3. CHANGES IN ORGANIZATIONAL CULTURE

In modern economic conditions it is evident that the economy is becoming primarily based on intangible sources of value and those concepts such as reputation, trust and loyalty have a concrete impact on competitive advantage, financial performance and businesses survival. Company's culture is an example of an intangible element. The culture of an organization consists of the basic assumptions and beliefs upon which companies are formed, how its members behave and how it defines itself in relation to the external environment (Burns, 2005). Articulated analysis identifies six basic elements that make up culture: values, rules of conduct; dictionary; methodology, rituals and myths and stories (Morris, Kuratko and Covin, 2008). Bowman and Faulkner (1997) divided the dimensions of culture into four domains: (a) values, (b) cognitive process, (c) behaviors, and (d) organizational processes. Burns (2005) systematized the results of empirical research, and on the basis of the results analyzed the dimensions and implications of the dominance of certain values.

- *Individualism versus collectivism*. It is the degree to which people tend to act as individuals rather than groups and vice versa.
- *Power distance*. It is the degree of inequality among people that the community is willing to accept.
- *Uncertainty avoidance*. It is the degree to which people are willing to avoid ambiguity, remove the uncertainty and strive for structured rather than unstructured situations.
- *Masculinity versus femininity*. The degree to which male values (competition, assertiveness, financial awards, achievements) and to which women values dominate (modesty, cooperation, rewards, relationships, a tendency to compromise).

The results showed that the entrepreneurial culture involves a shift from individualism to collectivism, to the extent to which the organization develops. Furthermore, entrepreneurial culture has a small distance of power. Such organization typically avoids uncertainty and finally, there is a balance between masculine and feminine dimension. What are the implications of such a composition values? The prevalence of collectivism and the balance between masculine and feminine dimensions of culture means creating relationships and networks with *all stakeholders* and sees them as more important than formal structures. It is culture oriented toward achievement, motivating people, and employees feel that they belong to the organization. Small distance of power creates culture that shares information, knowledge and learning. Small uncertainty avoidance indicates a culture that values creativity and innovation and recognizes the importance of balanced risk avoidance.

The achievement of certain equilibrium between the values is the fundamental management task which is often difficult to realize. We could use conflict of individualism and collectivism as an example. The values of individualism are: achieving individual goals, self-sufficiency and self-orientation, while the values of collectivism care for the welfare of the group and put the emphasis on unity and cooperation. Management must reconcile that often extremely different values and find a balance that enables the achievement of company objectives. However, a certain contradiction or tension between individual autonomy and the creation of a joint cooperative culture can never be ignored.

Implementation and development of entrepreneurial orientation in a company to a large extent depend on the balance between individual initiative, creativity and cooperative behavior at different levels, which increases social capital and the results derived from the essence of cooperative values.

What is the company culture and how it is achieved?

There are several elements that stimulate innovation and entrepreneurship and thus contribute to creation of an entrepreneurial culture (Morris, Kuratko and Covin, 2008):

- Focus on people and the transfer of powers
- Creating value through innovation and change
- Focusing attention on the essential
- Active (practical) management
- Doing the right things
- The freedom to fail and make mistakes
- Duty and personal responsibility
- Focus on the future and a sense of the reaction rate

For the realization of these values, they should be included in the company's vision and further concretized in the company's strategy. Bearing in mind the characteristics of employees and the intended profile of the culture, it is necessary to shape the policy for human resource management which is consistent with the strengthening of entrepreneurial culture. If it is the case for culture development within existing organizations, then the focus should be placed on encouraging and rewarding of creativity as the main source of innovation. Although company's culture changes over time due to changes of its components, it is important to point out that the company's culture refers to the way the company performs and carries out its business activities regardless to short-term events, changes or disruptions on the marketplace.

#### **4. SYSTEM FOR PROMOTING CORPORATE ENTREPRENURSHIP**

Modern enterprises faced with constant market uncertainty and rapid changes are trying to achieve two somewhat conflicting goals. First one relates to the integration of various business activities in order to achieve economies of scale and economies scope, while the other one refers to starting new business ventures and creation of innovations. Therefore, the answer for achieving synergy effect between these two goals offers corporate entrepreneurship which reconciles individual employee initiatives on one side and company's strategic goals on the other side (Wickham, 2006).

A variety of available literature states that culture is the most important element for the development of corporate entrepreneurship, i.e. if the company's culture is entrepreneurially inclined then the company will act in an entrepreneurial manner (Burns, 2005). More accurately, company's culture has an impact on the development of corporate entrepreneurship in the short run, while if the company wants to encourage the entrepreneurial spirit of its employees to act innovatively and proactively in the long run it has to provide an adequate incentive system which will enable employee willingness to take risks regarding their entrepreneurial activities. Conducting entrepreneurial activities within a company requires a greater freedom for its employees whereby the company exposes its self to a greater level of various forms of risks. One form of the risk refers to the possibility of divergence

between the strategic goals, guidelines and objectives set by the top management and the defined goals of the projects developed by the employees. While other form of the risk to which the company is exposed to refers to the possibility that those employees in which the company has heavily invested and have become a valuable part of the company's human and intellectual capital simply leave the company and start their own business venture which was previously developed within company or simply defect to the competition. Therefore, in order to avoid the risks listed above or at least reduce them to the minimum, the development of an adequate incentive system is a necessity for achieving the following objectives: (a) fostering the entrepreneurial and risk-taking spirit in the organization, (b) attracting and retaining the best talent, and (c) promoting venture success (Viswanathan and Nagarajan, 2004).

In forming a system for promoting entrepreneurial activities various factors should be taken into considerations. Factors that depend on the type of the business venture, venture development stage and the intrapreneur's role performed in the business venture. The most important factors which determine the success of the incentive system are: (a) human element, (b) autonomy, structure and processes, (c) short-term vs. long-term incentives, (d) performance relatedness, and (e) attracting and retaining talent (Viswanathan and Nagarajan, 2004).

- *The human element.* A successful business venture requires a combination of employees who possess entrepreneurial, managerial and technological knowledge and who according with their specialized knowledge perform various critical roles during venture's developmental phase. These roles may be: inventor, venture manager, venture team, internal support and external workers. Therefore, recognition of these roles is crucial for designing an adequate incentive and compensation system.

- *Autonomy, structure, processes.* The business venture success greatly depends on the autonomy of the team responsible for realization of the business venture because venture team acts in a newly created or emerging market where learning primarily happens by operating on it. Autonomy may be manifested as: a) autonomy in decision making, b) autonomy in support and resources needed, and c) autonomy in control and reporting required. Precisely because the greater level of autonomy differentiates the business venture from the rest of the organization, a more specific incentive system is need.

- *Short-Term vs. Long-Term Incentives.* As the words say a short-term incentive forms effect and ensure the implementation of short-term actions, while long-term forms of incentives ensure the realization of key strategic actions. In any business venture a balance between short and long term forms of incentives is required.

- *Connection with success.* It is necessary that incentives and rewards are associated with the achieved results and company's performance. This does not mean that failures should be punished, simply because the probability of a venture failure is a lot greater than the probability of an ordinary project. Moreover, even if the business venture failed, those employees who have done their job extraordinarily well should be rewarded.

- *Attracting and retaining talent.* In an effort to attract the best talent, a company should modify traditional incentive and rewarding system because employees should not experience participating in a new business venture as something that will slow down their career development.

In addition to the factors mentioned above that affect design of incentive system for promoting corporate entrepreneurship, the system itself should be as simple as possible with clearly defined goals. The results for measuring the venture success have to be clearly defined, and different level of

relevance should be given with the appropriate reward amounts. Moreover, the incentive and reward system should be present during the entire life of the business venture.

The most important components of incentive system for implementing corporate entrepreneurship are: financial incentives, non-financial incentives and risks associated with participation in a venture team responsible for developing new business ventures (Kuratko et al. 2005). Incentive system has to be designed in a way to increase performance and efficiency, there must be clearly visible link between performance and rewards, and the system must be based more on positive than on negative consequences of working behavior (Bahtijarevic-Siber, 1999).

• *The financial incentives.* Financial incentives are the most common form of incentives and rewards because they are directly associated with work of the individual or a group and are perceived as a direct reward for committed effort. Therefore, the following table 1 gives a detailed view of various forms of financial incentives and their characteristics.

Table 1: Financial incentives of corporate entrepreneurship and their characteristics

Financial incentive	Incentive features
Equity and equity-related	<ul style="list-style-type: none"> <li>• Shares/ options in parent firm/ venture</li> <li>• Phantom shares: if venture doesn't exist as a separate entity</li> <li>• Encourages collaborative behavior</li> <li>• Purchased equity in new venture links risk to potential reward</li> <li>• Relatively long term incentive</li> </ul>
Bonuses	<ul style="list-style-type: none"> <li>• Fixed amounts known in advance; Variable, performance linked; Discretionary bonus after major contribution</li> <li>• Can be both long term as well as short term</li> </ul>
Salary increases and salary	<ul style="list-style-type: none"> <li>• Salary increase is related to changing role in the venture</li> </ul>
Fringe benefits	<ul style="list-style-type: none"> <li>• Holiday trips, scholarships to children, sabbaticals etc.</li> </ul>

Source: Viswanathan, R.J. and Nagarajan, G.S. (2004) The 4E model: Designing an incentive system for internal ventures, ESADE MBA Business Review, p. 28

• *Non-financial incentives.* In order for an incentive system to be a comprehensive one, besides financial incentive forms that make up its foundation, it has to include non-financial incentives as well. The motivation for conducting entrepreneurial activities will be greater if an employee can realize more of its diverse needs. Therefore, it could be said that non-financial incentives are sometimes more important than financial incentive forms, especially in the start-up phase of the venture. The following table 2 provides an overview of the most important non-financial forms for promoting the development of corporate entrepreneurship within a company.

Table 2: Non-financial incentives of corporate entrepreneurship and their characteristics

Non-financial incentive	Incentive features
Top management support for venture	<ul style="list-style-type: none"> <li>• Presence of a management champion for the venture</li> <li>• Increased resources: money or personnel</li> </ul>
Autonomy, freedom, independence	<ul style="list-style-type: none"> <li>• Basic motivation of intrapreneur is to realize his vision in his own way: autonomy</li> <li>• Intrapreneur does not have to take management permission for every move: freedom and independence in operation</li> </ul>
Recognition	<ul style="list-style-type: none"> <li>• Recognition is not just a gesture, it is an empowerment tool</li> <li>• Manifested through recognition ceremonies, awards and corporate publications</li> </ul>
Authority, responsibility, power	<ul style="list-style-type: none"> <li>• Subtle incentives</li> <li>• Only explicit way of awarding these incentives is through promotions</li> <li>• Promotion to broadened responsibilities is the fundamental corporate reward</li> </ul>

Source: Viswanathan, R.J. and Nagarajan, G.S. (2004) The 4E model: Designing an incentive system for internal ventures, ESADE MBA Business Review, p. 28

• *Risks*. The unique aspect of corporate entrepreneurship, i.e. participation in the development of new business ventures, is the presence of significant levels of risk associated with intrapreneurs and other employees who participate in the ventures' development. Risks associated with employees who participate in a business venture development are presented in the table 3.

Table 3: Risks of employees and their characteristics

Risk for personnel	Nature of risk
Financial risk	<ul style="list-style-type: none"> <li>• Opportunity cost of leaving some other division and working for new venture</li> <li>• Possibility of missing out on incentives due to the inherent risk of the new venture</li> </ul>
Career risks	<ul style="list-style-type: none"> <li>• Working for the new venture may become a Stumbling block in the employee's career. He may miss out on promotions, etc</li> </ul>
Job security and benefits related risk	<ul style="list-style-type: none"> <li>• Firms sometimes don't guarantee jobs in case of venture failure. This creates job security risk.</li> <li>• While joining new venture employees often have to give up standard benefits package.</li> </ul>
Effort and stress	<ul style="list-style-type: none"> <li>• A new venture, by its inherent nature, is often more stressful and difficult than an established venture</li> </ul>

Source: Viswanathan, R.J. and Nagarajan, G.S. (2004) The 4E model: Designing an incentive system for internal ventures, ESADE MBA Business Review, p. 28

After developing a design of an incentive system for promoting entrepreneurial activities it is necessary to choose a model that would be appropriate for the company's organizational structure, culture and climate, which will implement entrepreneurial spirit to all organizational levels. This could be achieved by the use of the various combinations of the following models: (a) personal contribution, (b) stock ownership, (c), life-cycle incentives approach (d) intracapital and (e) intrapreneurial career path development (Viswanathan and Nagarajan, 2004).

- *Personal contributions.* In this model, employees set aside a certain amount of the annual salary, with no wage increases during the year, until the business venture achieves a certain level of performance. After the objectives are met employees are awarded with monetary or other forms of bonuses accompanied with the return of the previously unpaid wages. The same procedure is then repeated for the following year. The advantage of this model can be seen in encouraging teamwork and cooperation of the people involved in the venture development. Moreover, it creates a direct link between the risks and the potential rewards.

- *Stock ownership.* This model can be implemented in two ways: (1) outstanding employees are rewarded with the options for shadow/actual equity in the venture and (2) employees are rewarded with equity itself rather than options in the new venture. In this way employees are encouraged to participate in long-term venture development.

- *The life cycle of the business venture.* The company must have an established incentive and rewards system based on different aspects of the business venture life cycle. Different incentive forms and models are appropriate depending if the venture is in the seed phase, start-up phase, maturity or exit stage.

- *Intracapital.* This model satisfies the basic intrapreneur's need, autonomy to manage and allocate company's resources in order to convert its business idea into a successful business venture. Therefore, to a worthy and proven intrapreneur a certain amount of resources is allocated and he has an exclusive right to manage these funds according to his vision. In this way an intrapreneur will be more careful with resource allocation and their consumption than he would be if the resources are under their superior's control.

- *Intrapreneurial career path development.* One of the most demanding challenges of corporate entrepreneurship development is resolved with this model, and it is the problem of providing the most talented intrapreneurs with the opportunity to continuously develop their careers within the company. Most often problems occur when intrapreneurs have to return to their old work positions and their job routines where they are faced with the administrative tasks not related to new venture creation. Successful intrapreneurs characterized with high levels of entrepreneurial orientation are not even able to efficiently carry out the tasks associated with top management levels because they simply lack the features characterized with managers. Instead of giving hierarchical promotions, intrapreneurs should be rewarded with higher bonuses or by transferring them from a venture in the mature or exit stage to a new business venture which is in the concept or start-up phase. Therefore, this model aims to achieve continuous intrapreneur career development for those employees who are born leaders and who after successful venture realization simply would not be able to find the meaning and satisfaction of performing everyday operations of their old job positions.

After describing possible models for corporate entrepreneurship development, it can be concluded that the first two models, personal contributions and stock ownership, are closest to the traditional meaning of entrepreneurship, i.e. to the situation where intrapreneurs are most similar to entrepreneurs because these models create a direct relationship between the risks and possible rewards that business venture

carries with itself. Other advantages of these models are encouragement of cooperation and teamwork among participants in business venture creation.

## 5. CONCLUSION

New model of entrepreneurial culture has two essential objectives: a sustainable competitive advantage and the value delivery to company's stakeholders. In this sense, changes in corporate governance have to be implemented for management to meet the stakeholders' needs and to increase the shareholders' value. At the same time, it has to create the conditions for the continuous innovation development which are the precondition for the business excellence realization.

Conditions for creating a new model of entrepreneurial culture has to be provided within corporate entrepreneurship, i.e. it is impossible to achieve business excellence without the implementation of entrepreneurial orientation throughout all organizational segments. In order for a company to adjust to the new market circumstances, employees have to possess the essential features of entrepreneurial orientation: innovation, proactiveness, and risk-taking, which emphasize diversity and initiative as the main factors of entrepreneurship. On the other hand, harmony and cooperation between employees, teamwork and cooperation in avoiding conflicts are required. This is a key problem in creating an adequate entrepreneurial atmosphere.

A similar problem occurs in the shaping of organizational culture which understands the way the company performs and carries out its activities regardless short-term disturbances. It is often crucial to achieve the balance between individual values that form the foundation of the entrepreneurial culture. One of the problems is the balance between individualism and collectivism, since they often have conflicting values and beliefs. Some empirical research argues that an entrepreneurial culture involves a shift from collectivism to individualism. The relations and networks with a strong sense of "inner group" are developed, at the same time with a sense of competition to the "outside groups". This is need to synchronize with the stakeholder model of entrepreneurial culture which refers to the culture that creates relationships and networks with all stakeholders where informal structure is more important than the formal structure of relations.

Since the organizational culture is necessary for the realization of business excellence and stakeholders' value in its essence it has to be entrepreneurially inclined, therefore a certain contradiction between individual autonomy and collective cooperative culture remains the problem of a new entrepreneurial culture model.

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## THE FACTORS OF FINANCIAL CRISIS

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### Abstract

*The author argues assertion that economic and financial crises are more "rules" than deviations from the "rule". An analysis of the evolution of large-scale crises, economic crises since the nineteenth century has been performed. A special attention is paid to "paraeconomic" processes destroying money supply in the circuit with all the negative consequences on the further development of the economy. "Paraeconomic" processes called "financial bubbles" are factors generating financial crises. Analysis of the causes and evolution of every economic and financial crisis can not serve as basis for a theory that would exclude financial crises. Study of crisis is needed to predict their occurrence in order to minimize potential losses.*

**Key words:** *financial crisis, market, price, stock.*

### 1. INTRODUCTION

The material includes handling crisis from a range of analytical factors: research, development of crisis, "contribution" of each factor in initiating and carrying out economic and financial crisis. Economic crisis are not missing for a moment in the global economy. They are only different by level of depth, geography and as generators of crisis. The high level of economic interdependence makes some attacks to be easily mitigated, others multiplied. One financial crises within the meaning of contemporary concepts of "diagnostic" crisis was one of a.1857 the U.S., generated by "expulsion" of U.S. exporters to Europe, Russian exporters are liberated from military adventures in Crimea. Geography, and prices have favored Russia. At that time, the effect of "punishment" given by the market, have over 1400 U.S. banks failed. Usually, crises do not last long. This crisis lasted only two years.

The following dates have accompanied the global economy crisis as a "shadow", only that the size and depth have not been large enough for them to go down in history. But by 1878, technological progress, actions have generated speculation the next crisis that swept the U.S. and Europe. A feature of that crisis was the unprecedented overproduction in space and time for the world economy (Kindleberger, 1982, 1996; Pinner, 1937; Reinhart, 2009). Economy to a certain point, it is not unbalanced by financial bubbles until the market turns arbitrator and therefore bubbles "burst" with all the consequences: money raise their value, prices are reduced, assets are materialized devalues, businesses fails, increase unemployment, etc.. On October 22, 1929, the newspaper "New York Times", Irving Fisher, economist with considerable authority, outlined his views on the share price. Actions, according to Fisher, sold below the actual cost.

Population understood correctly, Fisher really was right - actions had to be sold at a higher price. Consequently, both with money and those without money, through bank loans, and were filled "pockets" with cheap shares. Therefore, it created a financial bubble, which destroyed the finances of the economic cycle. Money, converted into shares in the hope they will make more money, have

created a new situation on the market: supply of goods and services market was preserved, demand for goods and services decreased; Dow-Jones, which increased from 104 in September 1924 to September 1929 to 381.18, falling to 41.2 by July 1932. Financial bubble, driven by holders of shares snapped, shortage of money in the market caused the Great Depression of 1929-1933. Irving Fisher, in McGrattan's opinion, was right (McGrattan, 2003): the shares were sold at an unreasonably high price. In 1933, Irving Fisher made theoretical explanations on causes conducting to economic crisis (Fisher, 1933, p.337-357) and the successful theory was developed by Minsky (Minsky, 1982, 1986). Starter of the economic crisis in the years 1929-1933 was not Irving Fisher, who said a truth, but "producers" of shares.

## 2. COMPLEXITY OF FINANCIAL CRISIS

Statement can be expressed in formal language: note by N - number of shares, A - number of shares traded, (N-A) - the number of shares awaiting sale. Number of shares traded in a unit time is proportional to the number of shares sold (they are carriers of advertising pro stock), the number of shares to be sold, or otherwise expressed, where - coefficient of proportionality.

Solving the first order differential equation with separable variables, we determine the optimal number

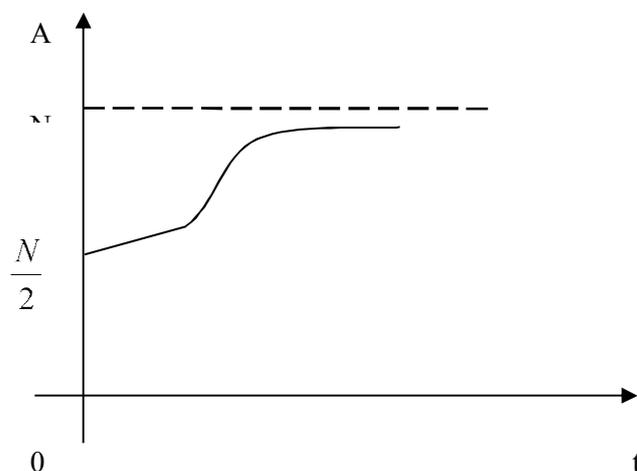
$$A^* \text{ of shares traded } \frac{dA}{A(N-A)} = \alpha dt \quad \text{or} \quad \frac{1}{N} \left( \frac{dA}{A} + \frac{dA}{N-A} \right) = \alpha dt \quad \text{from which we obtain}$$

$$\frac{1}{N} \ln \frac{A}{|N-A|} = \alpha t \quad \text{or} \quad \frac{A}{N-A} = e^{\alpha Nt} \quad A = \frac{N}{1 + \frac{1}{e^{\alpha Nt}}} \quad \text{which can be interpreted graphically (Figure 1).$$

Financial bubble was to be any claims, in fact correct, of Irving Fisher. The shares were sold to a certain speed  $\frac{dA}{dt}$  which was stimulated by two factors: the number of shareholders already become information carriers pro action and the potential number of shareholders.

Irving Fisher's published output only accelerated the process of "swelling" of the financial bubble to the size, the market and said "verdict" and financial bubble "burst", has generated economic crisis. Imaginary, the crisis could be avoided if there were restrictions on the number of shares to be sold out (the number N).

The increase in stock prices (generated by request), together with increasing N, leading to an accumulation of financial resources to expand capacity beyond that of production processes. Uncontrolled population growth was due to carry debt crisis of 1929-1933. On closer analysis, we found that the population led by the "flock of sheep" Fisher said - all bought, material goods prices fell - all trying to "get rid" of them.



**Figure 1: The evolution of the number of shares traded**

According to (Wheelock, 2008, p. 570), the U.S. unemployment rate in 1933 exceeded the 25% disposable income fell by 44%, real GDP fell by 30%. Over 43.8% of mortgages have remained unpaid (Wheelock, 2008, p. 138-139). By 1934, 50% of banks have failed (Bridgewell, 1938, p 171). Returning to the crisis of 2008-2010, we find that in the U.S., 55 million homes remain as collateral to banks, so 100-165 million people are affected (Barth, 2008).

Good conditions for initiation and growth of financial bubbles provide scientific and technical progress, innovation, advanced technologies. Emissions of action, enjoy overappreciation among buyers and, in principle, that is found "by a Fisher" that using the Internet, the modern means of telecommunications, the rules "flock" financial bubbles can initiate the way, at any time, can "explode", generating a crisis of proportions.

Such a crisis has been the world market in the years 1995-2001. Crisis of 2008-2010 was predicted back in 2005 by R. Shiller (Shiller, 2005, p.78-80; Leonhardt, 2005) who found that housing prices in other real estate prices exceed 40%.

Financial crisis in 2008-2010 affected the world economy, but American banks and property and shares, which were well provided (Blackburn, 2008, p. 63-106; EEAG, 2009; Felton, 2008). Who, what, how and when to initiate financial bubbles, generating economic crisis? An attempt to answer this question is found in the paper of German economist Zeidl K. [Zeidl, 2010, p. 122-133). In his view, financial crises are caused by 12 factors, including:

One. Substandard construction mortgage bonds increased. Some U.S. residents, neînștăriți without permanent jobs in the social policy of the state, took bank loans on favorable terms (first contribution is greatly reduced, the tax credit - for the next 2-3 years than the next tax year credit is flexible depending on the potential customer banking) (Garriga, 2006, p..401-403). Consequently, in the years

1994-2006, household debt increased considerably. For these favors have benefited people aged under 35 years (Garriga, 2006, p.398).

Two. Tax reform in 1986. The reform favors created for mortgages. Some people took advantage of these facilities, has "converted" expenses for other needs in the mortgage. Consequently, household debt increased.

Three. Lower percentage fees (Blackburn, 2008, p.65). Keeping taxes low and caused the appearance of cheap loans available to many people. Percentage fees were reduced from 15% in 1981 to 6% in 2005. Given the reduction of inflation, percentage fees were reduced from 8% in 1981 to 3.5% in 2005. Cheap loans have contributed to increasing the supply of housing construction. Consequently, housing prices have increased (Garriga, 2006, p. 403-405).

Four. Securing debt. Receivables are a deal between two subjects: the debtor and creditor. The lender makes the debt into shares they can sell, you can get the financial market, transferring his rights to another creditor. In, further centers have been invented to secure debt by creating securities (McDonald, 2008, p. 36). Lender may (with some probability) the consequences bankruptcy debtor or percentage tax reductions. Both situations can be overcome by imposing a lien creditor of the debtor, by establishing flexible percentage fee (McDonald, 2008, p. 32, 36). Relations between debtor and creditor, turned into securities can be sold at prices that correlate to the risk of business (Blanchard, 2009, p. 4-5; EEAG, 2009, p. 60-70]. Thus, the issuer of the securities fails to market risk probability, banks avoid risks, may increase the number of debtors, debts growing company.

Five. Rating agencies collapse. In the U.S., the three Rating agencies, establish rating of bankruptcy, income drawn with a certain probability. The questionable methodology used by them: the rating is determined for each type of paper value separately, they are not considered in the complex; Rating agencies are paid not by investors, but the issuers (ie, agency results are biased). Activities, establishing methods rating securities of these agents are much criticized (Benmelech, 2008). Lack of impartiality of the rating agencies allowed undeserved marketing of securities at inflated prices.

Six. Deregulation of the banking, finance. Many of the securities issued debt security centers have been purchased by companies Special Purpose Vehicles, Structured Investments Vehicles, lacking capital and term bonds were financed by low pay. These institutions were created by national banks in industrialized countries and geographically located in Ireland, the Cayman Islands, where the tax is reduced. Through these institutions, banking systems, financial monitoring avoided by those authorities. Through such a system banks got "freedom" in relations with customers, system, much divided, became uncontrollably (Mizen, 2008, p. 561; Blackburn, 2008, p.68-84). In our view, economist Zeidek failed to list all the factors that triggered the financial crisis of 2008-2010, and the factors listed do not have a mechanism, algorithm initiation, growth and financial bubbles plesnirii, did not leave room for other factors, can the "shadow", which become "producers" of financial bubbles. To clarify the contribution of individual, group or all the factors producing financial bubbles in the initiation, conduct banking and financial crisis, to establish the conditions necessary for generating the crisis. To follow the evolution of economic indicators: some produce goods, services (called final products), others provide money needed to balance the economic cycle.

The financial crisis occurs when the market currently, liquidity needs are considerably below. In creating such a situation can not be "blamed" the productive. Here, the approximate, based on input-output models, in all industrialized countries, some developing countries (China, India, Brazil, Mexico, etc.), balance between the volume of final products and liquidity needs is provided. Why are

cash poor at a time? In our opinion, the claim based solely on excessive increase in prices, is insufficient to financial crises, if not explain such increases, it examines the activities of agents that contribute to higher prices. Economic activities carried on debt creates imbalances: goods, services are created, their financial coverage is issued at a time, is over a certain period. So, debt finance creates microdeficits. Liabilities may be the most diverse construction of a building, purchase of comfort items related to the purchase of shares, etc. Each economic sector is accompanied by creditors and debtors. Finance, which covers products already created over time, are currently missing in the economy. Debt "extract" of business in finance. "Withdrawals" (debts) are the most diverse financial and in early stages, is some financial bubbles without negative impact on the balance (balance) of goods, services and finance. Rising prices caused by a number of exogenous factors, endogenous factors contribute to the liquidity gap. But price increases have immediate negative impact on the balance of goods, services and financial coverage. Debt and concomitant increase in prices is another factor with negative impact on the balance above named. Prices rise, debts increase, grow together, both contributes to financial bubbles, liquidity "withdrawn" in economic, financial bubbles feeds. Neither prices nor the number individuals, business entities that develop economic activities on debt can not be adjusted by someone (e.g. the government), the emergence and growth of financial bubbles can not be adjusted. Conversely, financial bubbles can be initiated without much effort and can be taken to "swell". For example, the emergence of technologies can be successfully mediated, market shares can be issued which can be made at prices that far exceed the face value, but is below the real effectiveness of these technologies. Excess demand allows "stealing" of business in finance, reduce purchasing power for other products, creates prerequisites for market liquidity deficit. Market liquidity deficit in country X can be created: money remittances to the country of origin of employees, activities in the informal economy, avoiding taxes by enterprises, income from trade in drugs, weapons, exports of ideologies, political: military activities ; create ghost companies operating them; support excessive interested actions to increase the stock price, unproductive activities (gambling, etc.) super rich possibilities of subjects to withdraw in economic quantities of liquidity, lack of mechanisms for managing the evolution of financial bubbles, no statistical evidence of the emergence and development of financial bubbles, diverse geography of financial bubbles.

### 3. CONCLUSIONS

World economy, of one or more countries, is always accompanied by economic and financial crisis, but being of different sizes have different impacts. The attention of society come only crises that exceed certain dimensions. Crises are the shadow economy. In economic history came during the crises of 1857, 1873, 1929-1933, 2008-2010. Factors that generate financial crises, economic relations are different: technological progress, excessive increase in prices, debt, finance the productive avoidance of wasteful activity, speculation in shares, start businesses, phantom shares, overproduction. Finance, out of natural economic cycle, is "financial bubble" that, over time, grow to critical size when generating financial crisis. The economic crisis in the years 1929-1933 was imminent, Fisher's article in the newspaper "New York Times" just reduced the period of occurrence of crisis.

A considerable impact on the ongoing process of crisis it is the "flock". An economic misinformation, highly publicized, may generate a financial crisis (e.g., an error occurred processing system or a statement of statistical indicators of a failed state leader, for example in U.S. or Germany). The financial crisis may be caused by unnecessarily large number of businesses, corporations, excessive prices. Financial bubbles are initiated and technological and scientific innovations, technologies, actions that cause great confidence in potential buyers of shares.

Consequently, the shares can be sold at unreasonably high prices, are initiated distractions in economic and finance, respectively, financial bubbles. Financial crises, in principle, can be predicted, but not avoided. The crisis in the years 2007-2010 was predicted by R. Shiller. On this basis, the German economist Zeidl vision, were placed 12 factors. Is an incomplete statement.

Number of factors contributed to the unfolding crisis is infinitely large, including a quantity of cash withdrawal by the subjects to become mega rich and wealthy, to make "respect" commodity-exporting countries, social policies in some states banking facilities granted to credit, thus demand, for example, the mortgage increases, then prices rise housing areas, fueling financial bubbles, fiscal reforms, such reforms in 1986 in the U.S., create favors for loans, help increase debt buyers, again creating financial bubbles, reducing percentage fees on mortgages, securing debt by issuing securities, disinformation potential buyers of shares by analytical agencies prestigious rankings suspicious of businesses established by the Rating agencies; loss the authorities to the possibilities of monitoring banking activities, lack of statistical evidence of the initiation and development of financial bubbles, lack of full analysis of profit debt countries overall world economy.

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**THE USE OF DYNAMIC ANALYSIS INDEX OF INVESTMENT PROJECTS ECONOMIC  
EFFICIENCY: NET UPDATED VALUE**

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**Abstract**

*In this article is presented the dynamic analysis index of projects economic evaluation, the net updated value (VAN), the method of calculation, as well as the advantages and disadvantages of using it through a case study. The net updated value is a significant index in assessing the economic and financial performance of a project or a company both internally and in the diagnostic tests requested by external partners.*

*Through its signification, it determines the economic value of an investment project and plans to increase this value by optimizing the investment decision after maximization criterion of VAN.*

**Key words:** dynamic analysis, net updated value, economic evaluation, optimization

**1. INTRODUCTION**

Investment represents the commitment of resources in the hope of benefit achievements over a long period of time in the future, or action to spend money or other resources in the hope that in the future you will get other benefits.

All studies of investment analysis of projects in engineering and all economic decisions, associate these studies must hold account of the additional value arising as a result of the acceptance of a particular project, as compared with the initial situation. The fundamental question that must answer the analyst is if the costs of accepting investments plus the costs of maintenance and its application are lower than income or savings associated with it (Doicin, 2009, pp.97).

The economic and financial evaluation of industrial investment projects in developed countries with market economy is based on the combined use of traditional and modern, rational methods, characterized by the scientific and reliability, tested and validated by long practice (Andreica, 2003, pp.1).

To take a financial investment decision, we must have a motivation based on knowledge of future efficiency of the financed objective. Usually, the economic efficiency indicators that play investments have given effort designed and expected future financial effects. Because the initial investment costs values, income and expenditure, and the residual value of the cash-flow-time available varies from one project to another, there isn't a unique method for determining efficiency of investment projects, which can be applied in any situation (Nistorescu, 2008, pp. 40-52).

Combined use of traditional methods and modern is specific to evaluate investment projects of small and medium scale. For large scale evaluation of projects it's used only the dynamic analyze based on modern and rational methods. The most important thing is that the methods and methodologies used to

ensure a realistic, relevant analysis of investment projects from the financial efficiency point view; to meet specific objectives and interests of companies who realize the project investments, from financing institutions exigencies country and abroad, in order to grant credits for attracting capital available from developed countries (Andreica, 2003, pp.3-10).

Divesting refers to the decision of cancellation before the investment term of a process, with the aim of optimization of dynamic portfolio investment as a result of the emergence of opportunities which, at the time of the initial decision, no one knew. Although divesting has defensive connotations, it is, however, an important element of dynamic optimization of corporate value.

Evaluation and justification of the divesting decision is similar to the procedure for investment decision but with reversed logic meaning: for example, how much would lose if it would continue investing just in case it would be cut off and would achieve another investment with a higher VAN, etc. Economic and financial criteria of divesting is representing maximizing the difference between recoverable updated value and the updated value of marginal future incomes lost as a result of the divesting decision. In fact, divesting is part of the general policy, medium-term and long-term performance of any company.

## 2. A COUPLE OF SLOTS CLASSIFICATION OF INVESTMENTS

The investments can be classified according to several criteria, so:

1. After the relation of the projected objective, we have (Cazaubon, 1997, pp.20-28):

- Direct investments are those that are made for the basic objective (acquisition of equipment, fitting them, etc.);
- Related investments are those completed in other economic objectives, in order to ensure the necessary raw materials for the production process of the future objective (land consolidations, etc.);
- Collateral investments which ensure the utilities of basic objective (water pipelines, gas, compressed air, telephone networks, etc.);

2. After their technological structure, we have:

- Construction-assembly works, consisting of construction works and installations of technology equipment mounting on the construction sites;
- Acquisitions of machinery that require mounting, fixing foundations, on pillars or placements;
- Acquisitions of machinery which does not require installation, means of transport, tractors, etc.;
- Geological works for the discovery of new reserves of useful mineral substances;
- Other investment expenditures, which refers to the plant-growing trees, buying and breeding, etc.

3. After their purpose and nature of the results, we have (Hoffman, 2008, pp.66):

- Materials - (buildings, machines, equipment) whose nature changed substantially nowadays, rapid growth in the volume of expenditure with informatics and automated production equipment, mechanical construction and buildings over;

- Nonmaterial - those efforts intended to prepare future (expenditure on computer science logic, commercial development, training of labor, research development).

4. After the character works, we have:

- The constructions of new units are those which are for things that have not previously existed, based on their building all elements which lead to getting the objective;
- Reconstruction of the existing objectives, which have suffered as a result of natural disasters, fires, etc.;
- For development – consist in expenses that are made in order to increase production capacity;
- For the modernization of existing units - consisting in the introduction of new machinery in place of those that are worn out physically and morally.
- For redevelopment – to the existing objectives for determining the best conditions of work activity;

5. After how the investment affects the enterprises economy, profitability and efficiency of economic agents, we have:

- With direct effects, reflected in the enterprise management (construction of new units, extending the existing capabilities and introduction of technical progress, including investments for refurbishment.
- With indirect effects on the economic situation of enterprise which invest (objectives for environmental pollution prevention, social and cultural objectives, strategic investments in perspective with useful effects).

6. After the source of financing, investments are dealt in investment financed from:

- Own sources, are constituted by the owner's capital;
- Attracted sources (foreign investments, etc.).

In Figure 1 is represented the diagram of design and implementation of a new investment project.

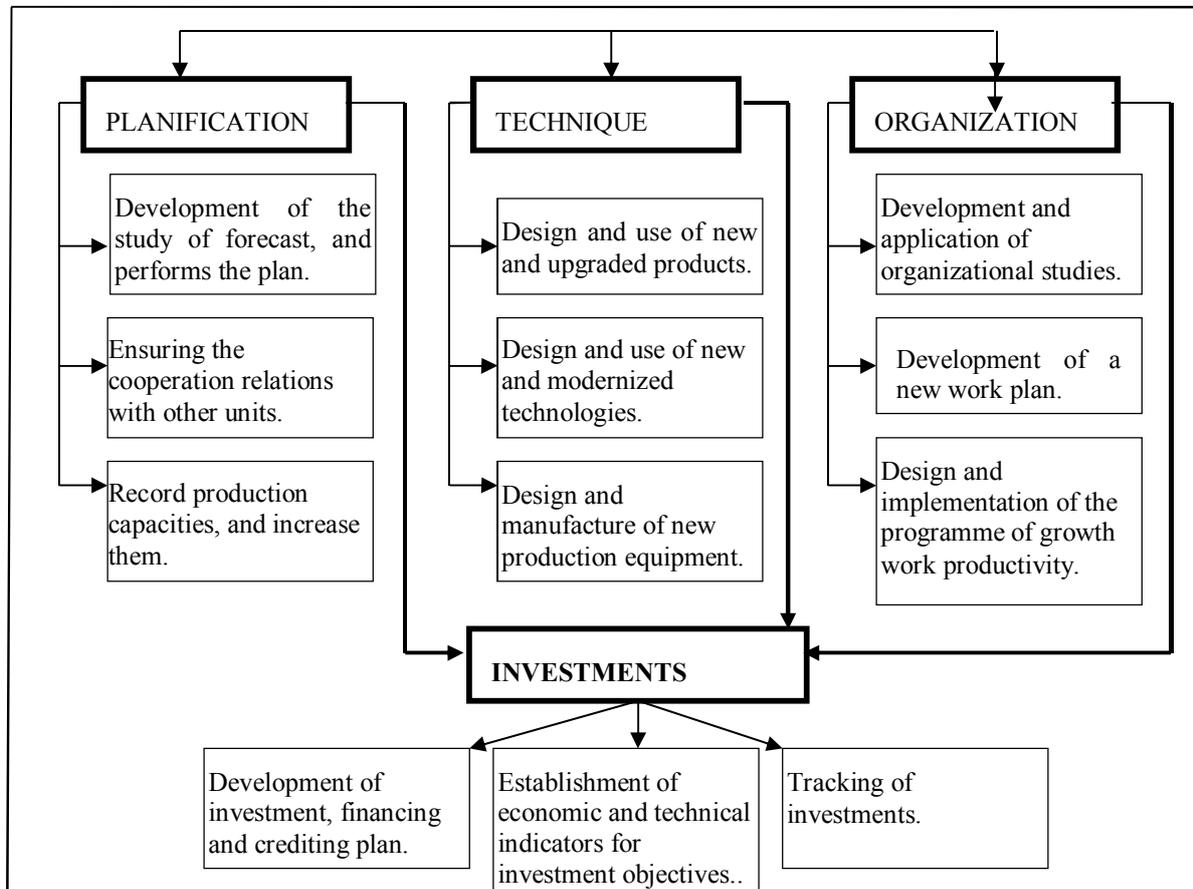


Figure 1: Implement of a new investment project

### 3. METHOD OF NET UPDATED VALUE

There are groups who want to express the net economic value in the percentage form, so in the form of a rate of profitability. Others prefer to express it, divided on the entire planned period, so they use the annual amount method. All these different ways of presenting of the same realities, shall be adopted according to the managers faith as one or the other presents the company in a more favorable light.

The method of VAN (net updated value) is based on the idea of determining the equivalent value of the available cash-flows developed by an investment project, usually at the start of the project. Because the calculations are even forecasting at that time, the calculated index was named "value updated". The facts that are taken into account the entries, positive values (cash inflow) and outs (negative values) (cash-outflow), was added the term "net" (Doicin, 2009, pp.99-111).

So, VAN represents the updated value of net benefits at the time of project starting of which were decreased the costs of obtaining them. The update will require converting all cash-flow values, which appear in the later moments, by multiplication (division) with (at) factors, determined on the basis of an update rates, previously determined rates (Jovanovic, 1999, 221).

In other words, the net updated value of an engineering investment project is a measure of capital excess (net profit), resulted at the life cycle end of an investment project (including the residual amount, VR). To calculate the VAN, as a function of the discount rate, k, should be updated all the future cash-flows (both those of the inflow and outflow type), at the initial time of the investment project, according to the relationship:

$$VAN = \sum_{t=0}^n CF_t(1+k)^{-t}, \text{ where} \quad (1)$$

VAN – net present value;

$I_0$  – initial investment [ monetary units];

CF – available cash flow;

n – lifespan of the project investment [years];

t - the index of the period of time considered as increment for life duration;

k - minimum acceptable rate of profitability [%];

VRn - residual value at the end of the project life [monetary units];

In connection with industrial investment projects is used the notion of value updated,  $V_0$  whose relation is (Doicin, 2009, pp.100):  $V_0 = VAN - I_0$ , or explain VAN, results:

$$V_0(k\%) = \sum_{t=1}^n \frac{CFDt}{(1+k)^t} + \frac{VRn}{1+k} - I_0 \quad (2)$$

Under the terms of which the enterprise owns an investment projects portfolio, to determine the corresponding value VAN of a given project (be it i), it will use the relation:

$$VAN_i(k\%) = \sum_{t=1}^n \frac{CFDi,t}{(1+k)^t} + \frac{VRi,n}{1+k} - I_{0,i} \quad (3)$$

If it's analyzed the decision that only one project will be realized, it will be achieved if  $VAN > 0$ , and if are compared several mutually exclusive projects, then it will choose that for which VAN will be maximal (and positive, obviously). Thus, we can reach the situation in which, given the several projects, we can't choose anyone because all the VAN calculated values are negative.

Basically,  $VAN < 0$  indicates that cash flow resulting from future exploitation of the project doesn't realize replenishment of the funds assigned to the initial and in consequence, the project should be rejected. All projects that will take  $VAN > 0$ , are preferable for monetary investments (in the form of bank deposits, for example) at a bearing interest rate equal to or less than the discount rate, k.

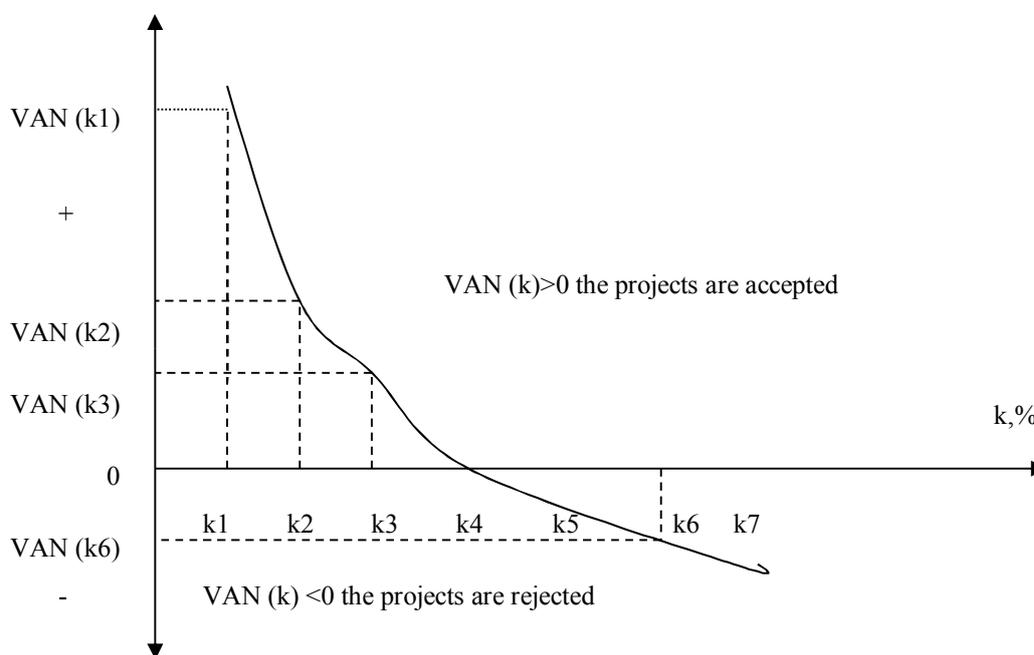


Figure 2: Representation of the net updated income

In Figure 2 is represented the variation of net updated income, and the selection mode of projects based on this indicator.

Although the net updated value method is the most popular method of evaluation of investment projects efficiency, it presents some disadvantages (Nistorescu, 2008):

- Are not taken into account possible future changes of profitability rates, required by investors depending on the market interest rates;
- Are not taken into account the budgetary constraints;
- Are not taken into account the interrelationships between different investment projects;

At least one indication is required before proceeding with the case study presentation: as long as the central place is occupied by the available cash-flows, based on net profit, so after decreased of the tax profit, all other components (residual value) must be determined in a similar logic, so as the net values. Alternatively, we can work with the values of gross profit (EBT) instead of available cash-flow, in which case the other components will be also calculated as gross amounts, before deduction of tax.

In the vast majority of cases, the index value of VAN is a net one, the investor wishing to evaluate the effects of investment project in the form of net benefits and, therefore, we will assign priority in the calculation of the net values.

**4. CASE STUDY**

For providing method for calculating the indicator, I considered an investment project in a machine building plant, which requires an investment of 5 million lei. The duration of the project execution is  $d = 3$  years (in the 3<sup>rd</sup> year, the plant will function partial). Of the 5 million, 1.1 million will be invested in the 3<sup>rd</sup> year in circulating capital, and in amortization capital will be 0.9 million (for the 3<sup>rd</sup> year we will spend 2 million lei). The engineers consider that in the tenth year will invest 1.5 million, in modernization. It's considered an average duration of operation,  $D = 13$  years.

To calculate the VAN index of project for those 15 years take into account?

We consider that amortization of fixed capital, will be linear:

$$A_{3-15} = \frac{3,9 \text{ million}}{13 \text{ years}} = 0,3 \text{ million / year};$$

Due to the costs of modernization since the 10th year, the annual amortization will grow with 0.25 million/year (1, 5 million: 6 years = 0, 25 million lei/year). Investments, incomes cash-flow and operating costs flow payment, amortization and gross profits of those 15 years take into account looks like this:

Year (i)	Annual Investments (Ii)	Annual Incomes (Vi)	Operating Costs (CEi)	Annual Amortization (Ai)	Annual gross profit (PBi = Vi-CEi-Ai)
1	1	0	0	0	0
2	2	0	0	0	0
3	2	6,7	4,9	0,3	1,5
4	0	6,9	4,8	0,3	1,8
5	0	7,1	4,8	0,3	2
6	0	7,1	4,8	0,3	2
7	0	7,1	4,8	0,3	2
8	0	7,1	4,85	0,3	1,95
9	0	7,15	4,95	0,3	1,9
10	1,5	7,15	5	0,55	1.65
11	0	7,35	4,9	0,55	1,9
12	0	7,25	4,9	0,55	1,8
13	0	7,22	4,92	0,55	1,75
14	0	7,1	4,95	0,55	1,6
15	0	7	5	0,55	1,45

Table 1. Calculation of gross profit (million lei)

a) We calculate the value of VAN, with discount rate  $k = 0.4$ , based on available cash-flows.

Year (i)	CFi (CFi = Vi-CEi)	Annual Investments (Ii)	$(1+k)^{-i}$ $(1+0,4)^{-i}$	VA (Ii)	VA (CFi)
1	0	1	0,71	-0,71	-
2	0	2	0,51	-1,02	-
3	1,8	2	0,36	-0,72	0,65
4	2,1	0	0,26	-	0,55
5	2,3	0	0,18	-	0,41
6	2,3	0	0,13	-	0,3
7	2,3	0	0,095	-	0,22
8	2,25	0	0,068	-	0,15
9	2,2	0	0,035	-	0,08
10	2,2	1,5	0,025	-0,04	0,06
11	2,45	0	0,018	-	0,04
12	2,35	0	0,013	-	0,03
13	2,3	0	0,009	-	0,02
14	2,15	0	0,006	-	0,013
15	2	0	0,005	-	0,01
			TOTAL	(-2,49)	2,533

Table 2. Calculation of net updated income based on cash flow (million lei)

$$VAN = -\sum_{i=1}^{15} VA(I_i) + \sum_{i=1}^{15} VA(CF_i) = -2,49 + 2,533 = 0,043 \text{ million lei.}$$

b) We calculate the value of VAN, with discount rate  $k = 0.4$ , based on algebraic sum of current net values.

Anul (i)	$V_i$	$K_i=I_i+CE_i$	$VNi=V_i-K_i$	$(1+k)^{-i}$ $(1+0,4)^{-i}$	VA (VNi)
1	0	1	(-1)	0,71	(-0,71)
2	0	2	(-2)	0,51	(-1,02)
3	6,7	6,9	(-0,2)	0,36	(-0,07)
4	6,9	4,8	2,1	0,26	0,55
5	7,1	4,8	2,3	0,18	0,41
6	7,1	4,8	2,3	0,13	0,3
7	7,1	4,8	2,3	0,095	0,22
8	7,1	4,85	2,25	0,068	0,15
9	7,15	4,95	2,2	0,035	0,08
10	7,15	6,5	0,65	0,025	0,02
11	7,35	4,9	2,45	0,018	0,04
12	7,25	4,9	2,35	0,013	0,03
13	7,22	4,92	2,3	0,009	0,02
14	7,1	4,95	2,15	0,006	0,013
15	7	5	2	0,005	0,01
				TOTAL	0,043

Table 3. Calculation of net updated income based on algebraic sum of current net values

$$VAN = \sum_{i=1}^{15} VA(VN_i) = 0,043 \text{ million lei};$$

Note that in both of these ways of calculation (a, b) of the project's net updated value we get the same value and positive, so the project can be achieved.

#### 4. CONCLUSIONS

Investment projects have a great importance for the development of industrial enterprises. Because it prepares the capabilities and future production conditions, these projects influencing long-term competitiveness of enterprises and in consequence the results and fiscal balance. Because investments consume considerable long-term financial resources, these projects present a special risk, their launch has most often an irreversible character.

The discount rate (k) used in VAN calculations accomplishes test criterion profitability of an investment project, acceptance or rejection of it. Indicator taken into account the execution time of

investments (d), the useful lifespan of the projects (D), unequivalent financial flows dispersed in time, and all relevant financial information: the project's operating costs, revenues, cash flow, investments.

If the indicator is calculated based on the balance of the annual revenue and annual costs of investment and operating costs, expressed in equivalent value, comparable, enable a full analysis on the horizon time (d + D), taking into account the dynamic parameters and their flow.

This article can be useful for economists, directors, managers of enterprises who want to achieve an optimum choice for spending the funds investment, using the presented method.

#### ACKNOWLEDGEMENTS

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**CYCLES ECONOMY BY THE EXAMPLE OF BALTIC STATES, GERMANY,  
SWEDEN AND FINLAND**

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**Abstract**

*With regard to the economic and the euro crisis has become actual problems of development of cyclic economy. This applies not only to the gross domestic product (GDP), but also other economic indicators such as changes in the labour market. Here are its major partner countries Estonia and the corresponding analysis.*

*The article is a historical overview of economic cycles, the theoretical basis and the last 40 years in the real world, the European Union (EU), Germany, Sweden, Finland and the Baltic countries' economic development, which confirms the cyclical trends in the economy today. Changes from region to region is different, but they also have characteristics in common. Theoretical generalizations are also given for the dynamics of mathematical models of economic development, trend lines. Regularities of change are complex, but it would be useful to know as well as politicians, business leaders and gather supplies for the bad times.*

**Key words:** economic cycle, economic growth, gross domestic product, European Union, Estonia.

**INTRODUCTION**

The theoretical basis for the current article stems from the statements of recognized scholars in the field of economics, the analysis of economic cycle and economic growth conducted by international organizations, recently published academic works dealing with economies in Europe countries and the views expressed in the authors' (Tanning, 2010) recent publications.

Economics is the social science that analyzes the production, distribution, and consumption of goods and services. (Wirtschaftswissenschaft) Political economy was the earlier name for the subject, but economists in the latter 19th century suggested 'economics' as a shorter term for 'economic science' that also avoided a narrow political-interest connotation and as similar in form to 'mathematics', 'ethics', and so forth. (Marshall, 1920)

A focus of the subject is how economic agents behave or interact and how economies work. Consistent with this, a primary textbook distinction is between microeconomics and macroeconomics. *Microeconomics* examines the behaviour of basic elements in the economy, including individual agents (such as households and firms or as buyers and sellers) and markets, and their interactions. *Macroeconomics* analyzes the entire economy and issues affecting it, including unemployment, inflation, economic growth, and monetary and fiscal policy. Other broad distinctions include those between positive economics and normative economics; between economic theory and applied

economics; between rational and behavioural economics; and between mainstream economics and heterodox economics. (Economics)

## 1. ECONOMIC GROWTH

Economic growth is the increase of per capita GDP or other measures of aggregate income, typically reported as the annual rate of change in real GDP. Economic growth is primarily driven by improvements in productivity, which involves producing more goods and services with the same inputs of labour, capital, energy and materials. Economists draw a distinction between short-term economic stabilization and long-term economic growth. The topic of economic growth is primarily concerned with the long run. The short-run variation of economic growth is termed the business cycle. GDP is a measure of the economic activity, defined as the value of all goods and services produced less the value of any goods or services used in their creation. The calculation of the annual growth rate of GDP volume is intended to allow comparisons of the dynamics of economic development both over time and between economies of different sizes. For measuring the growth rate of GDP in terms of volumes, the GDP at current prices are valued in the prices of the previous year and the thus computed volume changes are imposed on the level of a reference year; this is called a chain-linked series. Accordingly, price movements will not inflate the growth rate. (Real GDP)

The long-run path of economic growth is one of the central questions of economics; despite some problems of measurement, an increase in GDP of a country greater than population growth is generally taken as an increase in the standard of living of its inhabitants. Over long periods of time, even small rates of annual growth can have large effects through compounding.

In order to compare per capita income among countries, the statistics may be quoted in a single currency, based on either prevailing exchange rates or purchasing power parity (PPP). In economics, PPP asks how much money would be needed to purchase the same goods and services in two countries, and uses that to calculate an implicit foreign exchange rate. To compensate for changes in the value of money (inflation or deflation) the GDP or GNP is usually given in "real" or inflation adjusted, terms rather than the actual money figure compiled in a given year, which is called the nominal or current figure. (Purchasing)

## 2. ECONOMIC CYCLE

The term *economic cycle* or *business cycle* (German - Konjunktur; French - Cycle économique; Russian - экономические циклы; Estonian - majandustsükkel) refers to economy-wide fluctuations in production or economic activity over several months or years. These fluctuations occur around a long-term growth trend, and typically involve shifts over time between periods of relatively rapid economic growth, and periods of relative stagnation or decline. (O'Sullivan, 2003) These fluctuations are often measured using the growth rate of real GDP. Despite being termed cycles, most of these fluctuations in economic activity do not follow a mechanical or predictable periodic pattern.

### 2. 1 History economic cycle (crises) theory

The first systematic exposition of periodic economic crises, in opposition to the existing theory of economic equilibrium, was the 1819 *Nouveaux Principes d'économie politique* by Jean Charles

*Léonard de Sismondi* \*. (Sismondi, 1911; Over Production, 2008) Prior to that point classical economics had either denied the existence of business cycles, blamed them on external factors, notably war, or only studied the long term. Sismondi found vindication in the Panic of 1825, which was the first unarguably internal economic crisis, occurring in peacetime. Sismondi and his contemporary Robert Owen, who expressed similar but less systematic thoughts in 1817 Report to the Committee of the Association for the Relief of the Manufacturing Poor, both identified the cause of economic cycles as overproduction and under consumption, caused in particular by wealth inequality. They advocated government intervention and socialism, respectively, as the solution. This work did not generate interest among classical economists, though under consumption theory developed as a heterodox branch in economics until being systematized in Keynesian economics in the 1930s.

Sismondi's theory of periodic crises was developed into a theory of alternating cycles by *Charles Dunoyer*\*\* and similar theories, showing signs of influence by Sismondi, were developed by *Johann Karl Rodbertus*\*\*\*. (Rodbertus, 1905) Periodic crises in capitalism formed the basis of the theory of *Karl Marx*\*\*\*\*, who further claimed that these crises were increasing in severity and predicted communist revolution; he devoted hundreds of pages of *Das Kapital (Capital: Critique of Political Economy)* to crises. There is a critical analysis of capitalism as political economy, meant to reveal the economic laws of the capitalist mode of production, and how it was the precursor of the socialist mode of production (Marx, 1867).

*Clement Juglar* \* \*\*\*\* identified in 1860 the presence of economic cycles. He was one of the first to develop an economic theory of business cycles. (Juglar, 1862) He identified the 7-11 year fixed investment cycle that is now associated with his name. Within the Juglar cycle one can observe oscillations of investments into fixed capital and not just changes in the level of employment of the fixed capital (and respective changes in inventories), as is observed with respect to Kitchin cycles. The recent research employing spectral analysis has confirmed the presence of Juglar cycles in the world GDP dynamics up to the present time. (Korotayev, 2010)

Austrian economist *Joseph Schumpeter*\*\*\*\*\* argued later, that a Juglar cycle has four stages:

- ❖ expansion (increase in production and prices, low interests rates);
- ❖ crisis (stock exchanges crash and multiple bankruptcies of firms occur);

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\* **Jean Charles Léonard de Sismondi** (1773 –1842), whose real name was Simonde, was a Switzerland economist. He is best known for his works on French and Italian history, and his economic ideas.

\*\* **Barthélemy-Charles-Pierre-Joseph Dunoyer de Segonzac** (1786 - 1862) was a French liberal economist.

\*\*\* **Johann Karl Rodbertus** (1805 –1875), also known as **Karl Rodbertus-Jagetzow**, was a German economist and socialist of the scientific or conservative school from Greifswald. He defended the labor theory of value as well as the view, as an inference from that, that interest or profit is theft. He believed that capitalist economies tend toward overproduction.

\*\*\*\* **Karl Heinrich Marx** (1818 –1883) was a Prussian philosopher, economist, sociologist, and revolutionary socialist. His ideas played a significant role in the development of social science and the socialist political movement.

\*\*\*\*\* **Clément Juglar** (1819 –1905) was a French doctor, economist and statistician.

\*\*\*\*\* **Joseph Alois Schumpeter** (1883 –1950) was an Austrian-American economist and political scientist. He popularized the term "*creative destruction*" in economics.

- ❖ recession (drops in prices and in output, high interests rates);
- ❖ recovery (stocks recover because of the fall in prices and incomes).

In this model, recovery and prosperity are associated with increases in productivity, consumer confidence, aggregate demand, and prices. In the mid-20th century, Schumpeter and others proposed a typology of business cycles according to their periodicity, so that a number of particular cycles were named after their discoverers or proposers: (Seidl, 1999; Schumpeter, 1987 and 1961)

- ❖ the *Kitchin inventory cycle* of 3–5 years;
- ❖ the *Juglar fixed investment cycle* of 7–11 years;
- ❖ the *Kuznets infrastructural investment cycle* of 15–25 years;
- ❖ the *Kondratiev wave* or long technological cycle of 45–60 years.

Interest in these different typologies of cycles has waned since the development of modern macroeconomics, which gives little support to the idea of regular periodic cycles.

### **Kondratiev wave**

*Kondratiev waves* - also called *Supercycles*, *surges*, *long waves* or *K-waves* - are described as regular, sinusoidal-like cycles in the modern capitalist world economy. Averaging fifty and ranging from approximately forty to sixty years in length, the cycles consist of alternating periods between high sectorial growth and periods of relatively slow growth. Unlike the short-term business cycle, the long wave of this theory is not accepted by current mainstream economics.

Nikolai Kondratiev \* (Kondratjew, 1926; Кондратьев, 2002; Черепков, 2004; Коротаев, 2009) was the first to bring these observations to international attention in his book “*The Major Economic Cycles*” (1925) alongside other works written in the same decade.

*Schumpeter's* relationships with the ideas of other economists were quite complex in his most important contributions to economic analysis – the theory of business cycles and development. Following neither Walras nor Keynes, Schumpeter starts in “*The Theory of Economic Development*” (Schumpeter 1987... Schumpeter 1961...) with a treatise of circular flow which, excluding any innovations and innovative activities, leads to a stationary state. The stationary state is, according to Schumpeter, described by Walrasian equilibrium. The hero of his story is the entrepreneur.

The entrepreneur disturbs this equilibrium and is the prime cause of economic development, which proceeds in cyclic fashion along several time scales. In fashioning this theory connecting innovations, cycles, and development, Schumpeter kept alive the Russian Nikolai Kondratiev's ideas on 50-year cycles, Kondratiev waves.

Schumpeter suggested a model in which the four main cycles, Kondratiev (54 years), Kuznets (18 years), Juglar (9 years) and Kitchin (about 4 years) can be added together to form a composite waveform. Actually there was considerable professional rivalry between Schumpeter and Kuznets. The wave form suggested here did not include the Kuznets Cycle simply because

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\* **Nikolai Dmitriyevich Kondratiev** (1892 - 1938) was a Russian economist, who was a proponent of the New Economic Policy (NEP) in the Soviet Union. He proposed a theory that Western capitalist economies have long term (50 to 60 years) cycles of boom followed by depression. Kondratiev was 46 at the time of his execution by the NKVD.

Schumpeter did not recognize it as a valid cycle. See "Business Cycle" for further information. A Kondratiev wave could consist of three lower degree Kuznets waves. (Korotayev, 2010) Each Kuznets wave could, itself, be made up of two Juglar waves. Similarly two (or three) Kitchin waves could form a higher degree Juglar wave. If each of these were in phase, more importantly if the downward arc of each was simultaneous so that the nadir of each was coincident it would explain disastrous slumps and consequent depressions. As far as the segmentation of the Kondratiev wave, Schumpeter never proposed such a fixed model. He saw these cycles varying in time – although in a tight time frame by coincidence – and for each to serve a specific purpose.

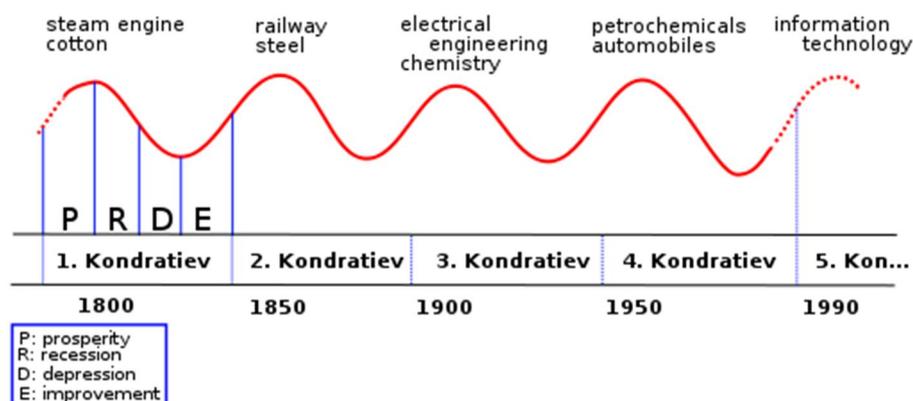
Later, in *Business Cycles* (1939), Joseph Schumpeter suggested naming the cycles "Kondratieff waves", in honor of the economist who first noticed them. In the 1950s, French economist François Simiand proposed naming the ascendant period of the cycle "Phase A" and the downward period "Phase B". Some market commentators divide the Kondratiev wave into four 'seasons', namely, the Kondratiev Spring (improvement or plateau) and Summer (acceleration or prosperity) of the ascendant period and the Kondratiev Fall (recession or plateau) and Winter (acceleration or depression) of the downward period.

## 2. 2 Characteristics of the cycle

Kondratiev identified three phases in the cycle: expansion, stagnation, recession. More common today is the division into four periods with a turning point (collapse) between the first and second phases. Writing in the 1920s, Kondratiev proposed to apply the theory to the 19th century:

- ❖ 1790–1849 with a turning point in 1815.
- ❖ 1850–1896 with a turning point in 1873.
- ❖ Kondratiev supposed that in 1896, a new cycle had started.

According to the innovation theory, these waves arise from the bunching of basic innovations that launch technological revolutions that in turn create leading industrial or commercial sectors. Kondratiev's ideas were taken up by Joseph Schumpeter in the 1930s. The theory hypothesized the existence of very long-run macroeconomic and price cycles, originally estimated to last 50–54 years.



**Figure 1.** A rough schematic drawing showing the "World Economy" over time according to the Kondratiev theory

Source: Korotayev A. illustration

2. 3 Real economic development since 1970

Having a base in the world, Europe and Estonia's main partner countries' economies and the dynamics of the major trade organizations the IMF, OECD and Eurostat estimates, we will see how in the world, the European Union (EU) and its important for our national economy developed, and what the future brings us. This allows countries to knowledge, as well as companies and individuals to plan their activities in an optimal way for a right decision. However, it could make predictions unexpected political decisions, natural disasters, etc.. However, it is considered that the composition of the EU and Germany have since changed and the Baltic countries' economies will be from 1992. year. The actual development is cyclical and vary widely from region to region.

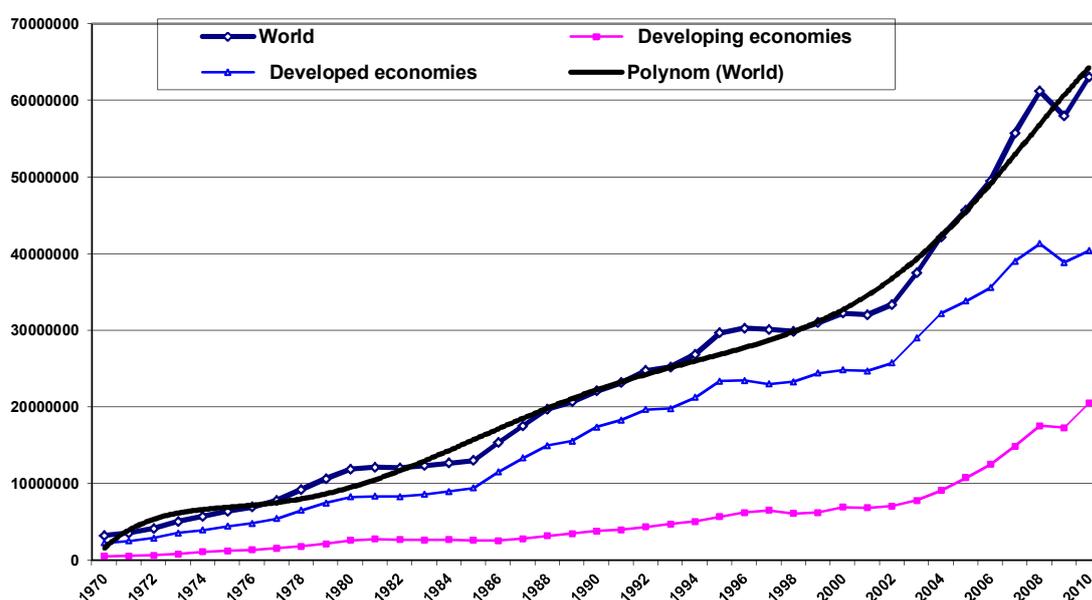


Figure 2. Total world, developed and developing economies nominal GDP USD in millions

Source: authors illustration

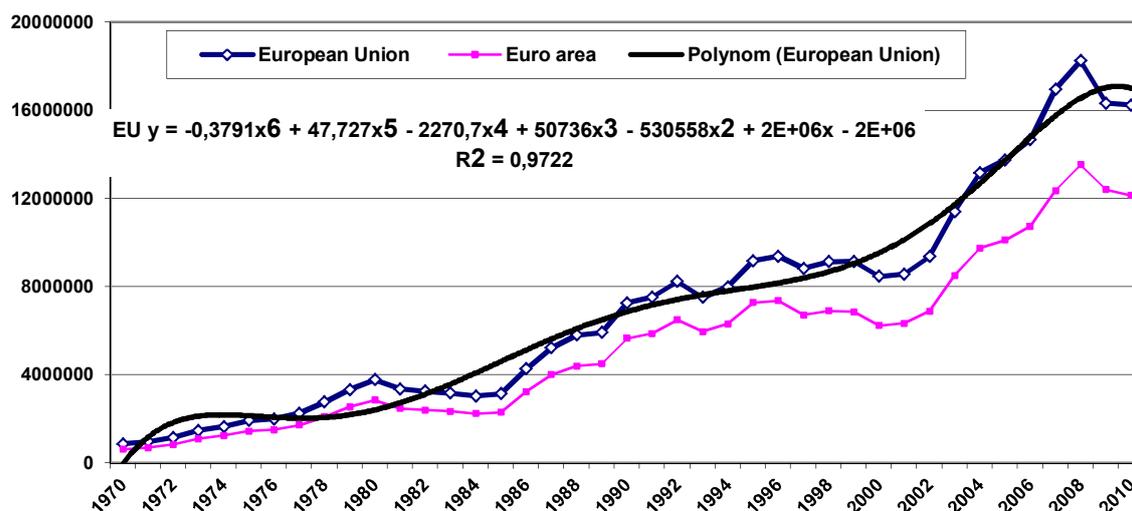
The authors made to the drawings in the world, the EU and the countries analyzed in the economy (GDP) for development of 40 years, the Baltic States since 1992. UNSTADi (Handbook of Statistics) based on the input.

Details are still separately developed and developing countries on economic development. As a rule, have their share in the global economy, about 1/3 and 2/3. Transition economy countries have been neglected, because their energy is very small. Theoretical generalization of the global dynamics of a mathematical model, which is a 6-degree polynomial, the coefficient of determination  $R^2 = 0.9902$  is very high, allowing to make generalizations about the world economy.

Since 1970. was the minimum years of global economic development. Stagnation in the first half of the 1980s, with the 1982nd even in decline, including both country groups. Next was a period of stagnation, - 1990 in the second half, with the 1997th and 1998. years, GDP was lower than in 1996.

year. 2009th of GDP was 3.3 trillion USD less than last year. 2010th However, there were a record volume of GDP, nearly U.S. \$ 63.1 trillion.

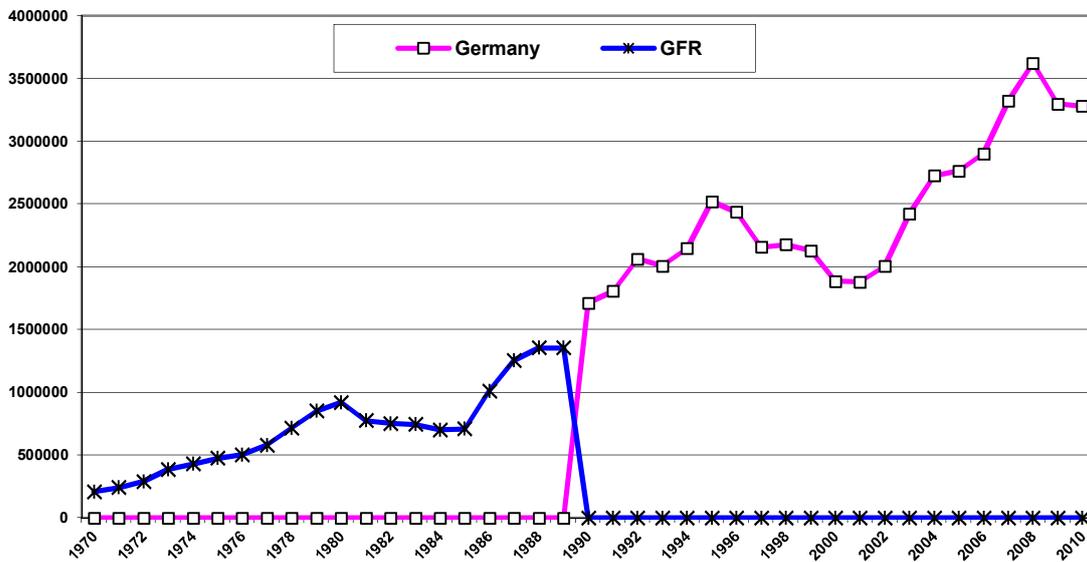
For analysis to 40 years, the world economy has grown 3.3 trillion to 63.1 trillion dollars, or 19.1 times. The figure shows that growth has not been steady, but with different gains momentum. At the same time the developed countries (U.S., Japan, EU and others) and developing countries (China, India and others) economic development has been different, even in the last economic crisis.



**Figure 3. Total European Union and Euro area economies nominal GDP USD in millions**  
*Source: authors illustration*

Here we should also note that over the years, the EU has increased the number of countries. Outages years coincide with some accuracy the total global development trends. It is characterized by the high share of EU in the global economy. At the same time, the EU was also a way to go back to the period. Thus it appears here more strikingly cyclical evolution. Dynamics in the euro area trend line is almost parallel to the trend line of the EU. Thus, the development of the Euro area is determined mainly by the development of the EU. Also here is a theoretical generalization of the mathematical model of the dynamics of the EU economy. To this end, the 6-degree polynomial, which, again, a very high  $R^2 = 0.9722$  allows to generalize the development of the EU economy.

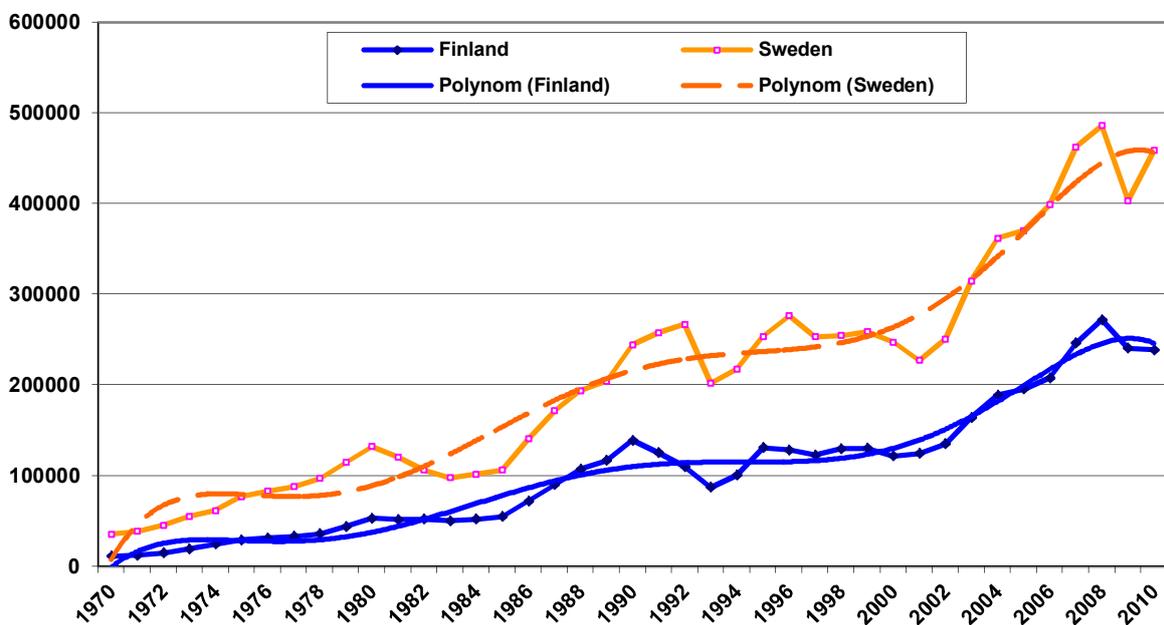
Since Germany is the EU's share of the largest, the most of his changes affect the whole economy of the EU on the one hand and its partner countries, including Estonia's economy. However, it should also be taken into account here the German reunification with East Germany and its impact on the overall development of their economies. We see three major downturn. Cycles are more contrast here.



Note: GFR = Germany (former Federal Rep.) 1970 – 1989; Germany 1990 –

**Figure 4. Germany economies nominal GDP USD in millions**

Source: authors illustration



**Figure 5. Sweden and Finland economies nominal GDP USD in millions**

Source: authors illustration

Sweden and Finland is Estonia's most important business partners. They depend very much on the development of Estonia's progress. We see periodic recessions in Finland and especially the sharp decline in the 1990s ("lying"). However, the fluctuations in the development of the Swedish economy and even greater than Finland. Strongly influenced by the downturn in Germany and the EU, and changes in the global economy. Here, too, the theoretical generalization of the economic dynamics of mathematical models - a 6-degree polynomial. Also, they have very high  $R^2 = 0.9533$  and  $R^2 = 0.9677$ , which can make generalizations about economic development in Sweden and Finland.

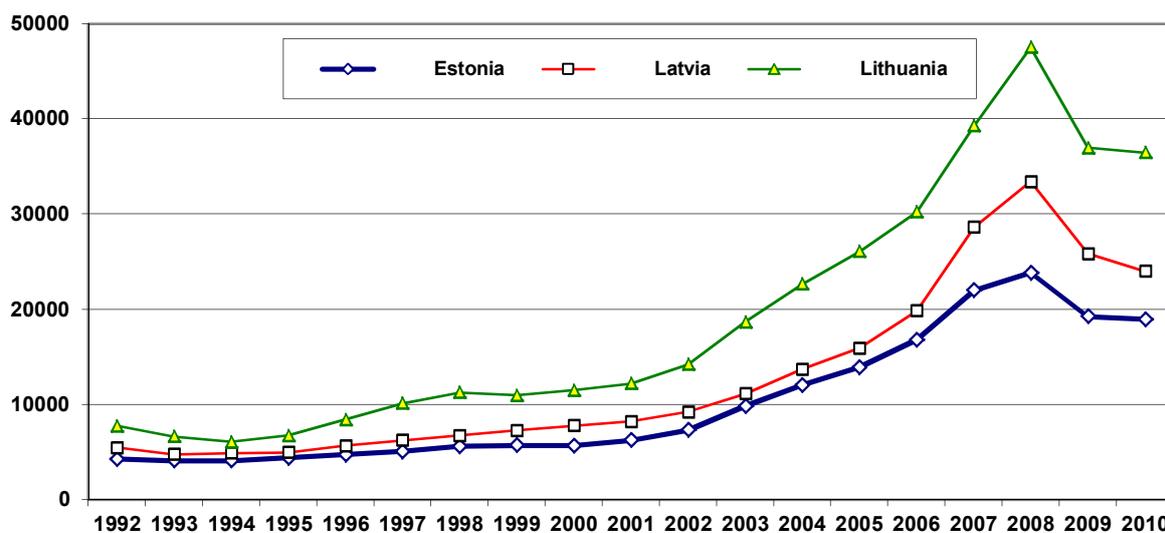


Figure 6. Estonia, Latvia and Lithuania economies nominal GDP USD in millions

Source: authors illustration

Before and after the economic crisis in the Baltic states were the highest increments in GDP, but the crisis was the decline in one of the world. Here, too, is developing a somewhat different trend lines, especially in the initial years of restored independence. Here there are no abrupt changes, except for the crisis years, as was the old market economies. 2010th had not yet reached the 2007th year levels. According to Eurostat, Estonia's GDP surpassed pre-crisis level of the 2011th In the first quarter, but the per capita projections by only 2012th year. Latvia and Lithuania is going to take time for a few years.

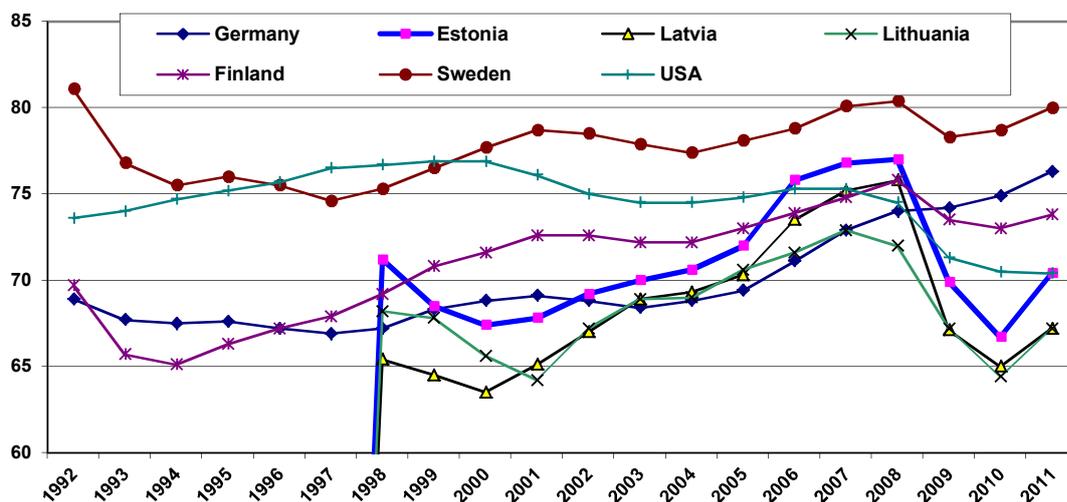
Germany, Estonia, Latvia, Lithuania and Finland, the economic summit in 2008., Sweden, however, the 2007th year. Germany and Sweden exceeded the pre-crisis level of the 2010th in Finland, and the 2011th Estonia, Latvia and Lithuania did not reach pre-crisis levels even in the 2011th year, but Estonia's 2012th, Latvia, Lithuania and the 2013th year. 2011th Estonia's GDP is projected to remain in the 2008th the level of 293 million euros or 1.8%. However, the 2012th It is already in excess of 702 million and 2013. million euros in 1860.

**Table 1. Code: tec00001. GDP at market prices. At current prices.** Billions of euro of PPS (tec00001...)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012 (f)	2013 (f)
Germany	1934	1977	2062	2147	2249	2373	2383	2225	2353	2459	2538	2630
Finland	123	122	132	135	142	155	158	144	151	157	162	168
Sweden	223	230	246	247	264	286	285	262	284	230	308	320
Estonia	13.9	15.3	16.9	18.7	21.0	23.5	23.2	20.0	21.0	22.6	23.9	25.3
Latvia	19.5	20.8	22.8	24.9	27.8	31.6	31.8	27.1	28.0	30.1	31.5	33.2
Lithuania	31.5	35.3	37.7	40.8	44.6	50.0	51.6	42.7	46.1	50.1	52.0	54.9

Note: (f) = forecast

2. 4. Labour market



**Figure 7. Employment rate, age group 20-64, %**

Source: authors illustration

The figure also shows the cyclical nature of employment changes. Comparisons are also given for the world's largest economy - the United States. Known to have been directly influenced by changes in labour market growth (Okun's law). However, it is each country's economic and social development of its own characteristics, which depend on the political, economic and other decisions, as well as a variety of information such as the objective conditions of existence of capital or natural resources. Strongly affected by changes in the current economic level. It is also different from the cyclical changes.

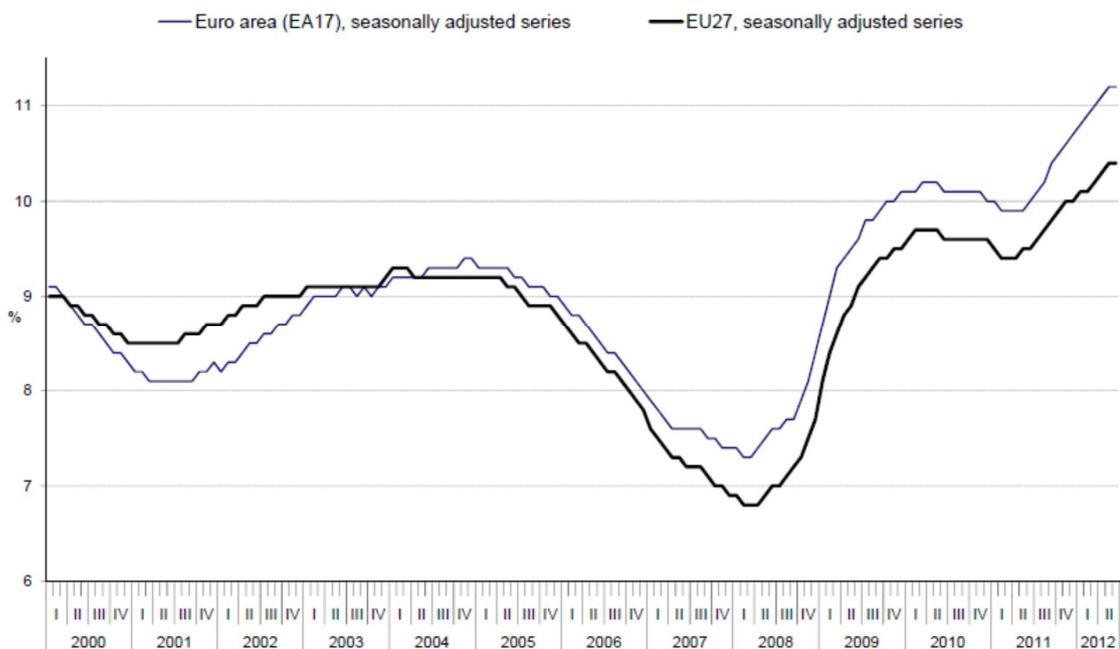
When compared to the strong economies in the U.S., Germany, Sweden and Finland of employment cycles, they were quite distinct. The last economic crisis reduced the rate of employment for all

analyzed countries, except Germany, where it is grown for eight years. When Sweden and Finland, employment rates dropped a little during the crisis, the U.S. strongly. The new European Union (EU) member states, the Baltic states of employment cycles are quite similar. They all have a common problem for relatively low wages compared to the rich Nordic countries. After opening the EU labour market in the new Member States to labour, including skilled workers move to the Western European countries.

Estonia's rate of employment in a mathematical model of the trend line (6th degree polynomial):

$$y = 0,0007x^6 - 0,0558x^5 + 1,7705x^4 - 29,274x^3 + 266,2x^2 - 1263,6x + 2515,9; R^2 = 0,9506$$

We see that in practical use, this mathematical model is too complicated, but works well as guidance.



**Figure 8. Euro area and EU27 unemployment rates, quarterly average, % (une\_rt\_q...)**

*Source:* Eurostat illustration

Eurostat figure in the euro area and EU27 unemployment rate of well-characterized changes in the cyclical nature of unemployment in 2000 - the 2012. We see two drop and rise to the top.

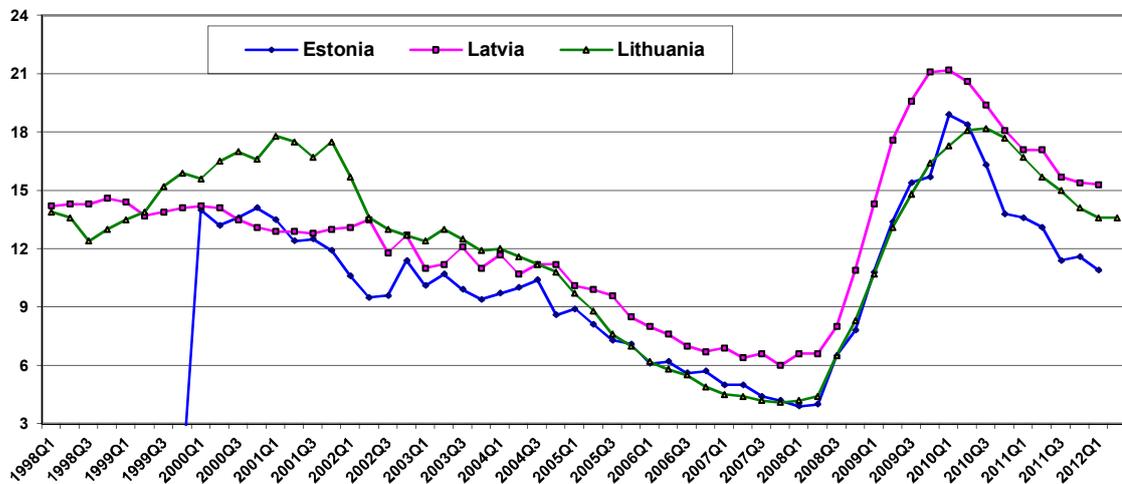


Figure 9. Estonia, Latvia and Lithuania unemployment rates, quarterly average, %

Source: authors illustration

The years 1998 - 2012 the Baltic countries, cyclical unemployment rate trend lines are quite similar. Trend lines are dependent on the tips of their countries' economic crisis, especially the last. However, the highest unemployment rate came close to a year later, when their biggest drop in GDP.

In summary, here are the social cycles are similar to the economic cycles, labour cycles, but the peaks are further shifted by almost a year.

Estonia's rate of unemployment in a mathematical model of the trend line (6th degree polynomial):

$$y = -4E-08x^6 + 4E-06x^5 + 6E-05x^4 - 0,0142x^3 + 0,5003x^2 - 7,0766x + 47,967; R^2 = 0,8123$$

An analogous situation was also a major economic recession in Finland (1990 - 1993) and subsequent rapid growth period. If, before the economic crisis, the 1989th In Finland, the unemployment rate was 3.1% and yet the 1990th to 3.2%, but it was a record-breaking 1994th in 16.6% of the annual growth of GDP was 3.7%. Years 1996 - 1999 were years of Finland's fast economic gains. During this period increased output (GDP) is significantly faster than the trend line trend line of employment. (Tanning, 2000). This generalization is also now in Estonia and other European countries.

## CONCLUSIONS

In summary, the main indicator of economic development is considered in real GDP (PPP) changes over time, which is also used here. However, it can, however, to assess the accuracy of certain factors such as labour productivity, etc. development. The output produced per worker and GDP, and changes in GDP and unemployment among the correlation relationship. Figures show the real economy (GDP) growth dynamics, which, however, is different from the smooth trend of the theoretical lines used here, despite the complex 6-degree polynomials and its very high  $R^2$ . Kondratieva economic cycles and other generalized trend lines are thus highly simplified generalizations.

As the labour market development is also dependent on the overall economic development, then here are similar to the cycles of social economic cycles, labour cycles but are almost a year beyond the tips of the displaced. Unemployment is rising as fast as economic improvement. So many unemployed, who used to live in a relatively high unemployment compensation benefits, do not rush over to look for work so quickly. It also does not increase unemployment will immediately fall in GDP, but until some time after the unemployment rate will increase. Future economic growth is faster than the growth of employment. This means that after the recession has intensified the economic development of much greater intensity than before the crisis.

Requires in-depth analysis of economic development as well as hundreds of other economic and social indicators for the treatment of these correlations examination, even by industry. Their decision-making should take into account both the politicians and business leaders in the economic development of a cyclical nature, the fact that after the economic boom slows down or even go back to it (the crisis), then to grow again after some time. Capitalism does not develop uniformly. This is confirmed by both the global and Estonian economic development in recent years. Politicians and business leaders are not making their decisions, need to know the exact complex mathematical models, one need only simplified the regularities of general knowledge.

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**EASTERN EUROPEAN COUNTRIES SALARIES AND PRODUCTIVITY  
BY THE EXAMPLE ESTONIA**

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**Abstract**

*After the opening of the European Union (EU) labour markets, some EU countries started facing the problem of partial work force drain to richer countries with higher wages. From Estonia, the main migration is to Finland. At the same time, East-European countries face quite a high unemployment rate on the one hand, and many vacant jobs on the other hand – there is a lack of qualified work force.*

*Hence the objective of this article is to analyse the labour market of new member states of the EU coming from East-Europe, with emphasis made on Estonia, more specifically the productivity, labour costs and salaries, problems associated with labour market, and to compare it with the EU levels. The article focuses on the analysis of whether the low wages of Eastern European countries, including Estonia, are justified when compared to the wages of Western European countries, and what are the possibilities and possible benefits of raising them.*

**Key words:** *European Union, Estonia, productivity, salaries, labour market.*

**INTRODUCTION**

An important element in *Estonia's* post-independence reorientation has been closer ties with the Nordic countries, especially Finland and Sweden. Estonia has had a market economy since the end of 1990s and one of the highest per capita income levels in Eastern Europe. The current government has pursued relatively sound fiscal policies, resulting in balanced budgets and low public debt. A balanced budget, almost non-existent public debt, flat-rate income tax, free trade regime, competitive commercial banking sector, innovative e-Services and even mobile-based services are all hallmarks of Estonia's market economy. Before the economic crisis, the economic growths of Estonia, Latvia and Lithuania were one of the highest in the European Union. Hence these countries were called Baltic Tigers. The crisis, however, took the three countries to a completely different edge – the fall of their GDPs was one of the biggest in the EU. After the crisis, the economic growth factors of Estonia have again been the biggest in the union. In 2011, the real GDP growth in Estonia was 7.6%. (Code: tsieb 020)

However, the employment rate and wages in Estonia are one of the lowest in the EU. A thorough analysis of the development of a small economy such as Estonia will also help make more general conclusions, at least on the European level.

After the economic crisis the GDP usually goes on an upward incline, while the unemployment is hard to curb. Why? To surmount the crisis, companies try to reduce the labour costs to a minimum. They

endeavour to get rid of poor quality, redundant and also conflict-prone workers, in the first place. Concurrently a new problem rises – qualified labour is scarce. This problem does not only pester Estonia, it is endemic. One of the root causes are locally prevalent low salaries as compared to the remunerations paid in West-European countries.

After the crisis the economy does not develop along the extensive track, but mainly by the intensive ways, i.e. on account of growth in productivity. Expanding of the production occurs mainly with the help of adopting more efficient machines and equipment and better work organisation, reducing the number of low-qualification workers and increasing the demand for high-qualification ones. Besides workers, that also affects the people with higher education and other specialists. Regardless of the relatively large unemployment an opposite situation has obtained in the labour market – in many branches of economy, the qualified labour is scarce. Due to free movement of labour in the EU countries a situation has obtained in the East-European member states, incl. also in Estonia: younger and experienced workers leave the country to work abroad, where salaries are higher. It is a foregone conclusion.

Looking into the future, all this boils down to the need to increase the efficiency of production and productivity, and also to provide a competitive salary level. For elaboration of means necessary to enhance the efficiency of operating of the labour market, the complex analysis of labour market is needed.

By reference to the above, the goal of this article is to analyse the major components affecting the labour market, the productivity and salaries and their relation in East-Europe, in the first place in Estonia. It is usually alleged that salaries cannot be increased due to low productivity. Since Estonian productivity in ratios is over twice higher than the salaries, the question “Why?” suggests itself. While the emphasis will be on Estonia, for theoretical generalisations the EU as an entirety has been partially involved in this article.

What are the opportunities to increase the labour market’s efficiency and salaries?

*Theoretical bases* lay, as a rule on relevant positions of renown economists published in academic issues and concerning mainly East-Europe, analyses and reference data of international organisations (ILO, IMF, OECD, Eurostat etc.) and also on positions of present authors released in their earlier publications (Tanning, L and T, 2010; Tanning, T and L, 2011).

Productivity is an important economic indicator, directly impacting on development of the whole economy and companies, as well as workers’ salaries – *ditto* standard of living. Estonian salaries fall significantly short of the salary level of Nordic and West-European countries. Referred to as the grounds for that is our relatively low productivity, which does not enable increasing remunerations in Estonia to the level of Finland and other countries with advanced economy.

Below we shall analyse, by reference to Eurostat source materials, how the factors affecting productivity have changed over an extensive period. We shall compare productivity and salaries both in Estonia and Europe. For instance, if the company would like to multiply the salaries, the production should yield the needed amount of extra money. Moreover, the company should retain, besides labour expense some money for overheads, profit etc. The income obtained should exceed the expense incurred. As a rule, labour costs constitutes the largest share in the company expense.

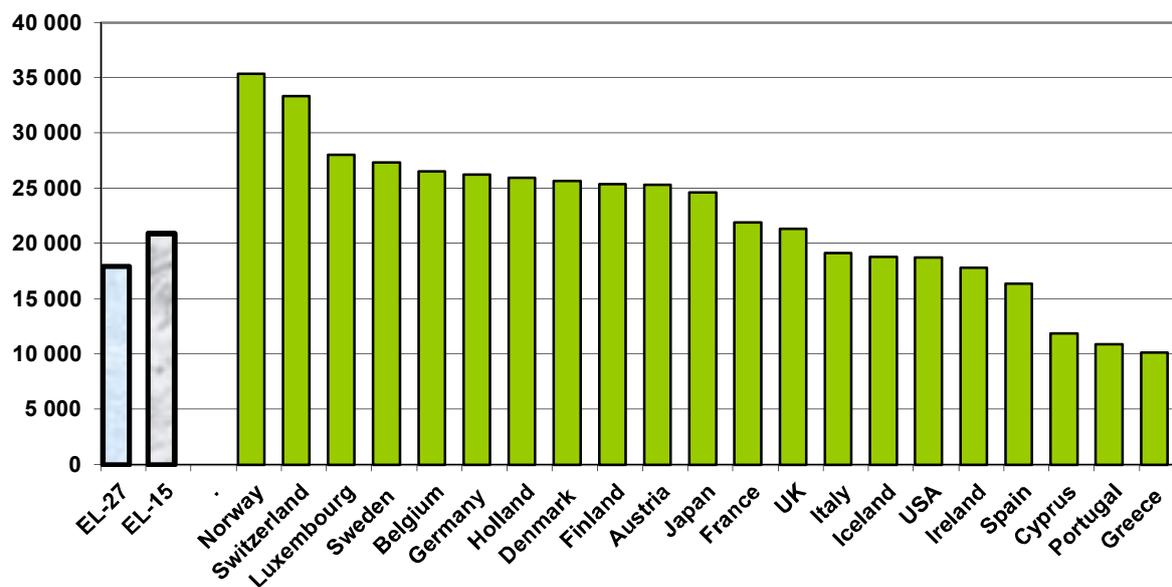
**ANALYSIS**

Analysis of labour costs and average gross annual salaries in the European countries make public in December 2011 (Tanning, T and L, 2011).

**Table 1. Net per year salaries, EUR, 1997 – 2011**

	1997	1999	2002	2004	2006	2007	2008	2009	2010	2011
EU (27)	12,489	11,934	15,844	16,407	17,235	17,910	17,975	17,728	18,456	17,928
EU (15)	15,222	14,356	18,723	19,413	20,260	20,942	20,910	20,697	21,350	20,911
Germany	23,966	18,786	21,958	23,022	23,597	24,180	24,739	24,552	25,297	26,253
Finland	15,023	15,512	18,434	19,478	20,797	22,047	23,170	23,643	24,449	25,385
Sweden	16,072	16,667	20,773	22,232	23,200	24,109	24,271	22,418	25,369	27,320

Source: Code: earn\_nt\_net



**Figure 1. Net per year salaries, EUR, 2011**

Source: authors illustration

In new EU member states the average net annual salary in 2007 was 5266 EUR, significantly smaller than Estonian salary (in 2011 was 6664). Also contrastively presented herein is the EU candidate state Turkey's salary, which was on an average level among the others. As regards the Estonia's

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remunerations, presented in greater detail at the end of article will be separately the data on recent years.

In the period under perusal the salaries of the new EU member states (CZ, EE, CY, LV, LT, HU, MT, PL, SI, SK) have grown 2.16 times, in the majority at least 3 and in Estonia 4.34 and Lithuania 3.95 times.

**Table 2. Net per year salaries in new states, EUR, 1997 – 2011**

	1997	1999	2002	2004	2005	2006	2007	2008	2009	2010	2011
New States (10)	2,438	2,723	4,018	4,054	:	4,833	5,266	:			
Estonia	1,522	1,730	3,285	3,819	4,209	4,969	5,958	6,695	6,353	6,438	6,664
Latvia	1,364	1,492	2,221	2,361	2,634	3,233	4,151	5,031	5,137	5,096	:
Lithuania	1,248	1,549	2,285	2,603	2,875	3,376	4,148	4,853	4,523	4,439	:
Czech Rep.	2,640	3,033	4,101	4,425	4,965	5,563	6,095	7,378	7,144	7,614	7,915
Hungary	:	:	4,137	4,666	5,048	5,112	5,819	6,293	5,776	5,858	6,035
Poland	2,588	2,995	3,830	3,484	4,050	4,537	4,983	5,509	4,625	5,189	5,370
Slovenia	4,571	5,153	6,614	7,236	7,538	7,945	8,490	9,154	9,334	9,819	9,908
Slovakia	1,649	1,513	2,628	3,223	3,376	3,787	4,501	5,363	5,706	5,884	6,094
Bulgaria	654	866	974	1,077	1,285	1,364	1,612	2,015	2,230	2,276	:
Romania	756	799	1,404	1,598	2,080	2,414	3,073	3,437	3,218	3,567	:

Source: Code: earn\_nt\_net

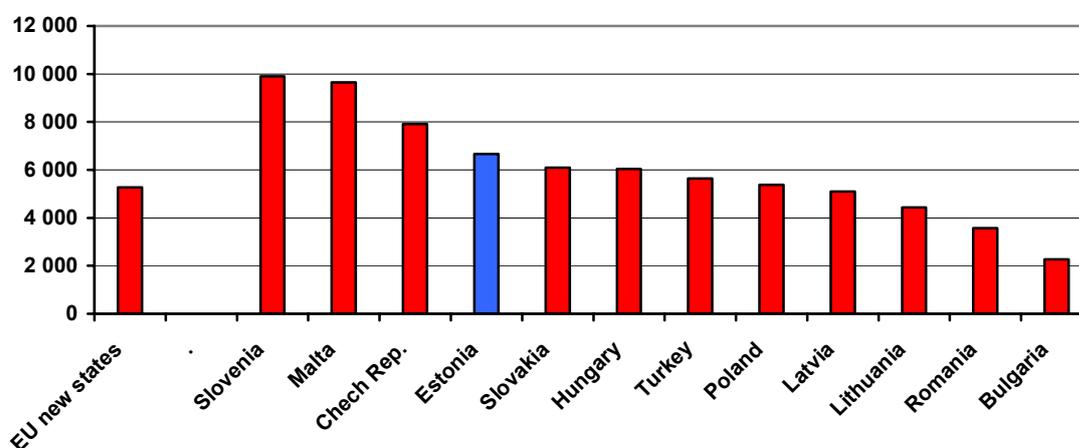


Figure 2. Net per year salaries in new states, EUR, 2011

Source: authors illustration

In the years of 1999 – 2011, as a general rule the minimum salaries grew, however due to the economic crisis part of the countries had frozen their salaries for two to three years, incl. in Estonia to the level of 2008. The British decreased minimum salaries in 2011 as against 2008 and the Americans increased it substantially. In Estonia, it has nevertheless increased as from 1999 by 3.6 times; in Latvia 3.8 times and Lithuania 2.5 times. It increased still more in Romania (5.9 times) and Bulgaria (4.2 times). It thence transpires that in evidence is the trend to level out the salaries, although at variable rates, significantly influenced by the position of their economies during the crisis and success of the policy in superseding the crisis.

Discrepancies in minimum salaries still are overwhelmingly large. Hence in Bulgaria it was 13.0 times lesser than in Luxembourg, 5.5 times lesser than in better economy post-socialist Slovenia and 2.1 times lesser than in Estonia. Whereas in Estonia the minimum salary is 6.2 times lesser than in Luxembourg and 2.6 times lesser than in Slovenia. Whereas the Luxembourg's minimum salaries are several times higher than in new EU member states. Reckoning with divergent price levels of the countries, Estonia's minimum salary should be 362 euro, subject to purchasing power standard (PPP).

Table 3. Productivity, basing on PPS, per one worker and hour, 1995 – 2010

	Per person employed (EU-27=100)								Per hour worked (EU-27=100)							
	1995	1998	2001	2004	2006	2008	2009	2010	1995	1998	2001	2004	2006	2008	2009	2010
EU-27	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Bulgaria	31.6	27.4	32.1	34.8	36.4	39.6	40.1	41.3	32.0	28.6	33.0	35.0	36.8	39.9	39.8	41.4
Germany	115.	112.	106	107	108	107	105.	105.	131.	128.	123.	125	127	126	124	123.

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	6	0	.2	.5	.7	.9	0	3	1	7	9	.6	.6	.7	9	
Estonia	34.1	41.6	48.3	57.7	62.4	66.0	65.8	69.2	:	:	41.4	48.5	52.1	56.0	59.0	61.0
Latvia	33.3	36.9	41.5	45.9	48.8	51.6	52.8	54.6	:	:	32.0	36.5	38.4	42.9	44.5	46.7
Lithuania	36.2	41.1	47.3	53.8	56.8	62.1	57.5	62.3	36.2	39.7	43.8	49.9	51.1	54.4	50.8	54.8
Finland	111.3	114.2	112.9	113.5	110.6	113.3	110.2	111.5	108.7	111.8	110.4	110.5	108.1	112.0	108.3	109.6
Sweden	111.2	113.2	109.0	115.5	113.1	114.2	111.9	114.5	117.6	117.8	114.2	120.6	118.1	117.9	114.2	115.4
Hungary	55.0	57.6	61.5	67.0	67.8	70.9	72.1	71.2	47.5	49.0	52.2	56.4	57.0	59.5	60.2	60.1
Poland	46.0	50.8	56.3	61.9	61.1	62.3	65.6	66.8	38.3	42.1	45.8	49.8	49.1	50.2	52.5	53.9
Romania	:	:	25.7	34.6	39.7	49.1	49.2	48.9	:	:	23.5	31.5	35.5	43.7	42.9	43.0
Slovenia	66.8	75.5	76.1	81.5	83.4	83.8	80.9	80.4	:	:	76.1	78.7	83.5	83.7	79.6	79.4
Slovakia	50.3	56.6	60.8	65.7	71.7	79.7	79.7	81.4	46.4	53.9	57.2	63.3	67.5	74.2	73.6	74.6

Source: Code: tsieb030 and tsieb040

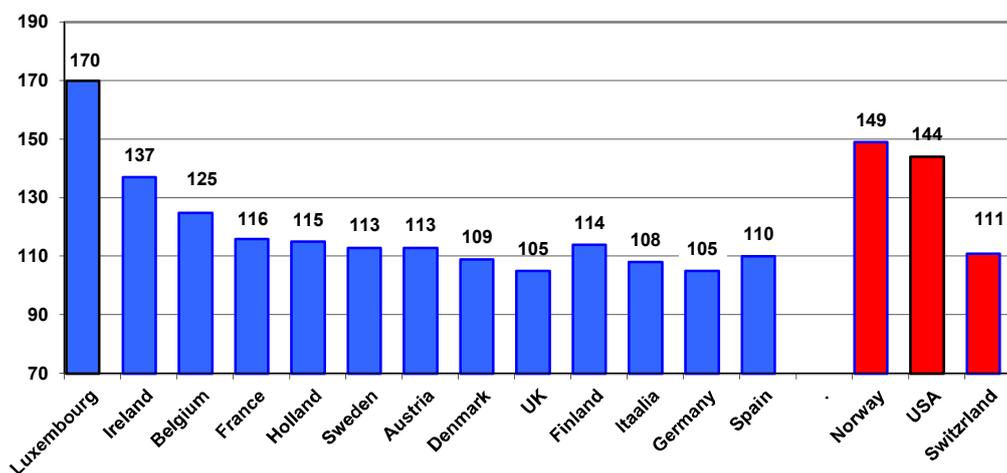


Figure 3. Higher productivity states > EL=100, 2010

Source: authors illustration

Of higher productivity in EU and also globally is Luxembourg and Norway, external to EU.

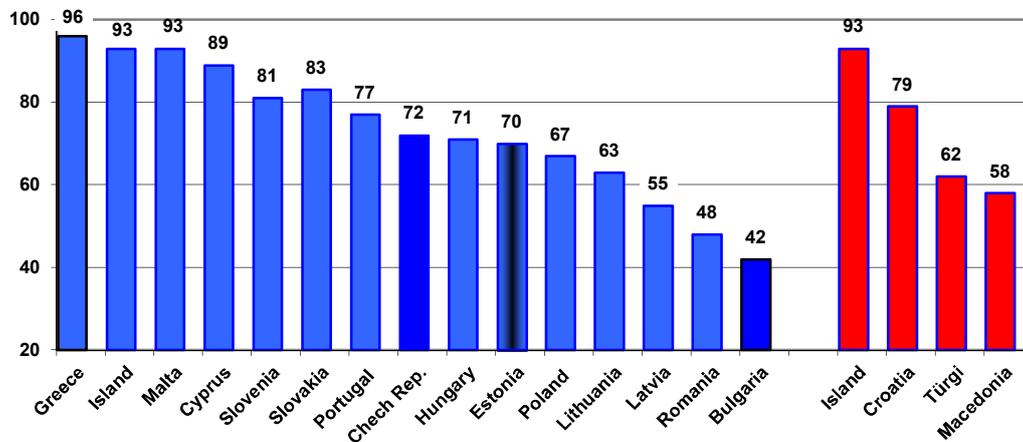


Figure 4. Lower productivity states < EL=100, 2010

Source: authors illustration

Of lower productivity are post-socialist countries, however somewhat higher is the level of Malta and Cyprus. Of somewhat higher productivity than Estonia is the EU-15 state Portugal. Of still higher productivity are EU post-socialist states Slovenia, Slovakia, Hungary and Czech Republic. Of EU candidate states, Croatia excels Estonia and Turkey maintains the same level.

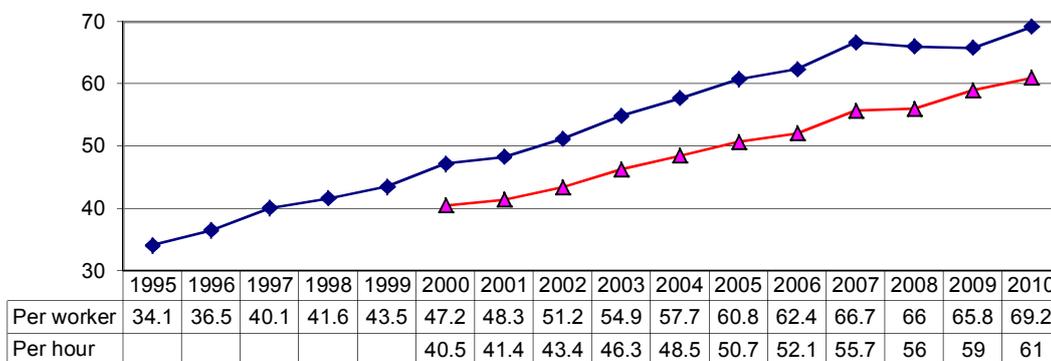


Figure 5. Growth of Estonian labour productivity (EL=100), 1995-2010

Source: authors illustration

In Estonia the yield per worker i.e. productivity grew in the period under scrutiny 2.0 times, however it got suspended during the economic crisis.

Contrastively, in 2010 in Latvia the yield per one worker was 54.6% and in Lithuania 62.3%, as the EU-27 average. The highest among EU member states it was in Luxembourg (169.9), Ireland (136.9)

and France (115.8) and the lowest in Bulgaria (41.3%) and Romania (48.8). In Norway (150.7) and USA (143.5) the productivity was 1.5 times higher than the EU average.

The one working hour's productivity displays a similar trend, the highest in Luxembourg 187.1. Estonia's productivity amounts only to 61.0%.

However the prevailing trend is that regardless of growth in productivity elsewhere, it rises in Estonia and also other EU new accessions noticeably quicker than in veteran and wealthy EU-15 countries.

When analysing the EU-27 productivity (added value produced by one worker) as per branches of economy and size of companies, one cannot draw an equipollent (equal in force or effect) conclusion as regards the productivity and number of workers engaged in the company. It is conditional of the branch of economy. For that matter, productivity in energy and water management companies is the highest in small firms, with up to 9 persons on payroll. Whereas the largest productivity is evidenced in big firms, keeping in employ 250 workers or more, the companies operating in the lease of movable property, accommodation (housing) companies and in total all branches of economy as an entity. Textile and habiliment (articles of clothing) firms have the largest productivity, with number of workers from 10 - 49; so do the timber companies with number of workers from 50 – 249 (Code: tin00054).

Below we will analyse in greater detail, from among productivity indicators of Estonian companies, the labour expense in current prices, or which the predominant share is constituted by salaries.

We will look at Estonian productivity indicators both by reference to sales revenue and added value as per employed and the same by reference to hourly productivity, mainly on new methods (Classification of Economic Activities (EMTAK) 2008), applied in 2008.

In Estonia, productivity differs little as per company size up to 249 workers. In 2003 and 2007 the largest productivity was boasted by firms with workers from 50 – 99; in 2005 with workers up to 9 people and for the rest under survey from 100 – 249 workers. Invariably, big companies of lesser productivity had 250 workers and more. That can be accounted for by larger flexibility in management of lesser companies, lesser number of ancillary personnel and also because workers of small companies are more of "jacks of all trades" than in big companies. In big firms productivity is sapped, as a general rule by large overheads.

**Table 4. Productivity indicators of Estonian companies in current prices, 2001-2012**

	<b>Labour productivity per person employed on the basis of net sales, thousand euros</b>											
	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
I quarter	10.8	11.1	12.3	13.6	15.2	17.6	20.6	21.2	18.5	20.8	25.2	26.9
II quarter	12.2	12.9	13.4	15.2	17.3	20.2	23.4	23.4	20.4	24.0	27.6	
III quarter	12.3	12.8	14.0	15.4	18.2	21.0	23.6	24.0	20.8	25.2	28.1	
IV quarter	13.4	13.6	15.0	16.6	19.7	22.0	24.4	22.0	21.7	26,8	29.3	

**Labour productivity per person employed on the basis of value added, thousand euros**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
I quarter	2.1	2.4	2.5	2.7	3.4	4.0	4.2	3.2	3.5	4.3	4.7
II quarter	2.5	2.6	2.8	3.3	3.9	4.7	4.6	3.7	4.1	5.0	
III quarter	2.5	2.7	2.8	3.4	4.2	4.7	4.6	3.5	4.4	5.0	
IV quarter	2.6	2.7	2.9	3.6	4.5	4.7	4.0	3.8	4.7	5.1	

Source: Code: FS0411

Productivity as per employed by reference to sales revenue was over 20 thousand euro as from the second half of 2006. In 2009 QI a dramatic decline occurred, again followed by a slowly ascending growth, whereas 2010 QIII and QIV were record-breakers. Admittedly Estonia has made its exit from the economic crisis mainly along the intensive track, i.e. on account of growth in productivity.

Productivity as per employed by reference to net value added has changed due to other regularities. As late as in 2010 QIV, Estonia attained the level of three successful quarters of the pre-crisis 2007. Whereas in 2010 QIV the level was already 1.5 times higher than productivity in the deepest slump of crisis in 2009 QI.

After the crisis, productivity recovered quicker by reference to sales revenue than by reference to value added, which implies the runaway selling prices after the crisis.

Whereas the above analysis per quarters support evidence to the surmise that in the period of economic crisis the changes are extremely rapid and consequently the analysis with one year precision will not yield a correct picture of changes underway.

**Table 5. Estonian companies' productivity per employed, thousand euro, 2005 – 2010**

	2005	2006	2007	2008	2009	2010
By reference to sales revenue	72.1	81.2	92.2	93.6	81.2	95,6
By reference to value added	14.7	17.4	19.3	18.7	17.4	16,7

Source: Code FS008

Sales revenue as per employed, of the first quarter of 2010 was 44.3 thousand euro. It is more than in the previous year, nevertheless it falls short of 2007 and 2008 average.

Business sector's productivity by reference to the net value added increased in 2010 by 18%, whereas the companies' average labour expense per employed kept on the level of 2009.

**Table 6. Estonian average gross monthly salary, month – euro, 2003 - 2012**

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
2003	391	394	434	414	437	474	423	400	410	432	448	487
2007	631	659	691	684	728	807	688	692	711	739	775	842
2008	758	810	797	816	829	905	806	793	801	819	842	855
2009	780	760	791	788	775	875	767	720	770	781	760	809
2010	744	751	779	789	791	888	755	736	785	787	807	849
2011	749	785	843	801	860	913	785	817	826	813	868	918
2012	839	817	886	...	...	...	...	...	...	...	...	...

Source: code YPA51

It needs be taken into account in this connection that periods affect the average salary, hence in December, on account of the Christmas bonus, the remuneration makes a quantum leap. When comparing equidistant months, the onset of crisis must be taken into account. In the pre-crisis period salaries made a headway. When comparing 2003 salaries with 2008 salaries, the growth was almost doubling. Whereas the 2010 salaries were lower than two years earlier. Largest gross salary was evidenced in June 2008 – 905 euro and the least in August 2009 – 720 euro. 2010 still witnessed continual incremental growth, however two years earlier it was still higher. June 2008 witnessed the record 904.99 average gross monthly salary, December 2010 evidenced 848.55 euro i.e. less by 56.44 euro.

For analysis of the real income the impact of inflation must also be considered, whereas in 2010 the CPI was much higher than before the crisis. Real salary, reckoning the impact of change in CPI and showing salary's purchasing power, declined for nine quarters on end. In 2010, IV quarter the real salary dropped by 1.2%.

**Table 7. Average quarterly monthly salary, euro (EMTAK 2008), 2009-2011**

	2009				2010				2011			
	IQ	IIQ	IIIQ	IVQ	IQ	IIQ	IIIQ	IVQ	IQ	IIQ	IIIQ	IVQ
Gross ...	837	887	787	832	811	891	793	861	854	923	841	907
Net ...	680	719	639	673	651	712	637	690	685	737	674	725

Note: Embraced have been companies of more than 49 workers and all governmental and municipal institutions and organisations. Embraced have been workers under Employment Contract, Service Contract and Public Service Act

Source: code WS041

In 2010 IV quarter the share of net monthly salary constituted 80% of gross monthly salary, being among the highest in the EU member states.

Quite naturally, in the pre-crisis year the salary and consequently labour expense were larger than in 2009. As from the second quarter 2010 the level of the previous year was superseded, however there was a shortfall, as compared to the pre-crisis time.

As per areas of activities the IV quarter of 2010 continually displayed the largest gross monthly salary in finance and insurance business (1337.73) and in information and communication (1305.33). Salaries in manufacturing industry (777.10); trade (740.74) and building (853.35) were much lower. The lesser area however was „other servicing business“ – 502.41 euro. Average gross monthly salary in 2010, IV quarter was the largest in Tallinn 920.46 and Tartu 811.93 and lower in county Valga 610.48 euro (code WS21).

**Table 8. Average gross monthly wages and labour cost per employee, euro, 2002-2012**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
<b>I quarter</b>											
Gross monthly wages	366	405	431	475	549	660	788	776	758	792	847
Monthly labour cost	498	546	581	640	739	886	1 059	1 055	1 030	1 074	1 148
<b>II quarter</b>											
Gross monthly wages	406	442	474	530	609	738	850	813	822	857	..
Monthly labour cost	549	596	639	713	818	991	1 145	1 105	1 114	1 159	..
<b>III quarter</b>											
Gross monthly wages	374	411	449	498	580	697	800	752	759	809	..
Monthly labour cost	506	555	605	670	779	937	1 078	1 024	1 027	1 096	..
<b>IV quarter</b>											
Gross monthly wages	416	455	492	555	653	784	838	783	814	865	..
Monthly labour cost	565	617	665	750	879	1 056	1 137	1 069	1 105	1 175	..

Source: code: WS010

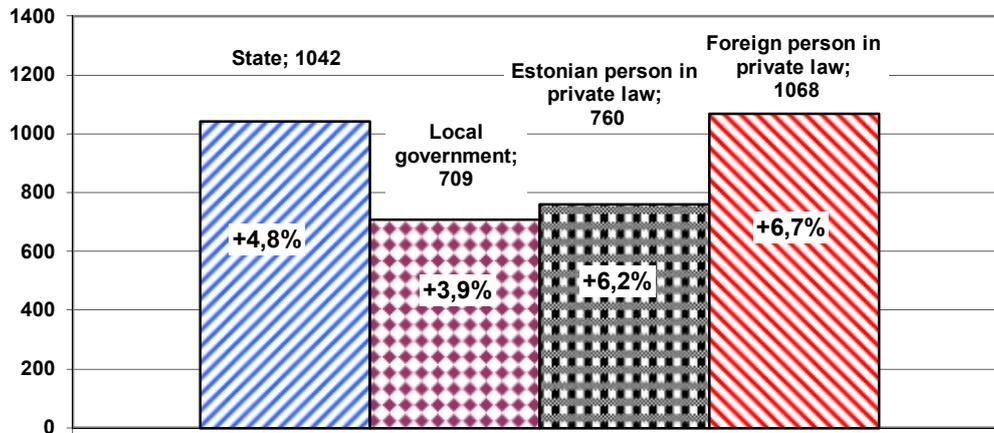


Figure 6. Estonian gross monthly salary per owner, QIV 2011, euro

Source: authors illustration

Productivity reverted to decline in the second half of 2007 and attained the trough of the slump in 2008, IV quarter. Whereas salary increased and its record sizes were evidenced in 2008 II and IV quarter, where productivity had plummeted. mbraced have been workers under Employment Contract, Service Contract and Public Service Act. While on the one hand it is emphasised that the salaries of government and self- governments were frozen, because before crisis they enjoyed a non-motivated large growth, the growth analysis of salaries of 2010, IV quarter contradicts to it. Lesser growth of salaries was evidenced in private sector. (Code: WS31)

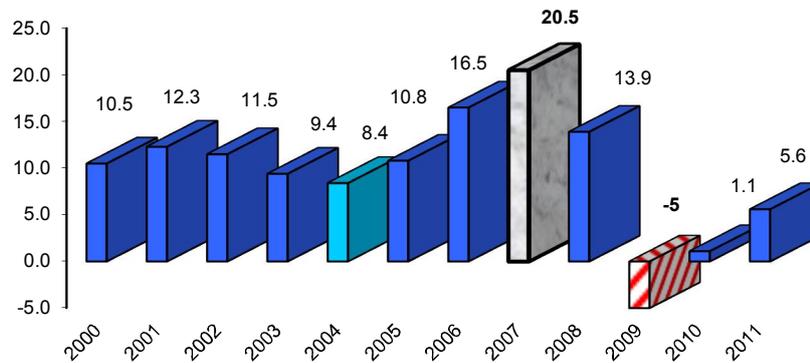


Figure 7. Estonian gross salary, %, 2000-2011

Source: authors illustration

In Estonia, in the 4th quarter of 2011, the average monthly gross wages and salaries were 865 euros and the average hourly gross wages and salaries were 5.19 euros. Compared to the 4th quarter of 2010, the average monthly gross wages and salaries grew 6.3% and the average hourly gross wages and salaries by 7.4%. (News releases 22.02.2012, no 33)

**Table 9. Real salary unit growth as per productivity, %, 1994 - 2012**

	1994	1995	1996	1998	1999	2000	2001	2002	2003
EU (27)	:	:	-0.6	-0.7	0.0	0.2	0.2	-0.4	-0.3
EU (15)	:	:	-0.8	-0.6	0.0	0.3	0.2	-0.3	-0.3
Estonia	10.1	-5.3	-4.4	-0.7	-2.7	-1.9	-2.3	-0.9	1.0
Latvia	5.8	-15.7	4.4	-3.1	-1.7	-6.6	-3.9	-4.1	2.0
Lithuania	8.3	-6.9	7.3	3.1	2.9	-8.5	-3.2	1.6	1.8
	2004	2005	2006	2007	2008	2009	2010	2011	2012
EU (27)	-1.5	-0.6	-1.1	-0.8	0.8	2.8	-1.4	-0.7	-0.4
EU (15)	-1.0	-0.5	-0.8	-0.6	0.8	2.9	-1.2	-0.7	-0.4
Estonia	1.0	-2.1	0.4	6.2	8.4	1.2	-9.2	1.4	-0.9
Latvia	-0.4	4.2	4.9	5.8	6.6	-5.6	-8.5	-2.4	-2.3
Lithuania	0.8	-0.6	3.4	-1.8	0.5	0.9	-9.5	-2.7	1.0

Note: 2011 and 2012 are forecasts.

Source: code: tsieb070

At the inception of the decade under survey, starting from 2001 the largest growth in gross monthly salary was witnessed in state companies and smaller in foreign entities under private law. In 2009 all forms of ownership experienced a drop in salaries, mostly in Estonian entities under private law.

As a general rule, Estonian salaries have exhibited slower growth than productivity. That holds true also for other countries presented herein. Whereas sporadically impressive leaps occur in both directions.

In 2007 and 2008 there took place a large growth of salary unit as per productivity in the Baltic states. 2010 evidenced the contrary development.

In 2011 Estonian salaries grow quicker than productivity, however in 2012 under prognosis productivity will grow more impetuously than salaries.

## CONCLUSIONS

*To sum up*, during the economic crisis all Estonian economic indicators worsened. 2010. witnessed a major advance, and subsequently the pre-crisis GDP was passed.

In 2010, the monthly labour productivity in Sweden was 1.62 times higher, and in Finland, 1.59 times higher when compared to Estonia; the respective rates for hourly labour productivity were 1.89 and 1.80. The difference, however, is continually decreasing.

In 2011, the net annual salary in Sweden was 27 320, in Finland 25 385 and in Estonia 6 664 euro – the respective relations being 4.10 and 3.81.

Based on the data from Sweden, the annual net salary in Estonia according to labour productivity should be 16 864 or 14 455 euro, that is over two times higher than it is now. Based on Finnish data, the respective figures are 15 965 or 14 193 Euros. We are currently comparing net salaries due to the differences in Swedish, Finnish and Estonian tax systems.

However, it is not enough to compare merely gross and net salaries: for a deeper analysis, price levels, social expenditures, family budget and other social figures must also be observed. As it is known, the highest price levels are in Switzerland, Norway and from EU countries, Denmark.

In Estonia, certain prices of more expensive goods and services may even reach the price levels of Germany, but in overall, the price levels in Estonia are still lower than in richer Western European countries.

When comparing the salaries in public and private sector in Estonia, it must be considered that in public sector, the number of people with higher education is much bigger than in private sector. Therefore it is not feasible to compare, for example, the salaries in education (public sector) with salaries in services (private sector), as the qualifications of workers are too different. Unfortunately, the salaries of workers with higher education do not differ that greatly from the salaries of workers with basic education.

Estonian productivity is 69%, but salaries are below 30% EU average. Consequently at such level of average productivity it is, as a general rule possible to raise salaries primarily on the expense of owner profit. This would also lessen the drain of qualified workforce. Keeping qualified workers in Estonia is in the long run also beneficial to the employer. A reasonable raise in the salaries would be a beneficial future investment for the companies. As for the rise of profit, it would be insured by keeping qualified workforce and by lessening or saving from training expenses on new employees, etc. But we mustn't also forget the golden rule of economic theory: the main goal of a business enterprise is earning profit to its owners. Hence, the conflict of interests arises. Therefore we may also look at different enterprises from a viewpoint of whether their activity is focused on today only or does it also consider the future.

Productivity in ratios of other post-socialist countries, new EU states is also substantially higher than salaries.

Significant discrepancy of productivity and salaries causes movement of labour of East-European states to the states of higher salaries. Whereas it must be taken into account that East-European countries produce, as a general rule goods of lower value than in Western Europe.

Nevertheless the labour market will put in place, in due course of time the correct relation of productivity and salaries, but by that time new EU member states will have lost part of their precious labour.

The possibility of raising salaries should be analysed separately according to economic branches, jobs and professions. The countries of Eastern Europe, including Estonia, could try to model after the experiences of developed industrial countries.

The salaries could be raised in there areas where the result (turnover and profit) is more connected to the quality if workforce, in order to find better and more competitive employees. It should also be certainly connected to the productivity and quality of work through salaries and bonus systems.

These generalisations could also be made to other new European Union countries.

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**ORGANIZATIONAL CHANGES AND CHALLENGES OF PUBLIC ADMINISTRATION IN THE SECTORAL MANAGEMENT OF HUNGARIAN PUBLIC EDUCATION, BETWEEN 1998 AND 2010 IN THE ASPECT OF PUBLIC POLICY**

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**Abstract**

*This study aims to investigate the structural changes and management implementation of the main goals of educational policy. It tries to give evidence to the failure of certain implementations of educational policy that were caused by the need of structural changes in the managing administrative body; the lack of institutional conversation and the continuity of reforms; and the anomalies of the cooperation of politicians and public officers. From 1998 on, the declared main goal has been seen in the development of a knowledge-based society, in favor of which numerous, very resource-intensive reform of the educational policy took place, in preparation of the coming joining to the EU in the field of education as well. The management was to become more and more fragmented and multiple, private sector was to gain a wider place in the improvement of schools' condition, and the number of experts working in enterprises was to widen as well (quality assurance, teachers training). In the sectoral management, the strict sense of the centralized responsibilities of the state and the duties and powers under the delegation of regional jurisdictions was planned to become more sharply separated.*

*It is obvious that institutional changes were required to successfully implement the changing goals of educational policy in the decision-making and decision-preparing bodies of the ministry, as well as in the supply institutes of the ministry and the different levels of the territorial administration. At the same time, I assume that those state administration and administrative changes that took place were not only introduced for reasons of the educational policy. I believe that many of the educational policy failures ending by the given political cycle or processes arching over cycles with no results or generating more difficulties were administrative were due to organizational constraints.*

**Key words:** *Administration, Administrative reforms, Educational policy goals, Institutional need, Failure of implementation*

**1. INTRODUCTION**

Education plays a crucial role in theories of social capital. These theories stress the importance of mutual trust, cohesion, social norms, civic mindedness and other connections among individuals for the well-being of societies (cf. the seminal contributions by Pierre Bourdieu 1986, James S. Coleman 1988 and Robert D. Putnam 1993).

Theories of human and social capital stress the importance of education on the long run for economic and social well-being of individuals and societies. This makes an analysis of how education can be

supplied in an efficient and equitable way a research topic of utmost economic and societal importance.

My starting point is the assumption that changes in the managing of educational systems are inseparable from changes taking place in the governmental–administrative system in a wider sense. In the last two decades a diverse and complex restructuring of the responsibility and power relations has taken place in Hungarian public education: decentralized educational structure have been established.

Following the changes that took place the role which is played by the state in the regulation of public education systems since the 19<sup>th</sup> century has fundamentally changed and is changing right now, as well. The state (as the public power) has a comprehensive responsibility for the functioning of the different subsystems in modern democracies as well. The state is responsible for those basic social goals that conceptualize the process of the democratic political will-formulating to be prevailed in various subsystems – such as, e.g., the educational system. To reach these goals which follow from the role of the state a well built and continuously updated public administration is needed. I am most certain that the complexity of our modern world demands the public policy attitude and methodology carried out by national governments.

In the Hungarian public administration the public policy approach, what is more, the concept of public policy is hardly known: instead, the traditional juridical attitude prevails. The juridical approach identifies not the social but the juridical problem, and thus, it identifies decision-making with legislation. In the Hungarian public administration, the view of legal and organizational authority dominates over aim-rational approach.

Neither on the level of the whole of the government nor on the level of the ministries doing sectoral management are those structural units to be found that focus on identifying exploring and solving the demands or problems of society.

The purpose of this study is to find answers for the following questions based on the above mentioned:

How can we identify the proper functioning of the managing state administrative body in the success or failure of certain educational policy implementations? What kind of examples show the structural-administrative changes (either because of the complications of implementation or the failures)? What kind of examples show that the correlation and mutual affection between the successful implementation of the education policy's goals and the sectoral structural-administrative operation has been acknowledged?

## **2. CHALLENGES ROOTING FROM THE RELATIONS BETWEEN EDUCATION AND PUBLIC ADMINISTRATION**

“National governments of nearly all colours, embarrassed by responsibilities they cannot or will not discharge, are devolving authority to lower levels and loosening the grip of public bureaucracies on the provision of some services. Others are wholly privatised. At times central government abets these changes simply by tolerating local experimentation, waiving formally – or through inaction – their statutory rights to specify how programmes are administered.” (Sabel, 2001)

In more countries, public administrative reforms were consciously introduced following the logic above and arching through more electoral cycles, often referred to as “New Public Management”. Based on the literature specialized on public administrative reforms (Hood, 1955; Pollitt-Bouckaert, 2000) we can contrast the New Public Management to the ordinary or “old” public administration in

many dimensions. In the ordinary public administration the actions are defined by high level regulations and rules, emphasis is laid on the set goals and the legislative process, the public administration organizes the service directly, the action itself is controlled, attention is paid to the processes, the direct office dependency prevails, and it is described by the continuous sponsoring of the comprehensive specialized areas.

On the other hand, the so called new public administration is described by the following: the actions are defined by the local procedures defined by high level regulations, the emphasis is on feasibility and law enforcement, public administration employ outsiders to organize services, the output is controlled, and attention is paid to the results. It is described by “intersectional” view the holistic approach towards everyday problems, and the usage of aimed programs for periodical sponsoring (remedial course for disadvantaged students). The inner structure and functioning of the institutes needed to be redesigned in order to create service-oriented public institutes.

***New Public Management***

- Competition (privatization, contracting out)
- Stimulating market relations (free choice of primary health providers and schools)
- More demand-side financing (vouchers)
- Managing by objectives
- Market incentives (performance contracting, performance budgeting, performance-related pay)
- Customer services

***New Public Service***

- Building coalitions of public, private, and non-profit organizations to serve mutually agreed goals
- Making national governments and local self-governments more responsive
- Enabling citizens to participate in decision-making
- Ensuring access to information for citizens
- Easily accessible government services (user-friendly services)
- Quality evaluation of public services (avoiding the negative side-effects of performance measurement based on roughly-defined proxies)

- Strategic planning
- Performance measurement
- Deregulations, standards
- Reducing and modernizing public employment

Table 1. The Instruments of NPM and NPS

According to Jenei (Vezetéstudomány, 2004) the cooperation and strategic partnership of public officers and politicians are needed for these reform processes to be realized.

The reform processes in the majority of the OECD countries were characterized by being client oriented, evaluating performance, giving preference to contractual solutions, or introducing electronic government system (Governance in transition, 1995; Issues and developments in Public Management, 1997).

In Hungary, these goals took priority during the public administration reform in 2006 – with little success. During 2000 our national endeavors towards public administration's upgrading were aimed more at the revision of the authorities of the different levels of public administration, the strengthening of public administrative staff, or the revision of the existing regulations (including the law-harmonization with the EU).

### 3. UTILITIES FOR PRACTICING THE GOOD GOVERNANCE – CIVIK SERVICE LAWS

To accomplish the functioning complexity and stand up to the challenges arising from the need to reach the well-being of citizens, modern democracies invented a new art of government, named good governance. Every state that promotes human rights, equity, transparency, accountability has to – independently from their political attitude – follow this method of governing. I do not wish to enter into details of this theory, but we must take a look at how its basic elements define the management trajectories in the so-called transition countries that force out the modernization of public administration. According to these, from the middle of 1990s, reform processes take off in the CEE Transition Countries. There is a juridical, human resource and management aspect for these public administrative reforms, driven through by for example Civil Service Laws (CSL).

Civil Service Laws are essentially about management in the public administration. Their purpose is to promote the creation of a new professional ethic built on accountability and transparent values, dedicated to the delivery of public services in a cost effective way, to the best standard, for the whole population. The detail of the law will concern definitions, authority, rights, responsibilities and so forth, but the goals are to facilitate *good governance*, to ensure the delivery of public benefits, impartially and at reasonable cost, and to establish government as a model employer.

The reform of public administration, and the implementation of a Civil Service Law and its associated secondary legislation or regulatory instruments, must be built on the development of human resources. This implies a large investment in training and education:

- to enhance the value placed on, and the prestige earned by, the new generation of civil servants;
- to achieve visible and measurable improvements in standards of performance and service;
- to match improvement in professional integrity and ethical standards with commensurate rewards.

As for Hungary, the Civil Service Law of 1992 provided the early basis for the development of a career-based professional and politically neutral civil service, but the legal framework includes numerous other laws and regulations which deal with specific areas and professions. The personnel function is largely decentralised to the level of the employing authority within government, with no ministry responsible for the overall policy.

The career-basis of civil service was strengthened in 1997 through the introduction of the basic public administration examination, and in 1998 through the special public administration examination. Exemption was granted to law graduates and a few others, but they were otherwise compulsory for new entrants, and for senior positions, respectively. National coordination was achieved through the Hungarian Institute of Public Administration which is responsible for the standards and training preparation, although the implementation is decentralised to the county level. Both levels of examination have a strong emphasis on law.

#### **4. GOAL SETTINGS OF THE EDUCATIONAL POLICY**

The art of governing can be successful only when clear public policy goals are set. As for a certain field of public policy – in our case the educational policy –, further fine-tuning is required. The goals of education policy are usually two-fold, encompassing both goals of efficient allocation and goals of equitable distribution. The extent to which each of these goals should be pursued is a matter of political choice and as such beyond scientific evaluation.

What scientific analysis can deliver, though, is an evaluation of how these goals either may or may not be achieved, and of the relationship between the two goals. Of course, goals of efficiency and equity are not restricted to education policy. However, a combined policy perspective that would also address other policies such as social policies, labour market policies and immigration policies and determine joined policy solutions lies beyond the scope of the current analysis, which explicitly focuses on education and training policies.

As per a European Commission report: “The concept of efficiency relates the outcome of a process to its input. A system is said to be efficient if a maximum output is obtained from given input, or if a given output is obtained with minimum input. Efficiency has thus to do with the ratio between output and input: How much do we get for what we put into the system? The analysis of efficiency thus deals with a comparison of costs and benefits.

The output may either be measured as a goal within the education and training system, such as achievement scores or completion rates, or as a goal outside the education and training system, such as employment probabilities or earnings returns on the labour market. There are two main aspects of an efficient resource use. First, efficiency is about allocating efficiently between different kinds of resources – e.g., between teachers and blackboards, or between more teachers per student and better-qualified teachers – that is, about choosing the most efficient input mix (allocative efficiency). Second, efficiency is also about using each resource efficiently, that is, making the best use of each given input (technical efficiency).

The assessment of efficiency in education and training has both an external aspect, where investments in education are compared to alternative investments outside the education system, and an internal aspect, which refers to the internal functioning of the education and training system.”

Educational policy is the usage of the available power and resources for educational management in order to change or influence the behavior of the actors and institutes of the education according to the foundations of public policy: to change, in a way by repairing it. A comparative study done at the end of 1990's including five Middle-European countries identified seven fundamental public policy goals – Quality/Success, Efficiency, Fairness and Equal Opportunity, Transparency and Accountability, the Possibility of Personal Choice and Multiple Supplies, Stability and Predictability, Adaptability - those success can be measured in the field of education. According to this study, in the Hungarian educational system, ensuring Possibility of Personal Choice (part of which is the wide supply) and Adaptability become realized on a relative high level, while goals of Fairness and Equal Opportunity and Stability and Predictability were fulfilled on a below average level (Pesti szerk., 2006).

## 5. WHAT IS EDUCATIONAL POLICY? – BY PETER RADO

„Making the distinction between politics and policy is not easy due to the lack of separate words in most European languages. Therefore, the discussion on educational policymaking and implementation in decentralized education systems should start with a definition. However, since providing an overview of the large number of definitions produced by the literature goes far beyond the purpose of this reading, a definition (extracted from various attempts at definition) is offered here that is easily translated to the activities in the practice. Educational policy is the use of authority and resources at the disposal of the governance of education to change or influence the behavior of the actors and institutions of education in order to solve problems. If this definition is unpacked a little bit, there are already a few simple messages that it carries. First of all, educational policy is a public policy area, that is, it flows from the authority of constitutional governance and the political mandate for the use of public resources. The second message is the aim of policymaking: change for the sake of problem solving. Thirdly, policymaking is mainly an indirect instrument; it works through the changed behavior of others, such as teachers, parents, mayors, etc.”

This is an ideal-typical approach towards governance and implementation; and political decisions and institutional (public administrative) decisions; and last but not least the difference between politicians and leader civil servants. I agree with Peter Rado in a sense, that: ” ...policymaking in a decentralized education systems is a sophisticated art of change management on a systemic scale. But still, the focal point of policymaking is governance and management: the legal mandate deployed to the different governance and management actors determines their policy responsibilities. Therefore, it is not only the national level that makes and implements policies; all management actors that face problems that call for initiating any sort of change within the realm of their responsibilities are policymakers: local and schools' policies are no less relevant than those developed at the national level. Educational policymaking being a governance instrument, in decentralized education systems the general aim of policies is not different: at the national level policies influence the connected local and institutional management cycles, while local policies address the management cycles of schools. In the following pages we will concentrate on policymaking and implementation at the national level, because the full scale of underlying concepts and the possible instruments are relevant only at the level of governments. However, it is important to bear in mind that the same concepts and instruments apply at lower levels, although with certain limitations”. In addition to his words, I would like to add that the root of the failure we can experience is the disharmony that occurred in the cooperation between

politicians and civil servants; although the responsibilities are clearly set by regulations, reality shows another picture displaying diffuse methods. Furthermore, what I have inclined once, is that policy making procedures do not meet in time and space, thus they cannot be coincident and coherent”.

## **6. INSTITUTIONAL – ORGANIZATIONAL NEEDS AND FAILURES IN THE PROCESS OF EDUCATIONAL POLICY**

Why do we have to study the management trajectories when we try to understand the functioning of public policies? It is basically required that different processes of policies meet and in time they are harmonized. The allocation of public funds needed to carry out the decisions of educational policy can start with the definition of the given years financial act for the government taking up office. The fund, however, is available only from the January of the year following the year of the successful election, and it is only auditable after the harmonization of funds and entitlements whether the organizational structure implementing political decisions is able to realize the decisions in an effective and efficient manner.

In those countries that went through a regime change, like Hungary exactly that attitude has not been rooted that is based on both fiscal rationality and national responsibility and could be the basis of public policy decisions and actions that are in the case of educational policy meant to be mainly long-term, arching through governing cycles. The political conceptions of those parties struggling for political power manifest themselves in public policy promises and programs.

For example, planning, negotiating, and approving the annual education budget of a country are political decisions. At the same time, allocating the funds a well-functioning administrative body or institute is required to be able to make numerous small decisions that are dedicated to different levels of hierarchy of the educational system. For more details regarding the allocation of responsibilities, see chart on next page.

“While in the OECD countries the main motivation is the globalization, the problems of effectivity and efficiency in the duty fulfillment of the state, the democratic deficit and the improving demand of the society for quality services, in Hungary beside the problems coming from the question of effectivity and efficiency – these motivations are the “transformation challenge” rooted from the complete social-economical transfer and the need for integration. The most important of those is IDEA, the official program of the Ministry of Internal affairs that was launched in the autumn of 2002, and commits itself on “decentralizing the central power, fulfilling the decentralization process”, the principles of “good governance” and the questions of a regional reform clearly take form in its goal settings and ideology. The anomalies of the Hungarian public education management and public administration are basically identical: fragmented self government structure on the level of settlements, the lack of or weakness of midlevel, strengthening, a central level non-committed for subsidiarity and the lack of partnership. Abolishing these problems requires measures both for the overall renewal of public administrative system and specific, sectoral measures as well” (Balázs-Palotás, 2009).

Because of the political and interest differences, only certain measures of those concepts could be implemented. It was also a failure, that the government fulfilled its intentions of reforms only following fiscal objectives, that it completely ignored the public duties of the ministry and its supply institutes, just like their professional, institutional, personal needs, furthermore there was no consultation with the apparatus and the lobbies. These were the results of a study carried out by the MTA Sociological Research, which tried to find answers to what were the direct reasons for the

changes decided by the 2118/2006. (VI. 30.) Decision of the Government and to what philosophy of public duties and the role of the state specified the redesign.

The strong institutional activity was a consequence of the decentralization process of the state, the consequence of which resulted in a very wide range of power given to the local (municipal) level. In 1990, due to a unique consensus between different political parties, local authorities were established instead of the former local councils by the Act on the Local Authorities. The following two charts show the responsibilities of state actors and the educational policy goals of the different levels.

Administrative Body	Level	Political Status	Sector Involved	Main function
Regional OKÉV	units of Regional	government office	specialized for education	<i>professional</i> supervision
Regional Councils	Development County and Regional	elected/representative	integrated, non-education specific	allocation of regional development resources and infrastructural funds
Regional and Committees	Development Training	Regional elected/representative	integrated, non-education specific	allocation of vocational training development funds
County Governments	County	elected/representative	integrated, non-education specific	service provision and regional coordination/planning
County Foundations for the Development of Public Education	Public County	elected/representative	specialized for education	allocation of funds for professional developments in public education
County-level Administration Office	Public County	government office	integrated, non-education specific	<i>legal</i> supervision
Regional Governmental Office (TÁH – formerly called TÁKISZ)	Central County	government office	integrated, non-education specific	providing financial information, including the financial data of education from local governments

Table 2. Actors of public education administration at regional level (Halász – Lannert, (Palotás) 2003.)

Level	Operational planning	Planning for development
National	Annual planning of the school year (examinations, evaluation, centrally administered assessments, etc.)	Thematic government strategies (LLL, social inclusion, etc.)
		Sectoral development strategies
		Subsectoral development strategies (e.g., vocational education development strategy)
		Subsectoral thematic strategies (e.g., special needs inclusion strategy)
		Strategies of large-scale development programs
Regional		Territorial development (NUTS 2)
		School network planning (NUTS 2 or 3)
Local	Annual operational planning	Mid-term thematic planning (e.g., equal opportunity plans)
	Mid-term operational planning (quality management planning)	
School	Annual operational planning	School development plan (if not included in quality management program)
	Mid-term operational quality management program	
	Pedagogical program or school curriculum	

Table 3. Multilevel Planning System in Education (Péter, Radó, 2010.)

The fundamental developments are appropriately characterized and summarized by Balázs – Hermann // as follows // so it will be worth citing them: „Contrary to the former local bodies, the new ones had real responsibilities, independently from the state (and the central party).

The ownership of the schools shifted from the state to local authorities: local and county governments now maintain more than 90% of the schools, whilst the rest includes church, foundation and private schools. By the law, local governments have to undertake obligatory public education services, but

they are free to choose their methods: for example by establishing new schools; maintaining the existing one; initiating joint schools and so on.

Offering territorial level education services (for example maintaining secondary schools, youth hostels, professional expertise) was a free choice for local authorities but an obligatory task of the county authorities. This inconsistency—generated by the Act on Local Authorities - has had, and still has, many problems in territorial education administration.

The decentralization of state administration resulted in more than 3 200 autonomous local authorities, amongst which nearly 2 500 became school owners.

This change, which was worth as much as a constitutional one, established autonomous local bodies, empowering them to decide on the local society and economy. But this process was not a part of a coherent constitutional change, because many regulations did not perfectly fit into the logic of a decentralized state system.”

## 7. BASIC DEMANDS OF POLICY MAKING

Public policy is not an act for once; it is a continuously operated and institutionalized function. The process has many idealtypical approaches. One of those is the so-called rational approach (D. Stone, 2001), according to which public policy is a rational line of steps following and based on each other. In the centre of this approach lie policy making and the technology of implementation. Political science, public management, law and public policy analysis all consider their mission to set public policy free from the allegedly “irrational” influence of politics, in order to help shape public policy with the help of scientific methods based on rationality and analysis. The incremental approach represents a different thinking, as it believes, the actors behavior in public policy is not predictable. The parts of the educational policy’s process are: 1. identifying those educational political problems needing intervention 2. planning of educational policies, designating the goals and the tools attached to them 3. educational political deal and formal decision 4. implementation of educational policy 5. evaluation of educational policy. These 5 elements designate the company of those questions that have to be asked in connection with every particular educational political initiative or basically, the functioning of every legitimate government – apart from those approaches mentioned above.

The evaluation of the educational political processes – according to the list of the five parts above – was neglected even in one governmental cycle, and when a government change happened, apart from the formal handover-takeover, no real handover of knowledge capacity or professional calling to account took place.

Educational policy is nothing more than solving those problems that require intervention from the state. State capacity is the ability to translate the intention of the state to a (public) policy, or the ability of the state concerning a collective act – with the least possible cost for the society – both including the administrative capacity of state officers and the deeper institutional mechanisms. (van Deveer, Dabelko, 2001.) In the United States, public political decisions are born as an act of a formal political decision making process, thus they are political decisions. On the contrary, in (continental) Europe the place of public policy making is the central public management, thus making the public political decision a public management decision based on political authorization.

The privileged place of the central sectoral management is maintained because every actor of the public policy system adjusts to it. Ministries operate the professional consulting mechanism of the

public policy making, the dealing process with the different groups of interest. For the ministries, the background of the information and knowledge of the public policy decisions is provided by their own agencies and institutes; the most important customer of public policy evaluations is public administration and not politics. The Ministry of Education is the most important partner of those who maintain schools and market actors (National Educational Press and other presses, professional services, consultant agencies, etc.) as the preparer of legislative and financial decisions. Thus, the Ministry of Education creates a special surface that makes visible the system of relations between the educational sector and the political decision making system, and at the same time it negotiates between them in a directing way.

Parallel to the growing complexity of education systems, the complexity of educational policies is also increasing. As a result, the information and knowledge demand that policymaking generates is also growing. In those European countries where there is a long tradition of cooperation among academic research and policymakers educational policy analysis is rarely institutionalized. By contrast, in Central and South Eastern European countries, where education science and empirical research in education is rather limited and cooperation between governments and researchers is more problematic, there is a need to institutionalize the knowledge management for policymaking. In certain countries, this function is institutionalized in universities, in several countries independent NGOs are doing policy research and analysis, while there are others where ministries of education establish an internal educational policy department or within an institution affiliated with the ministry.

Putting policies into effect may happen according to two distinct logics: in a *top-down* manner by which central initiatives are rolled through the education system, and in a *bottom-up* manner, by which local but sporadic existing good practices are scaled-up to the entire system along central policy priorities. Although the devotees of democratic principles would immediately opt for bottom-up implementation just because of its direction, it is important to see that the great majority of policies are implemented top-down because the initiative comes from the center, even in decentralized systems.

As far as Top-down manner is concerned, Hungary introduced for example, school-based quality assurance in a large-scale development program in 1,700 schools that opted into the program on a voluntary basis. When the program phased out, an amendment to the legislation made running quality management systems mandatory for all schools. Bottom-up implementation is the transferring of good practices that exist in a school to all other schools with similar problems on the basis of central policy priorities. In other words, it is the systemic scaling-up of good practices.

Policymaking in education is a high-quality governance activity, if it is open and evidence-based. In more concrete terms, the requirements of the quality of the educational policy process are: (i) policies should address well-documented and well-understood problems, (ii) policies are to operate with instruments that have the potential of affecting the behavior of actors in the desired way within the specific context, (iii) policies are able to gain the support of the most important stakeholders, (iv) the implementation of policies should be based on a strategy that fits both the context and the purpose, and is managed in an effective way, and (v) the policy process and the impact of the policies should be evaluated and the results of evaluation are fed back to policymakers.

High-quality policymaking and implementation is not a simple question of the capacities of the participating actors; it requires that various systemic conditions should be in place. Apart from all the functional governance instruments, transparency, systematic monitoring of the education system, policy evaluation, self-organized stakeholder groups, open and institutionalized policy consultation, and intensive international cooperation are all essential conditions. (see Rado, 2010.)

## 8. POLICY – PUBLIC POLICY, POLITICIANS - BUREAUCRATS

After the regime transition the Hungarian educational management followed the continental procedure, and the institution system between management and lobby was built up; however, the legitimate connection between politicians and public officers (for example, the public officer was not allowed to be member of any party) actually meant the overpower of the politician, what's more, the bounds of real interest groups of the bargain processes of the public policy was kept in the shadows by the power games.

All these analyzes are conducted deeper Vass and Jenei // as follows // so it will be worth citing them: „After 1990 the new political parties not only restricted the autonomy of the public administration, but also politicized the activities of the bureaucracy. The result of the impact of the new parties was a decrease in the professionalism of bureaucracy. It means that the legal-rational principle of the Weberian theory on bureaucracy was only partly accomplished. It turned out that no imitation of any Western models is possible, because of the impact of the Byzantine historical heritage. It resulted in that the legal- institutional framework was set up, but the political behaviour was not adequate to the framework and it caused serious deficiencies.” (Jenei, 2009.)

„A typical child-disease of the new, inexperienced ministers in Hungary that minister require the ministerial bureaucracy to be loyal to the governing political party.(The latest example: after the elections a leader of the junior coalition party introduced the newly appointed minister to the ministerial apparatus. Showing the helpfulness, he offered party-assistance to the bureaucrats in their work...)” (Vass, 2010).

## 9. SUMMARY

Governing is public policy itself. And the actual educational government is the director of educational policies implementation. The knowledge of the parts of the public policy process, their identification and their operation according to the public policy's logic is necessary to avoid endangering the continuity of the process by changing any of the educational policy's structure.

There are two relevant approaches to decentralization in education: a public administration (management) approach that focuses on the distribution of authorities among the actors at different levels, and the service delivery (educational) approach that focuses on the scope and extent of the autonomy of schools.

An operational approach to decentralization can be extracted from the inherent logic of the workings of governance systems. It is partly based on the distinction between schools and their systemic environment, as well as on the basis of taxonomy of the separate functional governance instruments within the systemic environment. (The practical relevance of these distinctions is larger in decentralized than in centralized systems.)

Horizontal decentralization means the redefinition of the role of major actors at different levels in the course of vertical decentralization (i.e., transferring authorities to lower levels). A core set of functions (i.e., roles) can be determined for each level of management.

The basic role of local and regional self-governments is to perform those functions that flow from the scope of their ownership over educational services that are provided locally.

Management at regional levels performs various additional roles, such as territorial planning and development, deconcentrated administration, quality evaluation (professional inspection), and professional support services. These distinct functions are to be institutionalized separately.

In decentralized systems, governance at the national level is free from administrative decision-making tasks and performs strategic steering and policymaking-related functions.

For the sake of ease and convenience, the definition of decentralization applied here does not include every possible aspect of decentralization. By decentralization we mean the delegation or devolution of the authority from central government agencies to the actors at the lower levels of management by involving non-administrative actors in decision-making. Therefore, decentralization is by definition power sharing. (see Rado, 2010)

After the transition, the governments management in the educational sector either the structural changes occurring from the public administrative reforms were in controls ignoring those processes initiated according to previous educational policy goal settings, or there were deficiencies in planning and providing the resources. Arising from all these problems – despite the many achievements – we can see an educational policy struggling with an “identity-disturbance”, which frame is a managing institute system restructured every four years or even more frequently. However, failures does not stem only from the “satisfactory” or straightforward “irrational choices” (Hirrschmann, 2000).

It is more the lack of harmony and institutional conversation between coherent elements – educational policies listing goals in the name of the usefulness towards the society, the financial resources enabling realization, public management reforms - that causes it. The roles and the way of cooperation between politicians wanting to win the elections and public officers is also unclear (Pesti, 2009). In Hungary, it is still unclear, what the difference is between politics and public policy (Ágh, 2004).

So far, I have been collecting the literature and the base of knowledge that is necessary for my further studies in my respective field of interest. Besides, I have asked permission to carry out a research in the Ministry of National Resources (NEFMI) archive. I would like to have a deeper look into those documents of organizational rules of operation and inner management regulations stored there in order to explore the motivation and inner logic of the structural changes – if there was anything of the sort at all. Are there only the automations of bureaucratic mechanisms in the background, or is there an organic and rational reason behind those changes? Or, are there any coincidences with educational policy goals?

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## HUMAN CAPITAL DEVELOPMENT THROUGH A COMPANY'S STRATEGY

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### Abstract

*Purpose Every company performs its business based on its strategy defined. In order to complete the strategy and succeeded investors' expectations management is forced to use all resources available – financial and non-financial as well. One of the most significant ones is considered the human capital. This matter has motivated the author to study human capital role in the context of a company strategy.*

*Approach. Authors explore the issue of human capital and its relatedness with the strategy of the company based on the study Western scientific publications and analysis of Latvian practice. Particular attention is paid to the importance of human capital management (HCM) system using the example of a Latvian retail company.*

*Findings. The authors' conclusions could be useful for the company management not only when forming the company's human capital policies, but also developing company's strategies (including investment strategies). In case company is able to achieve its goals and strategies in the most efficient way then winners are all – starting with the company's executives, investors, employees and ending with whole the whole society, industry the company operates in, country, etc.*

*Practical implications. This article reveals the theoretical and practical relevance of the researched topic examines the existing approach used by Latvian company for developing its human capital in order to ensure that all employees are working in accordance with company's strategy. This article may be of interest to financial statement users, regulators and standards setters.*

**Key words:** *human capital, human capital development, company's strategy*

### INTRODUCTION

Since new information age changed previous industry stage plenty of changes have been occurred and every day they continue to influence almost all companies all over the world. These significant and important issues (e.g. globalization, increasing mutual competition among companies all over the world, aging workforce, technology changes, intense regulatory environments, etc.) forces companies all over the world to look for more and more new directions and to change or develop its strategies to increase its competitiveness and efficiency in order not only to survive, but also be successful in the global market place. Most advanced executives have already discovered the importance of this association between company's expenses related to its human capital and company's corporate issues. They already discovered the key role of human capital for the company's welfare and they define possible solutions to find definite directions how develop its human capital.

The study *aim* was to explore the issue of human capital relatedness with company's strategic goals and examine how the Latvian company leads the development process of its human capital in accordance with its strategy and goals.

For attaining the goal set, various research methods were used during the development of paper. The *methodology* of the research includes a qualitative, theoretical research approach, involving a literature review, collecting data from public data bases (Lursoft, Ebsco), and from European Journal of Operational Research; data analysis and drawing conclusions. In the practical part of the article company's Y financial reports and internal information has been used also.

The theoretical focus of this study is analysis of human resource management and credit management related issues, and their applications in the business environment.

The questions discussed and explored in this article reveal various existing problems in the company related to effective credit management; which is considered by the authors of this article to be the effective practical benefit of this research.

Conclusions and recommendations are based on the results of the research and taking into account the studying the view of the investigated company's management.

The results of the study allowed the authors to identify specific patterns in the practice as well as formulate directions for further research aimed at developing recommendations not only for Latvian, but also for other companies. This article may be of interest to financial statement users, regulators and standards setters.

#### **HUMAN CAPITAL AS A MAJOR RESOURCE IN ACHIEVEMENT OF A COMPANY'S STRATEGIC GOALS**

Today in almost every company the workforce is the most significant user of such company's corporate resources as information technology, real estate, etc. It was discovered that company's expenses related to human capital are in range from 40 percent to 70 percent of total company's operating expenses per particular period. Usually these expenses consist of such items as monthly salaries, various bonuses and compensations paid to employees, benefits, trainings and coaching, etc. Therefore it is clear that today in almost every company expenses related to its human capital are really significant ones. Unfortunately, still there are plenty of executives who are only in the process to recognizing this issue and evaluate the importance of this phenomenon. Only few of them understand the association between expenses related to the company's human capital and company's corporate issues.

It is ordinary practice that the company uses various tools in order to ensure efficiency in its operations. In recent years various systems and models have been developed and used in order to manage various resources and processes within the company in the most effective way. Good examples are various financial accounting systems, supply chain management operations and systems, manufacturing softwares, customer relationship management tools, etc. Unfortunately, there are no any software developed yet to lead company's human capital. In Authors's opinion, it is just a matter of time and it is essential for company's management, scientists and experts to think forward and evaluate the rule of overall strategic planning by implementing top-down approach to "*workforce intelligence*". This approach will ensure the possibility to focus first on identification of specific business issues and only then by use of various analytical tools to convert workforce data in actionable business information. This approach will assist managers to plan and lead human capital in such activities like recruiting, planning process of company's workforce, safety, mergers and acquisitions, various controls, etc. By example, particular recruitment process of sales manager in international retail company. Nevertheless, there was revolution in field of recruitment process since web sites and online assistance systems that automatically connect potential applicant and company's human

resource management were introduced, the selection process of the most suitable applicants for this sales position for the further interviews is still a manual activity for the respective company's human resource manager. Human resource manager spends significant part of his time to read and evaluate each of the application received. In case of specific automated system this process could be done in the most effective and fastest way ensuring the best results and also not losing potential employee, who can apply and to be hired by other competitor while the selecting process for most applicable applicants for further interviews has been performed.

Authors think that it is one of key issues for the company's management to plan its workforce by connecting by example the demand of the company's product, future revenues and company's workforce together. Management should be effective enough not only to ensure in current situation that necessary employees work in the right places and needless ones are removed or changed, but also to see this process from the global perspective by managing the dynamics of its workforce for the next 3 or 5 years as well. Company's management has to be the one deciding what will be the dynamic and demography of its workforce for the next years in order to ensure the company will keep its market positions in the global market and decide what kind of specialists will have to be developed, deployed, etc. in order to ensure that company's strategic goals will be reached.

In authors's opinion the top-down approach to "*workforce intelligence*" is very important in today's business world since countless significant and important issues such as globalization and increasing mutual competition are taking place in the business world, aging workforce, technology changes, intense regulatory environments forces companies to find more and more new directions in order to increase its competitiveness and efficiency in order not only to survive, but also be successful in the global market place. And it is very crucial for company's management to find possible solutions to find definite directions it will develop its human capital.

## THE CONCEPT OF HUMAN CAPITAL DEVELOPMENT

Today more and more executives in all industries and countries all over the world evaluate importance of human capital management within a company. They understand that company's results and profitability of its business mostly relies on its human capital.

### *Research Related to Human Capital in Scientific Literature*

The Authors of this article reviewed the research publications by foreign Authors in order to study the degree of this topic development in the international scientific literature. On the basis of the results of the theoretical study the Authors concluded that the interests of foreign researchers are focused on the following main research fields:

- History;
- Development;
- Most recent researches.

Table 1 summarizes the results of the study of the viewpoints of some foreign researchers in the research fields listed above.

Table 1

**Human capital: researchers' views on the problem**

Researcher(s)	Main research idea/conclusion <i>(by the opinion of the Authorss of the paper)</i>
<b><i>History, development of human capital, Human capital in management practice and innovations</i></b>	
Ndinguri, Prieto, Machtmes (2012)	Reveals current human capital development approaches and explore its importance in the process of achieving company's strategic competitive advantage.
Smith, Courvisanos, Tuck, McEachern (2012)	Authors find that certain human resource practices not only support, but also even improve the company's capacity of innovation. Nevertheless, at the same time there is an insignificant direct link between human resource practices and innovations. And therefore there is no need for definite human resource practices and the capacity for innovations are necessary rather than sufficient conditions.
Passard C. D., McKenna K., Vyas K., (2012)	Stated that due to the movement from industrial to information age human capital is one of the most important assets to every company. Also, based on study performed among persons related to accounting consider that this is a very important company's asset and should be included whether in the balance sheet or in a separate human capital report.
Gamerschlag R., Moeller K. (2009)	Describe benefits company is able to to increase its financial performnace by use of human capital reporting. The Authors developed a model supporting this idea.
Ployhart, Van Iddekinge, Mackenzie (2011)	Authors discuss and support by the dynamic model the importance of interconnected human capital resources -when changes in generic human capital (personality, cognitive ability) bring to changes in unit-specific human capital (advanced training, experience). And further this process leads to influences unit service performance behavior, effectiveness.
Mehra, Mookerjee (2012)	The results reveal that today for comapnies operating in the IT industry (software companies) with specialized products and services should pay attention to find new ways to find open source projects that better suits to company's business and projects. They also emphasizes that it is crucial for the company to be successful to be learning organization.
Asaju (2012)	The Authors discuss the value of different employees. The stars are ones the most valuable human capital for the company. Also, they found out that the performance of these employees usually decline because of various factors.
Scharf E. R. (2012)	The results of Authors's performed search support idea the human capital is of key elements for the development process of company's value proposition.
Campbell B.A., Coff R., Krydcynski D. (2012)	Autors investigated imperferctions in the labor market. They extend theories of human-capital based competitive advantage of the company describing both: demand-side and supply-side of mobility constraints.
Ghalandarzehi K., Safdarie M. (2012)	Authors by application of ednogeneous economic models came to the conclusion that there are positive correlation between human capital and economic growth. They stated that human capital is one of the most effective factors for economic growth (e.g. developing factories by deviding work, implement usage of benefits, increase of market size, increase in productivity and capacity that are done by implementing corresponding management policies, etc.).

Razi N., More E. (2012)	Authors describe impact of a change of the effectiveness of human capital of a high performance work system practices in the service setting.
Saba A., Bashir I., Ahmed K., Hashim R. (2012)	Authors described the relationship between human capital and financial capital within an organization. They stated that in case the management support its employees via various kind of ways (invest, empower, learn, appraise, persuade through monetary and non-monetary rewards, etc.) the financial figures (profit) will increase significantly, because of strong correlation between company's human capital and financial capital.
Asaju (2012)	Stated that investments in human capital (at educational level) ensure the development in the particular country that further reduce the poverty.
Chan J., Bruggess J. (2011)	The Authors explore some Australian IPO's (listed 2010 and 2011) and explore how these companies report information toward human capital. They examined that in reporting performed by these companies there are only limited information about company's human resource reporting and strategic plans for its development.
Jack J.F. (2005)	Describes proc and cons of use ROI (return on investment) toward human capital and defines companies using this ROI process as well.
Kuzmina, I., (2008)	The article shows the role of Intangible assets (including Human capital) in the content of a company's strategy and describes the methods of its measurement and evaluation.
Kuzmina, I., Kotane, I. (2011)	The article shows the role of non-financial indicators in measuring intangible assets and company's performance management.

The results of study of foreign researchers' opinions show that there is a new direction not only in the management of human capital within the organization, but also in the development of company's reporting strategy toward human capital.

### HUMAN CAPITAL PERFORMANCE EVALUATION

In order to ensure that not only company's strategic goals are reached, but also each of employees have been developed at the same time, the company develops specific human capital management (HCM) system by use of which both goals are being reached. This system ensure that also company's people asset or human capital can be evaluated and measured and similar to other company's assets and its value has been increased similar with other assets by use of investments. Therefore, firstly company's management regularly (e.g. every year) defines and communicates its short-term and long-term goals and performance expectations to its employees in all levels. Usually company's human resource manager is responsible to lead such activities as rating, rewarding and other ones to ensure the company's goals set will be reached. In the specific company explored it has been done by use of employee's continues improvement through its career in this company ensuring that employee is able to develop in many various directions. Special Enterprise Resource Planning System (ERPS) has been used where all information toward each employee has been recorded – starting from his yearly goals set and self evaluating and ending with payroll and company's government policies.

Since the employee has been selected, interviewed and hired short-term and long-term goals for this employee have been set. Usually this process has been lead by employee's direct manager or mentor, but the whole process by responsible managers and also leadership development manager. By use of

goal setting forms management ensures that not only company’s strategic goals will be reached, but also defined necessary leadership qualities to be reached in the defined period of time. At the same time evaluation forms allows also employee by himself to control and manage his development within the particular company and identify areas to be improved or his actions fields to be changed. This form is splitted in specific parts dedicated to employees core competencies (existing, and necessary to be developed), short-term goals, long-term goals, talents, experience he can share with other employees (knowledge management).

Within the whole year regular project feedbacks forms are generated in the system allowing to employee see his strong and weak points and correct necessary weaknesses.

The next important step is the mid-year evaluation, when employee with his mentor discusses the progress of goals set and other important issues in order to ensure the employee is not only able, but also motivated to reach the goals set.

Next step is annual evaluation process, that starts with the step the employee evaluates himself whether he has reached or not reached goals set at the beginning of the year (evaluation is done in percentages) supporting with his comments in the HRMS system. Then so called “360<sup>0</sup> evaluation process”, “180<sup>0</sup> evaluation process” “0<sup>0</sup> evaluation process” follows, when managers, direct subordinates and equivalent colleagues fill for this employee anonymous evaluation forms describing how it was to work with this employee, how he has meet the expectations set for him, etc.

It is very important to be mentioned that at this evaluation process is the key criteria for employee’s annual bonuses, promotion and increase in monthly salary. In the Table 2 below the authors defined key benefits of of human capital performance evaluation process for both – employees and employers.

Table 2

**Gain from human capital performance evaluation process**

<b>Gain for employee</b>	Give clear idea of what is expected to be achieved and also what he wants to achieve in his career (in long-term and in short-term), and how to go about it
	Give the plan to reach goals set
	Give the structure to define his strengths nad weaknesses
	Allows to manage his career based on plan
	Gives the possibility to evaluatehis performance between acceptable and unacceptable results
	Shows various career opportunities within the company, greater satisfaction, productivity and commitment
<b>Gain for company</b>	Ensure each employee in the company works for company's strategic goals
	Ensure that employees are motivated to reach comapany's strategic goals
	Ensure clear and trusting relationship with each of employee
	Ensure efficient employees planning process within the organization, decrease employees’ work absence and increase their satisfaction, productivity and commitment

### HUMAN CAPITAL IMPACT ON COMPANY'S FINANCIAL INDICATORS

The case study will be supported by real example from international company Y (further Company Y – *authors' comment*) operating in the retail industry in Latvia. The authors analyzed the credit control policy of a retail company Y for the period 2011 – 2012. The employee described will be one employed in the field of finance and responsible for company's credit control department. Since the company's management has defined and focused on specific finance-specific competencies (e.g. employee's previous work experience, education, skills, knowledge, abilities, motivation, etc.) it ensures that his behavior will lead to the planned employee's performance that will be in accordance with company's strategic goals and values.

The credit controller has been employed in order to develop and implement credit control policy in the company. There is no any such a policies, credit standards, credit terms, credit monitoring used before in the company since its establishment (more than 7 years). Due the fact, that the turnover of this company has increased significantly from year to year (in year 2011: LVL23,274,440 and in year 2012: LVL27,155,488), also customers including debtors increased proportionally. The total amount of accounts receivables at the beginning of year 2012 were almost LVL4, 000,000 out of which LVL672, 744 were bad debts; the profit per this period was LVL 1,712, 282. It is really critical amount of bad debts (39% of the profit) meaning that this money still is not a real profit, but more likely as "*unreal money*"; there the authors means the money on customers' hands. In other words it can be even translated as "*percent free loan*" given to some of customers for unsettled date. At the beginning of year 2012 there were almost 800 debtors and more than half the bad ones. Although the company is quite important and significant player not only in the local market, but also in the global market, this figure is really dramatic one.

Uncollectible accounts belonging to customers that are not able or even not willing to pay back money to the company for products received have been increasing from year to year as well. Due the fact, that the company at the moment of sales is not able to know, how long time will take to receive cash receipts, it is really crucial to dully estimate possible losses from uncollectible accounts and to book this estimate as expense in the financial year the sales have been performed; this calculated amount of possible losses is credit to allowance fro uncollectible amount. Usually the amount of provision needed is calculated very accurately and with more pessimistic point of view. Based on the calculations, the provisions have been calculated per each quarter by following principle: 50% provision for debts older than 90 days and 100% provision for debts older than 180 days. Due the amount of debts become bigger and older, also the amount of provisions increases automatically.

The period explored is from 1<sup>st</sup> of January 2012 till 1<sup>st</sup> of December 2012. The Credit Control Policy was implemented at the end of February 2012; consequently, to value the effectiveness of new Credit Control Policy, all the figures will be compared before March 2012 and after March 2012.

Based on the figures it is obvious that the new hired credit controller does his work in the best way, and corresponding financial figures support this. Actually the successful result has been reached because of highly developed company's ERPS and effective employees' recruitment process performed by the company's human resource manager.

As soon as employee was recruited the career plan has to be developed. In the goal setting form of new credit controller were defined key competencies and goals to ensure the company's new credit policy will be developed, implemented and ensuring the first positive results already in the first months after its implementation. Based on table 2 and table 3 above it is shown that the goal setting form did the best – the employee were motivated to fulfill goals set for him that parallel ensure that the

company's strategic goals are reached either. Career planning and development for the credit controller supports the necessity of the match between organizational and individual employee goals that lead to positive results not only for the company, but also for employee itself as well. The Authors thinks that career development of credit controller increased his motivation and profuctivity. Therefore the company's goal to decrease the amount of bad debts and not allow new debts develop actually has been reached.

Table 3

**Calculation of provisions for bad debts per period from 1<sup>st</sup> January 2012 till 30<sup>th</sup> November 2012**

*Source: The authors' calculations based on the company' financial information*

<b>PROVISION -TOTAL BALTIC (LVL)</b>					
	01.01.2012.	01.04.2012.	01.07.2012.	01.11.2012.	01.12.2012.
Total	145 907	161 823	203 858	174 967	172 996

Table 4

**Calculation of three ratios relating to accounts receivables and bad debtors per period 1<sup>st</sup> January 2012 till 30<sup>th</sup> November 2012**

*Source: The authors' calculations based on the company' financial information*

<b>Period</b>	<b>Receivables Turnover</b>	<b>Average days' sales uncollected</b>	<b>Average collection period, days</b>
January, 2012	1,2	304	52
February, 2012	1,1	325	50
March, 2012	1,2	294	50
April, 2012	1,1	337	55
May, 2012	1,3	272	46
June, 2012	1,0	351	58
July, 2012	1,1	318	54
August, 2012	1,3	275	47
September, 2012	1,1	327	54
October, 2012	1,3	274	47
November, 2012	1,2	297	49

## CONCLUSIONS

The results of the research conducted by the authors of this article show that the topic of human capital importance is not only the subject for considerable debate among scholars and professionals, but it is already necessity for every company all over the world. Therefore the authors came to the following conclusion. The problems connected with the practical application of the various systems for the control and development of company's human capital can be explained by the fact that expense for human capital are in range from 40 percent to 70 percent of total company's operating expenses per particular period. Usually these expenses consist of such items as monthly salaries, various bonuses and compensations paid to employees, benefits, trainings and coaching, etc. Therefore it is clear that today in almost every company expenses related its human capital are really significant ones. Unfortunately, today only few executives understand this phenomenon. This conclusion is based on the practical case – company Y.

Most sensitive and difficult matter is evaluation of employees' competence and professional skills. By the opinion of the authors developing human capital performance management system within the company Y can be useful. A fundamental part of the performance management process is performance and development discussion, PDD where manager helps to secure the company's mission to accomplish the business goals and where the employee, in co-operation with their manager, evaluates the previous year and prepares their own action plans for the year ahead. The PDD results will help employees to develop strengths and areas for improvement, to plan own career, to affect individual and team targets and in addition to take suitable training. The PDD results will help managers to support the individual development of employees and to plan business based on employee's competence, performance and development activities. Moreover, it will help to identify and manage training needs, to provide the right needs of motivation and to identify and manage performance concerns.

Therefore, PDD allows transforming the business goals into individual targets for each employee, and it could be the first step by the way of creation human capital performance management system in the company. In this case will be very interesting practical experience which is accumulated by some Scandinavian banks operating in Latvia and it could be the object of further research.

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**THE EFFECTS OF THE TRANSITION TO IFRS ON PRUDENTIAL REQUIREMENTS  
REGARDING CREDIT RISK**

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**Abstract**

*The study examines, at the level of the regulatory framework in Romania, the method for determining the depreciation adjustments applied with the adoption of IFRS, comparative to the method of determination of prudential adjustments as laid down in prudential regulations and also present the measures adopted by the regulatory authority to mitigate the differences between these two methods. The study highlights that the provisions for impairment depends on the subjective character of the assessment made by managers and the value of accepted collateral. Also, in case of standard approach for determining capital requirements for credit risk, IFRS adoption, leads to higher capital requirements, but also to an increase of own funds due to lower impairment adjustments compared with prudential adjustments.*

**Key words:** *impairment, IFRS, prudential filters, credit institutions*

**1. INTRODUCTION**

In context of globalization of financial activity, the need to use the same standards for the preparation of financial statements had become stringent in order to understand and ensure the inter-comparability of information. In this regard also frames the decision of banking regulatory authority in Romania regarding the adoption of International Financial Reporting Standards (IFRS) as of January 1, 2012 (NBR Order no.9/2010) following the procedure set out in the Regulation (EC) No .1606/2002.

As stated in Financial stability report, 2012, among benefits of IFRS implementation are included: decrease of regulatory costs, assurance of a consolidated level of trust, relevance and transparency of the financial statements, assurance of consistency of accounting treatments, etc..

By addressing concrete implications of IFRS on the Romanian banking sector, the study is intended as a supplement to those developed by Raducanescu V. and Dima M., 2011, and Stefan C. and Musat M., 2011, highlighting the factors that influence the level of provisions.

With the adoption of IFRS, besides determining the prudential adjustments are to be determined also the impairment adjustments (NBR R no.11/2011).

Raducanescu, V. and Dima, M., 2011, after the recognition of loss, depending on the duration of the loan, consider two types of provisioning: the model of materialized (expected) loss - IFRS and model of projected (unexpected) loss - Basel II. Also, after the manner of allocation of loss on asset classes, the model of materialized loss - IFRS is divided into specific credit risk provisions and collective provisions.

To mitigate the changes produced by the implementation of IFRS on prudential banking indicators, in respect of the Guidelines on Prudential Filters for Regulatory Capital (CEBS, 2004) were adopted prudential filters (NBR Regulation no.18/2006). At EU level, reconciliation of the accounting provisioning with that for prudential supervision is diverse. For example, in countries like Greece, Slovenia, Bulgaria it is used the extra-accounting adjustments over the own prudential funds in the sense of their decrease (Raducanescu V. and Dima M., 2011).

The remainder of the paper is organized as follows. Section 2 deals with determination of adjustments for credit impairment. Section 3 deals with determination of capital requirements. Section 5 concludes.

## 2. DETERMINATION OF CREDIT IMPAIRMENT

In recognition of credit risk and losses from loans are used two methods of adjustment: prudential and impairment adjustments.

Prudential adjustments are determined in accordance with NBR Regulation no.11/2011 by applying the provisioning coefficient on gross exposure adjusted with value of collateral accepted as decreased risk factor. Provisioning coefficients are different on classification categories according to perceived risk.

Classification of loans and investments are made in five categories (standard, observation, substandard, doubtful and loss) based on debt service, financial performance and judicial proceedings. In assessing financial performance are considered quantitative indicators (return on assets, return on equity, etc.) and qualitative (ability of manager, business, etc.).

IFRS impairment adjustments are individually determined for significant exposures which records impairments and collectively determined for significant exposures which do not record impairments on one hand and insignificant exposures on the other hand.

Credit materiality level is set differently from one credit institution to another due to factors as: level of exposure in own funds, the level of exposure in total credit portfolio, the bank's market share in the banking sector, the loan approval level.

According to IAS39.59 *"A financial asset or group of financial assets is depreciated if there are objective evidences of impairment as a result of one or more events that occurred after the initial recognition of the asset and respective generating losses events have an impact that can reliable estimate the future cash flows"*.

Indices for loan impairment are: infringement of contractual terms, significant deterioration of the financial situation, the probability for opening the bankruptcy procedure or similar protection procedure, significant decreases in estimated cash flows for a portfolio of loans (e.g. unfavourable economic conditions correlated with failed obligations – increase of inflation, increase of unemployment, lower GDP, lower asset values, etc.).

### 2.1 Individual approach

To emphasize the computation of adjustments for impairment where it is considered a significant loan of 90,000 EUR, contracted for a period of five years from January 1 year N ( $i=0$ ), payable in equal instalments at the end of each year, with an annual fixed interest of 6% also payable at the end of each year. A commission of 3% (2,700 EUR) is retained when loan is granted. The loan is guaranteed 30%

with a real estate guarantee. Debtor holds to the credit institution a deposit in the amount of EUR 7,000 which is due in year N +2.

To determine the effective interest rate, are used the loan cash flows shown in Table no. 1, where i takes values from 1 (December N) to 4 (December N +4). Solving equation (1) we obtain the value 7.171085% real interest rate.

$$87.300 = \frac{23.400}{(1+y)} + \frac{22.320}{(1+y)^2} + \frac{21.240}{(1+y)^3} + \frac{20.160}{(1+y)^4} + \frac{19.080}{(1+y)^5} \quad (1)$$

Depreciation is the positive difference between the amortized cost of the loan, determined by summing future cash flows (principal and interest) adjusted with amounts to be amortized (commission) and the projected cash flows over the life of the loan, updated by effective interest rate used when the loan was granted (equation no.2).

Table no.1

Period	Outstanding principal (P) $P_{i-1} - p_i$	Cash flow – principal (p) $(p_i = 90.000/5)$	Cash flow – interest (d) $(d_i = P_i * 6\%)$	Commission received	Total cash flow (3+4)	Updating factor $1/(1+y)^i$	Updated cash flow forecast (6*7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Jan. N	90,000	-	-	2,700	-87,300		
Dec. N	72,000	18,000	5,400		23,400	0.933087	21,834
Dec. N+1	54,000	18,000	4,320		22,320	0.8706522	19,433
Dec. N+2	36,000	18,000	3,240		21,240	0.8123947	17,255
Dec. N+3	18,000	18,000	2,160		20,160	0.758035	15,282
Dec. N+4	0	18,000	1,080		19,080	0.7073133	13,496
Total		90,000	16,200	2,700	18,900		87,300

Source: own processing

$$\text{Present value} = \sum_{t=t_0}^T \frac{CF_t}{(1+r_{eff})^t} \quad (2)$$

where:

t - estimated timing of cash flows

$t_0$  - the date when the recoverable amount is calculated

T - the latest estimated cash flow

CF<sub>t</sub> - estimated cash flows (including those related to collateral) at time t

$r_{eff}$  - effective interest rate (calculated when loan was granted)

To highlight the value of adjustments for impairment, based on the credit quality, the following situations are considered. To solve, it is considered that no further changes occur in the revised cash flows and they will be collected. Based on assigned scores on financial performance indicators, the loan is framed "under observation" category.

a. The borrower reimburse all outstanding amounts due according to the original schedule until year N +1. In year N +1, besides the amounts due according to the original payment schedule, a refund in advance of 12.000 EUR is made by the borrower. In year N+2 due to financial difficulties the debtor cannot pay the principal due, but believes it will repay in full all amounts due in the coming years (principal equally when scheduled). In this case a mutual agreement leads to rescheduling the loan. Based on the assigned scores on financial performance indicators, established under NBR Regulation no.11/2011, the loan is framed in "under observation" category (provisioning coefficient 0.08), except for N+2 when is classified as "loss" (provisioning coefficient 1). Situation of credit value adjustments are presented in Table no. 2.

By applying IFRS, unlike the application of the rules on prudential adjustments, may not require provisioning for impairment. An arbitrary situation is the year N +2, where although there are indications of impairment, the option on non-provisioning exist due to considerations that respective amounts are to be recovered in the coming years (arbitrary decision of management).

Restructuring loans that imposes recognition of impairment and more stringent demands on prudential classification is a management decision. This can occur by allowing the financial potential of debtors and continuously extending the exposures, even if financial difficulties are recorded, especially for treasury credit lines.

Table no.2

Period	Outstanding principal (P)	Cash flow – principal (p)	Cash flow – interest (d)	Amortissment (A)	Amortized cost (Ca)	Updated cash flow forecast	Adjustment for depreciation (IFRS)	Prudential adjustment (Pa)
(1)	(2)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Jan. N	90000				87,300			
Dec. N	72000	18000	5400	860	70,160		0	3,600
Dec. N+1	42000	30000	4320	711	40,872		0	1,200
Dec. N+2	42000	0	2520	551	41,423	2,351	0	15,000
Dec. N+3	21000	21000	5040	380	20,803	22,672	0	0
Dec. N+4	0	21000	1260	197	0	18,084	0	0
Total		90,000				43,107		

Source – own processing

The amortized cost of credit  $Ca_i = Ca_{i-1} - p_i + A_i$ .

Amortissment  $A_i = Ca_{i-1} * r_{eff} - d_i$ .

Impairment adjustments (IFRS) are determined as difference between  $Ca_i$  and forecast cash flows updated at the moment  $i$ .

Prudential adjustment is determined by weighting the difference between gross exposure (principal + interest) and the value of collateral accepted with the coefficient of provisioning (e.g. for year  $N+2$ :  $(42,000 - 27,000)*1$ ).

b. In year  $N + 1$  are refunded in advance 7.000 EUR out of deposit matured. The remaining amount of loans will be reimbursed in equal installments until loan maturity. In year  $N + 2$  the payment of interest and principal are not fulfilled by the debtor and according to financial performance indicators score assigned to the loan, this is classified as "loss". Bank found the significant deterioration of the financial situation of the debtor (after losing retail market a reduction in forecast cash flow is projected, leading to failure to fulfill the obligations assumed and de-capitalization of the company) and bank no further calculate interest starting with year  $N + 3$ . In year  $N+ 4$  cash flows in amount of 22.500 euro are forecasted out of execution of collateral, less costs of the process. Starting with year  $N + 3$ , in order to determine the prudential adjustments, the guarantee becomes deductible at a rate of 25% of its value.

Situation to determine credit value adjustments are presented in Table no. 3.

Is to be noted that until the indications of impairment are constitute only prudential adjustments. Subsequent to recognition of impairment, the differences of provisions are due to amount of collateral admitted to deduction.

Thus, by applying IFRS, is to be considered net value obtained by capitalizing it, while in the case of applying prudential regulations is considered fair value, except for loans classified under Loss 2 category (for Loss exposures with a debt service higher than 90 days and/or legal proceedings were initiated); where fair value is weighted up to 25%.

Table no.3

Period	Outstanding principal (P)	Cash flow – principal (p)	Cash flow – interest (d)	Amortissment (A)	Amortized cost (Ca)	Updated cash flow forecast	Adjustment for depreciation (IFRS)	Prudential adjustment (Pa)
(1)	(2)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Jan. N	90,000				87,300			
Dec. N	72,000	18,000	5,400	860	70,160		0	4,032
Dec. N+1	47,000	25,000	4,320	711	45,872		0	2,632

Dec. N+2	47,000	0	0	551	46,423	0	28,144	22,820
Dec. N+3	47,000	0	0	380	46,803	0	28,524	43,070
Dec. N+4	47,000	0	0	197	47,000	18,279	28,721	43,070
Total				2,700		18,279		

Source – own processing

The amortized cost of credit-  $Ca_i = Ca_{i-1} - p_i + A_i$

Amortissment  $A_i = Ca_{i-1} * r_{eff} - d_i$

In column 6 is presented the updated cash flow forecast since the indications of impairment occurred.

Interest calculated for the year N+2 is  $47\,000 * 6\% = 2.820$  Eur.

IFRS Impairment adjustments are determined as difference between  $Ca_i$  and forecast cash flows updated at the time  $i$  (for example, for the year N +2:  $46.423 - 18.279$ ).

Prudential adjustment is determined by weighting the difference between gross exposure (principal + interest) and the value of collateral accepted with the coefficient of provisioning (e.g. for year N+3:  $43.070 = ((47.000 + 2.820) - 27.000 * 0.25)$ ).

## 2.2. Collective approach

Collective approach involves grouping of financial assets for which there is no objective evidence of impairment or those existing are insignificant, based on similar credit risk characteristics and their assessment using historical loss rates associated with information about prior experiences regarding losses in the respective assets groups.

Segmentation in homogeneous groups of financial assets is based on features that are relevant for estimating future cash flows for such groups of assets indicating the debtors' capacity to reimburse all amounts due according to the contractual terms applicable to valued assets (IAS 39.AG87). The criteria considered are:

- Type of customer (individual or legal person);
- Marital status of the client;
- Type and currency of the loan;
- Type of warranty;
- Initial value of the loan;
- Duration of the loan;
- Classification of each exposure according to the NBR regulations, respectively: Standard, Under Observation, Substandard, Doubtful, Loss 1 (for Loss exposures with a debt service less than 90 days) and Loss 2 (for Loss exposures with a debt service higher than 90 days and / or legal proceedings were initiated, corresponding to “default” classification);

Determination of impairment adjustments related to collective portfolio of bank exposures is made for each group of financial assets that present similar risks:

$$A_j D_{\text{COLL group J}}^i = EAD_{\text{group J}}^i * PD_{\text{group J}} * LGD_{\text{group J}} \quad (3)$$

where:

$A_j D_{\text{COLL group J}}^i$  - represent the impairment adjustment related to exposure  $i$  of financial assets  $J$  ;

$EAD_{\text{group J}}^i$  - represent the balance sheet exposure  $i$  from financial assets group  $J$ ;

$PD_{\text{group J}}$  - probability of default related to financial assets group  $J$  ;

$LGD_{\text{group J}}$  - loss given default related to financial assets group  $J$ .

The probability of default is intended to measure the qualitative evolution of the portfolio of exposures by analyzing the number of exposures depreciated.

Exemplifying the calculation methodology of collective impairments, it is to be considered that monthly credit migration from one category classification as in NBR Regulation into another is analyzed. Analysis is performed on a time horizon of at least 12 months prior to calculating the adjustments.

Measurement will be made by quantifying monthly migrating exposures related to each classification category into default category. This will be achieved by establishment the percentage of exposures that have migrated from each classification category into “in default “against the number of impaired exposures at the beginning.

Thus the probability of default for each month for all categories of classification is determined based on equation no.4, hypothetical results being presented in Table no.4. The value determined for the month 12, year  $N+1$  is 49%.

$$DR = \frac{D \text{ (number of impairment exposures in te last 12 monts)}}{ND \text{ (number of unimpaired exposures at beginning of period peroadei)}} \quad (4)$$

If probability of default (PD) is determined based on value of each loans migrating in the “in default” category from other categories, are obtain the results shown in the table no table no.4 (in case of a 4 months analysis).

It is observable that PD value calculated based on the number of credits differs from that calculated by the credit values. For example, for the first month, PD calculated based on the number of loans is 3.77% and those calculated on loans value is 0.17%. It shows the more frequent depreciation of the loans with inferior values.

Loss given default (LGD) is determined on monthly basis by analyzing the historical data over a time horizon of minimum 12 months before the date for calculating the adjustments as in formula below:

$$LGD_1 = \frac{\sum_j \text{Execution}_j - \sum \text{Update reimbursement}}{\sum_j \text{Execution}_j} \quad (5)$$

where:

$\sum_j \text{Execution}_j$  - is the sum of exposures for which legal proceedings were initiated in the 12 months ending month.

$\Sigma$ Update reimbursement - amount in cash reimbursements (including the sale of assets taken over as bank guarantees) update for  $\Sigma_j$  Execution j the later period pending the reference date of LGD;

$$\Sigma \text{Update reimbursement} = \frac{\text{Reimbursement}}{(1+\text{interest rate}) \frac{\text{Date of reimbursement} - \text{Date of execution}}{365}} \quad (6)$$

Table

no.4

Start date	ND	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D	DR %
12.N	2204	1	2	8	7	2	8	14	4	6	9	14	8	83	3.77
01.N+1	2678	2	3	7	8	7	5	7	9	6	7	6	10	77	2.88
02.N+1	2989	4	6	5	9	7	5	8	6	9	7	10	8	84	2.81
03.N+1	3456	3	8	7	5	8	2	9	7	6	7	3	14	79	2.29
04.N+1	3988	5	7	2	5	8	7	8	9	6	10	7	14	88	2.21
05.N+1	4003	7	9	9	9	9	11	8	11	8	13	11	13	118	2.95
06.N+1	4019	2	8	7	9	8	7	6	11	9	7	18	16	108	2.69
07.N+1	4128	5	8	7	11	11	9	8	10	13	14	11	17	124	3.00
08.N+1	4189	7	9	11	7	11	11	12	5	9	13	15	13	123	2.94
09.N+1	4218	8	6	12	8	11	8	9	11	14	10	17	19	133	3.15
09.N+1	4232	7	9	12	8	11	15	21	12	14	25	29	30	193	4.56
10.N+1	4221	6	5	9	11	17	20	29	25	30	25	26	33	236	5.59
11.N+1	4207	8	15	18	14	20	22	23	28	21	24	31	30	254	6.04
12.N+1	2204	1	2	8	7	2	8	14	4	6	9	14	8	83	3.77
Total															45
Probability of default (PD) based on the credit values (thousands)															
12.N	7636	0.5	0.7	1.3	1.1	0.2	0.9	2.3	0.6	0.3	0.8	2.4	1.5	12.6	0.17
01.N+1	7980	0.8	0.9	0.9	1.2	0.9	0.7	0.9	1.4	0.7	0.8	1.4	0.9	11.3	0.14
02.N+1	8532	0.9	1.0	1.0	1.0	0.8	0.6	1.0	0.7	1.0	0.9	1.2	0.9	10.9	0.13
03.N+1	9985	0.8	1.1	1.0	0.8	1.1	0.2	1.1	0.8	0.6	0.8	0.2	1.3	9.8	0.10

Source – own processing

To determine the relevance of PD and LGD they are tested retrospectively (back-tested) by comparing them with the actual recorded values (Dardac, N. and Moinescu, B.)

Considering that for a group of assets j in total amount of 8,756,652 EUR, determined value of LGD is 35% then adjustment for impairment is:

$$\text{Adj} = 8,756,652 * 35\% * 45\% = 1,379,173 \text{ EUR}$$

Models using sophisticated modeling internal ratings-based approaches (IBR), assesses credit risk for each asset or group of assets with similar characteristics, allowing a better estimation of depreciation compared to the standard approach (Schooner, MH and Taylor, MW 2009). However, when no potential conditions for impairment are present, statistical models based on historical data, comparative with the standard approach, may lead to the determination of a lower capital requirements.

### 3. CAPITAL REQUIREMENTS DETERMINATION

In general, using the standardised approach on credit risk, when apply IFRS, capital requirements to cope the credit risk (determined by multiplying the exposure value with the exposure associated risk weight and the rate of 8%) would be higher than that determined by applying IAS.

This is due to a different level of specific credit risk provisions, usually, larger in case of prudential provisions than accounting provisions, which are deducted from gross exposure as equity are influenced at the profit level by expenses related to provisions, no longer capital requirements for impaired exposures being necessary.

Using the example from point 2.1 letter b, in Table 5 are presented the results obtained when determining capital requirements for credit risk.

Table no.5

Period	Gross exposure	Provisions		Net exposure		Capital requirements	
		IFRS	Prudential	IFRS (2-3)	Prudential (2-4)	IFRS	Prudential
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Jan. N	90,000						
Dec. N	72,000	0	4,032	72,000	67,968	4,320	4,078
Dec. N+1	47,000	0	2,632	47,000	44,368	2,820	2,662
Dec. N+2	49,820	28,144	22,820	21,676	27,000	1,301	1,620
Dec. N+3	49,820	28,524	43,070	21,296	6,750	1,436	455
Dec. N+4	49,820	28,721	43,070	21,099	6,750	1,555	498

Source – own processing

To capital requirements for exposures higher than 90 days (since N +3), under NBR-NSC No.14/19/2006 Regulation is applicable a risk weight of 100%, in the other cases, exposures are weighted by 75%. For example, for year N+3, credit records debts higher than 90 days in total of

31,333 EUR (15,667 EUR principal and 2.820 EUR interest) associated provisions being distributed proportionally. Applying prudential adjustments for year N+3, capital requirements are determined as follows:

- Net Exposure for payment delays less than 90 days:  $31.333 - 31.333 / 49.820 * 28.524 = 13.394$ .  
Capital requirement =  $13,394 * 8\% * 75\% = 804$ ;

- Net Exposure for late payment higher than 90 days:  $18\ 487 - 18\ 487/49\ 820 * 28\ 524 = 7902$ . Capital requirement =  $7902 * 8\% * 100\% = 632$ .

For example within Table no. 5, for a loan with a gross exposure of 47,000 EUR, classified according to prudential regulations in “Loss” category, and according to Regulation NBR- NSC No.14/19/2006 on credit risk treatment using the standardised approach, for credit institutions and investment firms assignment to retail claims, the capital requirements to cope the credit risk is 2,662 EUR  $[(47,000-2,632)*8\%*75\%]$ , by applying the prudential adjustments and of 2,820 EUR  $[(47,000-0)*8\%*75\%]$ , by applying the impairment adjustments.

This is compensated by faster growth of own funds through net profit 2,211 EUR by applying IFRS. However, by enforcing the prudential adjustments (larger) a tax saving of 421 EUR, is obtain against 0 EUR by applying adjustments for impairment under IFRS.

To avoid significant changes to the bank prudential indicators, including capital requirements for credit risk after implementing IFRS and in order to ensure financial stability, prudential fiscal measures have been taken. Prudential measures impose a prudential filter consisting in deduction from the credit institution's own funds of the positive difference between the size of the prudential provisions and the level of IFRS accounting provisions.

This difference is also deducted when calculating the exposure value for determining the capital requirements for credit risk in order to avoid the double damage of the capital. Also in order to avoid the fiscal influence of the credit risk provisions expenses, the deductibility of the prudential filter have been admitted when calculating taxable profits.

Influences on own funds and measures adopted by the regulatory authorities for second year are presented in Table no. 6. For this consider initial equity worth 70,000 Euro and gross profit without influence in provisioning costs 100,000 Euro.

Table no.6

	Prudential <sub>0</sub>	IFRS <sub>0</sub>	IFRS <sub>1</sub> by applying filters
Capital requirements	2,662	2,820	2,662
Gross profit	100,000	100,000	100,000
Expense provisions	2,632	0	0
Deductible expenses of prudential filters			2,632
Taxable profit	97,368	100,000	97,368
Tax (16%)/Tax savings	15,579/421	16,000/0	15,579/421
Net profit	81,789	84,000	81,789
Total own funds	151,789	154,000	151,368

Source – own processing

Thus, when applying the standard approach, in order to avoid the artificial increase of the own funds and the exposure of the credit institution to potential credit risks, prudential filters have been implemented in order to cancel the negative effect of IFRS implementation and to ensure prudential requirements at the same level as prior adopting the new rules for determining the prudential value adjustments for credit risk.

Adjustments for impairment greater than prudential allowed as positive elements in determining own funds available to a limit of 0.6% of risk weighted exposure.

As states Raducanescu V and Dima M., 2011, in case of approach based on internal ratings, a prudential filter is not required, the capital requirement being set to cover the unexpected losses.

#### 4. CONCLUSIONS

Given the role that capital requirements plays in providing coverage of losses and ensuring financial stability, factors that influence their level, including provisions for loan impairment, requires a careful monitoring.

The study examines the effects of applying the accounting policies set out by the International Accounting Standards on methods to determine credit risk provisions and their impact on own funds of credit institutions.

The study indicates that failure to establish uniform criteria for recognition of loan impairment indicators, may lead to discrepancies in addressing credit risk from one credit institution to another according to risk inclination of managers. These different approaches can hide losses that over time may affect the stability of the credit institution.

In order to neutralize the negative effects of adopting IFRS, is required to issue regulations to counteract the artificial increase of funds availability by non-recognition of latent losses.

#### ACKNOWLEDGEMENTS

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## Contents



### **ASSESSMENT OF THE CONDITION OF PRIMARY HEALTH CARE IN BULGARIA**

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5

### **OPTIMIZED APPROACH TO FUNDING PRIMARY OUTPATIENT HEALTH CARE IN REPUBLIC OF BULGARIA**

Tsvetelina M. Petrova-Gotova, Tihomira Zl. Zlatanova

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11

### **VARIABLES USED BY THE PALESTINIAN BANKS' MANAGERS TO MEASURE THEIR BANK PERFORMANCE**

Suleiman M. Abbadi, Nour Abu-Rub

Faculty of Administrative & Financial Science, Arab American University, Jenin, Palestine

19

### **BRANCH-AND-BOUND TECHNIQUE IN ECONOMICS**

Velizar T. Pavlov<sup>1</sup>, Ivan R. Georgiev<sup>2</sup>

<sup>1,2</sup>Department of Numerical Analysis and Statistics, University of Ruse, 8 Studentska Str., Ruse 7017, Bulgaria

34

### **ENTERPRISE SIZE DISTRIBUTION IN THE CROATIAN SOFTWARE INDUSTRY**

Ksenija Vuković

Faculty of Organization and Informatics, University of Zagreb, Pavlinska 2, Varaždin, Croatia

43

### **CHALLENGES OF THE EU AND THE NATIONAL SME POLICY: BETWEEN ADMINISTRATING, MANAGING AND GOVERNING**

Ksenija Vuković

Faculty of Organization and Informatics, University of Zagreb, Pavlinska 2, Varaždin, Croatia,

52

### **INTEGRATION OF FINANCIAL MARKETS: PROBLEMS AND OPPORTUNITIES**

Zhanna D. Serikbayeva

International Academy of Business, Almaty, Rozybakiyeva st., 227, Kazakhstan

62

**HISTORICAL REVIEW AND INFLUENTIAL FACTORS OF THE ELECTRICITY PRICE  
MOVEMENT FOR SELECTED COUNTRIES OF THE EUROPEAN UNION AND THE  
REPUBLIC OF CROATIA<sup>1</sup>**

Ljerka Cerovic<sup>2</sup>, Dario Maradin<sup>2</sup>, Ivan Marković<sup>2</sup>

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71

**THE PERCEPTIONS OF HOSPITALITY SECTOR EMPLOYEES TOWARD EURASIAN  
TOURIST NATIONS' ATTITUDES AND BEHAVIOUR IN THE ANTALYA REGION**

Erkan Sezgin and Ridvan Kozak,

Faculty of Tourism, Faculty of Economics, Yunus Emre Kampusu, Anadolu University, Eskisehir, Turkey

81

**INTERNAL AUDIT – INTERNAL CONTROL SYSTEM  
AND ORGANIZATIONAL STRUCTURE RELATIONSHIP**

Kadir Dabbagolu

Halic University Business School, Bankalar Cad. Mektep Sk. 21, Sishane Istanbul Turkey

90

**PROBLEMS OF IMPLEMENTATION CORPORATE SUSTAINABILITY IN THE NEW EU  
STATES ON THE EXAMPLE OF POLAND**

Jacek Kamiński

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Institute of Economy and Management, Sidorska 95/97, 21-500 Biała Podlaska, Poland

98

**DEVELOPMENT OF MEDIA-RELEVANT HEALTH PORTALS IN THE CZECH REPUBLIC**

Josef Křížek, Martin Nohál

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110

**POTENTIAL THREATS OF THE CZECH PENSION REFORM**

Josef Křížek, Martin Nohál

University of Economics, Prague, Faculty of Economics, W. Churchill Sq. 4, 130 67 Prague 3, Czech Republic

123

**STUDENT EMPLOYABILITY AND BRAIN DRAIN IN THE REPUBLIC OF MACEDONIA**

Ljupco Eftimov

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Blvd. Krste Misirkov, nn., 1000 Skopje, Republic of Macedonia

132

**STRATEGIC FLEXIBILITY IN INTERNATIONAL INTERMEDIATE TRADE  
WITH HANSEATIC PRINCIPLES.**

Artur Rieger, Maksim Saat

Tallinn University of Technology, School of Economics and Business Administration, Tallinn, Estonia, Akadeemia tee 3  
145

**HUMAN CAPITAL AS THE SOURCE OF COMPETITIVENESS  
OF FOOD INDUSTRY ENTERPRISES**

Małgorzata Juchniewicz

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University of Warmia and Mazury in Olsztyn, 10-089 Olsztyn, ul. Oczapowskiego 4  
158

**FINANCIAL LEVERAGE MODELS VERSUS BANKRUPTCY ENTERPRISES**

Piotr Masiukiewicz, Mateusz Nowak

Department of Collegium of Business Administration, Warsaw School of Economics, 02-554 Warszawa  
168

**ESTONIAN OPINION ON BUSINESS AND PROFESSIONAL ETHICS\***

Jaan Alver, Lehte Alver, Natalja Gurvitsh

Tallinn University of Technology, Estonia  
178

**APPLICATION OF THE ANALYTIC HIERARCHY PROCESS TO OPTIMIZE THE  
STRUCTURE OF RUSSIAN INDUSTRY BY THE TYPE OF ECONOMIC ACTIVITY**

Rafail R. Ishmuratov <sup>1</sup>, Nuria R. Nasyrova <sup>2</sup>

<sup>1,2</sup> Kazan (Volga region) Federal University, Institute of Economics and Finance, Kazan, Tatarstan Russian Federation  
193

**THE EFFECT OF SERVICE QUALITY ON CUSTOMER SATISFACTION:  
A RESEARCH IN PUBLIC AND UNIVERSITY HOSPITALS IN TURKEY<sup>ii</sup>**

Sebahattin Yıldız

Assistant Professor, Kafkas University, Faculty of Business and Administrative Sciences, Department  
of Business Administration, Kars, Turkey  
206

**FINANCIAL EFFICIENCY ANALYSIS OF A HIGHER EDUCATION INSTITUTION IN  
TURKEY BY DATA ENVELOPMENT ANALYSIS APPROACH: THE CASE OF  
LANGUAGE EDUCATION CENTER (TÖMER) OF ANKARA UNIVERSITY**

Ali Argun KARACABEY, Fazıl GÖKGÖZ

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Quantitative Methods (Department of Management), 06600 Cebeci, Ankara / TURKEY.  
220

**ENTREPRENEURIAL CULTURE AS A PREREQUISITE FOR THE FORMATION  
OF INNOVATION DRIVEN ORGANIZATION**

Marko Kolaković<sup>1</sup>, Boris Sisek<sup>2</sup>, Bojan Morić Milovanović<sup>1</sup>, Mladen Turuk<sup>2</sup>

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243

**THE FACTORS OF FINANCIAL CRISIS**

Ileana Anastase (Badulescu), University Tomis, Cosntanta, Romania

255

**THE USE OF DYNAMIC ANALYSIS INDEX OF INVESTMENT PROJECTS ECONOMIC  
EFFICIENCY: NET UPDATED VALUE**

Marian Andrei Gurau

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262

**CYCLES ECONOMY BY THE EXAMPLE OF BALTIC STATES, GERMANY,  
SWEDEN AND FINLAND**

Toivo Tanning, Lembo Tanning, Maksim Saat

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272

**EASTERN EUROPEAN COUNTRIES SALARIES AND PRODUCTIVITY BY THE EXAMPLE ESTONIA**

Toivo Tanning, Lembo Tanning, Maksim Saat

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286

**ORGANIZATIONAL CHANGES AND CHALLENGES OF PUBLIC ADMINISTRATION IN  
THE SECTORAL MANAGEMENT OF HUNGARIAN PUBLIC EDUCATION, BETWEEN  
1998 AND 2010 IN THE ASPECT OF PUBLIC POLICY**

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Corvinus University of Budapest, Hungary

302

**HUMAN CAPITAL DEVELOPMENT THROUGH A COMPANY'S STRATEGY**

Ieva Kozlovska, Irina Kuzmina,

BA School of Business and Finance, Deloitte Latvia and RTU Riga Business School

316

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**THE EFFECTS OF THE TRANSITION TO IFRS ON PRUDENTIAL REQUIREMENTS  
REGARDING CREDIT RISK**

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328