Places and Possibilities of Higher Education Concerning Life Long Learning (New Challenges – Change of Paradigm)

LAJOS BESENYEI, Ph.D.
UNIVERSITY PROFESSOR

e-mail: stbes@uni-miskolc.hu

SUMMARY

Life Long Learning (LLL) has a very important role in the 21st Century in everyday life. LLL is becoming more meaningful and important, and consequently the higher education sector is progressively increasing its provision of lifelong learning worldwide.
This study analyses the main factors which are closely connected with accelerating time (with the learning process) and gives a global picture of the role of higher education institutions in LLL.

INTRODUCTION

First of all, it is a kind of contradiction that in the 21st Century, which is the age of the knowledge-based economy and society, there are serious debates all over Europe about the role, place and future of higher education. In the new 'region of knowledge' the universities and colleges are seeking to enhance their reputations by developing new educational programmes to meet the high social and economic expectations.
One of the most well-known outcomes of this process has been the introduction of the two-level qualification known as the Bologna process. This has been a comprehensive restructuring of the higher education system in Europe in order to develop a practice-oriented education. (The first results of this restructuring are about to appear since the first bachelor year which has experienced Bologna is graduating now, but actually it is obvious that there is a kind of dismay in relation to the Bologna process).
These days, perceptions of the role and expectations of higher education institutions have been modified. This is because the production and reproduction of knowledge now also takes place outside the universities. For example, the huge research laboratories of the enormous multi-national corporations have a size, and possess materials and a level of technical support, that cannot be compared to those of the universities.
In the developed world, even in Europe, a process is emerging that contains dangerous elements, i.e. the decreasing birth rate. This will result in higher education institutions facing crucial functioning problems in the near future. A competition for students has already started between institutions and it is becoming more dynamic internationally as well. (At the moment 21 foreign higher education institutes have departments in Hungary and on the top of that they attract our students with exemption from tuition fees together with the planned arrangements that aim to give governmental funds to the foreign institutions established in our country).
It is evident that the need for traditional graduate programs is steadily declining. Therefore, the future functioning problems and difficulties of the utilization and the running expenses of personnel and material infrastructures of the significant university centres have become visible.
In this way, Life Long Learning (LLL) is becoming more meaningful and important. Consequently, the higher education sector is increasing its provision of lifelong learning worldwide. It is not by chance that the European University Association accepted and published the European Universities' Charter on Life Long Learning last June, in which suggestions are summarized for the European universities and governments.
The Charter's main idea is about the fact that there is a need for a new way of thinking and a change in paradigm so that higher education in Europe should meet the new challenges of adult training. Unless these suggestions are put into practice, higher education in some countries will be striving with considerable operational problems.
In this monograph the emphasis is placed on the significance and importance of adult training and during my lecture, based on this work, I aim to highlight the special roles of universities and colleges.

Life Long Learning, regarding its content, is not a new definition. As a matter of fact, age-old traditions and examples prove that besides acquiring human knowledge through periods spent studying in schools, constant learning was always declared important afterwards.
Namely, this phenomenon had two causes: firstly, manual work required continuous preparation due to ever-changing new challenges, and secondly a person's essential desire for knowledge.
This last cause was humorously described by Fridrich Schleger, a German writer and linguist (1772-1829) who explained, "the more they know, the more they have to learn. Between knowledge and not-knowing there is a direct ratio or between the knowledge of what one may not know".
According to a Hungarian proverb: "A good priest has to learn all through his lifetime." In English it sounds like "It is never too late to learn" which corresponds with our topic.
It should be remarked that today, in the first years of the 21st Century, Life Long Learning has almost become a cliché. There are not any academic and professional conferences, dissertations and monographs in which this term is not mentioned.
Also, it is vital to clarify that Life Long Learning is not a kind of 'trend' or a researcher's 'fancy' but an objective process that has received an essential role nowadays in a knowledge-based society and in the foundation of the new knowledge economy.
In the history of mankind, knowledge did not have such a significant and direct role like today. The added value is the basic component of a nation's competitiveness; furthermore, institutions involved in knowledge production and its reproduction are major players in society and the economy.
All in all, this is what counts from the aspect of international competition.
It is also not by chance that in the European Union's current and future programmes, the cost of which is equal to the Research And Development (R&D) per GDP ratio of the United States of America, LLL has a key role regarding the different parameters of knowledge production.
At the same time, the ratio of the people participating in Life Long Learning is also meaningful. Truly, in the economic and social improvement of the developing countries, i.e. the poor countries of the South, more and more emphasis is put on creating the basic conditions of studying for the adult population. It is certain that today the usage of the most simple appliances requires a kind of basic knowledge and, through the revolution of information technology, digital literacy has become compulsory.
To tell the truth, from the point of view of the future of the world, some fundamental questions must be raised: for instance, the colossal inequalities, the chasm between the rich and the poor, and the unacceptable contradictions between deaths from starvation and abundance. This goal is reachable only with those people who possess the minimum skills that are obligatory in these times.
In the developing countries this knowledge can be achieved by adult training and Life Long Learning, because billions of people have grown up without studying in elementary schools.
For the sake of completeness, I would like to point out that implementing the ideas and practices of Life Long Learning is a major challenge even in our country since the proportion of the population involved in this learning process is below the ratio of the European Union average. Actually it is 4% at the moment. Although attaining the present 10% ratio of the European Union can be found in the aims of the programmes of 2013, it will not be enough for the expected international standards of that time.
I would like to emphasise that people's way of thinking, their lifestyle and sensitivity to the future are of primary importance. It seems that it is not an accepted and acknowledged fact in our country that people change their professions several times during their lifetime and beside their university degrees, other qualifications have to be obtained so as to conform to the required needs of the labour market with the help of special retraining.
Perhaps this phenomenon is not the result of a crisis or a lack of success in people's lives, but rather an adaptation to the objective challenges of the market economy and a rapidly changing world.
What factors have caused the fact that nowadays we have arrived at the point when Life Long Learning has such a definite role?
I would mention two main factors. One of them is accelerating time, and the other one is the emergence of a new economy, along with an abundance of knowledge and a knowledge-based society.

EXPONENTIONALLY ACCELERATING TIME

"People of this age have to experience more changes during their lifetime than 100 generations following each other in Ancient Mesopotamia", said George Marx, a philosophy professor. There is no doubt that in every field of life we are witnesses to the future getting closer to the present and we feel that the present rapidly blurs into the past and the future develops into the present.
Too many events impinge on today's people and they cannot absorb one memorable event before experiencing another (for example, a trip abroad) which almost deletes the impressions of the previous one. (An average person experiences the fact of accelerating time in the sense that festivals, e.g. Christmas and Easter etc. follow each other so quickly that one has no time to prepare for them).

Accelerating time brings more and more problems and there is less and less time available to solve them. Globalisation increases these problems since the cause and effect connections (in vertical and horizontal meanings as well) result in a non-transparent system that renders scientific research and the possibility of quantification more difficult and less viable.

This phenomenon is called the 'snowball effect'. A small snowball rolled down from a mountaintop starts as a 'game' but as it descends its weight becomes gradually heavier and it speeds up steadily. It may arrive in a valley as a powerful avalanche.

Today's people meet 'the snowball effect' more often in the case of unexpectedly appearing dangers. (They participated in the formation of these dangers, but did not recognize the real risks) These dangers could threaten the existence of mankind.

Let us elaborate on the basic problems of today by using the examples of environmental pollution, the despoliation of the non-renewable natural resources of the Earth, the destruction of forests and flora and fauna etc.

The statements explained above are well demonstrated by Heinrich Siedentopf, who was a German astronomer. In his 'model year' calculation, from the conquest of the 'terra firma' the events of 170 million years were summarised into a calendar year according to its units of time (month, week, day, hour, minute and second) and he located certain events accordingly:

- In January: vegetation
- In March: the first species of birds
- In September: the first primates
- In the middle of November: the anthropoid ape
- On the 30th December: the ancestors of the stone-tool-using human being
- On the 31st December:
  - At 8 p.m. the prehistoric man of the Neander Valley passed away
  - At 11:30 p.m. human beings began cultivating land
  - At 11:59:24 p.m.: the industrial revolution began
  - At 11:59:48 p.m.: the car and the aeroplane were invented

This model was prepared in the 1960s. So now it is apparent that the scientific innovations and the new events of the past 40 years – for instance, humans on the moon, space flight, the achievements of biological and information technology e.g. the internet – show an incomprehensible progress of development.

The best examples of 'the snowball effect' in connection with accelerating time are the data on population growth, since the question of the increase in population is a public matter nowadays.

The following table contains data concerning the world's population:

Table 1.

Time	*World population (billion people)*	*Years passed since the duplication of world population*	*Average density of world population (people/sq km)*
2085	10200	97	20,00
1988	5120	38	10,03
1950	2500	100	4,90
1850	1200	100	2,35
1750	660	850	1,29
900	320	900	0,63
0	140	1000	0,31
1000 B.C.	80	1500	0,16
2500 B.C.	40	2000	0,08
4500 B.C.	20	2500	0,04
7000 B.C.	10		0,02
10000 B.C.	1		0,004

According to the data in the table, it is noticeable that the almost invisibly slow growth was changed by an increasingly perceptible shift. The time of duplication is often used to express acceleration.

In the case of population, during the first thousand years a measurable duplication was not noticeable but this is true for the following hundred years, too.

A change rapidly came about at the end of the 19th and the beginning of the 20th Centuries and real panic arose when duplication time decreased to the half of a generation. What does the future hold?

To a large extent, the rate of duplication predicted in table 1 presents an optimistic vision of the next 100 years. Perhaps there are other pictures of the future that give much more pessimistic views, speculating that the expected population in 80-100 years might not be 10 billion but several times more.

The exponential population growth can be illustrated best by taking as a basis the previous century. This demonstrates that a person who is 80 now has experienced the fact that the population of the Earth has tripled. As a consequence:

- In 1927 world population was 2 billion
- In 1960 it reached 3 billion (33 years passed)
- In 1974 it became 4 billion (14 years passed)
- In 1987 it increased to 5 billion (13 years passed)
- In 1999 it grew to be 6 billion (12 years passed)

On the 12th October 1999, two minutes after midnight, the 6 billionth person was born in Sarajevo. This day was called 'THE DAY OF SIX BILLION'.

In the case of the rapid growth of the world population it is crucial to emphasize that the problem is not caused by the definitely increasing numbers but by factors resulting from social and economic structures.

All experts agree with the fact that the carrying capacity of the Earth is able to provide twice as much as the needs of the world population when there is rational economy. However, everybody has the same opinion that the

developing structure, i.e. 'the rich North and the poor South' ratio leads to unsolvable oppositions. Regarding the future, it is unmanageable that in the poor, starving and undeveloped countries the population is growing and 75% of human beings lead a miserable life while 25% are well-off.

The following chart depicts the figures indicated above:

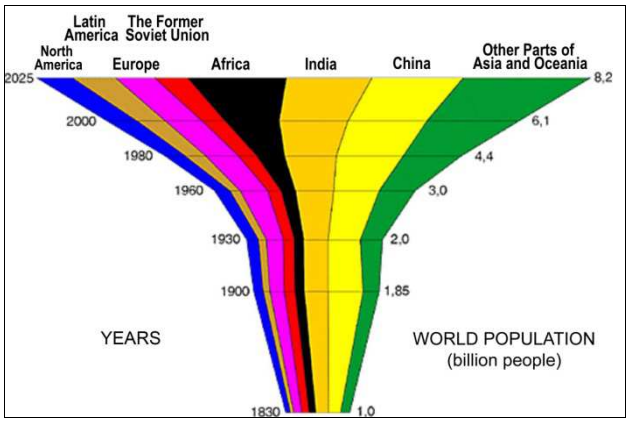

Figure 1. The Formation of the World Population by Continent

'The snowball effect' of population growth is interpreted by today's people as causing a number of life-threatening problems which are increasing in parallel and entering into a critical period. It should be recognized that people are biological beings and their lives have basic criteria that need to be provided for the sake of staying alive.

In this sense, air, water and food play crucial parts. All of these three basic resources are in serious danger. It is getting more obvious that 'Spaceship Earth' is not a scientific game but rather a reality.

Our Earth is a small fragile planet that can be flown around in a few hours, studied from the space, and with today's military technology eliminated in minutes.

Those in 'the spaceship' are in danger when there is not adequate clean air with proper pressure, the ozone layer happens to be destroyed, and there is also a lack of clean water and food.

'Mother Earth' is carrying a larger and larger weight on her shoulders, which is represented by the next illustration:

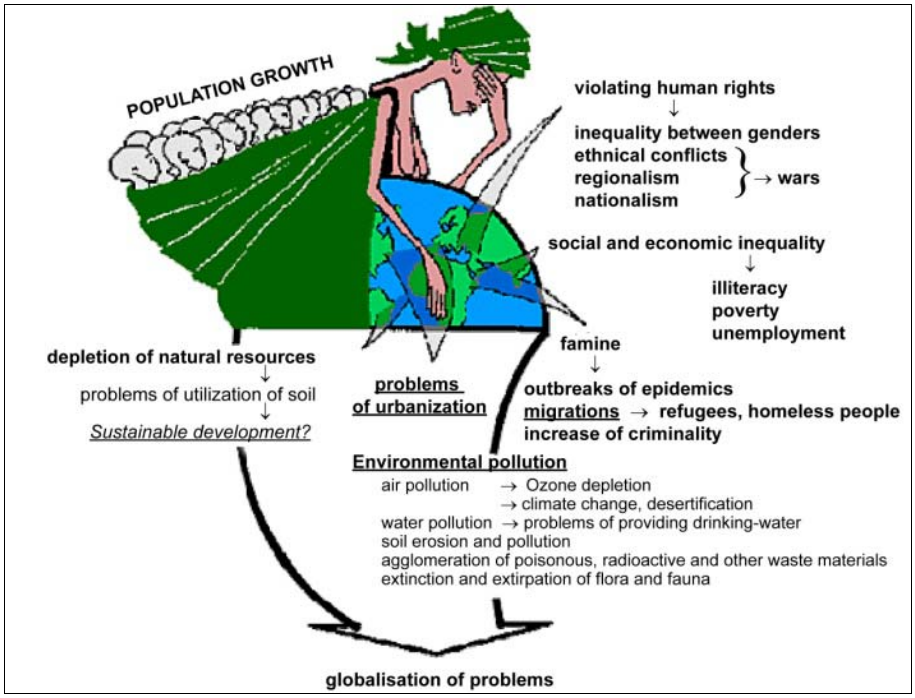

Figure 2.

It is possible to illustrate the fact of accelerating time not only with the example of world population, but also with those of science, technology and the economy. Although in these areas the results are especially spectacular and convincing, from another perspective they are threatening. (As the Roman Club determined from their evaluation of the developments of science and information technology, these phenomena may become either driving or destructive forces. When watching the outcomes of rapid development, we can observe both satisfying and worrying factors emerging).

This is in line with the research of Leon Lavalleé, who examined how much time is spent from the beginning of an experiment (the emergence of an innovative idea) until the introduction of a product. This work was elaborated on in the 1960s and it is relevant today when considering what results might emerge. Essentially, there are cases when the time would be zero since – during the period in the laboratory – the product becomes out of date because of the appearance of a new, more modern and up-to-date version.

Table 2. A data table is displayed for presentation purposes

Camera	1727-1829	(102 years)
Telephone	1820-1876	(56 years)
Radio	1867-1902	(35 years)
Television	1922-1936	(14 years)
Radar	1926-1940	(14 years)
Atomic bomb	1939-1945	(6 years)
Transistor	1948-1953	(5 years)

More examples could be enumerated. However, the previous ones are sufficient to support the original hypothesis that accelerating time directly effects the sudden growth connected to the needs of human knowledge acquisition. This takes into account the facts that in such a turbulent economy and society, people are obliged to change their occupations, enhance their competences, complete their fields of knowledge, and, in short, are directed to Life Long Learning.

A NEW SOCIOECONOMICAL FORMATION

The motivating factor of the need for Life Long Learning is the economic pressure on people compelling them to take part constantly in retraining programs and to acquire new and additional knowledge. This is due to the changing demands of the market economy and people's careers – factors which result in job modifications.

Therefore, it is true that in the 21st century the constant enhancement and renewal of knowledge serves as a basis for success. This can be illustrated by picturing the following scene. Through study a person nurtures the growth of a 'Tree of Knowledge' and that person may soon be sitting satisfied beneath its shade. However, a revelation may come when the 'leaves of the tree' begin to fade and fall. One soon realizes one remains without shelter and protection from the dangers of rough weather.

In our age, it is characteristic that economic and social centres are being transformed into the spheres of the production, reproduction and distribution of knowledge. In this way, knowledge itself has become a direct force of production.

In a period when there is a revolution in information technology – which we could call the world of microchips – material itself seems to be almost invisible. Indeed the knowledge provided by it dominates. Not to mention small discs (a few grams only), on which several gigabytes can be written, even on pen drives whole offices, all the data of companies, the results of research, and monographs can be carried.

This definite change is indicated with the help of the table below that was compiled according to the economic and social specialities of certain periods.

Table 3. The Economic and Social Centres of Some Significant Ages

Ages	*Economic and political centres*	*Social basis*	*Preferred capital investment*
The Middle Ages	Agricultural large estates	Agricultural society	Agricultural investments
Modern Age	Industrial centres, institutions	Industrial society	Industrial capital investments
Ultra-Modern Age	Competence centres, institutions	Knowledge-based society	Knowledge-based capital investment

The economy of the Middle Ages profited from the soil and that meant subsistence for the world's population of that time. 80% of the people worked in agriculture and that was the most important sector for producing income.

A country's economic, political and military power was based on the quality and quantity of the soil and perhaps the agricultural large estates were the main users of the scientific and technical developments of that age.

In this sense, that society can be called an agricultural society because from those circles originated the members of the political and economic elite. Therefore, agriculture was the preferred opportunity for investment.

Success, wealth, prosperity and positions were connected to agriculture.

The beginning of the Modern Age, i.e. the period after the industrial revolution, can be characterized by special changes and structural shifts.

Agriculture as the most important productive factor receded into the background. New factories appeared, and carbon and hematite mining came into the foreground. Larger centres were built that reached their peaks in the 20th Century.

Society started to move from an agricultural to an industrial one, most of the people gained their incomes from industrial production and similar activities, and that is how, next to the large industrial centres industrial colonies existed. As a result, people's lives were strongly connected to industrial activities.

The whole school system, from elementary to higher education, was reformed. Generally, polytechnic training was favoured, and the knowledge required by economic and business life was emphasized, even in the fields of law and economics.

As the Industrial Age progressed, it became increasingly suited to its name. The large industrial capitals represented the roles of the economic and political centres, and a political and economic aristocracy emerged from the industrial strata. A country's economic and political power was tightly connected to its industry and its resources of raw materials.

At that time capital was invested not into agriculture but rather into industry, while most profits were gained from factories, mines and plants.
Subsequently, the society of the Modern Age can be called an industrial society.
The major characteristics of the Ultra-Modern Age can be underlined in the same manner as in the previous age. Specific structural changes of the workforce can be observed. The number of industrial workers is decreasing in accord with the increasing figures employed by service companies, in the sector of information technology and in those sectors related to knowledge-production.
Today, most of world population works in those fields that are strongly connected to knowledge-production, and high-tec focused industries.
Robot mechanism and the automation of activities are linked to the processes of production.
Only a few people are enough to operate the whole manufacturing process, the other tasks are fulfilled by the knowledge of software, programmes, technology and techniques.
Institutes and centres of knowledge, or innovation research centres, have become the focal points of economic and political life and also the preferred places of capital investment. Funding the acquisition of knowledge is the most pleasant investment for a person and its usefulness can be benefited from through a lifetime.
The society of the Ultra-Modern Age can be called knowledge-based.
The main opportunities for success, career progression and enrichment are provided by this field.
It is not by chance that among the richest people in the world the number of active representatives working in the fields of services is increasing.
On the 2007 list of Forbes Magazine the first three positions were:

- No. 1 Warren Buffet (stock exchange)
- No. 2 Carlos Slim (telephone)
- No. 3 Bill Gates (Microsoft).

The youngest person on the rich list was Mark Zuckerberg (then 23 years old) co-founder of the Facebook website.
Among the billionaires of 2007, 50 of them were people under 40 years old who deal with software and information technology. This indicates that there is an innovative generation utilising a new expansion of knowledge production and information technology.
This aspect is relevant even today. In this age the traditional models of knowledge-production have fallen apart and besides the classic educational institutions there are new competitors in the market economy involved in knowledge production and its reproduction. For this reason, the connection between higher education institutions and Lifelong Learning is heightened.
The question is whether higher education institutions intend to improve or can participate in improving adult training. The present situation is not showing a promising picture because of several objective and subjective reasons.
For example, who should teach in the process of Life Long Learning?
An answer may be that in the training sessions of the educational system, the given educational institutions are accredited and entitled to issue certificates or degrees on many levels.
Today there are 71 higher education institutions in our country in the following sectors.

Table 4. The Partition Coefficient of the Hungarian Higher Education Institutions

	Universities	*Colleges*	*All*
State	18	12	30
Private, Denominational	7	34	41
All	25	46	71

The table should be completed with those higher education institutions operating in Hungary whose centres are abroad. Indeed, they are mushrooming. Actually, there are almost 20 foreign higher education institutions in Hungary.
Higher education in Europe is being forced to find ways to survive somehow the demographic crisis overtaking the whole of our continent.
It is an outstanding opportunity for a British, German or French higher education institution to expand to Eastern Europe, thereby multiplying our problems.
The situation in the training sessions of the non-educational system is not so simple, but for the higher education institutions it is absolutely a disadvantage.
In this present study the reasons cannot be discussed but at the same time it is true that the higher education institutions' ways of thinking portray an important element of aristocratic behaviour.
To fulfil the needs of the market economy concerning Life Long Learning adult training, enterprises have been founded. Today in Hungary 1408 accredited adult training enterprises are operating and there are more than 1000 smaller, non-accredited companies and training centres (around 10,000). There are more than 3400 programmes in different training centres. Quality assurance is a key question and a statement is risked that in reality this question has not been dealt with. The educational accreditation of numerous programmes happens from the input side, perhaps in a hurried way because of the large number of centres.
What is exceedingly important is examining the output side: how the accepted programmes are completed and whether these are put into practice to meet the requirements of the market economy. For instance, in what way the job opportunities of the students are increased.
In my opinion, this is the most critical aspect of adult training and Life Long Learning as well as a basic problem to be solved in the near future.

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Long Run Growth Effects of Fiscal Policy - a Case Study of Hungary

ADRIENN ERŐS, Ph.D.
ASSOCIATE PROFESSOR

e-mail: geteros@uni-miskolc.hu

SUMMARY

One of the most debated questions of economics is whether the pace of long run economic growth can be influenced by economic policies. The (long run) steady state growth rate of the economy is determined by two exogenous factors according to neoclassical theory. But Endogenous growth theories support the view that (among other factors) fiscal policy can affect economic growth through several channels, some of which can give positive, while others negative impulses to the rate of growth. The paper deals with the long run growth effects of fiscal policy in Hungary, emphasising that restrictive fiscal policy actions can still have a beneficial effect on the long run growth rate of the economy, founding such growth-oriented actions in the future, which could not have been taken without the earlier stabilisation. An outstanding growth-fastening effect is the lesson we can learn from comparing the fiscal data of the 1994-1996 period with the 2003-2005 data.

THE THEORY OF ECONOMIC GROWTH

One of the most debated questions of economics is whether the pace of long run economic growth can be influenced by economic policies. The (long run) steady state growth rate of the economy is determined by two exogenous factors according to neoclassical theory: the growth rate of the economically active population and the pace of technological progress. As these factors are independent of the decisions of economic actors, fiscal policy can not influence the long run growth rate of the economy. But over the short run, when the economy is on a transition path, even neoclassical theory accepts fiscal policy can determine the rate of growth, by giving incentives to economic actors to make better use of capacities, for instance, by enhanced government expenditures, or state investments (that is, by introducing Keynesian demand-stimulant actions). Governments are able to influence distinct economic factors, though only to a limited extent and only temporarily. Government policies can only affect the level of output, but not the steady state growth rate. It is important to mention that "these temporal beneficial effects can be felt for as long as even twenty years in some cases." (Gemmel, 2001)

"Endogenous growth is long-run growth at a rate determined by forces that are internal to the economic system, particularly those forces governing the opportunities and incentives to create technological change." (Howitt, 2006) This theory is of utmost importance in that it allows fiscal policy to influence economic growth. "According to the endogenous theory of growth the rate of long run economic growth depends on such governmental activities as taxation, the protection of law and order, supplying infrastructure, the defence of immaterial goods, and the regulation of international trade, capital markets and other segments of the economy. That is why governments can have a wide range of possibilities to influence long run economic growth both in positive and negative directions." (Barro, 2005)

In these models, fiscal policy can affect economic growth through several channels, some of which can give positive, while others negative impulses to the rate of growth. Fiscal policy can influence innovation activities, enhancing technological progress and thereby growth. (Howitt, 2006) It can have production externalities, by founding the optimal usage of the private sectors' resources in the fields of education or infrastructure. (Barro, 1988) Fiscal measures can influence both human and physical capital accumulation, as lower tax burdens enable a higher rate of return, and they can change the relative prices of capital and labour as well. "Incentive effects of policy can influence economic activity-taxation, and can readily lead to development traps and growth miracles". (King-Rebelo, 1990) The crowding-out effect must be mentioned too (Barro, 1988), as well as the role of income redistribution, which can have negative and positive effects in parallel. Income redistribution can be an incentive to entrepreneurship, but can also decrease the need for security savings at the same time. (Sinn, 1995)

Lots of variables have been shown by researchers to correlate with economic growth (Doppelhoffer-Miller-

Sala-i-Martin, 2000). Barro, in his 1995 paper, (Barro, 2005) used fourteen, while an OECD study involved 32 variables. There is a wide variety of possible explanatory variables, from the initial level of GDP through to the rate of GDP for the educated population or for distinct branches of industry, to characteristics of government expenditures and the system of taxation. Religious and geographical models must also be considered. As in this paper the growth effects of fiscal policy will be analysed, we will focus on that part of the extensive available literature which deals with this question.

Gemmel [6] divided the policy related literature of economic growth into three groups. He called those studies which were written before the era of endogenous models and which tested ad hoc hypothesises 'first generation studies'. 'Second generation studies' aim to test either neoclassical or endogenous growth models, using more advanced econometric methods. Still, most of these papers can only partly support the tested model. The reason for this is that the relations among fiscal variables are not considered in these studies, and only one (or some) of the relevant variables were included.

'Third generation studies' must consider the government budget constraint by testing fiscal growth effects (at least two effects – those of taxation and government expenditure, or budget balance, must be examined simultaneously). More advanced methods of panel- or time-series econometrics are to be used, including testing endogeneity. These studies deal with the budget as a whole, enabling researchers to give complex explanations of the effects of changes in distinct revenue or expenditure types. The fact that this coherent context of the budget was mishandled caused the misleading results of the first and second generation studies. "It is not meaningful to evaluate the effects of tax or expenditure changes in isolation: both the sources and uses of funds must be considered." (Miller-Russek, 1997)

The works of two groups of researchers can be considered as third generation studies (Miller-Russek, and Bleaney-Gemmel-Kneller), according to Gemmel. (Gemmel, 2001) Miller and Russek were mainly researching samples of a large group of countries, consisting of both developed and developing states, or concentrating on the USA only. Studies of the Bleaney-Gemmel-Kneller trio are more interesting for us, as they used samples of developed OECD (mostly European) countries.

First, we have to become familiar with the definitions these researchers use. Inputs from the public services to the private sector's production are called productive expenditure, "that component of public expenditure an increase in whose share will raise the steady-state growth rate of the economy". (Gemmel, 2001) Expenditures that do not enter the private sector's production function, and affect only households' utility function – thereby having no influence on the growth rate of the economy – Barro defined as government consumption services, while the Bleaney-Gemmel-Kneller trio calls them unproductive expenditure.

Tax revenues can also be divided into two types. One of them is distortionary taxation, "which affects the investment decisions of agents (with respect to physical and/or human capital), creating tax wedges and hence distorting the steady-state rate of growth". (flat-rate income taxes in Barro's models). Non-distortionary taxation "does not affect saving/investment decisions … and hence has no effect on the rate of growth" (lump sum taxes in Barro's models). (Kneller-Bleaney-Gemmel, 1998)

According to the model of Barro, non-distortionary taxes and unproductive expenditure have neutral growth effects. Shifting the revenue stance away from distortionary forms of taxation towards non-distortionary forms has a growth enhancing effect, whereas shifting expenditure from productive towards unproductive forms is growth retarding. (Kneller-Bleaney-Gemmel, 1998; Barro-Sala-i-Martin, 2000)

The Barro model uses a balanced budget, which does not consider the effects of budget deficits or surpluses. Still, as budget balance plays a major role in fiscal policy's growth effects according to second generation studies, Kneller, Bleaney and Gemmel integrated it into the original model of Barro. Their research gave strong support to conditional convergence, stating that a lower original level of GDP induces a higher growth rate. (Bleaney-Gemmel-Kneller, 2000) They found that "when financed by a mixture of non-productive expenditures and non-distortionary taxation, productive expenditures raise the growth rate and distortionary taxes reduce it, in accordance with the predictions of the Barro (1988) model. A budget surplus financed in this way also raises the growth rate." (Bleaney-Gemmel-Kneller, 2000)

METHODS OF EMPIRICAL ANALYSIS

The changing of the Regime in 1990 brought such major changes to the Hungarian economic system that it makes it impossible to use fiscal data from earlier decades. We can only rely on the time-series of data from the last one and a half decades, as earlier trends do not carry relevant information for the present. Fifteen years is a very short time-period when discussing long-run matters in economics. Still, as several empirical studies use similar, ten-fifteen or twenty-year-long time-series, this length can be accepted in our view. In order to avoid short run, political aspects of the discussion, data from after 2006 will not be used either. In order to smooth out the effects of short-run fluctuations in the data, we (being concerned only with long run effects) will use three year period averaging.

We use consolidated data from the general government level as fiscal variables in our analysis. Revenue data are taken from the OECD database.[1] Functional classification of the government expenditure can either not be found in international databases (Source OECD), or contains data only for 2003 and 2004 (Eurostat). These data can only be

found in the PM ÁPMSO - ÁHIR database; still, the aggregate expenditure of this time-series is different from that of international databases.[2] To make things even more difficult, the difference between the distinct years' data is not systematic. In some periods it can reach even 4-5 percentage points (as a share of GDP), while in others barely more than half a percentage point. We chose to use inner scaling to solve this problem, and secure the comparability of expenditure and revenue data. Concerning budget balances, international statistical databases have only published time-series for Hungary since 1997, and even these are not consistent with the data of the Hungarian Central Statistical Office (KSH), which is complete since 1990. To solve this problem, we chose to use the difference between the distinct year's revenues and expenditures (both from the OECD database) as budget deficit. We had two reasons for choosing this solution: firstly, to secure comparability of the time-series, and, secondly, the model we will use requires it.

To judge whether fiscal policy contributed to the long growth of the Hungarian economy, we need a reliable model. Unfortunately, we couldn't construct our own model, as we do not have enough data. We worked with only one country, while in most empirical studies panel data of at least 10-12 states are used. So, we had to use an existing model's parameter estimates and standard errors. We discovered this approach when studying the literature. (Kneller, 2000; Gemmel-Kneller, 2003) Which studies could be used for this purpose? We need a reliable, complex, third generation study, as that kind of study is the most developed today, considering the budget constraint. On the other hand, we would like to use parameters, calculated for developed, possibly EU member, states as there can be huge differences in parameter estimates for developed, developing or mixed groups of countries.[3]

We chose the parameter estimates of the Bleaney-Gemmel-Kneller group.[4] Their approach is based on the model of Barro (1988), but as mentioned above, it integrates the budget balance into it as follows:[5]

$$ng + C + b = L + \tau ny \qquad (1)$$

The implications of the budget constraint for empirical testing growth rate γ_t at time t is a function of conditioning – non-fiscal (Y_{it}) and the fiscal variables (X_{jt}) from equation (1): (Bleaney-Gemmel-Kneller, 2000)

$$\gamma_{it} = \alpha + \sum_{i=1}^{k} \beta_i Y_{it} + \sum_{j=1}^{m} \delta_j X_{jt} + \mu_{it} \qquad (2)$$

Assuming all elements of the budget, involving the deficit/surplus are included in equation (1) so the sum of all the fiscal variables have to equal zero: (Kneller-Bleaney-Gemmel, 1998)

$$\sum_{j=1}^{m} X_{jt} = 0 \qquad (3)$$

$$X_{mt} = -\sum_{j=1}^{m-1} X_{jt} \qquad (4)$$

So one element of the equation (2) must be omitted in order to avoid perfect collinearity. The omitted fiscal element will be the implicit financing element, the source of compensating any changes within the budget constraint.

$$\gamma_{it} = \alpha + \sum_{i=1}^{k} \beta_i Y_{it} + \sum_{j=1}^{m-1} \delta_j X_{jt} + \delta_m X_{mt} + \mu_{it} \qquad (5)$$

After rearranging the equation (5) we will get: (Bleaney-Gemmel-Kneller, 2000)

$$\gamma_{it} = \alpha + \sum_{i=1}^{k} \beta_i Y_{it} + \sum_{j=1}^{m-1} (\delta_j - \delta_m) X_{jt} + \mu_{it} \qquad (6)$$

Only those fiscal variables can be omitted from the equation, whose growth effect is neutral. According to Barro's model, (1988) these are non-distortionary (lump-sum) taxes and unproductive (consumption services) expenditures. After testing for the neutrality of both factors, the empirical study showed the smallest standard errors when both were omitted, so we will use parameter estimates from that method (Kneller-Bleaney-Gemmel, 1998).

[1] OECD Economic Outlook 79 database. Annex Table 26. General Government total tax and non-tax receipts

[2] OECD Economic Outlook 79 database. Annex Table 25. General Government total outlays

[3] Why do we think that parameter estimates of developed countries would fit Hungary, having reached only 65% of the average GDP per capita on PPS of the EU in 2006? Hungary, as a member state of the OECD and the EU belongs to the developed countries rather than to any other groups of states for which empirical studies are available.

[4] Bleaney, Gemmel and Kneller published their model and the empirical study based on it first in 1998[10], then a revised version in 2000 [4], which was further improved in 2003 [7].

[5] n is the number of producers in the private sector, each of them producing y amount of output, using g public services (productive expenditure). C stands for public consumption services (unproductive expenditure), b is the balance of the budget (which is surplus, if the sign is positive, and deficit, if it is negative), L is lump-sum (non-distortionary) taxation, τ is the rate of income tax (distortionary tax). [4] In their studies, the writers applied two other fiscal variables, other revenues and other expenditures, whose growth effect is ambiguous. In order to maintain balance across the government budget constraint after averaging the data, it is necessary to classify one of the variables as the balancing item. Kneller, Bleaney and Gemmel – after testing for several others – chose the budget balance for this purpose, so we will follow their practice to maintain comparability with their results, and to solve the problem of having no reliable time-series of data for budget balance, as mentioned above. [10]

The interpretation of the coefficient on each element of the government budget is the effect of a unit change in the relevant variable offset by a unit change in the element omitted from the regression (or some mix of the omitted elements in our case).

Bleaney, Gemmel and Kneller used the standard method of five-year averaging first. (1998) Later they established that the best results come from using eight year lags (Bleaney-Gemmel-Kneller, 2000), so we will use these parameter estimates. The parameter estimates, standard errors and t-statistics taken over are shown in table 1. From the t-statistics, we can see that other expenditures and other revenues are not significant in the regression.[6] Non-distortionary taxes and unproductive expenditures were omitted to avoid collinearity, so we only have to use the other three variables during the analysis, which are distortionary taxes, productive expenditures and budget balance as a share of the GDP.

Following the originators' example (Kneller, 2000; Gemmel-Kneller, 2003) we will show the effects of fiscal policy changes on long run growth by comparing three-year period averages of fiscal variables as a share of GDP. We will calculate the difference between two three-year periods, with eight-year lags between them, then calculate the most probable effects by using the parameter estimates. We will also define a confidence interval using the standard errors (and t-statistics).

Table 1. Parameter estimates of fiscal variables

Fiscal variable	*Parameter estimates - (standard errors) - t-statistics*
Budget balance	0,105 – (0,06) – 2,07
Distortionary taxation	-0,411 – (0,05) – -6,18
Productive expenditures	0,387 – (0,07) – 4,88
Other expenditures	0,040 – (0,07) – 0,59
Other revenues	0,040 – (0,07) – 0,63
Adj. R^2	0,723

Source: parameter estimates and t-statistics (Gemmel-Kneller, 2003); standard errors (Gemmel-Kneller, 2003)

DETERMINING THE LONG RUN GROWTH EFFECTS OF FISCAL POLICY IN HUNGARY

Using the Bleaney–Gemmel–Kneller model, an unequivocally beneficial growth effect can be attributed to the changes in Hungarian fiscal policy. Table 2. shows the results of calculations for Hungary, using three-year periods and an eight-year lag. The difference in the average of the fiscal variables' share of GDP between the first three years following the changing of the Regime and the three years around the Millennium (after the eight year lag) probably contributed 0.85 percentage points to the long run growth rate of the economy, according to the parameter estimates. With 95% certainty, the lower boundary of the confidence interval should be -0.07%, while the upper should be 1.77%. This is the only period in which there is a small level of uncertainty about the sign of the aggregate growth effect. Still, as only such a small part of the confidence interval goes to the negative domain, we can conclude Hungarian fiscal policy has enhanced the growth rate of the economy in the period since the changing of the Regime.

In the first row, the 1.83 percentage point improvement in the budget balance and the 5.61 percentage point decrease in distortionary taxation as a share of GDP would jointly contribute to the rate of economic growth by adding 2.5 percentage points to it. However, during the same period productive expenditures were limited to 4.26 percentage points as a share of GDP, which retarded growth (according to the point estimate, by 1.65 percentage points). Adding together the single effects of these three significant factors, we arrive at the 0.85 percentage point estimate for the aggregate growth effect of fiscal policy changes in the first time period.

Applying the method to the time-series of data smoothed by using moving averages (filtering the effects of short run fluctuations) we can see that the long run effects of the changes in Hungarian fiscal policy can be regarded as having raised the growth rate. The results of parameter estimates show a smoothed effect on fiscal policy in influencing growth performance. Point estimates for growth performance move between 0.75 and 1.06 percentage points, with only one exception.

This one and only mentioned exception is the growth effect of 1.32 percentage points, based on the fiscal policy changes between the periods 1995-1997 and 2003-2005, which is much higher than the other point estimates in the table. The possible reason for this exceptional performance is worth elaborating on. Taking a closer look, this outstanding value can be attributed to the increase in productive expenditure as a share of GDP. Though the other two significant factors (budget balance and distortionary taxation as a share of GDP) added a bit less to the growth rate than in the previous period, so the larger scale increase in productive expenditures has to be the cause of the higher level aggregated growth effect of fiscal policy. Their share of the GDP rose by 1.56 percentage points, contributing 0.6 percentage points to the growth rate. The effects of this tendency could be felt in the next period as well, even though the growth in productive expenditures as a share of GDP was only 0.96 percentage points.

[6] Based on the t-statistics only three of the five variables left in the regression equation proved to be significant, as Bleaney-Gemmel-Kneller used a sample of 237 objections. With this high number of sample elements, t- and z-statistics are the same, and absolute values above 1.96 can be accepted as significant.

Table 2. Long run growth effects of fiscal policy in Hungary

Change between three year averages, Eight year lag		*Budget balance*	*Distor-tionary taxation*	*Productive expenditure*	*Aggregated growth effect*		
					Parameter estimate	*Confidence interval*	
						Lower	*upper*
(1991-1993)-(1999-2001)	Change, as a share of GDP	1,83	-5,61	-4,26	**0,85**	-0,07	1,77
	Growth effect	**0,19**	**2,30**	**-1,65**			
(1992-1994)-(2000-2002)	Change, as a share of GDP	3,69	-4,31	-3,64	**0,75**	0,26	1,24
	Growth effect	**0,39**	**1,77**	**-1,41**			
(1993-1995)-(2001-2003)	Change, as a share of GDP	2,74	-3,04	-1,83	**0,83**	0,60	1,05
	Growth effect	0,29	1,25	-0,71			
(1994-1996)-(2002-2004)	Change, as a share of GDP	1,89	-1,97	0,13	**1,06**	1,01	1,11
	Growth effect	**0,20**	**0,81**	**0,05**			
(1995-1997)-(2003-2005)	Change, as a share of GDP	1,30	-1,40	1,56	**1,32**	1,08	1,55
	Growth effect	**0,14**	**0,57**	**0,60**			
(1996-1998)-(2004-2006)	Change, as a share of GDP	1,76	-1,21	0,96	**1,05**	0,84	1,27
	Growth effect	**0,18**	**0,50**	**0,37**			

Source: own calculation

Of course, it is also true that the growth in productive expenditure as a share of the GDP, beginning in 2003, can partly be attributed to the fact that the basis of comparison is the period between 1995 and 1997. This was the period of restrictive fiscal policy associated with Lajos Bokros, Minister of Finance. Taking a look at the time-series of the data we can see that the share of productive expenditure was not increased to an unusually high level between 2003 and 2005, only a part of the restriction imposed earlier was restored. The share of productive expenditure in GDP was 24.17% in 1994, which was decreased to 19.34% of GDP, but increased to 22% in 2003. In 2006, its share reached 20.07% again. This level is similar to that of Ireland (a country which has been famous for its unusual growth performance in the last two decades), but as a share of aggregate government expenditure, the weight of productive expenditures is only about 42% in Hungary, while it reaches 56% in Ireland

Expenditures had to be cut in order to improve the balance of the budget in 1995. This improvement took place over a two-year period. In 1994, the deficit was an unsustainable 11.6% of GDP, and by 1996 it had been decreased by 5.4 percentage points. To make thing even more serious, this decrease in the deficit occurred simultaneously with a 4.94 percentage-point decrease in revenues as a share of GDP (the share of distortionary taxation to GDP was decreased by 1.37 percentage points). Expenditures were limited to 5.56 percentage points as a share of GDP. The very strict 7.18 percentage-point decrease in unproductive expenditures was not enough to cope with this level of deficit. A 4.85 percentage-point decrease of productive expenditure as a share of GDP was also needed in order to accomplish this improvement of the budget deficit.

According to the Bleaney-Gemmel-Kneller model, because of this same contiguity, the Bokros-Package did not contribute directly to growth.[7] The improvement of the budget balance by 4.5 percentage points added 0.47 percentage points to the growth rate of the economy (based on the point estimate), while a 1.37 percentage-point decrease in distortionary taxation contributed 0.56 percentage points to the growth rate. Still, as productive expenditures were decreased by 4.58 percentage points, retarding growth by 1.88 percentage points, aggregate growth effect, as a sum of the three significant factors mentioned above, was 0.74 percentage points. This had the effect of slowing the rate of economic growth.

We always have to remember though that the major aim of these stabilisation packages (following the economic situation they are needed in) can never be to contribute to economic growth directly. In these times, the restoration of budgetary balance is more important than any other economic goals. This requirement was met by the actions resulting from the Bokros-Package. By stabilizing the economy, it was able to pave the way for the later, growth-oriented actions, which could not have been taken without the normalisation of the budget balance first. In this way, these actions contributed to economic growth by making it possible to take the steps needed for enhancing growth, founding the economic situation.

[7] *Kneller [11] in his study used the same point estimates to evaluate the effects of a distinct fiscal policy action. Following in his footsteps, we will use this method to analyze the effects of the fiscal policy measures, known as the Bokros-Package in Hungary.*

When evaluating distinct fiscal policy programs we can not lose sight of the extent to which they founded actions taken later. If the Bokros-Package had not succeeded in stabilising the overall state of the budget, the growth-enhancing actions could not have been successfully taken later. Without the restoration of the budget balance, not only would the deficit and state debt have risen to unsustainable levels, but later growth-oriented policy action could not have been accomplished.

CONCLUSIONS

The values calculated for fiscal policy's contribution to long run economic growth can be regarded as being very high when compared internationally (particularly in the 1990s). Compared to the results of other international empirical studies, even the modest estimates in our tables are quite large. These results could be seen as surprising, as several researchers and politicians stick to the principle that fiscal, and general economic, policy can have no influence on the long run growth rate of the economy.

In the empirical study we used as an example, the writers (Bleaney, Gemmel and Kneller) found about a +/-0.2-0.3 percentage-point general (beneficial, or unbeneficial) effect of the changes in fiscal policy directions in the examined time period (1987-1997) for a sample of eleven OECD countries. The only exception was Finland, where they calculated a +1.41 percentage-point growth improvement effect for fiscal policy actions. (Gemmel-Kneller, 2003)[8]

Still, we have to remember that fiscal policy is much more balanced in these OECD countries than in Hungary, where major changes had to be made to the general system of the economy, after the changing of the Regime. Changes in fiscal variables as a share of GDP could only be measured as some tenth of the percentage in the case of those countries (even though the method of comparing two three-year periods, with eight-year lags between them, was the same as the one we followed). The amplitude of fiscal policy changes (as a share of GDP) is one order of magnitude larger, as some fiscal factors changed by even 6-7 percentage points as a share of GDP. This is what our unusually large effects can be attributed to.

The relevance of our results concerning the relationship between fiscal policy actions and economic growth is also supported by the fact that confidence intervals rarely cross zero. So, the model gives unambiguous positive or negative growth effects for distinct changes in fiscal policy directions. The sign of the effects seems to be sure, even if one would doubt the amplitude of the changes.

We would not dare to give an explicit, numerical answer to the question: to what extent did fiscal policy contribute to Hungary's growth performance in the last one and a half decades? However, we are sure no reader familiar with the question would expect us to do so.

Both the theoretical and empirical literature of economic growth suggests decreasing the government sector's size. Moreover, endogenous theory states that it is not only the rate of expenditures to GDP that matters for growth, but that the mixture of expenditures has a major role to play as well. Examples of the Bokros-Package and the present restrictive policy actions in Hungary support the idea that a decrease in productive expenditure can have growth retarding effects even if an improved budget balance (and a possible decrease in distortionary taxes) are beneficial to the rate of economic growth.

Restrictive fiscal policy actions can still have a beneficial effect on the long run growth rate of the economy, founding such growth-oriented actions in the future which could not have been taken without the earlier stabilisation. An outstanding growth-fastening effect is the lesson we can learn from comparing the fiscal data of the 1994-1996 period with the 2003-2005 data.

[8] *The countries examined in the sample were: Austria, Denmark, Finland, France, Germany, the Netherlands, Norway, Spain, Sweden, Switzerland, the United Kingdom and the United Stated of America.*

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Availability Ranking and Regional Disparities of the Transport Infrastructure in Northern Hungary

ILDIKÓ GYŐRFFY
ASSISTANT LECTURER

e-mail: regindy@uni-miskolc.hu

SUMMARY

Studies that analyze the economic impacts of the transport system mostly deal with entire countries or larger territories. However, the effects of the transport system on regions or sub-regions have increasing importance. The inadequate quality and density of the minor, access and connecting roads as well as the low quality of the transport services might be one of the most important reasons for regional disparity. As a result, the quality and quantity of micro-relations should be included amongst the aims of road infrastructure developments.

In the study I have described the availability position of the 174 Hungarian sub-regions. To streamline and enlarge the regional road infrastructure would be necessary to improve our competitive potential and also to assist and increase the economic development processes. Their economic, social and institutional terms have to possess satisfactory internal and external connections.

Keywords: infrastructure, regional development, availability, road network, location theory

INTRODUCTION

It is well established – according to several pieces of literature and references on the topic of regional development – that the quality standards of the transport networks have a strong connection with the economic situation of an area. Increasing mobility is a precondition for increased productivity and growth, and improvements in transport may in themselves promote growth. The infrastructural position is able to affect internal and external capital flows, as economic growth can assist the expansion of the networks. The transport system can also have an effect on the intensification of regional connections. Therefore, its development is becoming an increasingly important objective.

In my research papers, I analyse availability in terms of competitiveness, internal and external connections, and of choice of location. The main problems of the Hungarian regions – in infrastructural aspects – arise from the inadequate road and rail networks. Due to their bad condition, poor quality and low weight-bearing capacity, they are able to delay economical and social development to a great extent. This is mostly felt in those settlements that are situated on the periphery of the regions, in relative isolation.

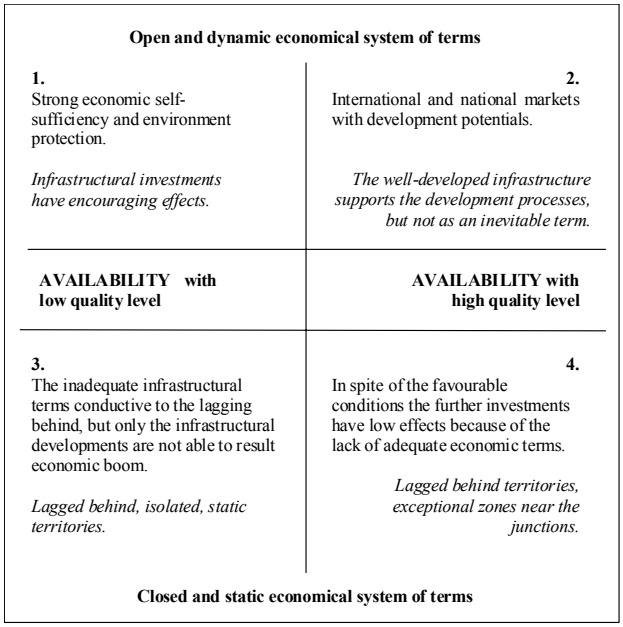
Taking the North-Hungarian region as an example, it is mostly the inadequate density of the minor, access and connecting roads that causes disadvantages, and it is the low-quality transport services in the rural areas that restrict economic growth. This might be a reason for areal disparity. The streamlining and enlargement of the regional road infrastructure will have to be a high priority in the future in order to improve the quality of life in these regions and ensure connections with the global economy. (Baum, Korte, 2002).

COHERENCE BETWEEN AVAILABILITY AND COMPETITIVENESS

Availability and the adequate infrastructural conditions appear in many sources as an independent term of competitiveness. During the survey of the other terms we have to take into consideration that, in accordance with the economic situation and its main scope of activities and realizable aims, different elements and service claims become the key issue and propulsive power for economic development in different time periods (Fleischer, 2003.).

For the word 'competitiveness' there is not any consistent definition in economic literature. An 'official' definition by the OECD of a nation's competitiveness is "the degree to which a country can, under free and fair market conditions, produce goods and services which meet the

test of international markets, while simultaneously maintaining and expanding the real incomes of its people over the long term" (Lengyel, Rechnitzer, 2002).
Competitiveness equally requires innovation potentials, achievement, successes in business, and cooperation processes inside and outside of agglomerations, regions and national borders. It also means that, in line with their purposes, a branch of industry, a product or a kind of economic strength is able to constitute propulsive power for the business actors or institutions of the region. Consequently, an essential point is how the big business sector, knowledge-based innovators, and small and medium-sized enterprises are able to cooperate effectively (Vickerman, 2002).
Although infrastructural extension is reasonable in many ways – good availability and well-expanded internal connections are necessary preconditions for almost all developments – it cannot be conclusively declared that the network development of any transport sector has a positive effect on competitiveness.
Through competitiveness the term of availability also plays an important role in the choice of location. In these times, the tertiary sector dominates, product differentiation has the utmost importance, and – due to globalization – the role of the agglomeration economy, clusters, supply chains and cargo networks is increasingly vital. As a result of this, transport and infrastructural preconditions have a significant function. Although the infrastructure does not have an independent attractive force, it is able to operate effectively through its integration into economic systems and to promote regional development processes (Jensen-Butler, Madsen, 2005).
The transport network can be regarded as an optimal term as long as it is able to provide a satisfactory accessibility to the region or territory from other areas, and can allow an economical availability of several markets that are important for certain regions. These conditions may be met if the transport network of the area is an integrated part of the European networks and the connections are optimal for the territory (Vickerman, 2002).
At the same time, the fact has to be taken into account that the improvement of the micro-connections also plays an important role in the competitiveness of an area. In this regard, the minor road infrastructure and the local network system might become more necessary for the region than, for example, one of the trans-European transport corridors (Fleischer, 2003).
The utility of the infrastructural investments from the point of view of local or regional development is not obligatory. The model of Banister and Berechman analyses the coherences between the economy and transport investments. They introduced the open and closed system into the analysis of transport investment surveys. The system is called open when political and economical factors are secured (Figure 1).
The other important viewpoint is that of accessibility. Availability is not able to signify economic development automatically, just in the cases where an open and dynamic system exists. In the second case, a well-developed transport infrastructure is able to support the development processes, but it is not an inevitable term. In the dynamic system, a positive effect might be partly discovered where the infrastructure provides just low-level accessibility – as we can see, in the first case the infrastructural investments have also high encouraging effects. But in other cases, the infrastructural developments are not able to result in economic development, because some other economic terms are missing (Tóth, 2005).



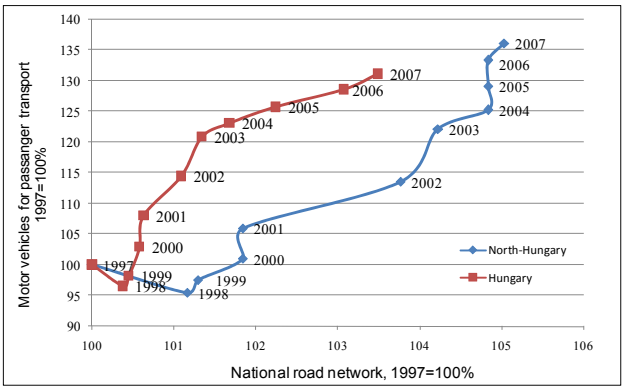
Reference: Jensen-Butler, Madsen, 2005.

Figure 1. Coherence between the economy and transport investments

The infrastructural terms have important effects on the economic conditions of an area as discussed above. The different impacts mainly arise from the changes or developments of the transport infrastructure. When the transport conditions improve along with the availability and attractiveness of locations, prospective firms and consumers react positively. Changes in transport costs are able to have an effect on freight and passenger movements as well as on market size. Transport system improvements are able to increase the labour market and can have an influence on migration processes and also have an effect on the property and housing markets (Tóth, 2005).
These positive impacts – mainly the increased transport claims and mobility – also require the further development of the availability conditions. From the introduction of the availability terms, the spatial, temporal and qualitative terms are well separated. An improvement in all of these factors would be necessary to improve the competitive potential of a territory and also to assist and increase the economic development processes.

INFRASTRUCTURAL TERMS IN THE NORTH-HUNGARIAN REGION

Accordingly, the adequate infrastructural terms are important indirect preconditions to improve the competitiveness of an area. The availability problems and the weak cohesion among certain areas are able to cause regional disparity inside a region. This problem can delay economic and social development to a great extent. But in every case we have to take into consideration that in addition to the infrastructural terms, other economic conditions have to exist to ensure the economic development of a region. In the case of some Hungarian regions, we can say that the availability through the road infrastructure is satisfactory – the extension of the regional network has been much faster in recent years than the national average, but inside the region many accessibility deficiencies exist (Figure 2). There is weak cohesion among certain areas that has a negative effect on capital expenditure and market relations, as well as on the quality of life.

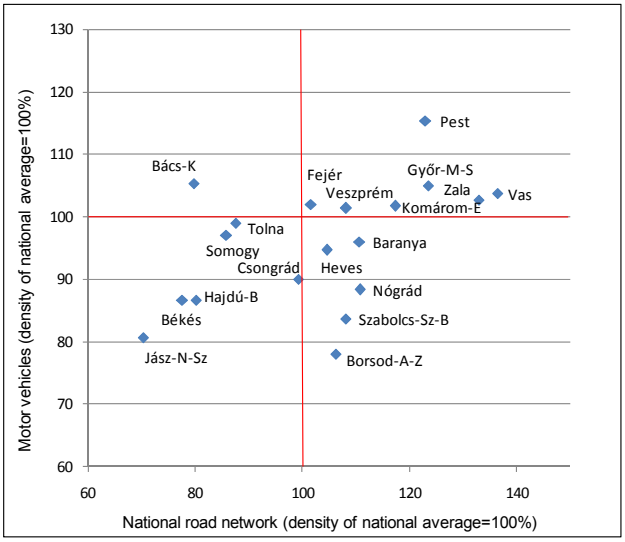


Reference: Hungarian Central Statistical Office – own calculation

Figure 2. Motorization and transport infrastructure tendencies

Taking the North-Hungarian region into consideration we can say that the highway that reaches the southern part of the region is not able to connect easily the micro areas of the central and northern territories with national economic activities. One of the main problems is that an adequate system of minor roads and other possible connections does not yet exist. As a result, foreign investors, who prefer good availability, might invest in other territories (Erdősi, 2005).

The availability of a huge number of towns in the region – mainly in the sub-region of Ózd, Bodrogköz and Edelény – is possible from only one direction. Several settlements of Nógrád County have the most disadvantageous position with extremely long accessibility times. Because of these, the western territories of the county build contacts with central Hungary instead of the North-Hungarian region – weakening further the internal connections inside the territory.



Reference: Hungarian Central Statistical Office – own calculation

Figure 3. Rate of road density and number of passenger cars in 2007(national value=100%)

In my earlier research papers, I compared the regional and national conditions by using ten indicators of the road, and subsidiary, road infrastructure according to Bennett's method. I also mentioned some facts about the availability possibilities of rural areas through public transport services.

Taking the national value as a base, the road density and the stock of passenger cars have the following values in the case of the seven NUTS-II regions. Figure 3 shows how the number of passenger cars and road density values are related to each other. Central Hungary, and central and western Transdanubia are above the national average in both terms. The eastern part of the country is lagging behind the others. Here both the number of passenger cars and road density are under the average. This is also the case in Northern Hungary. As discussed above, all these factors might be linked to income conditions.

AVAILABILITY RANKING WITH CENTRALITY INDEX

The Territorial Potential Model contains elements of mass (absolute volume of GDP or population) and distance. According to this model, territories that have the biggest potential are those that either have the greatest economic power or are near the centre, or both (Dusek, 2004; Nemes Nagy, 2005; Nagy, 2007).

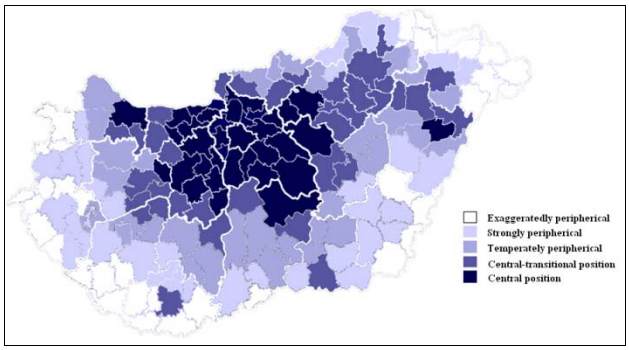
This methodology - that could be used for defining centre and peripheries and is derived from Newton's law of gravity- states that any two bodies attract one another with a force that is proportional to the product of their population and inversely proportional to the square of the distance between them (Tóth, 2006).

The Centrality Index contains own and inner potential values. The own potential shows the own availability terms (available population in space and time) inside the sub-region, the inner potential is given by the 174*173 availability matrix (available population in space and time from the sub-region inside the country). In this way, we draw a distinction between the internal and external destinations.
The basic theoretical model takes the form of:

$$A_{i1} = \frac{W_i}{c_{ii}} + \sum_j \frac{W_j}{c_{ij}},$$

where A_{i1} is the availability index of i locality,
W is the mass (population),
c_{ii} is the travel time inside the given sub-region,
c_{ij} is the travel time between i and j destination.

According to the population potential – which divides the scatter range of the Centrality Index into five classes – most of the sub-regions that are in exaggeratedly and strongly peripheral positions are located in Szabolcs-Szatmár-Bereg, Vas, and Somogy counties (Figure 4).



Reference: own calculation

Figure 4. Centres and peripheries (2007)

Table 1. Data by availability categories

Subregions (total)	*Availability category*					
	1	*2*	*3*	*4*	*5*	*Summa/ Average*
Distribution of unemployed persons (%)	18,9	21,0	18,5	21,4	20,2	100,0
Enterprises per 1000 inhabitants (pcs)	77	93	94	98	111	101
Income per capita (before tax) by availability categories (HUF)	1366072	1395031	1379380	1550994	1819759	1536123

Reference: own calculation
Notation:
1=Exaggeratedly peripheral 2=Strongly peripheral 3=Temperately peripheral 4=Transitional position 5=Central position

Regarding the Centrality Indices, the role of the capital city and its agglomeration is significant as well as that of certain county capitals. Since the point of the model is that those sub-regions which get in better clusters are able to reach greater mass in a given time-period, we can draw inferences about the connections between a local center and the neighbouring settlements. 60% of the Hungarian population lives in peripheries that are in a worse position according to certain indicators (Table 1).

It is also noticeable that the central and peripheral positions are always relative. In connection with the development of other territories, notions of what is an adequate or inadequate situation are always changing. In my further research work, I am going to analyze what the connection is between the centre and peripheries in geographical and economical mean.

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Myth and Reality: Impact of Fiscal Transfers on Regional Convergence

GYÖRGY KOCZISZKY, Ph.D.
UNIVERSITY PROFESSOR

e-mail: regkagye@uni-miskolc.hu

SUMMARY

The decision makers of the European Union have committed themselves a great number of times in the past decades to decreasing the economic and social differences between regions in the member states. This was designed to be achieved by the regional (cohesion) policy of the community; this is what the population in the poorest regions of new members have trusted in. The results are, however, far from unambiguous. This paper seeks to find reasons for this based on the experience of the region of Northern Hungary.
Key words: growth, sigma and beta convergence, state intervention, subsidisation

INTRODUCTION

The hope of catching up with economically more developed countries is not new in Hungarian thinking. The very best of the intellectuals from the Reform Age to the present day (e.g. István Széchenyi, [1] Miklós Wesselényi, Endre Ady,[2] Oszkár Jászi, and István Bibó in accordance with the spirit of their age and their social standing) have asserted their conviction of the need for convergence and discussed its obstacles.

The political propaganda prior to Hungary's accession to the European Union (2004) set out the promise (both directly and indirectly) of catching up fast.

The outcome is well-known. Although the facts remain ambiguous, we feel caught in a cycle in which our wishes do not become reality. Therefore, an increasing part of the population feels deceived. The initial great enthusiasm was quickly replaced by disappointment and disillusionment, and the recognition that we have again entertained disproportionate hopes. It seems that we had unfounded expectations concerning EU membership (particularly over the resources from the various funds), much higher ones than what the available subsidies would entitle us to.

This paper attempts to answer three questions:

- Has our economic performance (GDP growth) achieved a substantial breakthrough as a result of our economic policy following the accession and as a result of the resource allocation mechanism which forms part of it? Or has it been enough only to more or less maintain our position?
- Is it possible to sustain real convergence without regional convergence?
- What impact have EU subsidies had on Hungarian regional convergence?

HISTORICAL BACKGROUND: FROM SEMI-PERIPHERY TO SEMI-PERIPHERY?

Our economic historians are more or less in agreement about the periods of Hungarian economic growth and development.

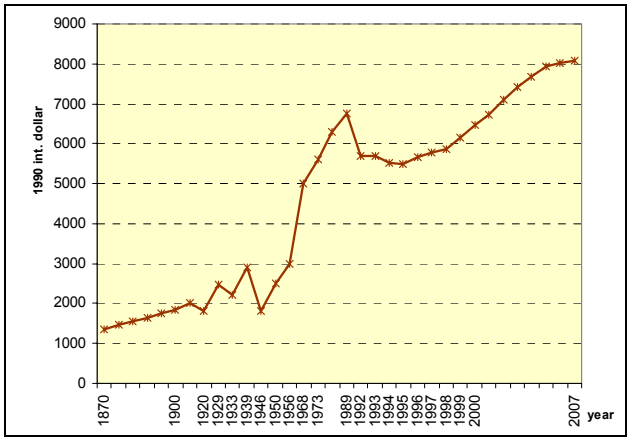
The span of almost fifty years ('balmy days of peace') between 1867 and 1914 (Austro-Hungarian Monarchy) is in general positively evaluated (e.g. Berend/Ránki, 1987), although opinions are divided on the economic growth rate of the period.

[1] *"How could we lift Hungary out of the mud?" asks István Széchenyi in his letter to Miklós Wesselényi in 1830 (Széchenyi, 2004).*

[2] *"Ferry-boat county, ferry-boat county, ferry-boat county. Even in its best dreams it only shuttled between two banks: from the East to the West, wishing to go back. Why did they lie that the ferry, oh Potemkin, you holy man with anointed hands, you only cheated on Czarina Catherine?... Idealists and malefactors united to build castles of the air-stones of falsity and shouted to the whole world with joy that Europe had been built up under the Carpathian Mountains.*

The Great Humbug did not hurt Europe, the lie was believed at home. We were told that Europe was here, we were preparing for a life of culture and jerked ourselves forward with taut nerves." Ady Endre, Budapesti Napló, 15 October 1905. (Complete Prose Works of Endre Ady, Vol. 7. Arcadum Adatbázis Kft.).

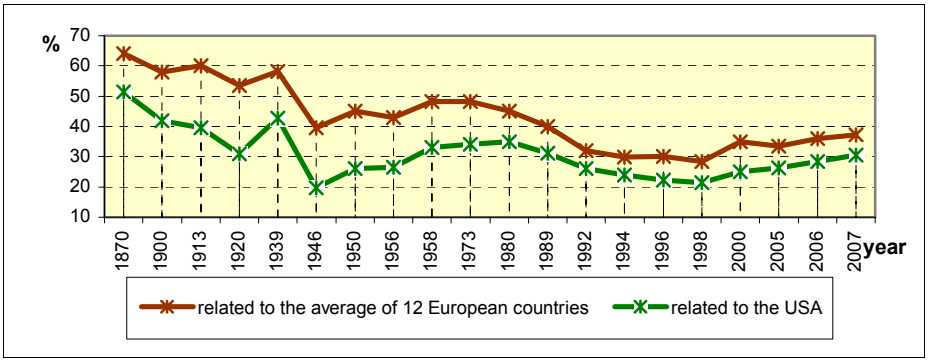
It remains a fact, however, that Hungary developed from a backward agrarian country (with a semi-peripheral position) into an agrarian-industrial country with a developed food industry in that period.
As a result, the growth rate of the economy accelerated (Kövér, 2007) between 1870 and 1913 (at a growth rate of 2-3.5 %/year) and the per capita GDP was nearly trebled (Figure 1).



Source: A. Maddison: Monitoring the World Economy 1820-1992. Paris: OECD, 1994 and author's calculation based on CSO data

Figure 1. Per capita GDP in Hungary, 1870-2007

This growth rate was broken by World War I. Although the governments succeeding each other took serious steps to protect to economy (repayment of foreign debts was halted, industry was given considerable military orders, etc.), the resources had been depleted by 1918 and the economic performance of the country suffered a significant setback.
Opinions are greatly divided on the economic performance of the period between the two World Wars (the Horthy period) as well as on that of the subsequent period (1945-1989) (Romsics, 2008). Unbiased empirical analyses have been published only recently. The change in political orientation taking place after 1989 has exerted a significant influence on the Hungarian economy, as is well-known. Privatisation, the decline of state interventions, the opening up the markets, the indebtedness of the country, etc. have put a range of companies in difficult situations, and industries have declined. The dramatic decline in added value and output had the direct consequence that the specific performance of Hungary underwent a decline (Figure 2).



Source: Based on data in A. Maddison (1995) and author's calculations

Figure 2. Relative development of per capita GDP in Hungary (1870-2007)

At the beginning of the new millennium (between 2000 and 2003), hopes were raised again and economic growth re-appeared. The global economic crisis which broke out in the spring of 2008 shook the Hungarian economy dramatically. Although there are disagreements concerning the causes according to different political opinions, there is hardly any dispute about the fact that the Hungarian economy suffered the negative external effect when already in a state of ill health. Thus, the consequences are far more serious than the Union average.
As also shown by the data of the Statistics Office of the European Union, the per capita GDP at purchasing power parity in Hungary in the year of accession was 63.2 % of the EU average, in 2007 it was only 62.6 %, in 2008 60.3 %, and in July 2009 it fallen to only 59.8 %.

Thus, the real convergence indicators of Hungary show a relative decline in the past four years. (As opposed to the period 2000-2004, when a convergence was registered with the value of the indicator rising from 56.1 % to 63.2 %. It is worth noting that in Slovakia, which joined the Union at the same time as Hungary, 50.1 % in 2000 rose to 55.5 % at the time of accession and to 67 % in 2007. Between the turn of the millennium and 2008 the same indicator rose from 68.5 % to 80.2 % in the Czech Republic, from 48.3 % to 53.3 % in Poland, and from 44.6 % to 67.9 % in Estonia.)
According to the Eurostat cumulative data, Hungary ranks ninth of the ten countries which joined the Union in 2004 in terms of real convergence in the period 2000 to 2007, and last when considering the period since the accession (http://epp.eurostat.ec.europea.eu). This means that our economic performance is weak not only in an

absolute sense, but also when compared to the new members.

According to the Eurostat data, in the field of industry and services, the annual gross income of full-time employees in companies employing at least ten persons in Hungary was 12.8% of the average of the 15 old members in 1998. This ratio had increased to 21.7 % by 2008, with the major part of the increase taking place between 2000 (13.51 %) and 2004 (20.56 %).

In 2006, the value of the indicator was 22.93 % in the Czech Republic, 10.28 % in Rumania, 19.49 % in Slovakia and 17.67 % in Poland (the last figure is for 2005). In Hungary the annual gross income grew by 10 % in 2006 as compared to 2004, and in 2007 the increase in incomes was 26 % as compared to the year of the accession.

At the same time, the data available show that in 2006 the annual gross income in Hungary amounted to 21.7 % of the average income of the 15 old members and 25 % of the EU- 27. Nevertheless, foreign direct investments of non-resident companies in Hungary have visibly increased since the accession, although economic analysts are doubtful about the causal relationship. According to the data of the Hungarian National Bank, FDI remained between 1995 and 2000 in a narrow band between 2.63 billion Euro and 3.70 billion Euro, while in the three years preceding the accession it showed a definite decreasing tendency: from 4.39 billion Euro in 2001 to 3.19 billion Euro in 2002 and then to 1.89 billion Euro in 2003.

In the year of accession this tendency changed: FDI increased to 3.63 billion Euro in 2004, then to 6.17 billion Euro in 2005 and also exceeded 6 billion Euro in 2006. In the last two years it decreased to a level around 4.5 billion Euro, with its average amounting to 4.93 billion Euro between 2004 and 2008. Meanwhile, the public debt increased, with the highest rate of debt service in the region.

To sum up: the economic statistical data of the past 150 years have proved that Hungary continues to belong to the semi-peripheral countries of the world economy.[3] Our positions obviously undergo changes, for the system itself is dynamic. At the moment it seems that Hungary is sliding downwards rather than climbing towards the centre.

CONDITIONS FOR SUSTAINABLE CONVERGENCE

The general concept of convergence (Hungarian Encyclopaedia, Budapest, 2000) allows for a wide range of interpretation. Economic and regional economic scientists have formulated two interpretations for convergence.

The first definition regards convergence as a decrease in the differences between the chosen social-economic indicators, which indicates in effect a decrease in the range of standard deviation (σ convergence). In the second interpretation, convergence means catching up on a longer term growth path (ß convergence). Thus, the latter (sustainable, and therefore, long-term convergence) is of greater importance than the former.

The rate of sustainable (long-term) convergence and the change with time of its rate are basically determined by three groups of factors with a strong logical interrelation in a given country: the public morals, nominal equilibrium and growth surplus (Figure 3).

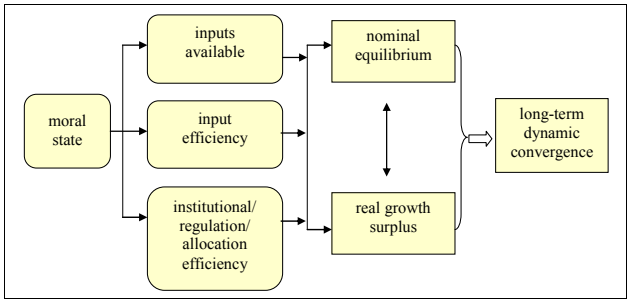


Figure 3. Macro-economic conditions for sustainable convergence

Nominal equilibrium is described as the stability of state finances (the monetary and budget situation). (As it is known, the European Union wishes to keep the differences between the member states within limits and to secure convergence by the prescription of the Maastricht criteria, though with varying results).[4]

[3] The centre-periphery world theory comes from Immanuel Wallerstein (1983). According to it, in a global world a centre at a high level of economic and social development concentrates capital, state-of-the-art technology, information, and science, and this is where innovation originates from. The economically backward periphery has the role of providing raw materials for the centre, and is described as having a low technical level and social underdevelopment. These – in addition to other features – determine the difference as well. The exchange of goods between the centre and the periphery is performed with terms of trade beneficial for the centre. A relation of economic dependence develops between the two regions with the capital of the centre playing a major role. The model was refined in the late 1980s with the introduction of the concept of semi-periphery.

[4] The Maastricht criteria (as is well-known) defined four convergence criteria for the introduction of the common currency (the Euro):

- *Price stability: the rate of inflation in the period examined may exceed the average of the three countries with the lowest inflation by max 1.5 %.*
- *The budgetary deficit is not to exceed 3 % of the GDP, and national debt is not to exceed 60 % of the GDP.*
- *Long-term nominal interest may exceed the average of the interest of the three countries with the lowest inflation by maximum 2 %.*

Nominal equilibrium is determined by an increase in the inputs, particularly the strengthening of savings, the efficiency of their use and the system of institutions and norms handling them. The equilibrium of financial and fiscal affairs (or the still manageable imbalance) is a necessary, but not sufficient, condition of convergence.

In the case of real convergence, the performance of a country with a lower performance (development and income levels) approaches those of countries with a higher performance.

In practice, this can be achieved if the income generating capacity of the poorer country grows more rapidly than that of the richer country. This process can be generated by an increase in productivity and employment, and by eliminating factors hindering the growth of performance (e.g. a system of institutions with low efficiency, political instability, etc.).

There is hardly any chance of real or nominal convergence when there is a lack of stable moral conditions or the will to improve the moral situation.

The general moral situation exerts its effect both on fiscal and real processes. The larger the proportion of the black (hidden) economy, the higher the budgetary revenue lost. The proportion lost in this way can be replaced by increasing the budgetary revenues (taxes and contributions from the white economy), selling assets of the national wealth ('denationalisation'), and reducing the state expenditure. Or it can be replaced by credits.

In the case when the political elite violates the written and unwritten legal regulations or, although abiding by them, takes the liberties to take steps infringing public morals, then a 'simple' citizen will also regard tax evasion as a forgivable sin (e.g. work without invoice, etc.).

The connections between the black economy, corruption and real processes are at least that serious. Part or all of the state intervention intended for increasing capacity, improving productivity, improving efficiency, i.e. the convergence of real processes, may disappear in the current system without having achieved its purpose.

Without improving our public moral conditions and states, increasing the performance of the economy and creating nominal equilibrium are both vain hopes.

Obviously the same logic can be followed in evolving the relations in respect of regional convergence. We can note that the steps taken by the government in power for creating (sustaining) nominal equilibrium may strengthen or also weaken the chances of convergence of a particular region.

REGIONAL POSSIBILITIES FOR INVESTIGATING BETA (ß) CONVERGENCE

Investigations designed to determine ß-convergence attempt to provide answers in respect of the time and speed of 'catching up'.

The model of simple ß-convergence (Baumol (1986), DeLong (1988), Mankiw (1992)) was elaborated on by Barro & Sala-i Martin (1995) relying on the work by Solow (1956) and Swan (1956).[5]

This model is suitable for examining the differences in regional incomes (performance) if there is an explanation for the causes (Barro & Sala-i Martin, 1995. pp.382.).

On the basis of the original Solow-Swan model (explaining growth for the overall period of catching up against the initial GDP level), ß-convergence can be written as follows:

$$(1) \qquad \ell n\left[\frac{y_{T,i}}{y_{0,i}}\right] = \alpha + \beta \ell n y_{0,i} + \varepsilon_i$$

$$(t=0, \ldots, r;\ m=u=1, \ldots, n),$$

where $y_{t,i}$ per capita income at time t in region i; and ß is the convergence factor.

The model presupposes that if the regions examined are of the same structure (e.g. the growth rates of the population, savings, and investment as well as access to technology are identical and in a state of equilibrium); then only their initial states may differ.

Parameter ß exerts an impact on the progress towards the state of equilibrium (speed of convergence, b), which can be expressed as follows:

$B=-(1-e^{-bT})$, consequently $b=-\ell n(1+ß)/t$ (Arbia, 2006).

The second significant parameter is halving time (the time needed for the logarithm of per capita regional income to become the mean value of the initial value and the value that can be assigned to the state of equilibrium. Formulated in a different way, it denotes the time needed for the initial difference in per capita output to be halved).[6]

[5] Despite the criticism (Quah, 1993, Temple 1999, Durlauf et al. 2005), several authors involved in regional convergence use this relationship as their starting point.

[6] The formalisation offered in equation (1) does not influence the meaning assigned to the parameters (e.g.: the negative value of parameter ß is in harmony with the absolute ß-convergence condition, the higher the (absolute) value of parameter ß, the faster the economy of the region approaches an equilibrium).

Mankiw (1995. pp. 304-305.) points out that this standard form ignores the interrelations and dependence relations between the regions (Anselin, 2003).[7]

Regional interrelations can be best demonstrated by means of a regional auto-regression model (Anselin/Bera, 1998), into which a regional 'impact factor' is introduced for the dependent variable.

Accordingly, equation (1) can be written in the following form:

(2)

$$\ell n\left[\frac{y_{T,i}}{y_{0,i}}\right] = \alpha + \beta \ell n y_{0,i} + p\sum_{j=1}^{n} w_{ij}\,\ell n\left[\frac{y_{T,i}}{y_{0,i}}\right] + \varepsilon_i;$$

$$\varepsilon_i \sim \text{Nid}(0,\sigma^2),$$

where w_{ij} is an element of the matrix of regional weight W; p is a variable dependent on regional influence expressing regional interaction (i.e. to what extent the per capita GDP increase of the neighbouring regions influences the specific GDP increase of the region under examination).[8]

Regional dependence can also be expressed by re-interpreting the error factor of equation (1) (Anselin/Bera, 1998):

(3) $$\ell n\left[\frac{y_{T,i}}{y_{0,i}}\right] = \alpha + \beta \ell n \gamma_{0,i} + \varepsilon_i,$$

where $\varepsilon_i = \delta\sum_{j=1}^{n} \omega_{ij}\varepsilon_j + \mu_i$, $\mu \sim Nid(0,\sigma^2)$.

The regional structure of the data can be modelled by the auto-regressive error factor (which is a random coefficient) and can be determined by the model iteration (Kelejian/Prucha 1999) formalised in (3).[9]

The disturbances in models (2) and (3) can be written in matrix form:

(4) $\varepsilon \sim N(0,\sigma^2 V)$ or $\mu \sim N(0,\sigma^2 V)$,
$V = \text{diag}(v_1, v_2, \ldots, v_n)$.

Modelling the disturbances is identical to student error distribution (Geweke, 1993). In order to supplement the model, normal preliminary values were supposed for parameters α and ß, a diffuse preliminary value for sigma noise variance, and uniform antecedents for $[-1/\lambda_{min};+1]$ and ρ (model 2) or δ (model 3), where λ_{min} denotes the minimum eigen value of the standardised weight matrix.

The model can be evaluated by the sampling proposed by Gibbs. (For the calculation methods of regional models in more detail see LeSage (1997); for the analytical or coding errors in the general Bayes model of subsequent simulations see Geweke (2006).)

The solution presented above is methodically suitable for handling problems of regional dependence resulting from empirical calculation.[10] In order to understand the problem in all its details, let us regard equation (1) as a simple linear regression model and equation (2) as a multiple linear regression model. It is known from regression theory that the value of the coefficient in the simple regression model is different from that of the identical variable coefficient in the multiple regression model. Although it is true that the negative value of ß advances convergence, it is possible to find differences between the two cases. More exactly, in the case of the individual regions, convergence refers to the same level of per capita income (i.e. to the same state of equilibrium) in the case of equation (1) and to different ones (depending on the regional context) in the case of equations (2) and (4).

According to Abreu (2005), the interpretation errors of the regional deferral model (equation 2) can be correctly written as follows:

(5) $$y = X\beta + \rho W y + \varepsilon,$$

where vector y (nx1) contains the growth rates and X contains the constant elements as well as the initial values of per capita income, and W is the regional matrix. The model can then be written in the following form:

(6) $$y = (I - \rho W)^{-1}(X\beta + \varepsilon), \text{ where:}$$

(7) $$(I - \rho W)^{-1} = I + \rho W + \rho^2 W^2 + \rho^3 W^3 + \ldots$$

[7] The literature is greatly engaged in eliminating this limitation (Abreu, 2005; Fingleton/Lopez-Bazo, 2006). From a theoretical aspect, the use of regional auto-correlation was advocated by Lopez-Bazo (2004) Vaya (2004) and Ertur and Koch (2007), who examined neo-classical models with the involvement of regional externalia, which resulted in convergence models, including regional auto-correlation as well.
The new economic geographical models (Fujita, 1999) answer the question why the distribution of economic activities is non-uniform spatially. The primary conditions (e.g. vicinity to natural resources) can be used to explain why an industry settles in a certain location, and the secondary conditions show that a company has chosen a geographical area for its activities because other companies have already been established there. The new economic geographical models stress the spatial spin-off effect between the economies, which has to be included also in the convergence models.
[8] The model can be appraised by the maximum probability method (Anselin, 1988).
[9] The original ß-convergence model was made more accurate by using the Bayes framework (LeSage, 1997, 2002). It is claimed that the greatest merit of the Bayes approach used in regional convergence is that it answers the problem of heterogeneity in regional samples and of leaping values, which resulted from the 'enclave impact', in which case a particular event elicits different behaviours from the nearby events. These problems can be solved by the Bayes hetero-skedasticity model.
[10] But does parameter ß have the same meaning in equations (1), (2), (3) and (4)? More accurately, can we still interpret the change of ß-parameter, similarly to the original model, as the speed of convergence towards the state of equilibrium? In equation (2) and in its Bayes version, for example, have we used other components in addition to the initial specific income in explaining regional growth?
In this respect, they represent a kind of 'regional condition', which is discussed in detail by Le Gallo/Ertur (2003), and Arbia and Pealinck (2003), i.e. these are convergences which tend towards various states of equilibrium and which are determined by the regional context (with the exception of the specification of spatial error).

It can be seen from equations (6) and (7) that the multiplication effect means that the growth rate of region i exerts an impact not only on the marginal change of the explanatory variable of region i, but on the marginal changes in the explanatory variables of other regions as well. More exactly, the first member describes the direct changes (the impact of the growth rate of the marginal change on the initial per capita GDP); and the second describes the indirect effects, which are the spin-off effects of the direct effects of first-rank neighbours. Finally, the other members describe induced effects, which consist of the summation of the impacts exerted by the highest ranking neighbours. Consequently, in the regional deferral model, the coefficients calculated examine only the direct marginal effect of the changes in the explanatory variables, excluding all the indirect induced impacts.

EXAMINATION POSSIBILITIES USING PANEL DATA

Panel data have several advantages over pure time series and cross-section models (Baltagi, 2001; Hsiao, 2003). Their introduction is justified by the fact that they eliminate the limitations of the conventional neo-classical approach (the initial technology and growth rates of the regions are identical and constant).

Panel data are characterised by the combined presence of cross-section and time-series models. Thus, equation (1) can be written concerning the panel model as follows:

$$(8) \qquad \ell n\left[\frac{y_{t,i}}{y_{t-5,i}}\right] = \alpha_i + \beta^{?}\ell n y_{t-5,i} + \varepsilon_{it}\cdot$$

$$(9) \qquad \widehat{\beta}_{FE} = \left\{\widehat{\beta} + \frac{\sum_{i=1}^{n}\ell n y_{0,i}\,\ell n\left[y\frac{y_{5,i}}{y_{T,i}}\right] + \sum_{t=+}^{T}\sum_{i=1}^{n}\ell n y_{t-5,i}\,\ell n\left[\frac{y_{t,i}}{y_{t-5,i}}\right]}{\sum_{i=1}^{n}\left(\ell n y_{0,i}\right)^2}\right\}\frac{\sum_{i=1}^{n}\left(\ell n y_{0,i}\right)^2}{\sum_{t=1}^{T}\sum_{i=1}^{n}\left(\ell n y_{t-5,i}\right)^2},$$

where $\widehat{\beta}_{FE}$ ß$_{FE}$ is the least-square (fixed impact) parameter of parameter ß' in equation (8), and ß is the parameter of the least square method referring to the cross-section model. It can be seen from equation (9) that the sign of ß$_{FE}$ depends on the sign of member C (and its relation with ß):

$$(10) \quad C = \frac{\sum_{i=1}^{n}\ell n\gamma_{0,1}\,\ell n\left[\frac{y_{5,i}}{y_{T,i}}\right] + \sum_{t=6}^{T}\sum_{i=1}^{n}\ell n y_{t-5,i1}\,\ell n\frac{y_{t,i}}{y_{t-5,i}}}{\sum_{i=1}^{n}(\ell n y_{0,i})^2}$$

(Thus if ß<0 and C<0, ß$_{FE}$ is negative and convergence can be interpreted both for the cross-section model and the panel data. But if ß<0 and C is positive and /C/>/ ß/, then at the level of panel data we speak of divergence, even if the cross-section model shows convergence. As opposed to that, if ß>0, but C is negative and /C/>/ ß/, convergence prevails at the level of panel data, even if divergence is demonstrated in the cross-section model.

The results discussed so far refer to a case without regional correlation. Regional dependence (as consideration of a supplementary regional deferral or error coefficient) complicates the relation between the two models further.

Model (8) is easy to handle from a regional econometric aspect, just like model (1); the involvement of regional dependence in the panel data is identical in both cases, particularly with the fixed effect regional auto-regressive model, which can be written in the form:

Equation (8) can be regarded as a modified version of the original ß-convergence, where the growth rate is determined not for the complete period, but for 5 years (Elhorsd, 2003).

The main point of the calculation method is that regional and time observations are performed resulting in an individual parameter (ß'). In equation (2), the dependent variable is the growth rate of the specific GDP of region i at time t yt-5,i (the natural logarithm of the per capita GDP of the same region at time t-5), and ß' is the relevant parameter of the convergence analysis. Equation (8) is the classical expression of the (αi) fixed impacts in the panel data model. It is well-known from the literature that the speed of convergence greatly depends on the differences that can be measured in the states of equilibrium. Fixed impacts are probably the easiest way to explore region-specific differences in the states of equilibrium.

The second possibility is to use conditional convergence by applying several explanatory variables in the model. (Since the objective of the analysis is to examine the results obtained by the different calculation methods, more complex versions of equation (8) were not used so as to diminish the risk that the outputs obtained from the various models would not be comparable.)

Economic growth and convergence are basically long-term phenomena. Thus, there is a discussion going on in the literature about how long the periods examined (in the case of panel data) should be (Islam, 1995). The argument for examining five-year growth periods is that, when annual growth rates are used, the impacts of short-term economy cycles and long-term effects become mixed up with each other.

$$(11)\ \ell n\left[\frac{y_{t,i}}{y_{t-5,i}}\right]=\alpha_i+\beta\ell ny_{t-5,i}+\rho\sum_{i=1}^{n}W_{ij}\ell n\left[\frac{y_{t,i}}{t-5,i}\right]+\varepsilon_{it}$$

$$\varepsilon_{it}\sim Nid(0,\sigma^2),$$

using the notations in equation (2) and its conclusions. It is, however, also possible to re-interpret the regional error model as follows:

$$(12)\ \ell n\left[\frac{y_{t,i}}{y_{t-5,i}}\right]=\alpha_i+\beta\ell ny_{t-5,i}+\varepsilon_{it}\text{, or:}$$

$$\varepsilon_{it}=\delta\sum_{i=1}^{n}\omega_{ij}\varepsilon_{it}+\eta_{it}\ ,\ \eta_{it}\sim Nid(0,\sigma^2),$$

which is called the fixed effect regional error model in the literature.

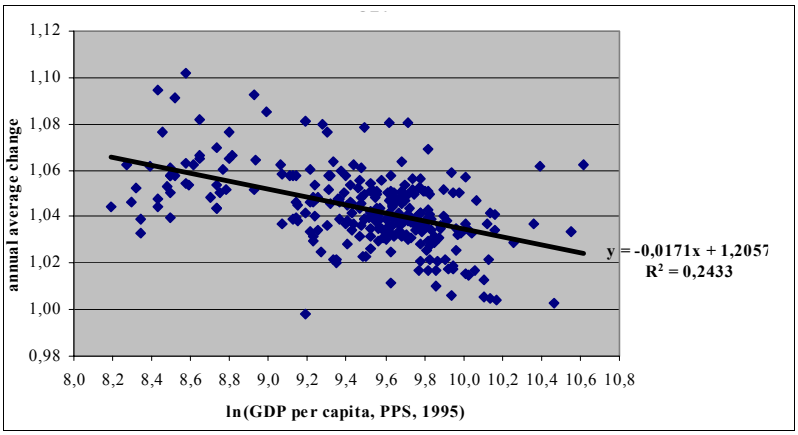
Several examples prove (particularly for poorer countries) that an increasing macro-economic performance will lead to a growth of disparities within the country (the trade-off effect).[11]

The experience of the most developed countries and the old members of the European Union, on the other hand, shows that an increase in macro-economic performance is necessarily matched by an increase in regional divergence. If there is a well-functioning regional policy in place, the regional income differences (sigma convergence) can be reduced (Table 1).

Table 1. Development of macro- and mezo level convergence indicators in selected countries

Country	*Number of regions*	*Beta convergence*		*Regional income inequality (sigma convergence)*				
		Period examined	*(%/year)*	*1940*	*1950*	*1970*	*1990*	*2005**
Germany**	11	1950-1990	1.4	-.	0.31	0.20	0.19	0.14
Sweden	24	1951-1933	2.4	0.26	0.15	0.10	0.07	0.06
Great Britain	11	1950-1990	3.0	-	0.17	0.10	0.12	0.10
France	21	1950-1990	1.6	-	0.21	0.17	0.14	0.11
Italy	20	1950-1990	1.0	-	0.43	0.33	0.27	0.25
Spain	15	1955-1987	2.3	-	0.34	0.27	0.22	0.20
USA	48	1880-1990	1.7	0.35	0.24	0.17	0.17	0.16
Japan	47	1955-1990	1.9	0.63	0.29	0.23	0.15	0.12
Hungary***	7	1995-2007	0.81					
EU ***		1995-2007	1.71					

Source: Sala-i-Martin
Author's calculation **without the former GDR ***Author's calculation



Source: author's calculation based on Eurostat data

Figure 4. Beta convergence (EU 27, region)

[11] The trade-off effect is used in the literature in several contexts (e.g. the exchange rate, etc.). For our topic, perhaps the expression 'contrary effect' seems appropriate.

To sum it up: as a result of its semi-peripheral character, the speed of convergence between the regions of Hungary falls behind the EU average (2007).

The regional policy of Hungary in the period examined was not able to achieve convergence as such either by improving economic activity, or by setting the economy on a new growth path. Therefore, its convergence is in effect virtual.

DIVERGENCE INSTEAD OF CONVERGENCE

The European Union and the national regional policy (strengthening cohesion) are in principle designed to serve the growth of the macro-economy and that of regional performance simultaneously.
This dual objective has been achieved with varying success in the EU in recent years (Figure 5).

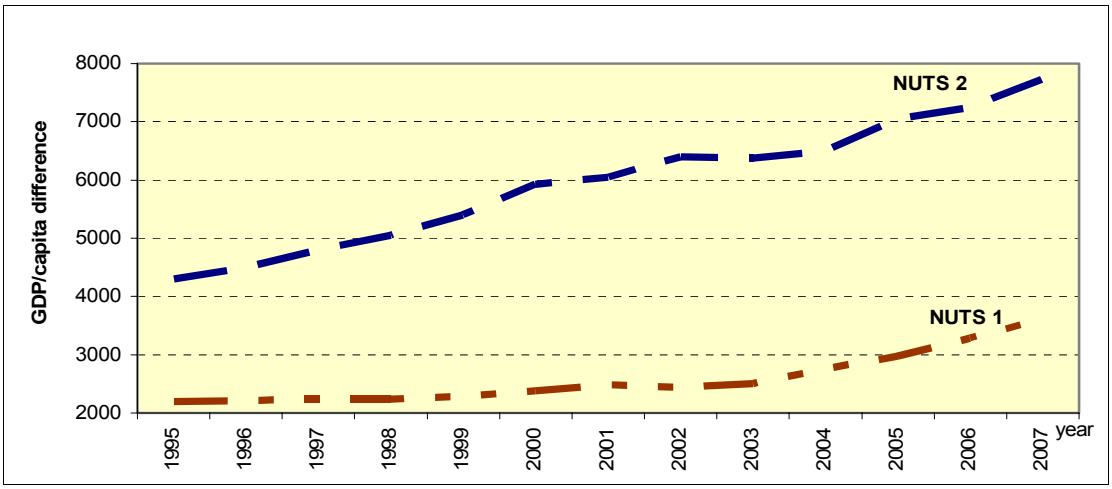


Figure 5. Development of sigma convergence in the EU NUTS 1 and NUTS 2 levels

Besides some positive cases, several negative examples can be mentioned. Unfortunately, Hungary belongs to the latter: for almost the past 15 years, the macro-economic performance has increased at the same time as an increase in regional differences (Figure 6).

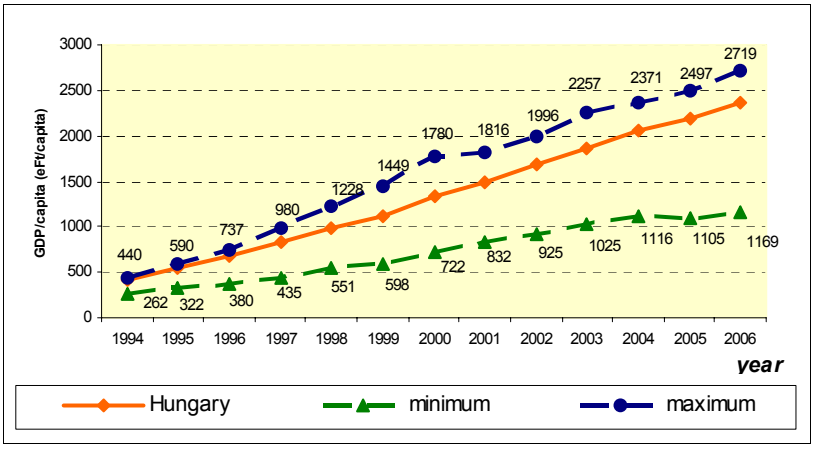


Figure 6. Standard deviation of county per capita GDP in Hungary

Meanwhile, the growth rate of counties with outstanding performance as compared to the basis period (6.17) is well in excess of the national average (5.56).

Thus, as is natural, the range of standard deviation increased – the scissors opened wider (Figure 7).

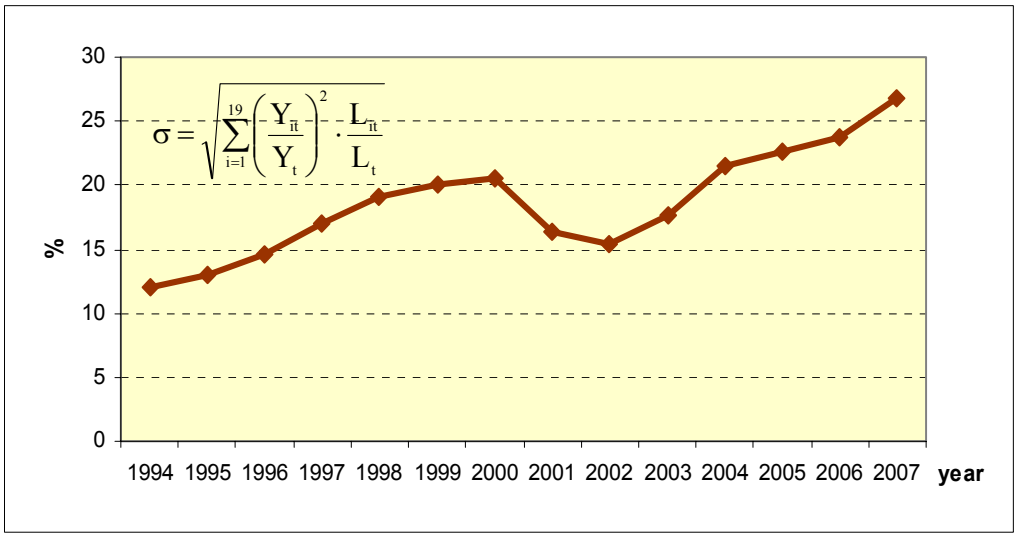


Figure 7. Development of per capita GDP σ-convergence in Hungary

According to the standard deviation of economic performance, Hungary became split into three parts. The lagging behind of Szabolcs-Szatmár-Bereg County seems to be permanent. The situation of Borsod-Abaúj-Zemplén County is somewhat better, but no real improvement can be perceived (Figure 8).

Table 2. Changes in per capita GDP (thousand HUF/person) in Hungary

County	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*
Pest	324	394	487	643	760	894	1 035	1 309	1 493	1 678	1 816	1 949	2 018
Fejér	410	542	696	980	1228	1283	1 577	1 561	1 596	1 782	2 009	2 091	2 292
Komárom-Esztergom	341	471	599	716	827	918	1 104	1 397	1 561	1 997	2 282	2 497	2 426
Veszprém	339	460	543	669	795	901	1 115	1 262	1 343	1 483	1 606	1 633	1 713
Győr-Moson-Sopron	440	590	737	905	1182	1449	1 780	1 816	1 996	2 257	2 371	2 430	2 719
Vas	439	581	734	951	1150	1317	1 517	1 529	1 679	1 985	2 067	2 068	2 332
Zala	401	496	620	751	881	989	1 122	1 310	1 472	1 754	1 875	1 871	1 878
Baranya	356	433	518	662	769	868	1 005	1 122	1 258	1 401	1 516	1 584	1 702
Somogy	325	413	498	579	672	760	911	1 058	1 158	1 301	1 421	1 439	1 469
Tolna	401	497	600	690	838	978	1 092	1 206	1 342	1 345	1 457	1 512	1 593
Borsod-Abaúj-Zemplén	299	410	468	570	670	736	851	950	1 054	1 182	1 371	1 499	1 563
Heves	310	405	493	599	716	805	946	1 113	1 250	1 398	1 523	1 528	1 626
Nógrád	263	322	380	435	553	605	722	832	925	1 025	1 116	1 105	1 169
Hajdú-Bihar	353	421	521	632	741	794	963	1 126	1 249	1 435	1 564	1 620	1 698
Jász-Nagykun-Szolnok	335	419	503	620	704	745	894	1 062	1 152	1 239	1 327	1 358	1 542
Szabolcs-Szatmár-Bereg	262	327	391	474	551	598	731	847	934	1 069	1 167	1 196	1 257
Bács-Kiskun	329	425	502	602	696	769	916	1 038	1 178	1 280	1 434	1 466	1 567
Békés	338	422	507	590	673	750	893	985	1 069	1 158	1 263	1 302	1 359
Csongrád	402	503	614	737	864	947	1 110	1 195	1 327	1 465	1 607	1 670	1 744
Average in Hungary	**425**	**544**	**669**	**830**	**983**	**1113**	**1 325**	**1 499**	**1 691**	**1 870**	**2 050**	**2 185**	**2 363**
minimum	**262**	**322**	**380**	**435**	**551**	**598**	**722**	**832**	**925**	**1025**	**1116**	**1105**	**1169**
maximum	**440**	**590**	**737**	**980**	**1228**	**1449**	**1780**	**1816**	**1996**	**2257**	**2371**	**2497**	**2719**
standard deviation	50,98183	71,09075	98,15695	140,7276	187,751	223,4005	271,0971	244,7015	261,7051	329,5011	349,121	375	402,5
relative variance	0,119957	0,130682	0,146722	0,169551	0,190998	0,200719	0,204602	0,163243	0,154764	0,176204	0,170303	0,172	0,17

Source: KSH

Table 3. Range of per capita GDP standard deviation and changes in relative variance

	1994	*1995*	*1996*	*1997*	*1998*	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*
Hungary	425	544	669	830	983	1113	1325	1499	1691	1870	2050	2185	2363
minimum	262	322	380	435	551	598	722	832	925	1025	1116	1105	1169
maximum	440	590	737	980	1228	1449	1780	1816	1996	2257	2371	2497	2719
relative variance	11,99572	13,06815	14,67219	16,95513	19,09979	20,07193	20,46015	16,32432	15,47635	17,62038	17,03029	17,16	17,03

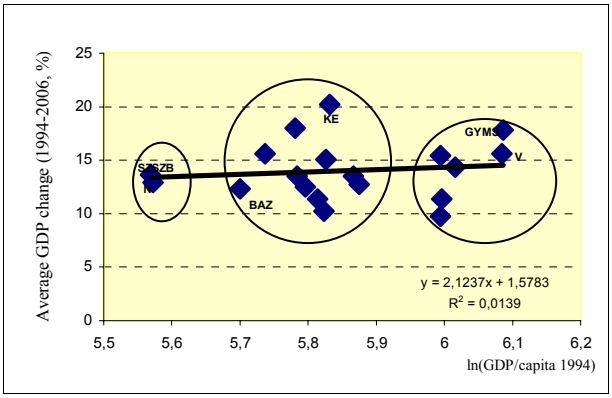


Figure 8. Convergence clubs of counties in Hungary

IMPACT OF EUROPEAN UNION SUBSIDIES ON REGIONAL CONVERGENCE

Even the first works on economic growth raised the question of what role governments played in generating growth and of what capacities governments had that the private sphere did not.

The 1950s and 1960s (the golden age of state intervention) was pervaded by a naive approach to the operation of governments. Explicitly or not, the supposition was entertained that the public sector served the advancement of social welfare with each of its acts.

Therefore, hunting for annuities played an insignificant role in the motivation of political decision makers and executives. It was thought that the public sector formed a monolithic unity, economic decisions were reasonably understandable and there could be no inconsistencies between policies.

The consistency of the individual steps in economic policy was regarded as given not only in space, but in time as well. Therefore, the political time horizons of governments were believed to be sufficiently long enough for the decisions of the present not to enter into conflict with those to be employed by the future governments.

However, these conflicts may well arise either as a result of errors, or they may originate from political considerations as well (e.g. winning the elections to come) that urge governments in the short term to choose alternatives that are obviously incompatible with long-term objectives.

It was also taken at face value that economic policy decisions were reversible. Civil servants could be dismissed when they were no longer needed, or after the objectives strived for were achieved, entitlements could be automatically eliminated, etc. Conversely, we know today that it is much easier to increase entitlements than to decrease them, or that it is much easier to hire than to fire civil servants.

Finally, mention must be made of the misconception that the instruments of economic policy are completely under the control of decision makers, and that they in turn can rely on an honest and efficient civil servant body, which executes all the decisions made at a higher level in an objective and efficient way. It is sufficient to refer here to corruption, the problem of employer and agent, or the hunt for annuities – the relevant literature is also the product of recent years.

Experience has shown that this romantic or idealised image is far from reality. Actually, the public sector is not monolithic, but consists of a number of political centres with conflicting interests and thinking, which are not necessarily governed by the same conception of public interest. The economic policies followed by them are not necessarily consistent in space and time. While it may easily happen that they are hunters for annuities and are under the influence of various groups of interests, it is also possible that those making some of the economic political decisions ignore how the economy works in reality. There may be employer-agent problems present; measures may be irreversible; bureaucracies may have low efficiency and/or be possibly corrupt (or both).

The fundamental objective of the cohesion policy of the European Union is to achieve the convergence of regions with low performance. It follows that subsidisation is only efficient if it generates surplus output (as compared to the condition without subsidies).

The literature makes the impact of surplus performance contingent on the efficiency of the operation of the system of institutions and on that of utilisation.

Empirical studies and analyses verify in this respect as well that there are considerable differences between the member states. Side by side with obviously positive examples, low absorption capacity is not infrequent. Unfortunately, this is what was typical of the first two years following Hungary's accession (2004-2006) (Table 4).

Table 4. Impact of subsidies on increase in GDP

Country	GDP/EU* subsidy	Contribution to increase in GDP (%)		
		1989-1993	1994-1999	2000-2006
Portugal	~ 3.0 %	3.9	4.6	6.1
Spain	~ 1.5 %	2.9	3.1	4.2
Greece	~ 2.6 %	4.3	5.6	6.1
Ireland	~ 2.8 %	n.a.	8.9	8.6
Hungary	~ 2.1 %	-	-	1.2**

Notes: * AGENDA 2000 (max. 4 %) ** in 2004-2006
Source: The Role of Fiscal Transfers for Regional Economic Convergence in Europe (No.1029.2009.)

Although the experience of two years is hardly suitable for drawing far-reaching conclusions, it can be seen clearly that the impact of subsidies arriving in Hungary on GDP growth lags behind the EU average.

This has or may have a number of causes:

- the political 'brainstorming' present in resource allocation.
- the majority of EU funds arriving in the Hungarian convergence regions (60-65 %) have the one-time effect of increasing demand or of improving community infrastructure. They do not have the effect of strengthening economic potential, and this is also true for a high proportion of 'soft projects'.
- Resource allocation happens on the basis of political (partial) interests, and the majority of resources are not spent on investments supporting long-term convergence; thus, their impact is also weaker.
- Resources are not additive, but substitutive in character. In the majority of cases, they do not appear as additional funds, but replace previous domestic investments.

Table 5. Working capital imports of selected countries against the working capital imports of the world and of EU-27 in 1998-2007 (%)

		1998	1990	2000	2001	2002	2003	2004	2005	2006	2007	Changes
the Czech Republic	Against the world	0.53	0.58	0.36	0.68	1.36	0.37	0.69	1.22	0.43	0.50	-0.03
	Against EU-27	1.31	1.25	0.71	1.47	2.74	0.81	2.32	2.34	1.07	1.13	-0.18
Estonia	Against the world	0.08	0.03	0.03	0.07	0.05	0.16	0.14	0.30	0.12	0.14	0.05
	Against EU-27	0.20	0.06	0.06	0.14	0.09	0.35	0.45	0.58	0.30	0.31	0.10
Poland	Against the world	0.90	0.67	0.67	0.69	0.66	0.82	1.82	1.08	1.36	0.96	0.06
	Against EU-27	2.24	1.44	1.34	1.49	1.34	1.77	6.11	2.08	3.41	2.19	-0.06
Hungary	Against the world	0.47	0.30	0.20	0.48	0.48	0.38	0.63	0.80	0.48	0.30	-0.17
	Against EU-27	1.18	0.66	0.40	1.03	0.97	0.82	2.10	1.55	1.21	0.69	-0.48

Source: UNCTAD working capital database

ON THE SHORTCOMINGS HINDERING REGIONAL CONVERGENCE

In spite of the subsidies of recent years, the economic performance of the Hungarian regions lags behind (at various rates from time to time) what we have hoped for; divergence rather than convergence has emerged. The causes are complex. Beyond the conditions for nominal and real convergence, the moral foundations are lacking, which has a fundamental influence on the room for manoeuvring of the former.

A regional level convergence program seems to be virtual. Part of the subsidies (resulting from the types of the programmes) is used for 'political scenic plans'. It is only an extraordinarily small proportion (hardly verifiable) that attempts to change the economic structure. As long as there is no intention amongst the political elite to change this, hardly any positive progress can be expected.

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What Do the Business Results for 2007 Reveal? A Macro-analysis Based on Company Balance-sheets

TAMÁS MELLÁR, Ph.D.
UNIVERSITY PROFESSOR

e-mail: mellart@ktk.pte.hu

INTRODUCTION

The basis for this analysis was provided by the aggregated balance-sheets of companies for the year 2007. The analysis essentially focuses on "macro-aims and character", although little more than half of the national GDP is created in the business sector (specifically, 12,891.7 billion Ft of the total GDP for 2007 of 25,419.2 Ft). It is, however, evident that this is the most significant proportion (at least in relation to the most important features of economic activity) and so there is some value in examining the results from the perspective of total economic activity and in drawing conclusions for the economy as a whole.

The features of the analysis and the conclusions which can be drawn from the results are basically influenced by the fact that the database does not contain finely detailed data, but rather the total values of groups of businesses. The smallest of these in the database was the branch, and so we took this as a unit of calculation. One of the most important factors of the investigation was to examine who produces what, with what result and by how much does the latter add to the common budget based on a breakdown of the ownership of the branches.

We have differentiated between three forms of ownership: companies with domestic majority ownership, companies with foreign majority ownership, and state-owned companies.

(In this latter case we did not strictly apply the 50% rule, and we also regarded some typical sectors as state-owned if the branch level ownership ratio stood at some percentage points below the critical limit).

GENERAL BUSINESS OVERVIEW

Table 1 shows in a comprehensive fashion the most important characteristics as broken down by owner and branch. The most striking – but scarcely surprising – oddity to be seen in the table is that foreign majority-owned companies provide half of the GDP (value added)[1] produced by companies (and a quarter of the total GDP), while they own only twenty percent of the companies and only 30% of employees are employed by them. More efficient production can be observed also in the fact that employees of foreigner companies produce, on average, more than 9 million Ft in new value, whilst in domestic business circles the figure is less than half of this at only 4.3 million Ft.

[1] It would be more precise to speak of value added produced by companies, but since the use of GDP is so widespread, even in professional standard language, we have no other option than to follow this less-than-perfect use of terminology.

Table 1.

	Total companies	*Foreign companies*	*Domestic companies*	*State-owned companies*
Number of businesses	333 596	64 615	253 618	15 362
(%)	100.0%	19.4%	76%	4.6%
Employees	2 242 179	678 415	1 322 211	241 553
(%)	100.0%	30.2%	59%	10.8%
GDP (billion Ft)	12 891,7	6 208,2	5 750,1	933,4
(%)	100.0%	48.2%	44.6%	7.2%
GDP per capita (‘000 Ft)	5 750	9 151	4 349	4 403
Fixed assets (‘000 Ft)	27 475	60 643	12 192	15 836
Fixed assets-to-personnel cost* ratio	9.5	16.3	5.1	5.1
Personnel cost-to-GDP ratio	50.3%	40.7%	55.5%	71.2%
Exports as % of total sales	27.2%	40.1%	17.8%	4.7%

* Personnel cost means the total of wages and salaries, related charges and the cost of fringe benefits.

Differences in the level of technical development among the sectors are shown by the very different range of fixed assets per capita and of the assets to personnel cost ratio (capital to labour). The per capita value of the fixed assets is four times higher in foreign-owned companies than in their domestic equivalents, and the capital to labour ratio is three times higher. The different developmental level is also shown by export sales: only 18% of the domestic companies’ sales are exports, whilst in foreign-owned companies export sales as a percentage of total sales reached 40%.

The limited appearance of state-owned companies in terms of production and employment is not at all surprising and can be explained by the intensive privatisation carried out in earlier years. The state’s role is, in any case, concentrated much more on non-market-related areas such as education, health-care, public administration etc. and so any significant participation in the corporate field is not to be expected. Furthermore, it cannot be regarded as in any way odd that the state-owned corporate sector has relatively low profitability (see the data in Table 2). State companies are basically not expected to be highly profitable, but to have a useful, supplementary function in correcting the market. It should also not be surprising that state-owned companies receive the largest proportion of available subsidies on a per unit basis. At this stage of the analysis, we cannot judge the extent to which branch subsides are necessary or unnecessary. However, we are convinced that the total ratio of state subsidies is too high, since it exceeds 6% of the value added (GDP). If we also add the tax allowances on a similar scale, the exaggerated and misdirected role of the state in business is even more obvious.

The technical and competitive dominance of foreign-owned companies is also shown by profitability: net profit on sales, both before and after tax, is significantly higher here than in the domestic sector (ignoring the state-sector completely). However, it is interesting to note that this advantage starts to weaken if we look at profit in relation to fixed assets. Here, domestic companies showed better results. However, before any dramatic conclusions are drawn, it is useful to remember that domestic companies normally operate with a limited fixed asset base. These favourable results are undoubtedly due to this.

Table 2.

	Total companies	*Foreign companies*	*Domestic companies*	*State-owned companies*
Pre-tax profit as % of sales	9.7%	13.0%	7.2%	5.2%
	(7.2%)	(9.4%)	(5.6%)	(3.3%)
After-tax profit as % of sales	9.0%	12.1%	6.6%	4.6%
	(6.5%)	(8.5%)	(5.0%)	(2.7%)
Pre-tax profit to fixed assets (%)	10.2%	9.2%	14.6%	3.5%
	(7.6%)	(6.6%)	(11.3%)	(2.2%)
After-tax profit to fixed assets (%)	9.5%	8.6%	13.4%	3.1%
	(6.8%)	(6.1%)	(10.2%)	(1.8%)
Pre-tax profit deducting after-tax to pre-tax profit	7.1%	6.4%	7.9%	11.5%
Subsidies-to-GDP ratio	6.3%	1.2%	7.4%	22.7%
Tax allowances-to-GDP ratio	6.3%	8.3%	4.9%	1.3%

() In brackets we show the index adjusted for losses in non-profitable companies.

TAXES, TAX ALLOWANCES AND SUBSIDIES

As already mentioned in the previous chapter, the superiority in efficiency of foreign-owned companies is also shown by their profitability, since their after-tax profit ratio exceeds 60%, even though they scarcely achieve a 50% share of production (see Table 3). What is actually paid as profits tax can easily be calculated from the company's balance-sheet as the difference between the pre- and after-tax profit figures. Our calculation, however, produced the surprising result that the whole business sector paid some 450 billion Ft in profits tax, whilst, according to their pre-tax profit figures, they should have paid 1,250 billions in tax based on the 16+4=20% profits-tax rate. Therefore, nearly two-thirds of the theoretically due profits tax was not paid, and so businesses benefited from some 810 billion Ft of tax allowances.

Table 3.

	Total companies	*Foreign companies*	*Domestic companies*	*State-owned companies*
After tax profit* (billion Ft),	5 846.9	3539.6	2163.3	144.0
% share	100.0%	60.5%	37%	2.5%
Profit tax paid (billion Ft),	448.4	242.9	184.4	21.1
% share	100.0%	54.2%	41.1%	4.7%
Tax allowance (billion Ft),	810.7	513.6	285.1	11.9
% shares	100.0%	63.3%	35.2%	1.5%
Subsidies (billion Ft)	806.2	71.4	426.2	308.6
% shares	100.0%	8.8%	52.9%	38.3%

* Comprises only the totals from profitable businesses.

Obviously, the extent of this is not a minor issue. The majority (more than 60%) of tax allowances were granted to foreign enterprises and only one third to domestic companies, although domestic companies employ more than the half of all employees. The level of allowances to state-owned companies is negligible.

The situation is totally different in the case of subsidies, the biggest proportion, more than half of all subsidies, were granted to domestic enterprises, and mainly to those with a large shareholding by the state. By comparison, foreign-owned companies did not even reach 10% in terms of subsidies, although some strikingly highly subsidised branches can also be found here. The major beneficiary of subsidies was the state company sector since they received the most in relative, even if not in absolute, terms. This is clearly visible in the penultimate line of Table 2, where the ratio of subsidies compared to GDP is shown.

PROFITABILITY AND LIQUIDITY

It is worthwhile returning to the issue of profitability although this has already been mentioned in connection with Table 2, where the figures of sales revenue- and assets-to-profit were published. The situation is better illustrated by the business management profitability indices (see Table 4).

Table 4.

	Total companies	*Foreign companies*	*Domestic companies*	*State-owned companies*
After-tax profits to registered capital	0.357	0.373	0.390	0.075
Value added to own capital	0.283	0.190	0.511	0.654
Value added to sales revenues	0.199	0.213	0.176	0.418
Current assets to short-term liabilities (liquidity)	1.28	1.30	1.19	1.63
Total liabilities to own capital	1.78	1.49	2.38	2.46
Liabilities to own resources	0.63	0.598	0.704	0.71

The primary role of the index calculated as a ratio of net profit and registered capital (first line of Table 4) is to measure the efficiency of share capital, the dividends paid being used to calculate capital yield. We, however, are not concerned with this, since only a negligible proportion of companies with majority domestic ownership are currently traded on the stock market. Consequently, it is not surprising that domestic companies offer a higher yield than their foreign counterparts, since it is a fact that Hungarian businesses are heavily under-capitalised. The ratio of value added and own capital (the second line of the table) shows the

scale of value added which can be generated by the specific business sector from its own resources. The value of both the domestic and state business sectors is better than that of foreign capital since the percentage of "own capital" is very low. Furthermore, the value added compared to sales revenues can be regarded as an index of efficiency which shows the new value added by the sector. The index for state-owned companies was the best, due, on the one hand, to their relatively low assets-to-stock ratio, and, on the other hand, to the fact that they mainly undertake service-like activities where RMCs (raw material costs) are relatively low.

The quotient of current assets-to-stock and short-term liabilities is the liquidity ratio – which is higher than 1 if part of the current assets originates from own resources or from long-term foreign resources. Values below 1 indicate problems for the business and its management, since, in such a case, there are insufficient resources to cover short-term liabilities. Based on this, it is somewhat surprising that the liquidity ratio of domestic companies is not much worse than that of the foreign-owned companies with state-owned companies performing best in this respect. The critical value of the capitalisation ratio – that is, the quotient of total liabilities and own capital, is 2; if the value is higher than this, the burden of foreign liabilities can be very high. From the data in the penultimate row of Table 4, it is evident that both the state and private domestic business sectors are within the critical range due to the high ratio of foreign debt. The debt index shows the level of liabilities within total resources. The critical value here is 2/3 (two-thirds); a higher level of indebtedness is accepted as being too high, in which case disinvestment can cause a crisis. From the last line of Table 4 we can see that domestic companies (both state- and privately-owned) are within this critical range and so are deeply in debt.

THE INCOME-SIDE COMPOSITION OF GDP

With company balance-sheets we can also calculate value added (GDP) from the income-side. This is shown by the ownership sectors in Table 5.

A significant proportion of GDP is provided by two basic elements of income: wages and associated costs, and taxes (profits tax). Amortization is added to this in accordance with the principle of the gross account and subsidies as corrective factors. Based on the total number of companies, the total of wages and related costs amounts to one-half of the GDP, whilst profits-tax accounts for more than one-third. Nevertheless, there are significant sectoral differences behind these total percentages. In the case of state-owned companies, gross wages represent the majority of value added, whilst, with foreign-owned companies, they represent only 40%. The situation is exactly the opposite in respect of profits, in that in foreign-owned companies profit is the largest, whilst in state-owned companies it is the smallest. Naturally, the comparison is much more relevant regarding domestic and foreign businesses, but the differences here are also very significant. The wages-to-profit ratio is significantly lower in foreign-owned companies than in their domestic counterparts, and it is obviously the differences in profitability and in the assets-to-wages ratio which lie behind this.

Table 5.

	Foreign companies		*Domestic companies*		*State-owned companies*		*Total*	
	billion Ft	*share*	*billion Ft*	*share*	*billion Ft*	*share*	*billion Ft*	*share*
Wages	1932.8	30.6%	2448.3	43.5%	542.5	78.9%	4972.8	39.0%
Social security payments	593.8	9.4%	742.2	13.2%	165.1	24.0%	1516.0	11.9%
Net profit	2490.3	39.5%	1637.7	29.1%	64.4	9.4%	4218.2	33.1%
Profit tax	246.1	3.9%	187,6	3.3%	14.4	2.1%	455.1	3.6%
Amortization	1116.7	17.7%	1037.1	18.4%	210.0	30.5%	2375.9	18.7%
Subsidy	-71.4	-1.1%	-426.2	-7.6%	-308.8	-44.9	-806.2	-6.3%
Total*	6308.4	100.0%	5626.7	100.0%	687.6	100.0	12731.8	100.0%

* Totals are different from those of previous tables since branches with negative value added were eliminated.

The branch differences are even more pronounced if we compare data as per capita value added rather than on total value added (see Table 6).

Table 6.

'000 Ft	*Foreign companies*	*Domestic companies*	*State-owned companies*	*Total**
Wages	2 826	1 852	2 403	2 218
Social security	868	561	731	676
Net profit	3 642	1 239	285	1 881
Profit tax	360	142	64	203
Amortization	1 633	784	930	1 060
Subsidy	-104	-322	-1 368	-360
Total	**9 224**	**4 256**	**3 046**	**5 678**
Net national	***3 950***	***3 471***	***2 116***	***3 301****

* Foreign share has been taken into account with 70% weighting in net profit.

By employing one person, foreign capital produces twice as much GDP (value added) as do domestic companies, and exactly three times more than state-owned companies. At the same time, on a per capita basis, the taxes (social security and profits tax) paid by foreign-owned companies amount to 1.2 million forints, by domestic companies to 0.7 million and, by state-owned companies to 0.8 million. Furthermore, foreign-owned companies pay fifty percent more in wages to their employees than do their domestic counterparts and 17% more than state-owned companies. Based on these facts, one might conclude that employment should mainly be encouraged in foreign-owned companies, since this produces the highest returns in GDP, wages and tax revenue.

The matter, however, is not so simple, and it is evident that per capita values are high in foreign-owned companies since they employ only a limited number of people (the capital-to-labour ratio is high), by the technique of employing the cream of the labour market. Consequently, the costs of creating a new job are much higher than in other fields. In the previous era, the state provided a 10–20 million Ft subsidy to foreign-owned companies to create one job, recouping this through tax revenue over 10–15 years. One job could be created by a much lower (3–5 million Ft) subsidy in domestic companies – meaning a quicker (5–7 year) repayment period to the state budget.

Finally, a further point for consideration in respect of the success of foreign and domestic companies would be: how large is the proportion of income created which is truly expendable? The NNI (Net National Income) indicator answers this question by subtracting amortization and owner-related income (in our case, the profit) of foreigners from GDP. The last line of Table 6 contains the adjusted index. It is clear that the difference between the ability of foreign and domestic companies to produce income decrease greatly in this case, and, if we take into account the significant job creation subsidy given to foreign-owned companies, the scales clearly come down on the side of domestic companies.

Functional Food Marketing – The Hungarian Market Case

SZABOLCS NAGY, Ph.D.
ASSOCIATE PROFESSOR

e-mail: marvel@uni-miskolc.hu

SUMMARY

In Hungary, a growing number of consumers have recently recognized the importance of healthy eating habits in disease prevention. As health is one of the most important terminal values of Hungarian consumers, functional foods are likely to have a bright future and their market is expected to grow significantly in the coming years. In this paper, the main driving forces of the growth of the functional food market, the consumption patterns of functional foods, up-to-date product trends, the relevant marketing approaches, and the main consumer segments have been identified. This paper contains empirical research findings on functional food consumption in Hungary. As a marketing manager or academic, you shall find valuable pieces of information on the segmentation, the main target groups and the most successful positioning strategies regarding the functional food market in Hungary.
Key words: health marketing, functional foods, life marketing approach, death marketing approach, target groups, positioning strategy, market segmentation

INTRODUCTION

In Hungary, a growing number of consumers have recently recognized the importance of healthy eating habits in disease prevention. As health is one of the most important terminal values of Hungarian consumers, functional foods are likely to have a bright future in Hungary and their market is expected to grow significantly in the coming years. Discoveries and research results of recent decades confirm that nutrition has a significant impact on human health. Being aware of this, consumers in developed countries like Hungary are devoting greater and greater attention to maintaining their health and obtaining more and more information about healthy life-styles. Consumers focus on preventing instead of treating diseases. This also affects their relationship towards food.

HEALTH MARKETING

Health Marketing is a multidisciplinary area of public health practice. This innovative approach draws from traditional marketing theories and principles, and adds science-based strategies for disease prevention, health promotion and health protection. The definition of Health Marketing according to the Centres for Disease Control and Prevention (CDC) is the "creating, communicating, and delivering of health information and interventions using customer-centered and science-based strategies to protect and promote the health of diverse populations." (CDC, 2005). Health Marketing, therefore, can be considered as (CDC, 2008):

- "A multidisciplinary practice that promotes the use of marketing research to educate, motivate and inform the public of health messages.
- An integration of the traditional marketing field with public health research, theory and practice.
- A complex framework that provides guidance for designing health interventions, campaigns, communications, and research projects.
- A broad range of strategies and techniques that can be used to create synergy between public health research, communication messages and health behaviours."

FUNCTIONAL FOODS

The literature gives various definitions of functional foods. There has not yet been a generally accepted definition of functional foods as professionals have not come to a common agreement regarding what products belong to this category and what do not; and whether food supplements or medicines like powders and capsules also belong to the functional foods category. Different approaches more or less share the opinion that these foods convey health benefits and have a favourable effect on the general state of health. According to Childs and Poryzees (1998), products which have any special

positive impact on our health are called nutraceuticals or nutritional foods, pharma food or medical foods, designer foods or super foods. In many cases, they are commonly placed in the category of functional foods.

Functional food or medicinal food is any fresh or processed food claimed to have a health-promoting and/or disease-preventing property beyond the basic nutritional function of supplying nutrients. However, there is no consensus on an exact definition of the term.

According to Health Canada (2009) "a functional food is similar in appearance to, or may be, a conventional food that is consumed as part of a usual diet, and is demonstrated to have physiological benefits and/or to reduce the risk of chronic disease beyond basic nutritional functions, i.e. they contain bioactive compound."

According to the Organic Food Directory (2009), functional foods, as defined by the Institute of Medicine in Washington, are those foods that encompass potentially healthful products including any modified food or ingredient that may provide a health benefit beyond the traditional nutrients it contains. Functional foods can include foods like cereals, breads and beverages which are fortified with vitamins, herbs, or nutraceuticals.

THE FUNCTIONAL FOODS MARKET

Functional foods in Hungary are very innovative products. Product innovation is fed by shifting trends in consumer behavior. Moreover, the Hungarian economy is extremely open and reacts very sensitively to international market changes. Hungarian consumers are highly motivated to follow international trends and accept new consumption patterns. Therefore, a closer look at the international functional food markets is essential before saying anything about functional food consumption in Hungary.

The growth rate of sales of functional foods on the global market amounted to 35% between 2002 and 2004; and the forecast is 27% for the period 2004-2009. The most dynamically growing regions are Latin America, Eastern Asia and Eastern Europe, where the market share was as high as $4 billion in 2004. Due to changes in consumption patterns, the rapidly expanding economies – for instance, Hungary – have considerable growing potential. Health consciousness in these countries is gradually rising and, as a result, the demand for functional foods is increasing. Longer and more intensive working hours, stress, urbanisation and economic growth also contribute to the growing demand for functional foods. Euromonitor International projected 20% growth in functional food consumption in the new economies for the period of 2005-2009. In Russia, Poland and Hungary the growth rate will be lower and their market share in this segment of the food industry will not be considerable.

The current economic crisis is having a negative effect on food consumption in Hungary. It is very hard to see now what the future will bring in this market segment in Hungary. According to local experts, food consumption will slump, especially in the mid-priced segments of the market, but functional food consumption can grow a little.

The driving forces of the consumption of functional foods on the global market are as follows:

- growing salaries of managers (middle and top)
- liberalisation,
- more and more intensive marketing campaigns
- involvement of retail networks which are the most effective points of sales
- better customer attitudes to wellbeing and health-consciousness
- the symptoms of obesity and functional malnutrition

Strict legislation is the most serious factor which prevents the expansion of the functional food market. This is because strict regulations are imposed on advertisements and on the labelling of products.

CONSUMPTION AND PRODUCT TRENDS

The functional foods market is constantly changing. The consumers' needs are getting more refined and product requirements are getting more complex. These factors should be taken into consideration in the innovation processes of functional products.

According to Sloan (2006), health and other health-related factors will play a more and more essential role in food consumption in the years to come, as the demand for more convenient, delicious and efficient foods will increase. She identified the Top 10 Trends in the sector of functional foods:

- Children at risk: a growing number of children are struggling with obesity, high blood pressure and three types of diabetes. The future challenge is to develop healthier foods for children.
- Low-calorie foods: in order to avoid obesity, consumer awareness of the importance of low-calorie foods and drinks is growing.
- Phytochemicals: sales of antioxidants in the USA increased by 20% in 2007. Four out of every ten consumers say that they eat fruit and vegetables to avoid getting ill.
- Multiple benefits: Functional foods are expected to solve several issues at the same time. They have to be effective in the case of obesity, to prevent the development of high cholesterol levels and to develop protection against heart diseases.
- Healthy fats: due to the growing popularity of omega-3 fatty acids, consumers are opting for

healthier oils. They avoid the consumption of unhealthy types of fat.

- Mature matters: in almost every affluent society the population ages and the number of elderly people is growing. Their demand for functional foods is increasing.
- Glycemic index, gluten and grains: low-glycemic-index products will gain more and more popularity in the future. Gluten-free products will become more common in restaurants. The multifaceted health benefits of whole-grain products are gaining universal recognition.
- Natural solutions: sales of organic food are expected to increase.
- Boosting performance: a lot of consumers are very concerned about their energy level and eat functional food to gain extra energy
- Fun favourites: almost every consumer expects healthier versions of their favourite foods, such as beverages made with 100% real fruit juice and calorie-burning soft drinks.

KEY FACTORS OF FUNCTIONAL FOOD MARKETING

There is a great need for good products, but it is not the main precondition of market success. Marketing aimed at promoting the product also has to be success-oriented. The most basic rule is to get to know and understand the consumer. Consumers being targeted by the functional foods sector are usually well-educated, well-informed and wealthy. The basic objective is to map their needs. In order to be successful in the market, the message has to be repeated several times: firstly on the label, then in the media, and in the doctor's office. The message primarily has to highlight the most important benefits of the product. Scepticism will always exist, so special attention has to be paid to training and the education of consumers. Consumers can be asked: "Do you want to take care of yourself more? If so, try this brand and have some functional foods."

According to several studies, consumers are not very responsive to food innovations. Consequently, the marketing of functional foods has to focus on health benefits, (for instance, cancer issues) and shaping a healthy image (e.g. "You will feel better if you consume functional foods" or "You will be healthier and happier", etc.)

There are two basic approaches to functional foods: life marketing and death marketing.

The death marketing approach is based on negative motivations – for instance, avoiding illnesses – while life marketing is built on positive motivations: for instance, being healthier, looking better, and feeling better than now.

According to the life marketing approach, functional food has an added value (e.g. increasing intellectual potential). In advertisements it is advisable to employ bright colours, eye-catching pictures, and slogans like 'the pleasure of wellbeing'. The product is a mixture of health plus convenience plus pleasure (hedonism). Priority has to be given to pleasure. Probiotics are the best example of the life marketing approach.

The death marketing approach concentrates on special diseases or states of health, for instance, drugs reducing the cholesterol level. In this case, communication has to be more objective, factual and credible (scientifically verified). The message has to explain the development of some kind of a disease too. Tested scientific results can also be used in the message. Consumers are motivated by their own fears and concerns.

Life marketing is especially effective when health benefits are communicated in the message. The credibility of the message is of utmost importance.

EMPIRICAL RESEARCH – QUESTIONAIRRE SURVEY

In order to map functional foods' consumer behaviour in Hungary, a marketing research exercise (phone interviews, a questionnaire survey, focus groups) was conducted. 383 respondents comprised the sample with a reliability level of 95%, and a 5% confidence interval. Quota sampling was used, with female respondents overrepresented (59.04%) in the sample. It was found that:

- Leading a healthy way of life is important for Hungarian consumers.
- The consumption of healthy foods comes to the consumers' mind first when they think of a healthy lifestyle.
- Respondents considered cancer, coronary heart diseases and high blood pressure as the most serious diseases.
- Eating healthy food was considered as very important to respondents.
- At the top of the list of the top 10 healthy foods were vegetables and fruit.
- Consumers were ill-informed about functional foods as most of them had never heard about this category.
- The most important motives for purchasing functional foods are as follows:
  - they have a favourable effect on health,
  - they have a preventive nature
  - and they improve the state of health generally.
- Every second respondent was worried about his performance and wanted to boost it.
- Weight consciousness played an important role in the life of 40% of all consumers
- Hungarian consumers believe that functional foods cannot replace medicines.

I applied factor analysis and found that respondents considered functional foods as having preventive functions and producing a beneficial effect on people's health. The performance boosting properties of functional foods were linked with their modern and trendy image.
The high prices of functional foods, their poor availability and ill-informed people considerably prevent the consumption of functional foods. These unfavourable factors have to be eliminated before the introduction of functional foods on the market. Primarily high prices produce a negative impact on their sales. Only a few respondents thought the taste of functional foods is not as good as "traditional ones"; and even less did not like their design (packaging). The fact that consumers were ill-informed largely contributed to low sales. There were only a few respondents who did not trust functional foods.
Consumers can accept the premium prices of functional foods. The majority pay 10-20% more for them, but a lot of buyers are willing to spend even 20-50% more. Goods containing sunflower products are sold at a higher price.
When buying functional foods, people pay special attention to the doctor's advice, product labels and the opinions of reference groups (friends, family members) as sources of information in the information search phase. The product label is an essential source of information. The opinion of reference groups is a driving force, whereas advertisements have only a limited effect on consumers. Almost every consumer agrees with the introduction of trademarks for functional foods. It would be advisable to introduce trademarks as this would provide consumers with objective information about the product and the reliably of the message it communicates.
When analyzing the communication variables, two main factors emerged: the doctor's advice on the one hand, and the brand name and advertising campaign on the other. Considering them, it became obvious that the doctor's advice played a more important role than the brand name or advertisement. As a result, it can be stated that if we want to be successful in this field, our communication has to utilise not only conventional ATL methods, but to place the opinion makers in the centre of our communication mix because of the need to promote the credibility of the product.

MARKET SEGMENTS

In order to segment the market we conducted cluster analysis. We managed to identify four segments and named them after their typical character types. The demographic variables of the segments are shown in Table 1:

Table 1. Demographic variables of the segments

	Health conscious females	*Mothers of the family*	*Distrustfuls*	*Managers*
	K1	*K2*	*K3*	*K4*
age	26-35 years	35-59 years	60 + years	14-25years, 26-35 years
sex	female	Female	male	male
marital status		Married	married	single
residence	county seat, other cities	county seat	county seat, other cities	Budapest
occupation	unemployed, retired	entrepreneur, intellectual	manual worker, retired	student, entrepreneur, intellectual
leading position	no	Yes	no	yes
net income per capita	50-100 000 HUF	under 50 000 HUF	100-150 000 HUF	above 150 000 HUF

Source: Piskóti and Nagy (2007)

Table 2. shows the characteristics of the market segments.

Table 2. Segment characteristics

	Health conscious females	*Mothers of the family*	*Distrustfuls*	*Managers*
	K1	*K2*	*K3*	*K4*
How important do you consider healthy eating habits?	very important	more important than the average	less important than the average	more important than the average
How important do you consider a healthy lifestyle?	very important	more important than the average	less important than the average	more important than the average
What does a healthy lifestyle mean to you?		doing sports		wellbeing
What diseases do you worry about?	cancer	obesity		immunological

	Health conscious females	*Mothers of the family*	*Distrustfuls*	*Managers*
	K1	*K2*	*K3*	*K4*
Have you heard of functional or health-enhancing foods?	less than the average	more than the average		
They boost my performance	xx			
They improve my state of health	xx	x		
They have a favourable effect on my health	xx	xx		x
They are trendy, modern foods.	xx	xx		x
They help prevent certain diseases.	xx	x		
They help regulate my weight	xx	x		
They replace drugs	xxx	x		

Source: Piskóti and Nagy (2007)

Table 3. Segment characteristics 2

	Health conscious females	*Mothers of the family*	*Distrustfuls*	*Managers*
	K1	*K2*	*K3*	*K4*
Higher prices of FF than the average	nn	x	n	xx
Worse taste of FF than the average	x	n	x	x
Worse appearance of FF than the average	x	nn	x	x
Little information is available about FF (I do not know much about them)	x	x	x	
Poor availability of FF			x	
I do not believe in the favourable effects of FF	average	more than average	does not believe	hesitates
What is the maximum amount you would spend on FF compared to conventional ones?	more than the average (22-23%)	average (14%)	less than the average (7%)	average (15%)

Source: Piskóti and Nagy (2007)

Table 4. Segment characteristics 3

	Health conscious females	*Mothers of the family*	*Distrustfuls*	*Managers*
	K1	*K2*	*K3*	*K4*
brand name			nn	xx
information about ingredients		xx		
opinions of friends, family members	n	x	n	x
advertisements	n	n	n	x
doctor's advice	n	xx		n
How much do you agree with the introduction of trademarks for FF to make them easily recognisable?	xx		n	x

Source: Piskóti and Nagy (2007)

Indications:

x - above average
xx - extremely above average
n - below average
nn - extremely below average
FF - functional foods

TARGET GROUPS

Having considered consumption trends and consumer orientations, as well as the findings of our primary research, three main target groups can be defined as follows:

Health-conscious youngsters

These people are able to identify health hazards. Most of them require healthy meals which have significant benefits for their everyday general state of health. It is important for them to build up their self-image, and they are significantly influenced by fashion and style, and different means of communication (mainly the internet). This is very typical of the young generation: those aged 18-30 who spend their time studying, doing sports and having fun. They are the main consumers of ready-made products.

Mothers of the family

These consumers are motivated by ideals of nurturing and modern approaches to family life. This group comprises parents who teach their children how to lead a healthy way of life and eat healthy food from birth; housewives who care about their family members; and females who wish to be healthy, and stay young and beautiful. Modern ways of thinking, combined with the desire for social mobility and simplicity, place an emphasis on health. They are consumers of food and beverages rich in fiber and low in fat and sugar. Apart from consuming ready-made food, they are the major consumers of semi-ready products. This segment is the largest one.

Decision makers

The members of this target group are in leading positions (managers), lead a stressful way of life and suffer from lack of time. Preventing diseases, improving their performance and maintaining wellbeing are all strong influences on their food consumption. Career progression is an essential part of their lives and inseparable from their occupation. Prestige is important for them too. They are the main consumers of ready-made foods.

CONCLUSIONS

In order that a new functional food can become a market success, a well-defined positioning strategy is required. According to Gilbert (2000), there are five golden rules (positioning strategies) for positioning functional foods:

- Prevention: The consumption of functional foods can prevent the development of certain diseases. Key words used in their positioning are: long life, good quality of life.
- Performance: We state that people can be healthy and their physical and mental abilities can increase if they consume functional foods. The emphasis is on daily health, accomplishment and success.
- Wellbeing: for consumers, the health benefits of functional foods mean feeling good and finding balance. These goods have to embody a holistic approach: the unity of health, body, mind and spirit. Emphasis is laid on daily health needs, moderation and variety.
- Nurturing: the consumption of certain foods can create a feeling of caring for the health of others and their quality of life. This can give a sense of satisfaction to the caregiver: “I have done something for others today too.” The key words are growth, development and healing.
- Cosmetics: The consumption of functional foods makes you look beautiful and better than others. It increases self-esteem through improved physical condition and acceptance of personal appearance.

In Hungary, in different consumer segments different positioning strategies are required. In the Health-conscious youngsters segment cosmetic, wellbeing and performance positioning strategies are expected to work, while in the Mothers of the family segment positioning strategy must be based on the nurturing and prevention approach. To be successful in the Decision makers segment, the marketers of functional foods should use the wellbeing and performance positioning strategies.

Considering the current economic crisis in Hungary, the best target group is the Decision-makers segment. They have enough resources to purchase functional foods and to pay more in order to prevent diseases, boost their performance and stay as healthy as possible so as to keep their jobs and the living standard they are used to.

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An Empirical Study of the Development of Information and Communication Technology in Hungary

PÉTER SASVÁRI, Ph.D.
ASSISTANT PROFESSOR

e-mail: iitsasi@uni-miskolc.hu

SUMMARY

As I could not find a reliable mathematical and statistical method for studying the effect of information communication technology on businesses in the literature, I proposed a new research and analysis method that I also used to study the Hungarian economic sectors.

An essential question for enterprises is what factors have an effect on their net income.. First, I studied the potential indicators related to economic sectors, then I compared those indicators to the net income of the enterprises surveyed. The data resulting from this comparison showed that the growing penetration of electronic marketpalces contributed to the change in the net income of enterprises in various Hungarian economic sectors to the extent of 37%.

Among all the potential indicators, only the indicator of electronic marketplaces has a direct influence on the net income of enterprises. However, the effect of electronic presence is also significant as it has a huge effect on the potential indicator of electronic marketplaces.

It was practical to determine two clusters based on the potential indicators. Eight economic sectors have been placed in the first, while five sectors have been placed in the second cluster. Only the money which is spent on professional training has a more significant effect on what cluster a sector belongs to.

Key words: information society, information and communication technology, ICT, economic branch, electronic presence, electronic marketplace.

INTRODUCTION

The current age is often referred to as the Information Age. This concept was first introduced by Manuel Castells, the best-known theoretician of the information society. The information society is a new, special variant of existing societies in which producing, processing and distributing information has become a fundamental source in the economy.

According to the related literature data, the Information Age began in the second half of the 1950s when, for the first time in history, the number of white-collar workers (engineers, administrative employees etc.) exceeded the number of blue-collar workers.

One of the main driving forces of the Information Age is the phenomenon called the Information and Communication Revolution. Its significance is often compared to the agricultural and industrial revolutions which have taken place in the history of mankind. In important fields of high-end technology (computer technology and telecommunications) not only the robust growth of quality, quantity and performance parameters can be observed but the approximation of these two fields along with the appearance of compound applications can also be detected. These phenomena of the information society can not only be seen as one of the results of the development of technology but also as a coherent system affecting the society as a whole.

THE CHARACTERISTICS AND IMPACTS OF INFORMATION AND COMMUNICATION SYSTEMS

Information and communication technology can be regarded as a universal technological system, which is closely linked to all of the previous systems and which creates new, more complex technological systems. ICT's main characterizing function is to ensure the acquiring, storing, processing, delivering, distributing, handling, controlling, transforming, retrieving and using of information.

ICT has a different effect on the actors of the economy, including companies, employees and consumers.

Nowadays we are witnessing a change of paradigm in the operation of enterprises. They have become a rapidly changing system of independent work groups and projects. Enterprises characterized by flexible operation demand a flexible labour force. In this new situation, employees have to abandon traditional patterns and develop a new kind of mentality. If they want to stay afloat in the labour market, they have no choice. This is because enterprises are no longer strongly interested in developing the professional knowledge of their employees.

Beside the changes experienced in the attitudes of enterprises and employees, the behaviour of consumers has also been fundamentally changed by the effect of ICT. As the Internet has freed consumers from their isolation, they have become active and conscious actors in the economy. The relationship between buyers and sellers has changed, as it has become harder for sellers to recognize and influence the trends in demand and consumers are better informed than ever before.

Information and communication technology has brought about a deep change in the opportunities for consumers, compared to the opportunities provided by industrial capitalism. This change is as profound as the one caused by the Industrial Revolution earlier. The new generation of consumers is, first and foremost, well informed, due to them collecting and using other consumers' existing experiences. Companies (especially corporations previously focused on products and markets) nowadays concentrate on consumers. It is not enough to recognize consumers' problems, but identifying the problems in order to solve them is also necessary. The opportunities provided by ICT identify actual consumers, based on the actual problems which occur during the use of a product.

Companies can keep pace with the speed of the development of ICT only by introducing job enrichment. The requirement of versatility can be met only by employees with a high-level general education.

The decrease in the number of strictly defined positions along with the changing requirements of the remaining ones allows employees to acquire new skills whilst also widening their responsibilities. Cross-training sessions are also organized for the group of employees in order to enable them to perform various tasks.

Team-based companies have better problem-solving skills, higher productivity, more efficient use of human resources, more creativity and more innovations when compared to traditional non-team based organizations. Nowadays, when digital information is regarded as the chief means of production, the efficiency of production is highly dependent upon obtaining and processing information. Based on the achievements of ICT, companies have improved the infrastructure they use to obtain and process information. The companies also help their employees to co-operate in this process by compressing time and space.

The intention of raising efficiency allows the possibility of virtual teams. By being part of a virtual team, employees do not have to work under the same roof and other employees from outside the company can take part in its work.

Nowadays, the majority of changes in work organization, decision mechanisms and corporate organization structures require enhanced flexibility. Flexibility means quick reactions, the removal of strict limits and – as frequently mentioned – job enrichment, as well as openness to innovations and unconventional answers to newer and newer challenges. The environmental impulses do not link the operators of the assembly lines or the workers of call centers in a long chain. Companies were operated centrally from a single headquarters earlier, but nowadays managers and workers try to find answers to the current challenges in many local corporate decision nodes. The coordination of numerous independent units is generated by the company as a self-organizing system, and the company's philosophy is determined by the self-organization of independently operating units based on market principles.

THE AIM OF THE RESEARCH

Based on the considerations presented above, it is not the subject of my examination to answer whether there is a need for ICT or for creating the necessary conditions for the information society. The real subject is to measure what economic, social, cultural and environmental effects it has on the society. The rich literature on the information society discusses these aspects in detail. During my work, I take the information society as a normative future plan for Hungary, and I am looking for the answer of what progress has been made in building the information society in the Hungarian economic branches. I examine the following issues:

- to what extent we can speak about the information society in Hungary nowadays
- what is the development level of the information society in several economic branches and company sizes compared to each other and to the member states of the European Union?
- how this development level can be measured and calculated
- how the development level of information and communication technology increases in companies of certain sizes
- what trends can be observed in the development process in the individual economic branches and company sizes?

My examination extends to the static, momentary state of the development level of the ICT devices used in the economic branches, as well as to their dynamic analysis, expected pace of growth and their qualification.

When establishing the aims of a piece of research, there is always the question of how to position the individual parts of the subject. Should they be positioned in a broader subject [8] or should they be selected for further

and deeper examination? The former possibility means that we aim to make suggestions by putting the practical analysis into a broader structure. The aim of my research is exactly this, as the information society represents a new stage in society's development, and the changes caused by information and communication technology can be observed in every part of our life nowadays.

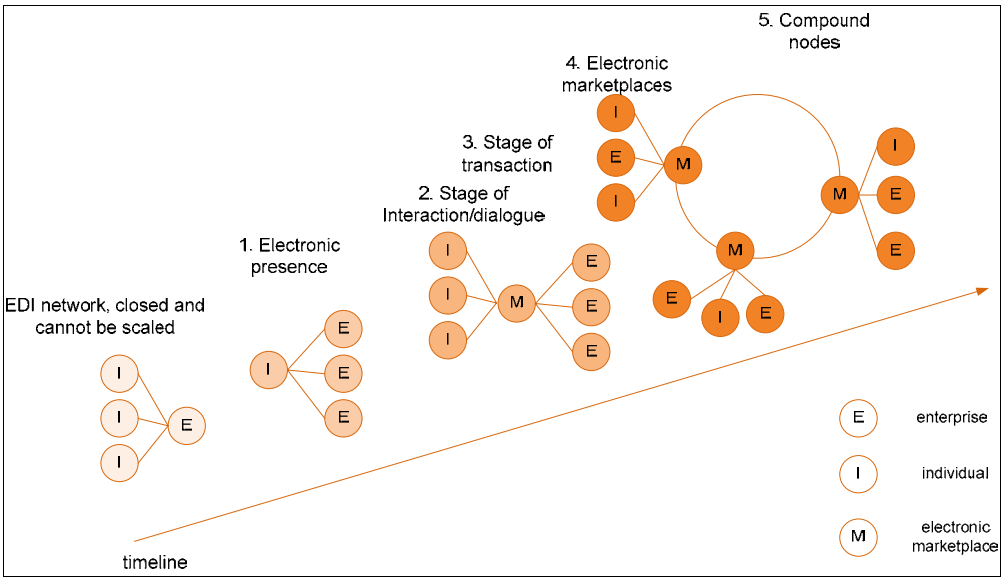
THE RESEARCH METHODS

Similar problems are raised by the quantification of the various components of the information society to those raised by the definition of its concept. There is a wide range of variables that can be measured: a great number of explanatory variables can be listed. These range from the perhaps more easily measurable infrastructural components to the more difficult components related to knowledge and the willingness to use information. That is why most analyses use sets of variables and complex indices as there is no easily measurable (one-dimensional) index that would characterize the information society.

The examination of the subject is interdisciplinary as it has social and scientific references, so a complex approach was needed when I started processing the literature. I needed to study literature on economics, law, sociology and technology connected to the information society.

Considering this subject's complexity, I selected several analytical methods and approaches. During the data collection, I relied upon the Hungarian and the international literature on the subject. Thus, I was able to process a large quantity of information (nearly 6000 figures). I also extended my literature research to printed and electronic publications on the Internet.

The literature on the development of ICT distinguishes five development stages [Figure 1].



Source: Kápolnai A.-Nemeslaki A.- Pataki R.: eBusiness stratégia vállalati felsővezetőknek (E-business strategy for senior management)

Figure 1. The development stages of information and communication technology

These stages are built upon each other. With the help of the model shown above, I measured the individual development stages. By averaging the data of the first three development stages, I examined the enterprises' willingness for adaptation.

With the help of my own model, which comprises five elements, I analyzed the development and growth of the size categories and economic branches.

Its steps are as follows:

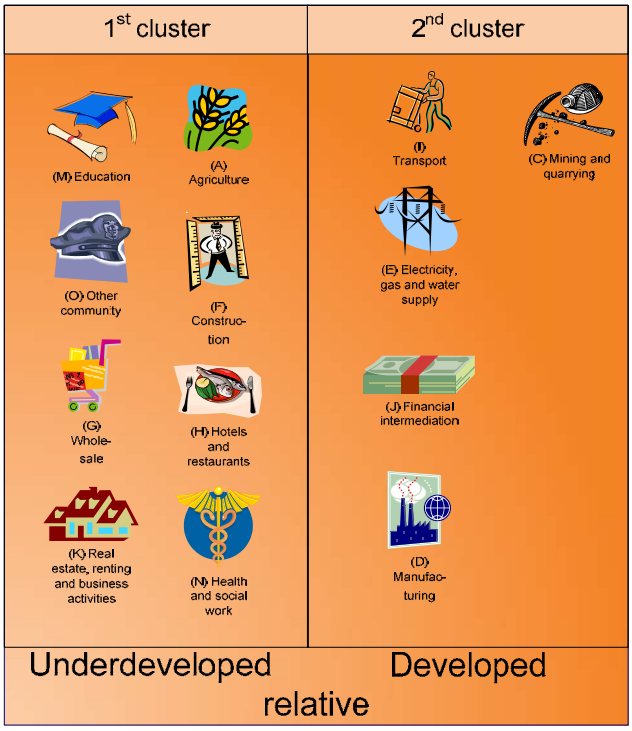
- Processing the data of the primary and secondary research
- Assigning single indicators to individual development stages, calculating potential indicators
- Calculating the values of potential indicators from single indicators
- Studying potential indicators
- Determining potential indicators at the individual development stages

Then, with the help of the resulting indicators, I performed a cluster analysis, a compound regression analysis, and, finally, a discriminant analysis on the economic sectors surveyed.

THE RESULTS OF THE ANALYSIS OF INFORMATION AND COMMUNICATION TECHNOLOGY

Clustering is the division of a set of observations into subsets so that observations in the same cluster are

similar in some sense. The clustering process is successful when the subsets are similar to each-other and different from the elements of other subsets at the same time. Based on theoretical considerations, I decided to make groups of economic activity categories from the five previously defined potential indicators.

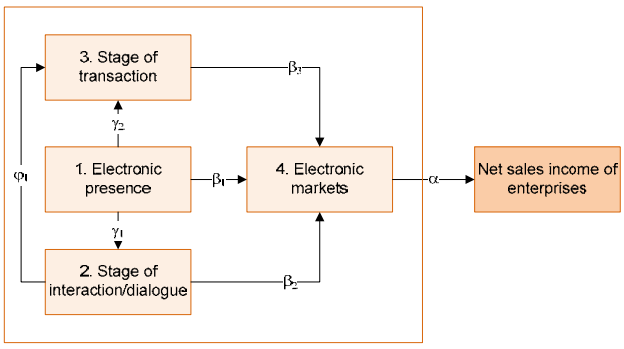


Source: Individual primary research using SPSS 16.0 statistical package

Figure 2. Two-cluster model of the national economic sectors

To summarise the results of the cluster analysis, it can be stated that the sectors "Electricity, gas and water supply", "Transport, storage and communications", "Mining and quarrying", "Manufacturing" and "Financial intermediation" belong to the second cluster because of better average values.

I used the path model to study how the potential indicators influence one another and what direct or indirect effect they have on the average net income of the individual economic sectors. (thousand HUF/enterprise).

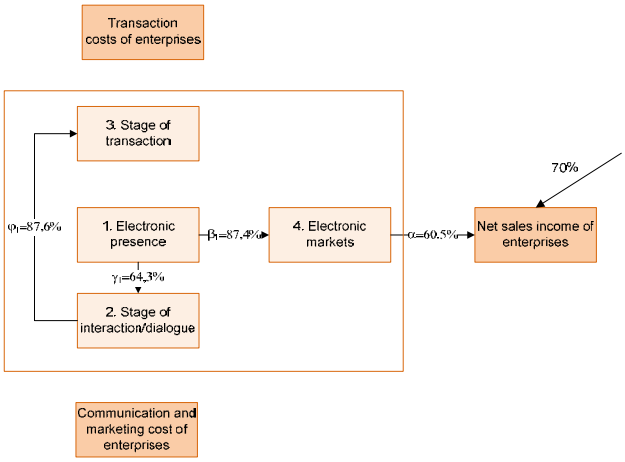


Source: Individual primary research

Figure 3. The scheme of the path model of the potential indicators

The variables presented in the path model are linked with arrows to one another showing the direction of their relationships. I assumed in my causal model that the potential indicator of electronic presence is the exogenous variable. Based on the arrows leading from it, the potential indicator of electronic presence has an effect on the other potential indicators. It also has an indirect effect on the average net income of enterprises in several economic sectors. These paths are called indirect paths by the literature. In my model, they show how the effect of the potential indicator of electronic presence manifests itself through the potential indicators of interaction/dialogue, transaction and electronic markets. The potential indicators of interaction/dialogue and transaction became endogenous variables. Endogenous variables are variables with causal links leading to them from other variables in the model. In other words, endogenous variables have explicit causes within the model. The dependent variable in my model is the average net income of enterprises in economic sectors: the arrows leading from the other variables point to this one but it has no arrow or link pointing back to the other variables. The aim of setting up a path model was to divide the zero linear correlation between the independent and the dependent variables into two parts. The first part is the effect that the independent variable directly has on the dependent variable, while the second part shows the effect being had on the dependent variable by the independent variable through other endogenous variables.

Only the potential indicator of electronic markets has a direct effect on the average net income of enterprises [Source: Individual primary research Figure 4] However, the effect of the potential indicator of electronic presence is significant as it influences the potential indicator of electronic markets to a great extent. The value of the indirect effect of electronic presence was (87.4%*60.5%) 56.2%. In the table below, a new arrow also appears with a value of 70%, showing the effect of non-specified variables from outside the model on the average net income of enterprises.

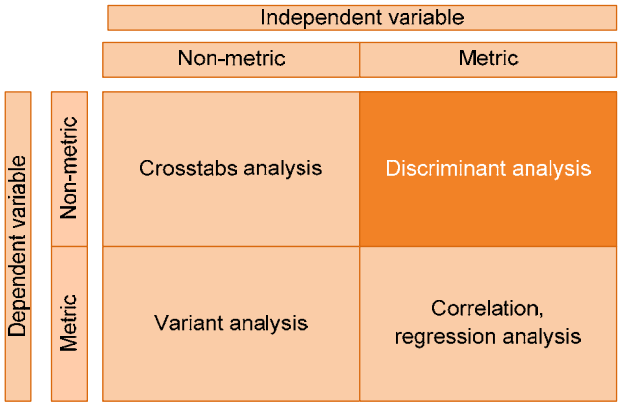


Source: Individual primary research

Figure 4. The final path model of the potential indicators

Electronic presence has no direct effect on the potential indicator of transaction. The value of the strength of its indirect effect was (64.3%*87.6%) 56.3%, according to my computation. The model verified the hypothesis that electronic presence largely determined interaction/ dialogue. Electronic presence had an indirect effect on transaction and it had the strongest correlation with electronic markets. Before creating the model, I assumed a direct correlation between transaction and electronic markets, but I could not verify the existence of the relationship between them. However, the new result of my research was that there was a direct correlation between electronic markets and the average net income of enterprises.

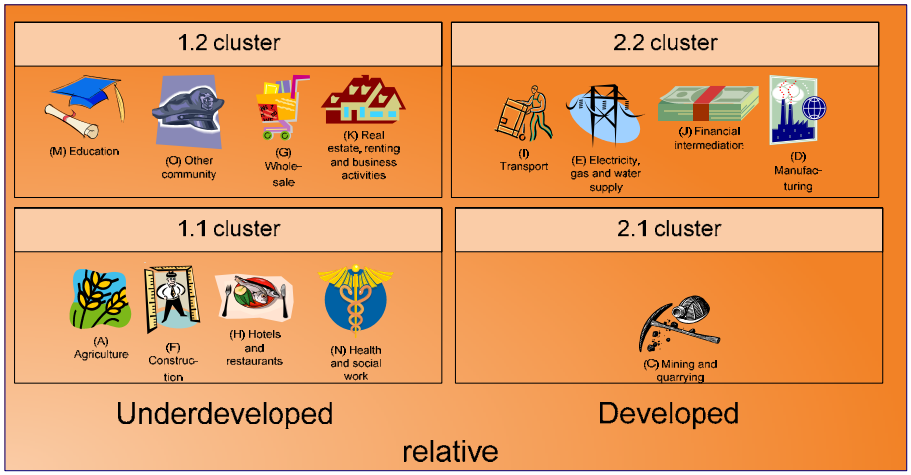
In the early phase of my research, I encountered the problem that there were no explanatory variables in the typology created by cluster analysis. Typologies are different clusters of a low measurement level so the explanation of their development status is impossible with previously used techniques. Discriminant analysis is a useful method to explain a low measurement level variable with another variable of high measurement level. Discriminant analysis is a technique where dependent variables are not metric and are classified as belonging to two or more categories whereas independent variables (predictors) are measured on a metric scale [Figure 5].



Source: Sajtos László- Mitev Ariel: SPSS kutatási és adatelemzési kézikönyv, Alinea Kiadó, 2007

Figure 5. Partial summary of the methods used for structure analysis, along with discriminant analysis

After completing the cluster analysis, I found that the economic sectors surveyed could be classified into two, then four ICT development levels or clusters [Figure 6].



Source: Individual primary research using SPSS 16.0 statistical package

Figure 6. Four-cluster model of the national economic sectors

The following four economic sectors were placed in the 1.1 cluster: 'Agriculture, hunting and forestry', 'Construction', 'Hotels and restaurants' and 'Health and social work'. The average of the potential indicators to electronic presence, interaction/dialogue, transaction and electronic markets was the lowest in the four clusters.

Four economic sectors were classified into the 1.2 cluster as well: 'Wholesale and retail trade; repair work', 'Real estate, renting and business activities', 'Education' and 'other community, social and personal service activities'. Examining the data of this cluster, it could be observed that its average values were higher than those of the 1.1 cluster but were lower than the average values of the other two clusters.

Only the 'Mining and quarrying' sector was classified into the 2.1 cluster. In terms of electronic presence and electronic markets, this sector was the most developed compared to the other sectors. This cluster produced the second highest ICT values based on the values of the other potential indicators.

'Manufacturing', 'Electricity, gas and water supply', 'Transport, storage and communications' and 'Financial intermediation' could be found in the 2.2 cluster. The values of interaction/dialogue and transaction were the highest in this cluster compared to the other ones.

My aim was to become acquainted with the human resource demand of enterprises (the number of the employees regularly using computers), the cost of ICT services or availability (cost of computer-related

services), and the amount spent on professional training (the total expenditure on professional training).
These three explanatory variables jointly indicate the different ICT development stages. In this case, the discriminant analysis predicts whether an enterprise belongs to a specific development stage or not.
Based on the primary research, it can be stated that education expenses have a more significant effect due to the fact of belonging to various clusters. As the aim of the discriminant analysis is the classification of cases into groups, the classification table is one of the most important results of the analysis.
The table below consists of two parts: the first presents the scores before the grouping took place. The chance of being classified into a cluster is 25% in each group and each cluster's weight was different.

Table 1. Classification Results b,c

Cluster	*Prior*	*Cases Used in Analysis*	
		Unweighted	*Weighted*
1.1	,250	36	36,000
1.2	,250	82	82,000
2.1	,250	4	4,000
2.2	,250	58	58,000
Total	1,000	180	180,000

		Cluster	*Predicted Group Membership*				
			1.1	*1.2*	*2.1*	*2.2*	*Total*
Original	Count	1.1	19	17	0	0	36
		1.2	30	51	1	0	82
		2.1	2	1	1	0	4
		2.2	24	30	0	4	58
	%	1.1	52.8	47.2	0.0	0.0	100.0
		1.2	36.6	62.2	1.2	0.0	100.0
		2.1	50.0	25.0	25.0	0.0	100.0
		2.2	41.4	51.7	0.0	6.9	100.0
Cross-validateda	Count	1.1	16	19	0	1	36
		1.2	32	48	1	1	82
		2.1	2	2	0	0	4
		2.2	24	30	1	3	58
	%	1.1	44.4	52.8	0.0	2.8	100.0
		1.2	39.0	58.5	1.2	1.2	100.0
		2.1	50.0	50.0	0.0	0.0	100.0
		2.2	41.4	51.7	1.7	5.2	100.0

a. Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case.

b. 41.7% of original grouped cases correctly classified.

c. 37.2% of cross-validated grouped cases correctly classified.

Source: Individual primary research using SPSS 16.0 statistical package

The actual hit ratio can be seen in the second part, it is given as a percentage, its value ranges from 0 to 100. Instead of the lowest possible value, it needs to be compared to the expected hit ratio. The expected hit ration means the hit ratio that results from random categorization; its value is 25% in the case of four groups.
The classification table is suitable for the evaluation of the results of the discriminant analysis as it shows the ratio of the adequately categorized group membership. The rows make up the categories of the dependent variables and their initially observed values, while the columns of the table constitute the values predicted by the independent variables.
The table can be divided into two parts: the upper part of it shows the initial analysis, while its lower part presents the cross validation values. The data are presented in the same way in both parts of the table: they are expressed either in absolute value or as a percentage. When analyzing the absolute values of the table, it can be observed that only 19 cases were placed in the 1.1 cluster from its original 36 cases, while 17 of them were placed in the 1.2 cluster. Expressing this data as percentages, it means that the rate of the adequately categorized cases is 52.8% in the 1.1 cluster, 25% in the 2.1, 6.9% in the 2.2 and 62.2% in the 1.2 cluster. Consequently, the procedure was successful only in the cases of the 1.1 and the 1.2 clusters.
SPSS identifies values as adequate hit ratio on the diagonal: if the prediction equals the value of the initial sets of observations then the prediction is perfect and every value is situated on the diagonal. Enterprises were adequately categorized in 41.7% of cases and 37.2% of predictions based on the given variables.
In summary, it can be stated that the first and the fourth clusters are significantly different from the other two clusters, as their hit ratio is above 50% in the case of three independent variables. Examining the results, it can also be observed that these two clusters can hardly be divided in the case of three independent variables.

CONCLUSIONS AND SUGGESTIONS FOR THE PRACTICAL USE OF RESEARCH FINDINGS

The most important step of the cluster analysis is to determine the number of clusters. The data show that it is expedient to form two clusters based on the potential indicators. The first cluster comprises eight, while the second comprises five economic activities. As a consequence, those economic branches that use ICT devices less frequently than the national average belong to the first cluster, while the second cluster contains those economic branches that can be seen as developed ICT-users.
The multiple regression analysis is the series of regression models built upon each other. Using the regression model, I studied the direct and indirect effect of the potential indicators on each other and the companies' net income in several economic branches.

The only potential indicator affecting a company's net income is the indicator of electronic marketplaces. However, the effect of the electronic presence is significant, since it has a great influence on the potential indicator of electronic marketplaces. During my primary research, I found that the effect of the non-specified variables out of the regression model on a company's net income is 70%.

The typology carried out by cluster analysis does not contain independent variables. The discrimination analysis helps to explain the values of dependent variables with the help of independent variables. With the clusters showing the given development stages, my aim was to get a better idea of the companies' needs for human resources, and of how much is spent on training and ICT services by the given company. Expenses which are exclusively devoted to training have a more significant effect on which cluster a company belongs to. It was possible to classify the companies into clusters based on the three independent variables in 42% of the cases.

I could not find a reliable mathematical and statistical method for studying the effect of information communication technology on businesses in the literature. That is why I proposed a new research and analysis method that I also used to study the Hungarian economic branches.

The primary possibility of utilizing the proposed method appears in situation report. I managed to measure the relative (economic branches correlated to each other) and the absolute (economic branches correlated to the same ones in a different country) development level of the information communication technology with the help of creating development stages and quality categories, and with the adaptation willingness belonging to the given development stages.

The secondary possibility for utilization lies in following patterns. The development of ICT is different in several countries, regions and economic branches. The European Union proposed a strategic framework for its member countries. The main aims of establishing a strategic framework are:

- a single European information space
- boosting investment and innovation in ICT research
- establishing a receptive European information society

The economy of the United States is regarded as a model economy where two-third of the employees were dealing with information processing during working hours in 2000. One of the causes of the massive economic performance of the United States is highly-developed information processing. If we manage to measure this level of development, a strategy can be formulated in the European Union and in the individual member states in order to catch up with the most developed countries.

The general object of this study is to find ways of analysing the national economy of a given country. With the help of the method I have worked out, it is possible to analyze and assess the sections, subsections, divisions, groups and classes of a given national economy. In addition, the economic branches, company sizes and organization forms can also be studied.

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An Analysis of Diversity Management Through Cultural Dimensions

ANA SPERANCIN
PH.D. STUDENT

e-mail: apcm2000@yahoo.com.br

SUMMARY

Dealing with social pressure for equal treatment and opportunities has been one of the most important business issues in modern times. Countries are dealing with this issue in different ways, with different approaches and levels of maturity according to their values and particular characteristics. Of all the possible reasons that can justify this disparity, it is assumed that the differences observed in the level of national culture can denote a plausible explanation for the differences found in the approach to diversity management in distinct countries.

Therefore, this study has the purpose of investigating the differences in cultural dimensions among the Member States of the European Union and their impact on the level of diversity management practiced in these countries. The dimensions of culture analyzed are those described by Geert Hofstede. They are related to power distance, uncertainty avoidance and the role of gender and the individual in the society. The level of diversity management is determined by the evaluation of corresponding national statistics.

Findings from the correlations between cultural dimensions and the main national statistics were used to build up a framework by identifying core values which can foster diversity policies. Moreover, the combination of the four cultural dimensions in typologies identifies countries in the European Union which have a better and worse predisposition, solely with regards to their national culture, to adopt measures toward diversity management.

Key words: cultural dimension, diversity management, values, equality, discrimination

INTRODUCTION

The present article has the aim of discovering correlations between the intrinsic national values of countries in the European Union which can affect their practices toward diversity management. It is believed that broad values in a society are important factors that can push or pull initiatives in, for example, combating discrimination. Hence, these values can be important variables in improving diversity policies or, on the other hand, they can be deep barriers to leveraging equality in the society.

The cultural dimensions developed by Geert Hofstede were considered in this study in order to establish a comparison among countries. These dimensions are known as power distance, masculinity v femininity, individualism v collectivism, and uncertainty avoidance. The countries selected for this study belong to the European Union. However, only 23 of the 27 member countries are being considered because the evaluation of those dimensions was not found for four of them (Cyprus, Latvia, Lithuania and Slovenia). These 23 countries were chosen not only because of the availability of the scores of Hofstede's cultural dimensions, but also because there is a common database of statistics provided by the European Commission for all of the EU Members.

Therefore, the most recent surveys conducted in these countries were analysed in order to obtain statistics which portray their current situation regarding the management of their diverse populations. They are: the EU-MIDIS survey which focuses on the situation of minority groups in each country; the Eurobarometer 296 that investigates the populations' perceptions of discrimination; the Quality of Life and Working Conditions surveys which gather information about various factors that affect Europeans' lives; and the Report on Equality between women and men which states the key indicators of gender differences, as well as the Eurostat numbers. By using statistics selected from these surveys, we are able to rank the countries in accordance with the perspective of diversity management. These statistics are in some ways predictors of the main national results so far achieved by public and private institutions related to the promotion of diversity. Some figures are about: the employment rate of women, youth and older people; the presence of women in high positions; the number of women and men working part time; the perception of discrimination based on the six core dimensions of diversity in Europe (gender, race/ethnicity,

age, sexual orientation, disability and religion/belief); and so on.

After collecting these statistics, the next step was to find out whether there is a positive or negative correlation between any cultural dimension of Hofstede's model and the results of the statistics, or whether there is no correlation at all. Subsequently, this analysis, as a result of the correlations, found advantages and disadvantages were identified for each cultural dimension as an interpretation of their contribution to diversity management.

Based on these findings, sixteen typologies were created by the combination of the four cultural dimensions. All the countries were plotted in a diagram drawn up to clarify and exemplify their situation in promoting equality in their societies. The results of this study show the level of a plausible predisposition a society has in dealing with diversity management based on the scores of the cultural dimensions in which the correlated social statistics are used as evidence. In the diagram we can see that for some typologies, national values can contribute to the promotion of diversity concerns. For others, which are poles apart, they cannot contribute so much.

KEY DEFINITIONS

The definition of the four cultural dimensions should be emphasized in order to clarify their meaning from the diversity management point of view. Table 1 lists the scores available for all the four dimensions for the 23 European countries.

Table 1. Hofstede's Cultural Dimensions scores: 23 EU Member States

Country	*PDI*	*IDV*	*MAS*	*UAI*
Austria (AT)	11	55	79	70
Belgium (BE)	65	75	54	94
Bulgaria (BG)	70	30	40	85
Czech Republic (CZ)	57	58	57	74
Denmark (DK)	18	74	16	23
Estonia (EE)	40	60	30	60
Finland (FI)	33	63	26	59
France (FR)	68	71	43	86
Germany (DE)	35	67	66	65
Greece (EL)	60	35	57	112
Hungary (HU)	46	80	88	82
Ireland (IE)	28	70	68	35
Italy (IT)	50	76	70	75
Luxembourg (LU)	40	60	50	70
Malta (MT)	56	59	47	96
Netherlands (NL)	38	80	14	53
Poland (PL)	68	60	64	93
Portugal (PT)	63	27	31	104
Romania (RO)	90	30	42	90
Slovakia (SK)	104	52	110	51
Spain (ES)	57	51	42	86
Sweden (SE)	31	71	5	29
United Kingdom (UK)	35	89	66	35

Reference: Hofstede [2003] For BG, EE, LU, MT, PL, RO and SK: http://www.urbanministry.org/wiki/geert-hofstede-cultural-dimensions

Definition of Power Distance

The power distance dimension (PDI) can be defined as "the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally." [Hofstede, 2003, p. 28] When it is high, it means that people are afraid to disagree with the authorities, who tend to be more autocratic or paternalistic. On the other hand, when the score is low, there is a more cooperative interaction across power levels where "inequality is considered basically undesirable; although unavoidable, it should be minimized by political means". [Hofstede, 2003, p. 39]

Transposing this definition to the concept of diversity management, we could infer that the higher the level of the power distance index, the harder will be the implementation of diversity management. This is because, when inequalities exist and are accepted in a broad way, equal treatment is jeopardized while the probability of generating discrimination in the society increases. With a high hierarchical system and great centralization of power, combating prejudices becomes a more difficult task. As a consequence, it is expected that, for instance, there is a wide salary gap between the top and bottom of organizations. There is also less respect for young leaders since older leaders are seen to have more credibility and to be more dependable.

Definition of Masculinity v Femininity

The second dimension is about the level of masculinity or femininity (MAS) in the society that shows differences in the gender social roles. In masculine societies, the segregation of roles is clearly distinct: men are concerned with assertiveness and competition while women focus on relationships and quality of life. Equality is emphasized much more in feminine societies where men and women take an equal share of responsibilities at home and work. Feminine values give more importance to people and relationships and promote a feeling of solidarity. Therefore, the willingness to integrate is stronger than the desire to exclude. This encourages actions aimed at promoting diversity management.

Definition of Individualism v Collectivism

The third dimension consists of the degree of individualism or collectivism (IDV) in a society. This reveals whether or not the interest of the individual prevails over the interest of the group. Equal rights are also expected in individualist societies; however, collective values stress more the needs and equality within groups (not neglecting the minority ones). Indeed, collective values are required to promote integration in order to become a more cohesive and inclusive society.

Definition of Uncertainty Avoidance

The last dimension, called uncertainty avoidance (UAI), describes the level of tolerance of uncertain and unknown situations in a society. Cultures that are averse to uncertainties try to reduce possibilities and risks by applying laws and strict rules, as well as adopting precautions and safety measures in order to reduce anxiety and stress. Actually, according to Hofstede, as strong uncertainty avoidance leads to intolerance for what is different, it can result in a high degree of nationalism, xenophobia and the repression of minorities. Therefore, having strong uncertainty avoidance can be a barrier to the implementation of diversity policies because these would require more efforts to change systems of management and adaptations to include minorities in the workforce.

ASSUMPTIONS

There are some important suppositions taken for granted in this study. First of all, it is assumed that the core values related to the four cultural dimensions of Hofstede behave as an active force for or against the promotion of diversity management. They are not considered as neutral values in this aspect.

Second, there are other factors, which are more directly correlated, that can better explain the social statistics of each country. However, only the values gathered from the four cultural dimensions are being considered in this study.

The third assumption is that the four cultural dimensions possess the same weight, and are predictors in an equal way to determine whether the culture has a predisposition to fight against discrimination and implement equal treatment in the society or not. None of these values is more important or more sovereign than the others in dealing with diverse population aspects.

The next assumption is about the interpretation and, consequently, classification of the countries' scores in each cultural dimensional between high (strong) or low (weak). For this study, it was determined that above the level of 40 the score is considered strong or high while below this position, the score is low or weak. The score itself is not relevant, just the classification as high and low.

Finally, the inference is that the typologies created here represent and characterize the level of predisposition of the countries to adopt diversity policies in a more efficient manner.

HYPOTHESIS

Analysis shows that some social statistics can have a positive relation, some a negative relation, and some no relation, with the cultural dimensions. There were some statistics where no clear correlation was found. They are: the proportion of female employees who work part time, the pay gap between women and men, harassment/bullying at work, and discrimination against each of the six core dimensions.

For seven other social statistics, correlations were established. The following investigation reveals some interesting results, summarized in table 2. The column "index" shows which cultural dimensions have some direct relationship with the statistics listed in the second column. For each set of statistics, the best and worst scores of the EU23 are reported, and, in brackets, the score of the respective cultural dimension being analyzed. The last column shows the type of correlation that was discovered.

The Correlation between Social Statistics and Cultural Dimensions

Youth employment is an important priority in the EU according to the European Youth Pact, whose aim is to improve the education, training, mobility, employment and social inclusion of young people. The most recent statistics on the youth unemployment rate in the EU showed that Spain (24.6%), Greece (22.1%) and Italy (21.3%) have the highest rates, while the Netherlands (5.3%), Denmark (7.6%) and Austria (8%) reported the lowest rates of unemployment among young people. [Giaccone and Colleoni, 2009] The three best countries have approximately the weakest rates in the power distance index among the EU23. It is believed that strong power distance societies have more discrimination against the young population because credibility and power are more concentrated in older generations. That is why high levels of youth unemployment are likely to be associated with strong scores in PDI. People with more experience and a high level of education have better opportunities. The Eurobarometer 296 survey attempted to establish the percentage of respondents who think that in their country discrimination on the basis of age is widespread. The average for countries rating lower than 40 in the PDI was 37% while the countries rated as strong in PDI had an average of about 42%.

The second variable is the proportion of children up to 3 years old cared for by formal arrangements in the society such as nurseries, kindergartens and other childcare systems. As the European society is ageing and changing, more women will be available and needed in the labour market. Therefore, creating an effective system of delivering social care is essential because better childcare provision can enable women to enter the workforce, while also enabling families to have more children as nowadays the fertility rate is decreasing. [European Foundation for working conditions, 2009] The countries ranked with the lowest MAS rate have more women using childcare systems: 73% in Denmark, 45% in the Netherlands and 44% in Sweden. On the other hand, countries with high MAS rate show less usage of this

social care. Consequently, we can suppose that there is a strong negative correlation between the masculinity index and the availability of good childcare systems in the countries analyzed. Feminine societies are more sensitive with regards to concern for others and so provide social welfare that allows parents to participate in the labour market while caring for their children.

The next element studied is the employment rate of women. In 2000, the Lisbon Strategy agreed to the aim of increasing the proportion of women in employment to 60% by 2010 in all EU Member States. According to the results obtained, the countries with a better rate are those which have a combination of lower scores in the PDI and MAS indexes. Denmark, Sweden, the Netherlands and Finland are above the target of 60% while the worst scores belong to countries with a high rank in both mentioned dimensions. Societies with a high level of power distance and masculine values more often concentrate power in male hands. Environments characterized by competition and domination create a barrier to the advancement of women in the labour market and to their desire to get more opportunities and thus increase their employment rate.

The share of male employees working part time is another interesting statistic. In all of the EU23 countries, the participation of women in flexible working schedules is more common. However, this opportunity is available for men as well, but they are only using it in a few countries. Actually, the countries with high scores in the PDI and MAS dimensions such as Slovakia, Bulgaria and the Czech Republic have the lowest participation. Therefore, flexible working schedules can lead to the creation of another type of discrimination against women. This is because, if such schedules are only popular for one gender, then probably the advancement and promotion of these women can be jeopardized due to competition with full time dedicated male employees. In these societies, as gender segregation is strong, men do not accept the idea of sharing the responsibilities at home. Indeed, in countries with low PDI and MAS, part-time work is more gender-balanced.

The following figure is about the sex distribution of the members of the highest decision making bodies of the largest publicly quoted companies. In this case, the uncertainty avoidance dimension seems to contribute more to the results. In countries with strong UAI such as Luxembourg, Portugal, Malta and Italy, there are fewer women occupying high positions. As men have assumed such responsibilities for millenniums, change can seem very risky and uncertain for societies which are afraid of unknown situations. It is the same with the employment rate of old people. Countries with a high level of UAI, such as Malta, Poland, Luxembourg and Hungary, show lower employment rates of old people. The Stockholm European Council of 2001 set a target of increasing the average EU employment rate among old women and men (55–64 years) to 50% by 2010. The countries with the lowest levels of uncertainty avoidance have already reached this target.

The last assessment is regarding the level of discrimination. Despite the existence of European laws, a Eurobarometer survey showed that many people believe that discrimination is still widespread on the grounds of racial or ethnic origin (62%), sexual orientation (51%), disability (45%), age (42%) and religion (42%). Respondents from individualist societies, where people are more self-oriented and do not care for others, are more likely to claim they have experienced discrimination in the last twelve months. The only four countries considered more collectivist in this group (with a score of less than 40) – Greece, Romania, Bulgaria and Portugal – have lower complaints than individualist countries.

Table 2. The Correlation among social statistics and cultural dimensions

Index	*Examples/Figures*	*Best Scores*	*Worst Scores*	*Possible correlation*
PDI	Youth unemployment rate [1]	NL (38) = 5.3% DK(18) = 7.6% AT (11) = 8%	ES (57) = 24.6% EL (60) = 22.1% IT (50) = 21.3%	Positive correlation between PDI and youth unemployment rate
MAS	Proportion of children up to 3 years cared for by formal arrangements [2]	DK (16) = 73% NL (14) = 45% SE (5) = 44%	CZ (57) = 2% PL (64) = 2% AT (79) = 4% SK (110) = 5% HU (88) = 8%	Negative correlation between MAS and usage of childcare systems up to 3 years
PDI & MAS	Employment rate for women [3]	DK (18,16) = 73% SE (31,5) = 72% NL (38,14) = 69% FI (33,26) = 68%	MT (56,47) = 36% IT (50,70) = 46% EL (60,57) = 48% PL (68,64) = 51% HU (46,88) = 51%	Negative correlation between PDI and MAS scores with female employment rate
PDI & MAS	Share of part time workers in total employment (men) [4]	NL (38,14) = 23.6% DK (18,16) = 13.5% SE (31,5) = 11.8% UK (35,66) = 10.8%* DE (35,66) = 9.4%*	SK (104,110) = 1.1% BG (70,40) = 1.3% CZ (57,57) = 2.3% LU (40,50) = 2.6% EL (60,57) = 2.7%	Negative correlation between PDI and MAS scores with the rate of men working part time

Index	*Examples/Figures*	*Best Scores*	*Worst Scores*	*Possible correlation*
UAI	Sex distribution of members of the highest decision making bodies of the largest publicly quoted companies [5]	SE (29) = 26% FI (59) = 20%* SK (51) = 18%* DK (23) = 17%	LU (70) = 3% PT (104) = 3% MT (96) = 4% IT (75) = 4%	Negative correlation between UAI and participation of women in high management teams
UAI	Employment rate for old workers [6]	SE (29) = 70% EE (60) = 60%* DK (23) = 59% UK (35) = 58%	MT (96) = 29% PL (93) = 30% LU (70) = 32% HU (82) = 33%	Negative correlation between UAI and employment rate of old people
IDV	Feeling discriminated against in the last 12 months [7]	EL (35) = 7% PL (60) = 10%* RO (30) = 10% IE (70) = 10%* BG (30) = 11% PT (27) = 11%	AT (55) = 25% IT (76) = 19% HU (80) = 19% CZ (58) = 19%	Positive correlation between IDV and the rate of people feeling discriminated against

Sources:
1. Working conditions report 2008-2009 (Eurostat 2009)
2. Equality between women and men 2009 (Eurostat, EU-SILC 2006)
3. Working conditions report 2008-2009 (Eurostat 2009)
4. Equality between women and men 2009 (Eurostat, Labor Force Survey 2007)
5. Equality between women and men 2009 (Database on women and men in decision-making 2008)
6. Working conditions report 2008-2009 (Eurostat 2009)
7. Special Eurobarometer 296 – 2008

* Exceptional cases which are a little different from the trend analyzed

CONSEQUENCES

Advantages and Disadvantages of Cultural Dimensions

Based on the correlations explained above and the analysis per se of the intrinsic values generated by the cultural dimensions, we are able to create a framework concerning the advantages and disadvantages of these dimensions in order to promote diversity management. Considering all the assumptions made and the hypothesis explained, table 3 lists the values that are important to leverage diversity policies in each cultural dimension using the social statistics as an illustration of it. All in all, advantages are mostly related to low scores in the dimensions whereas disadvantages are related to high scores.

Table 3. Advantages and disadvantages of cultural dimensions in promoting diversity

Index	*Advantages (Low Scores)*	*Disadvantages (High Scores)*	*Statistics**
PDI	- Less inequalities - Less dependence - More freedom - Expanded range of lifestyles - More cooperation	- Inequalities accepted - Equal treatment jeopardized - No recognition of discrimination - High hierarchical system - Great centralization of power	- Youth unemployment rate (+) - Employment rate for women (-) - Share of part time male workers in total employment (-) - Salary gap between top and bottom of organizations (+) - Respect for young leaders (-)
MAS	- Sensitivity - Welfare - Relationships - Quality of life - Solidarity - Equal share at home and work - Fairness - Flexibility	- Domination - Competition - Gender gaps	- Proportion of children up to 3 years cared for by formal arrangements (-) - Employment rate for women (-) - Share of part time male workers in total employment (-)
IDV	- Cooperation - Equality - Integration - Inclusion	- Selfish and self-reliant - Lack of care for others	- Feeling discriminated against (-)
UAI	- More tolerance of differences - Changes in management easier	- Less tolerance for uncertainties - Nationalism - Xenophobia - Repression of minorities	- Sex distribution of members of the highest decision making bodies(-) - Employment rate of old people (-)

* (+) positive correlation, (-) negative correlation

Diagram of Diversity Management

Sixteen different typologies were created based on the scores in the 4 cultural dimensions. The typologies acknowledge whether or not these countries have the inclination for, and fewer barriers to, the promotion of more equality and the combating of discrimination in their societies.

Table 4 shows the symbols considered to create the typologies. According to the supposition described above, the dimension was classified as high (strong) or low (weak) if the score is higher/equal to 40 or lower than it respectively. The symbols shown in this table are the titles of rows and columns in the following diagram (Figure 1).

Table 4. Classification of the results of cultural dimensions and their respective symbols

Index Score	*Symbol*	*Calculation*
Strong Power Distance	P	PDI>=40
Weak Power Distance	D	PDI<40
Individualism	I	IDV>=40
Collectivism	C	IDV<40
Masculinity	M	MAS>=40
Femininity	F	MAS<40
Strong Uncertainty Avoidance	U	UAI>=40
Weak Uncertainty Avoidance	A	UAI<40

The 23 countries were plotted in the diagram according to their typologies. The typology PIMU means, for instance, strong power distance, high individualism, high masculinity and strong uncertainty avoidance. This quadrant, which shows high scores in all dimensions, is the worst environment to implement diversity management. (This conclusion is based solely on the values gathered from the four cultural dimensions) On the other hand, the typology DCFA (weak power distance, collectivism, femininity and weak uncertainty avoidance) creates the best environment to conduct such practices because the culture promotes values such as tolerance, solidarity, cooperation and freedom which are very important factors in creating more equality and inclusion in the society. Unfortunately, no country among the EU23 is located in this quadrant. However, it is believed that the typologies DIFA, PCFA, DCFU and DCMA (striped cells) are the second best environments if they possess at least 3 lower scores out of the 4 dimensions. And in the quadrant called DIFA, we have Denmark and Sweden as examples: with the best scores in some of the social statistics studied.

Nonetheless, the majority of the countries are concentrated in the quadrant PIMU. Considering their statistics, they are the ones with the worst figures and ranks and they appeared more times in the worst scores column in the second table. The quadrants PIMA, PIFU, PCMU and DIMU (in gray cells) are the second worst environments because they consist of 3 high scores out of the 4 dimensions: thus, concentrating more disadvantages. Some countries are plotted in these quadrants too.

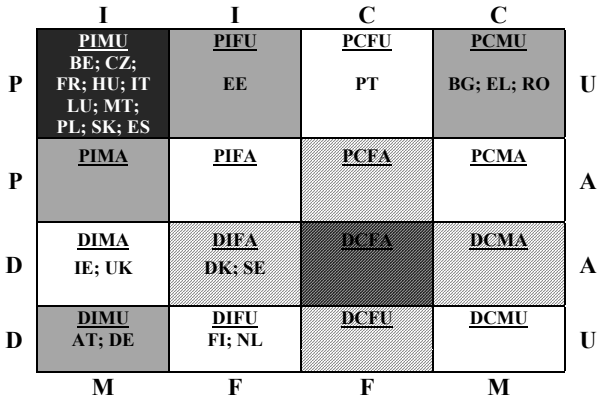

Figure 1. Diagram of typologies based on cultural dimensions. Plotting the EU23 countries

Finally, the remaining quadrants such as DIMA, PIFA, PCFU, PCMA, DIFU and DCMU (in white background on the diagram) are considered more neutral and balanced with 2 high scores and 2 low scores in the cultural dimensions. As it was assumed that none of dimensions are more important than the others, in this case the 2 high scores nullify the 2 low ones by balancing the advantages and disadvantages found.

CONCLUSION

The population of the European countries is changing. Families are having fewer children and the older population is increasing. Consequently, the traditional age structure is being transformed very fast. Fewer young people will be available in the labor market, while older people as well as minority groups that have been facing exclusion and depravation will be more and more available, accessible and needed. Moreover, reconciling family and professional life will be necessary together with the idea of the integration of men and women by reducing gender gaps and supporting job desegregation. Managing diversity is a precondition to guarantee equal opportunities in this way. The statistics studied here report how countries in the European Union are dealing with these wholesale changes which demand more inclusion.

Generally speaking, the advantages and disadvantages of the cultural dimensions that can influence the implementation of diversity practices, either as an impulsive force or limited one, are determined by the score of the dimensions in each country. Lower levels are more attractive for diversity policies because the values correlated create a better environment in the society by stimulating more respect, the acceptance of differences and the inclusion of minority groups. In the diagram

shown above, the countries that are located in the stripped quadrants probably have a culture more prepared to sustain non-discriminating behaviours. Denmark and Sweden are the best examples in this group with better scores in the social statistics presented.

This does not mean that countries with other typologies cannot implement successful practices toward diversity management. There is just an assumption that, in terms of culture, they have less disposition to accept the differences of those groups that are excluded from the mainstream of the society, and to treat those groups well. The diagram above is just one illustration of the kind of possible combinations of cultural dimensions which can result in a better climate and determine the best conditions, in the national culture, to value and foster diversity.

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The Concept and Development Tendencies of Corporate Social Responsibility

KRISZTINA SZEGEDI¸ Ph.D.
ASSOCIATE PROFESSOR

e-mail: vgtkrisz@uni-miskolc.hu

SUMMARY

The expression Corporate Social Responsibility was first used in the United States of America in the 1960s. This triggered a nationwide debate about the responsibilities corporations have towards societies. The most criticized statement belongs to Milton Friedman, a Nobel prize winner, who said, "The social responsibility of business is to increase its profits."[1] This means that there is only one responsibility of business, namely to use its resources and to become engaged in activities in order to target increases in profits. The past few decades have brought about a lot of changes. According to a survey published recently, which encompassed over 100 countries, the majority of managers polled said it was not enough if corporations generated high returns to investors but this should be balanced with contributions to the broader public good. [2] In the background of the empirical results lies the fact that growing numbers of corporations realise that the business world is not an isolated area, but is closely linked with, and strongly related to, its narrower and wider environment and ultimately to societies and the natural environment.

THE CONCEPT OF CORPORATE SOCIAL RESPONSIBILITY

There are several definitions of Corporate Social Responsibility. There are some who describe it as an instrument; others think it is a concept. Still others consider it a business model which needs sweeping changes in terms of approach and which assumes changes in paradigm. Corporate Social Responsibility supposes the recognition of the fact that a corporation is more than simply a foundation striving for return on capital and maximisation of profit. A corporation is a partnership of people operating in a well-defined social and natural environment. Corporations have to play an active role in social processes and have to take into account the environmental and social effects of their activities. [3]
The definitions formulated by some major organisations are as follows:
"With the fast-spreading commitment to C[S]R, a case can be made that a fundamental new business model – one that respects stakeholder and shareholder values simultaneously – is evolving." (United Nations Global Compact)
"CSR is a concept whereby companies integrate social and environmental concerns in their business operations and in their interactions with their stakeholders on a voluntary basis." (European Union [4])
"CSR is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large." (World Business Council for Sustainable Development)

What is CSR?

After summerising the definitions, it can be concluded that CSR is a business model which promotes business contributions to sustainable development i.e, it creates a balance between economic interests, environmental needs and social expectations by integrating the following components into a business strategy:

- Emphasis on environmental and social interrelationships – corporations operate in the environment and society in an integrated form. They take into account the impact their operations have on the environment and society and they want to exert a favourable effect on evolution. Some publications and corporations lay more emphasis on this component and prefer using the term Good Corporate Citizenship.
- Stakeholder approach – during their operations companies make efforts to take into account the interests of shareholders and stakeholders. As all the participants concerned have an interest in the responsible behaviour of companies, the term Corporate Responsibility (CR) has been in use instead of Corporate Social Responsibility (CSR) recently because it reflects a broader approach.

- Ethical behaviour – the concept of CSR does not only take into account the impact of corporate operations on the communities concerned, but it also stresses the need for ethical behaviour which respects the interests and values of these communities. Some papers consider CSR and business ethics as synonyms. Several experts think CSR is the expression of the business ethics in corporate practice. [5]
- Volunteering – having acknowledged their responsibilities, companies then decide to assume them on a voluntary basis. Volunteering reflects their commitments and provides them and the communities involved with opportunities to apply the most favourable instruments. Taking into account practical elements, a system giving rise to CSR or controlling it does not exist. However, this does not mean that CSR cannot be motivated by government regulations or community expectations.

What is not CSR?

CSR is not PR – a lot of companies consider CSR to be one of the instruments of Public Relations. It is obvious that CSR increases the reputation of companies, and, thus, positively differentiates the products of these companies in the views of customers. This, therefore, brings about competitive advantages. CSR is much more than just a PR instrument as it involves new approaches and business models. If it is used as a PR instrument, it does not reflect the real commitment of the company and may have an unfavourable effect.

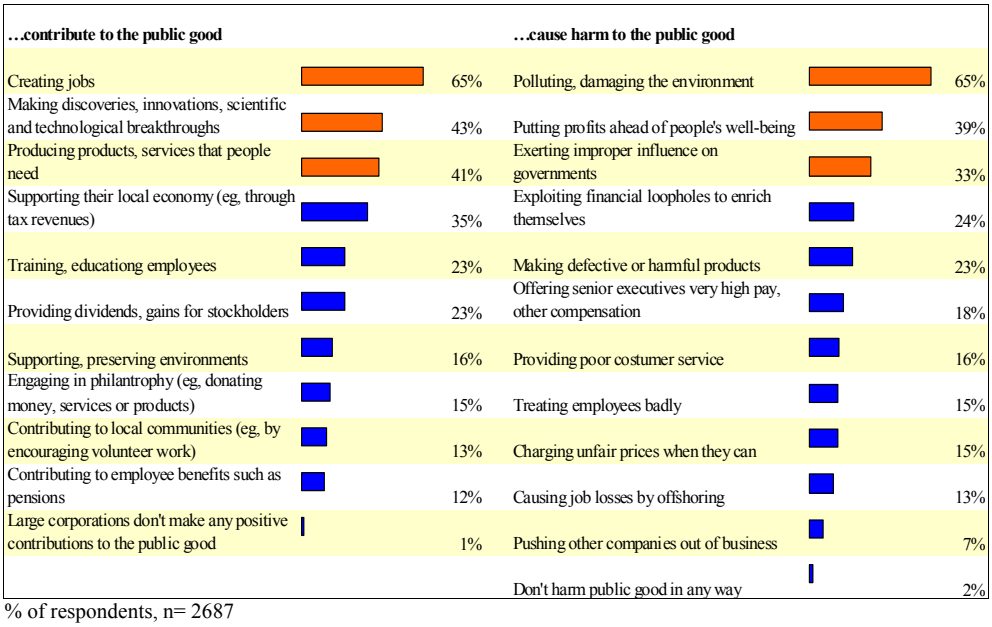
CSR is not charity work – CSR has often been associated with charity activities and, instead of bearing responsibilities in a broader sense, a number of companies have limited their activities to this. Charity work and sponsorship are constituent parts of CSR, which are integrated into company operations, and are not separate activities. However, CSR means more than this.

CSR is not a social part of sustainable development, but has a much wider meaning. We accept the EU definition of CSR as the business contribution to sustainable development.

CONTENT ELEMENTS OF CORPORATE SOCIAL RESPONSIBILITY

As a modern approach integrated into corporate operations, CSR appears in every corporate field. It looks for solutions in order to protect the environment and improve working conditions. These solutions take into account social interests and are based on innovative and economical aspects. [6]

An international survey conducted in over 100 countries polled over 4000 top executives and examined the most favourable and unfavourable effects major companies exercised on society. The findings show that creating jobs was the most favourable impact. Following this, the innovation and production of essential products and services were also of great importance. Figure 1. shows the most important factors influencing the public good. Polluting and damaging the environment, putting profits ahead of the well-being of people and exerting improper influence on governments are considered the most harmful factors to the public good by the respondents. [7]



% of respondents, n= 2687
Respondents could select up to 3 responses; those who answered 'other' are not shown.
Source: Assessing the impact of societal issues: A McKinsey Global Survey, 2007.

Figure1. Most important ways in which large corporations currently…

A lot of articles in different fields of scientific literature mention Corporate Social Responsibility. Summarizing the ideas mentioned in them, and taking into consideration the stakeholder approach which is the basis of CSR, the most important factors of CSR according to the communities concerned are as follows:

- Employees – ensuring job places; respecting employees' basic rights; providing safe, healthy and proper working conditions; promoting training and development; ensuring equal opportunities and non-discrimination; offering decent salaries; ensuring a balance between work and private life; the diversity of the work force; training and supporting the handicapped; fair and extensive in-company communication; participation and involvement in decision-making; and proper management of restructuring, dismissals and crisis situations
- Customers - useful, good-quality, healthy and reliable products and services; protection of national products; fair behaviour towards customers; decent prices; and proper customer information
- Contractors/suppliers – incorporation of social/environmental values into purchasing decisions; avoiding business relationships with companies that use illegal practices (i.e. child labour); active engagement in supply chain risk management; ensuring socially responsible practices through the whole supply chain; and prompt responses to supplier complaints
- Local communities – improvement of life conditions of local communities; creating jobs; protecting the environment; promoting social catch-up; supporting local education, health care, security and culture; and contributing to increases in local tax revenues
- Shareholders and owners – reporting socially responsible business practices to shareholders; and providing a definition of a mission that includes non-financial objectives
- Government – promoting the creation of a favourable regulatory environment for CSR; and proposals for sustainable industrial solutions
- Civilians – sensitivity to social problems; providing assistance to civil organizations; and ensuring cooperation
- The natural environment – promoting solutions to global and national environmental problems; saving energy and avoiding environmental pollution; commitment to minimising negative impacts and optimising resources; performance of full life-cycle analysis on all products/services; and the incorporation of environmental values into purchasing decisions
- Society in a broader meaning – promoting solutions to national and global problems; providing assistance to disadvantaged communities and regions; promoting entrepreneurial development and innovation; compliance with human rights standards; promoting the fight against corruption; raising the awareness of the public concerning the importance of CSR; and providing proper information about essential operations

Which factors will dominate in various countries and companies depends highly on the existing cultural community. According to an American survey conducted recently polling over 2,000 people on corporate social responsibility, priority was given to commitments to communities and to society in broader terms. This was followed by commitment to employees and responsibility to the environment. Only 1% of respondents defined corporate social responsibility as charitable and philanthropic giving. [8]

According to Mark Line, director of csrnetwork, CSR has different meanings in various parts of the world. In the United States, corporations think they should produce profit first, part of which they will contribute to the public goods afterwards. In some countries, like France and Germany, CSR means issues related to employees' relationships and human resources. [9] According to a survey conducted by McKinsey, German respondents think the most important CSR factors are creating jobs, training employees and social measures. Another German survey revealed that the main CSR areas are environmental protection, in-company training, the support of the handicapped, the avoidance of child labour, the development of products with low risks, and respect for basic human rights. [10] Central European countries, the new member states of the EU, interpret CSR factors in a different way. According to a survey focusing on Hungary, Poland and Slovakia, the main factors are ethical conduct, transparency in operations, compliance with regulations, stakeholder partnership, environmental protection, addressing stakeholders' concerns, public relations and the correction of social inequalities. [11]

As for the development of CSR in Europe, the United Kingdom is considered a model. Here the first Minister for Corporate Social Responsibility was appointed in 2000 and CSR has widely been accepted in the business sector. Scandinavian countries and Belgium have also achieved considerable results concerning this issue. France has taken the lead in promoting CSR principles: it is the only country where it is obligatory to prepare CSR reports. In Austria and Germany, principles of CSR have been present in their social policies and, in addition, they take CSR very seriously. In 2008 in Germany, a new Internet webpage was created called 'CSR WeltWeit' (CSR in other parts of the world) which provides extensive information on CSR activities in 24 countries and illustrates them with case studies related to German corporations.

Compared to Western Europe and Scandinavia, CSR is a relatively new concept in Central and Eastern Europe and

its evolution is relatively slow. Large, mainly multinational companies have started to adapt their CSR policies and programmes to the local context. The most tangible signs of progress can be seen in Poland, Hungary and the Czech Republic, but CSR initiatives are starting to take place in the Baltic countries, Romania, Russia, Slovakia and others. [12] Firms from Eastern Europe do not agree on the most important actions required for the broader adoption of CSR activities. Hungarian companies prefer incentives and relations with local governments to influence their behaviour, and pressure from consumers rather than regulation, central government participation and/or management. They believe that under these circumstances CSR would embrace new business models and modes of behaviour. Slovakian companies share these views to some extent, strongly believing in dialogue with the government. In contrast, Polish firms stress macro and national-level factors (regulatory reform, national dialogue with the government, banking measures). However, there is an agreement that governments should not become heavily or directly involved in micro-managing business issues. [13]

ADVANTAGES OF CORPORATE SOCIAL RESPONSIBILITY

Why is CSR advantageous? What favourable effects does CSR produce on companies? Does CSR have to recover its expenditures? Do we speak about responsibilities or economic interests in this case? These have been the most essential, discussion-generating questions in the circle of experts for years. The reasons for the introduction of CSR from the point of view of the business sector are summarised below:

Business reasons

In the past few years such famous scholars as Philip Kotler, the marketing guru, [14] and Michael Porter, professor of strategy, [15] have been arguing for CSR, saying that it leads to competitive advantages. Companies have adopted CSR practices, first as window-dressing, then as patchwork policies, and now thought-leaders are arguing the necessity of integrating CSR with core business strategy. Regarding the CSR issue, the European Union clearly states that there is 'broad consensus among businesses about the expectation that CSR will be of strategic importance to ensure long-term business success.' [16] CSR 'can play a key role in contributing to sustainable development while enhancing Europe's innovative potential and competitiveness'. [17]

According to the literature, the advantages that corporate social responsibility may have are as follows:

- improving image, multiplying PR and advertising opportunities
- reducing social and environmental risks, prevention of scandals, decreasing criticism from civil organisations and others concerned
- enhancing corporate reputation
- becoming a more attractive company for a well-qualified and trained labour force
- improving morale and conditions at work, resulting in a more committed, productive, innovative, loyal and content work force
- increasing transparency for customers by means of responsible trade
- upgrading corporate brands
- attracting loyal customers
- developing mutually beneficial partnership collaborations based on trust and common scales of values, resulting in new business opportunities, new markets and an increase in innovation productivity
- promoting greater transparency of corporate processes, resulting in an increase in the feelings of satisfaction of stakeholders and investors, and also resulting in greater interest in the company
- developing good relationships with government regulators, authorities, the public and, especially, with the media
- contributing to the development of a more stable global market
- creating corporate values arousing trust, as a result of which the national and international competitiveness of major corporations will increase

Is CSR good for business?

The reasons listed above for the introduction of CSR have not completely convinced all corporations that responsible behaviour will have business returns, at least in the long run. Academics also have different opinions on this issue. According to sceptics, if CSR were good for business, all companies would start to apply it in a helter-skelter way. The supporters of CSR, on the other hand, argue that the business opportunities hidden in CSR have not been discovered yet and, in addition, some favourable impacts of CSR cannot or can hardly be expressed numerically. There is a third group of academics who disapprove of even raising this issue, saying that taking on responsibilities is important in itself and should not depend on whether it will have any business returns or not.

In the past few years more and more empirical studies have discovered correlations between responsible behaviour and corporation results. [18] A survey of more than 500 business executives was conducted by Grant Thornton LLP, the U.S. member firm of Grant Thornton International, one of the six global accounting organizations. This survey found that company executives believe that corporate responsibility programmes can positively impact their business and help achieve strategic goals. [19] A report released by Goldman Sachs, one of the world's leading investment banks, surveyed companies from six sectors: energy,

mining, steel, food, beverages, and media. The report found that the companies that are considered leaders in implementing environmental, social and governance (ESG) policies – with the aim of creating a sustained competitive advantage – have outperformed the general stock market by 25 per cent since August 2005. In addition, 72 per cent of these companies have outperformed their peers over the same period. [20]

On the basis of studies finding a positive correlation between social responsibilities and corporate productivity, it can be stated that a socially responsible attitude of a company can be considered a long-term and strategic investment which results in competitive advantages in a favourable corporate environment and will finally lead to economic returns. In addition, it will create a "win-win" type situation from which the company and its environment, as well as society, will profit. By a favourable corporate environment we mean that corporate people promote and give a positive evaluation to CSR initiatives. There may be considerable divergences between certain countries and regions in this respect. It is not surprising that companies committed to CSR try to have a positive impact on their environment as well by, for example, increasing customer awareness and promoting the development of a regulatory system for the promotion of CSR.

Companies have to behave in a responsible way, but the reason for doing so should not be profitability. However, it is not a problem if there are forms of social activities which comply or can be made to comply with business interests. It is crucially important that a company should be trustworthy, as this model is based on trust. The new business model seems to ensure real competitive advantages if the corporation environment develops. However, later it can appear in the form of a basic expectation, resulting in a competitive disadvantage for companies which do not behave in this way.

THE CSR PROCESS AND ITS TOOLBAR

The practical aspect of CSR can be defined as the methods and instruments used for the practical execution of CSR's theoretical ideas and objectives, and their application in everyday life. The first step of the process is to define the mission and CSR values of the company. In order to determine the impact of CSR, the most important values of the company, the character and degrees of CSR's involvement, and the related risks and opportunities have to be defined. The CSR strategy is a part of the corporate strategy. The CSR strategy includes a list of its main objectives, the methods to achieve them and the tools to be used for this. After practical implementation of the objectives, its performance is evaluated and communicated.

CSR values can be published in a Code of Behaviour or Ethics containing a set of norms of corporate behaviour. Their elaboration is especially characteristic of large companies. SMEs can also compile a simple system of norms containing basic values. It is not the formulation, but the process of its creation and the selection of values that is important. The advantage of formulation is that it provides some guidelines to avoid the dilemmas which occur in everyday life. Formulation can, therefore, serve as a helping hand.

In the elaboration of CSR strategies, involving the parties concerned is of essential importance and this can be done in the form of a stakeholder dialogue. This can provide opportunities for raising critical and relevant issues and defining the main strategic routes. It is not essential to elaborate a separate CSR strategy. Integrating social, environmental and business ethical aspects into the strategy, operative plans and budget is theoretically enough.

Perhaps the CSR strategies of multinational companies are better elaborated as they have more financial resources and, due to their size, they need to regulate the processes on a much bigger scale in order to formulate their objectives and strategy. SMEs do not formulate a CSR strategy, but it does not mean that they do not have CSR operations. Defining principle strategic policies can promote awareness of CSR operations and their compliance with company basic values.

Measuring performance is considered to be a critical element of the process. It is often very difficult to create criteria which comply with basic principles and objectives and can be used for measuring their performance. Only a handful of major companies take the trouble to elaborate a system measuring performance despite the saying that everything that can be measured can be implemented. The preparation of social, environmental and sustainability reports can also promote this process, and in this way provide opportunities not only for internal monitoring, but for external evaluation and auditing as well. Employing evaluating organisations from outside results in an increase in transparency, ensures the trustworthiness of the process and offers professional values which contribute to improving the process.

There are several international standards which rank corporate processes from social and environmental aspects. The environmental standard ISO 14000, the European EMAS, the international standard dealing with occupational health and safety, the International Occupational Health and Safety Management System (OHSAS18001), the social and ethical standard focusing on working conditions in developing countries, Social Accountability 8000 (SA 8000) and Accountability1000 (AA1000) all focus on involving the parties concerned. The development of ISO 26000 CSR standards is in the process of elaboration and will provide management standards on CSR. These standards are primarily used by major companies because of their high costs, but more and more suppliers are also required to obtain them. Thus, SMEs will be forced to introduce them. Apart from

international standards there are national ones as well, such as the German WerteManagementSystem^{ZfW}. The Global Reporting Initiative (GRI) has been introduced recently. This is a system elaborated by an independent organisation which gives guidance to measure and compare the impacts of the three pillars of sustainable development: economic, environmental and social effects.

There are several initiatives regarding compiling ratings of CSR performance, for example, Accountability Rating, which is done by an organisation independent of CSR and might well generate fair competition among companies. There are awards in both large and SME categories in several countries, which may promote performance evaluation and offer a stimulus. In the past few years, a number of social and eco labels and marks have been developed and placed on products to prove that the product is environment-and society-friendly. One of the best-known marks is the Fair Trade Mark for helping developing countries. In addition, product labelling targets raising customer awareness, which may have a favourable impact on the CSR operations of companies. However, customers are often confused by the wide range of marks and by the fact that they are often placed on the products without any supervision.

Another instrument may be the spread of Socially Responsible Investing, SRI. Capital investments of socially responsible investments target not only profitability, but social and environmental aspects and criteria as well. They are based on screening processes. Several banks, investment funds and social institutions specialise in offering socially responsible investments. Among the best-known organisations are Ethibel (Belgium), Fundacion Ecologiay Desarrollo (Spain), Avanzi (Italy), Triodos Bank (the Netherlands), EIRIS and Pirc (UK). The screening terms depend on the institution itself and on the forms of investments. Companies must fulfill extremely strict ethical and environmental conditions regarding their investment practices, for example, giving preference to industries heavily involved in environmental issues (production of alternative energy) or excluding some sectors of industy (weapon production and trade, gambling, tobacco and alcohol). Major stock exchanges around the world use a sustainable index. This is a portfolio of securities of companies which are considered more sustainable in their line of operations. The best-known indexes are as follows: the Dow Jones Sustainability Index (DJSI), the London FTSE4Good, the Domini 400 Social Index, and the Ethibel Sustainability Index. In the United States of America, the cradle of this branch of industry, socially responsible investments amounted to $2.3 billion in 2005. [21]

A number of problems arise from the fact that there is a confusing variety of systems of performance evaluation and that they are not standardized. Corporate Social Responsibility (CSR) is an issue that has worked its way into many policy debates and corporate agendas

SUMMARY AND DEVELOPMENT TENDENCIES

Corporate Social Responsibility is a hot issue that has worked its way into the agendas of world economic and social forums and debates about global development. It can best be understood in terms of the changing relationship between business and society. Traditionally, in the United States, CSR has been defined as a philanthropic model; while the European model lays more emphasis on operating the core business in a socially responsible way. In the past few years, the two models have made some advances towards each other, as it has become more and more accepted that CSR encompasses strategic issues related to the basic operations of companies.

The European concept defines CSR as a business contribution to sustainable development, and its peculiarities lie in the fact that it lays emphasis on promoting the active incorporation of CSR in small- and medium-sized enterprises. The level of uptake activity of CSR in various parts of Europe is different. Eastern European countries are less developed in this respect. In addition, while in Western Europe the elaboration of CSR was initiated primarily by consumer and NGO groups, in Eastern Europe it was the multinational companies that imported reporting guidelines, which therefore have predominantly PR functions.

The approach of seeing CSR as good for business is not generally accepted yet. However, it is gathering momentum. Its further evolution depends highly on the willingness of the organisations concerned to meet its requirements. According to an American survey, 62% of the respondents believe that pressure to pursue corporate responsibility programmes in the future will come chiefly from consumers (45%) and investors (21%). Nearly three-quarters of executives (72%) believe that the government should regulate companies with regard to their impact on the environment, and more than half (56%) believe that the government should regulate companies with regard to their effect on human rights and labour practices. Only one-third (35%) believe that the government should regulate companies with regard to their impact on the communities in which they operate. [22]

Social organizations (NGOs) may play an essential role in the evolution of CSE. In Eastern Europe such organizations are not as strong and active as in Western Europe. Being involved in CSR means a long-term ‘win-win-win’ situation and has to be beneficial for all participants (the business world, social groups and governments). This has already been proved by a number of examples in developed countries like Great Britain, Germany and Spain.

CSR performance assessment uses assessment tools, and this enables a standardized assessment. It is of crucial importance that future entrepreneurs, business leaders, managers and their employees have CSR competencies and skills. The essential elements of CRS evolution are credibility and trusthworthiness, which can be achieved by an increase in the transparency of reports, hiring external experts to prepare these reports and taking into account stakeholders' interests.

The importance of CSR lies in the fact that it unleashes a huge potential for evolutional energy at all levels. It provides a systematic framework for company management, which takes into consideration financial, environmental, employment-related, social and ethical issues. CSR helps reduce energy demand and waste generation, thus cutting costs. In addition, it helps companies increase their differentiation on the market, create innovative new products and processes, open new markets, attract and retain appropriate employees of all ethnic groups and minorities, improve their corporate image with the public and parties concerned, reduce legal risks and insurance costs, and improve the quality of life and the whole community.

A survey of chief executives in 23 countries found that four executives out of five believe that, due to CSR, corporate brand values will have increased by 2010. Eighty-five per cent of executives and investors surveyed rank corporate responsibility as a central consideration in investment decisions. [23]

According to a survey conducted by McKinsey, which encompassed over 4,000 corporate top executives in over 100 countries, 59% of CEOs said corporate responsibility should be embedded into global supply chains. More than 90% of CEOs are doing more than they did five years ago to incorporate environmental, social and governance issues into strategy and operations. Seventy-two per cent of CEOs said that corporate responsibility should be embedded fully into strategy and operations. [24]

Tendencies show that in the future CSR may become a business concept of the mainstream, the objective of which will be not profit maximization, but the creation of an economy which can help people retain their humanity without continuing to exploit nature. [25] According to megatrends dealing with the future world of business, "CSR is clearly not a short-term phenomenon, but a trend-driven necessity." [26]

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A Regional Evaluation of Sustainability with Special Regard to Social Aspects[1]

KLÁRA TÓTH SZITA, Ph.D.
ASSOCIATE PROFESSOR
e-mail: regszita@uni-miskolc.hu

ESZTER SIPOS NÁNDORI
LECTURER
e-mail: stsne@uni-miskolc.hu

SUMMARY

Today sustainable development is an organic part of the community policies of the European Union including regional policy. Sustainability is important not only for products and services, but also for regions. Regional evaluation of sustainability is an emerging research field. The assessment of regional social performance has not been elaborated yet. Social life cycle assessment, however, would be suitable for this task. This study aims to utilise Social Life Cycle Assessment and indicators to assess regional sustainability. To test the assessment system, this study analyses the social performance of Northern Hungary.
Key words: regional policy, sustainability, social LCA

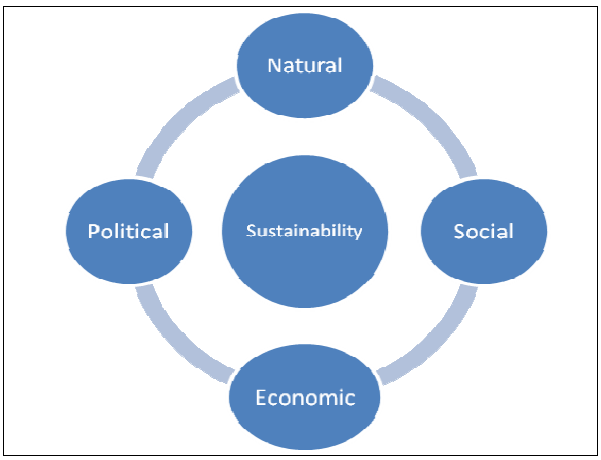
INTRODUCTION

Today sustainable development is an organic part of the community policies of the European Union including regional policy (especially after Johannesburg and Lisbon). Sustainability is important not only for products and services, but also for regions. The regional environmental performance can be assessed with Life Cycle Assessment. Environmental sustainability is in primary focus and there have been many attempts to achieve this objective. Another dimension of regional sustainability, the social one, has, however, been strongly neglected. The assessment of regional social performance has not been elaborated yet. Social life cycle assessment, however, would be suitable for this task. It was designed to assess the social and socio-economic aspects of products and services and their potential impacts (either positive or negative) throughout their life cycle. It can be applied on its own or in combination with Environmental Life Cycle Assessment.[2] This assessment method also has limitations. It requires many qualitative data as numeric information is less capable of assessing social aspects. As extensive data collection is needed for the evaluation, this method is quite expensive.[3] Another method for the assessment of social regional performance could be the use of indicators. This study aims at utilising Social Life Cycle Assessment and indicators to assess regional sustainability. To test the assessment system, this study analyses the social performance of Northern Hungary.

SUSTAINABILITY

The welfare of the society and the improvement of living standards can only be assured in the long run by integrating the efforts to increase economic and social growth while, at the same time, preserving natural resources and heritage and using them in a sustainable way in order to achieve an acceptable environmental quality. The common segment of economic and environmental strategies is the improvement of competitiveness. This is based on innovation, the sustainable use of natural resources, the qualitative reproduction of human resources and the balanced development of social and environmental infrastructure.[4]
To ensure sustainability, decisions have to be made that consider the long-term economy, ecology and the equality of all communities. Sustainability is built from the actions of people and businesses at local level, and it extends outwards in a spiral.
The dimensions of sustainability can be seen in Figure 1. The main value belonging to the natural dimension is to protect natural systems and use resources wisely. The political dimension involves making decisions through democratic means, while the economic dimension emphasises appropriate development and the satisfaction of livelihoods for each member of the population. The social dimension refers to people caring for each other and the appreciation of social justice and peace.[5]

[1] *"Supported by OTKA 76870/2009 research"*
[2] *United Nations Environmental Programme (2009) p 37*
[3] *United Nations Environmental Programme (2009) p 9*
[4] *Roncz Judit – dr Szita Tóth Klára: Energy consumption as an indicator of sustainability p 1*
[5] *http://www.unescoapceiu.org/bbs/files/doc/2002/esd/TLSF/intro/mod03/uncom_c_bod.htm*

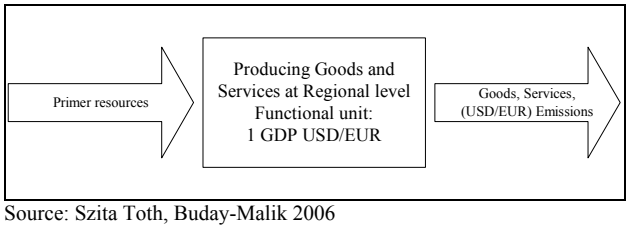


Source: own compilation based on http://www.unescoapceiu.org/bbs/files/doc/2002/esd/TLSF/intro/mod03/uncom_c_bod.htm

Figure 1. Dimensions of sustainability

To evaluate the progress toward sustainability, it has to be measured. There are several ways to measure sustainable development. One of them is the calculation of the ecological footprint, which includes some aspects of land use[6]. The Human Development Index (HDI) can also be used to measure sustainability. It measures the development of human resources and combines three components. It takes into consideration average life expectancy at birth as an index of health and longevity, knowledge gained in education as a measure of the individuals' knowledge, and GDP per capita as a measure of income and living standards.[7]

Analysis can also be carried out with the help of indicators[8] or with the Life Cycle Assessment (LCA) based approach. The latter approach helps with the sustainability assessment of products, services, systems and also regions, by taking into account materials, products or services. Sustainability evaluation can be conducted by setting up an input-output analysis for the functional unit of GDP produced by the region. The inventory is based on the primer resources as inputs and the emissions, environmental effect, etc. as outputs. The model of regional sustainability assessment is presented in Figure 2.

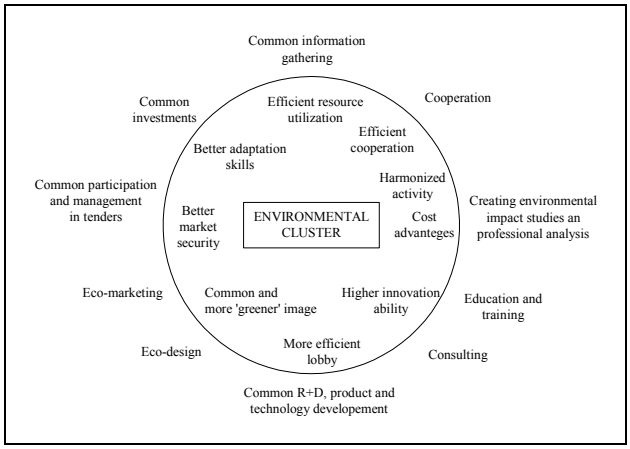


Source: Szita Toth, Buday-Malik 2006

Figure 2. LCA model for regional sustainability assessment

The environmental dimension of regional sustainability has developed significantly recently due to environmental clusters. In the past five years, the number of these clusters has grown significantly based on triple helix (research institutes, industry and regional organizations). They could effectively contribute to the enhancement of environmental policy tools and the improvement of the environmental performance of industrial actors. There is strong government support to encourage cooperation in order to promote environmental thinking. The European Union supports the cooperation actions of research driven clusters in the fields of environmental industry and protection.

The key responsibilities of environmental clusters are to create special competences in the field; to promote life-cycle thinking and monetary-flow analysis; to improve the eco- and energy- efficiency of products and services inside the cluster; to participate in building environmentally friendly infrastructure development; to eco-innovate and improve regional environmental data management; to initiate cooperation actions in the environmental industry, and to support environmental and innovation policy-making (e.g. through participation in joint research or the development of regional policy tools). The operation of research-driven environmental clusters is shown in Figure 3. The inner circle represents the common research drives, while the outer circle refers to the results obtained.

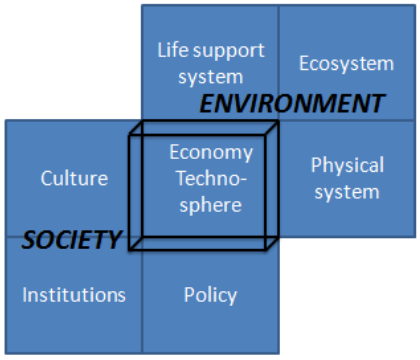


Source: Buday-Malik, Szita Toth, Roncz J, 2009

Figure 3. The operation of research-driven environmental clusters

The environment and the society are related to each other. Figure 4 represents the linkage between these two dimensions.

[6] *Finnveden et al. (2009) p 11*
[7] *Kristóf T. (2003) p 1091*
[8] *United Nations (2008) p 6*



Source: Huppes, Gjalt – Ishikawa, Masanobu (2009) p 1694

Figure 4. The common segment of the environment and the society

The economy and the technosphere, which include production and consumption, make up the common segment of the environment and the society. In spite of the developing environmental dimension of regional sustainability, however, the social component has been neglected so far. The next chapter summerizes what the social aspect of regional sustainability refers to and what the ways to measure it are.

Social Sustainability of Regions

LCA can renew the regional performance assessment system. With inspiration from Environmental LCA, the development of methods for Social LCA has started.[9] The integration of social components requires that greater priority is given to the participation of stakeholders and the treatment of utility.

Social LCA has to be carried out in four steps. First, the scope and the goal have to be defined. The ultimate goal of S-LCA is to promote social conditions and human well-being.[10] Scoping has to include the goal of the study, the inventory scope and system boundaries, the functional unit, the alternatives, data collection requirements, allocation procedure and critical review. The next step is the inventory analysis. In data collection, the reliability of data always has to be considered. Different methods of data collection can be used depending on the scope. The next step is impact assessment, which involves classification, characterization, normalization and analysis as in an environmental LCA study. The last step of Social LCA is the interpretation of the results and the evaluation.[11]

When using indicators to assess social performance, the question of what kind of indices to use arises. There are no indicator-lists that can be used as a guide.

Quantitative data are easier to evaluate, but they are considered to be too insufficient to refer to all aspects of social impacts. Qualitative data, however, can cover all aspects of social performance, but are much more expensive to collect. Thus, a combination of qualitative and quantitative data can be considered to be the best solution. Choosing the most suitable indicators for the given task can sometimes be difficult. Most indicator-lists express the complexity of the given individual topic.[12] Before starting the data collection and the analysis, each indicator needs to be clearly defined.

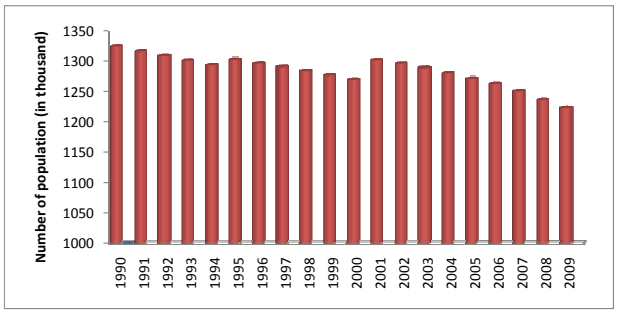
This study gives an example of the assessment of regional performance from social aspects. Social indicators are used to evaluate the regional performance of Northern Hungary. To undertake the analysis, only quantitative data are used as qualitative data are currently not available. The assessment of Northern Hungary is carried out by the analysis of demographic and labour market data.

Assessment of the Social Performance of Northern Hungary

Northern Hungary has had to face severe economic and social challenges since the transition to the market economy. In spite of its natural and environmental potential, the performance of the region is very poor both in terms of economic and social progress. Currently a real struggle is being fought for economic competitiveness and for a better quality of life.

The assessment of the social performance of Northern Hungary is carried out using social indicators. Comparisons are made between Northern Hungary and the whole country in the case of the most important social indicators. Then the performance of the region is evaluated by assessing changes in the past eight years.

One of the social indicators is the size of, and the changes in, the population. Figure 5 shows the size of the population in Northern Hungary.

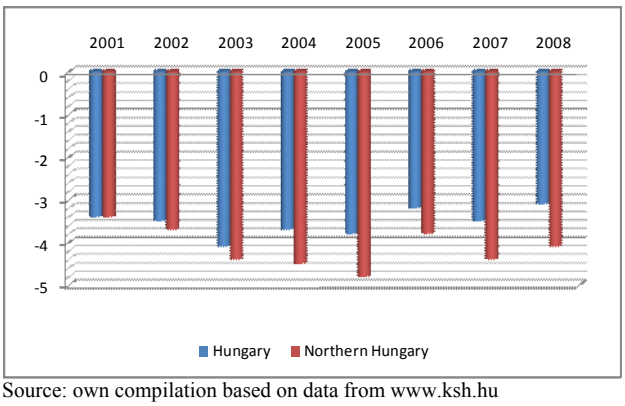


Source: own compilation based on data from www.ksh.hu and www.registar.hu

Figure 5. The population of Northern Hungary (1990 – 2009)

[9] *Finnveden et al. (2009) p 2*
[10] *United Nations Environment Programme (2009) p 22*
[11] *United Nations Environment Programme (2009) p 10-14*
[12] *United Nations Environment Programme (2009) p 8-9*

The decline in the size of the population has been interrupted two times in the past twenty years. First, in 1995, when the size of the population slightly increased by 0.8 percent. The second increase was in 2001, but this is probably due to methodological changes. The 2001 census corrected the data derived from calculations.
Besides looking at the total number of, and the changes in, the population, the composition of these changes is also worth examining. Population changes can have two sources: vital events and migration. Vital events include birth and death and the natural increase or decrease which expresses the sum of these two factors. Figure 6 shows the natural increase and decrease per thousand inhabitants for Hungary and Northern Hungary.

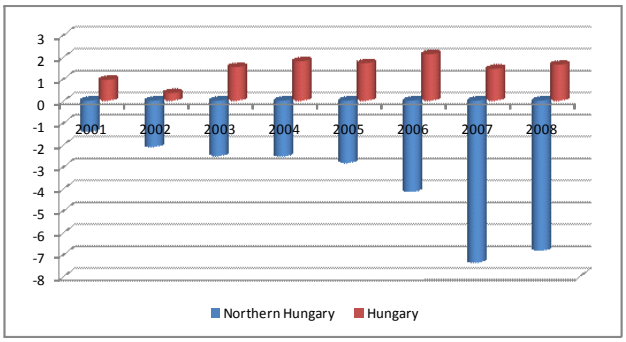


Source: own compilation based on data from www.ksh.hu

Figure 6. Natural increase (+) and decrease (-) per thousand inhabitants (2001-2008)

In the examined period, the balance was always negative for both of them, and in Northern Hungary the natural decrease was always higher. Even if the live birth rate per thousand inhabitants is higher in the region than the national average, deaths per thousand inhabitants is also higher.[13]
Note that one of the highest fertility rate indicators can be found in Northern Hungary. This is due to the fact that the fertility rate is extremely high among women younger than 14 (which is three times higher than the national average) and among women between 15 and 19 years old (twice as high as the national average)[14] while the fertility rate of those above 25 is lower than in Hungary.[15]
This leads to the unfavourable fact that young mothers leave the education system without getting any qualifications and thus cannot reach the living standard necessary to satisfy the minimum needs. Founding a family at an early age can be a reason for poverty and deprivation.[16]

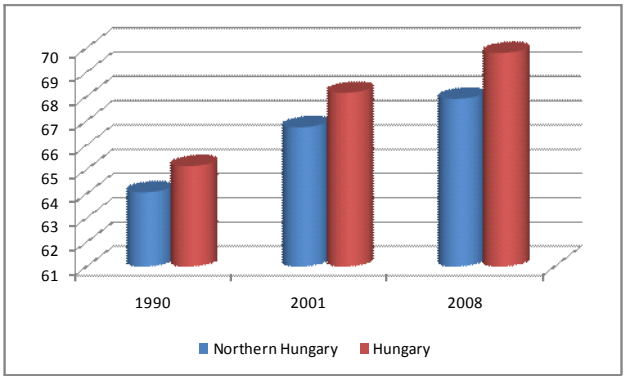
Changes in the size of the population can also be caused by migration. Figure 7 shows the net migration per thousand inhabitants. In the case of Northern Hungary, this measure is the sum of internal and international net migration, while at the national level this is equal to international net migration.
Figure 7 shows that while net migration in Hungary has been positive, in case of Northern Hungary it has always been negative. A considerable increase in net migration can be seen for the examined period. Even if the international net migration was positive in the region between 2001 and 2008, it was counterbalanced by the negative national net migration.



Source: own compilation based on data from www.ksh.hu

Figure 7. Net migration per thousand inhabitants (2001-2008)

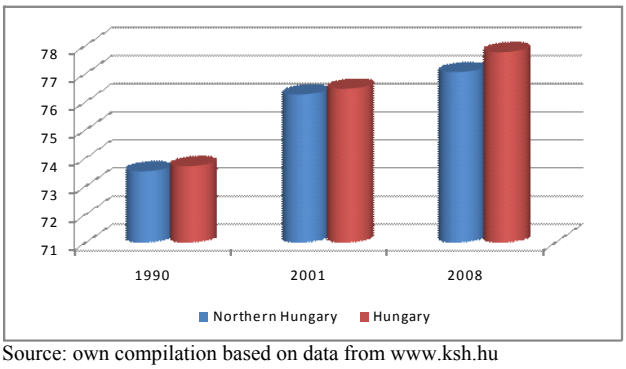
Not only population data, but also average life expectancy is an important social indicator of regional performance. The average life expectancy is shown for men in Figure 8, and for women in Figure 9. This value is much lower for men than for women, which is a problem throughout the country. In the case of Northern Hungary, however, all values are lower than the national average. The difference between regional and national data is more important in case of men.



Source: own compilation based on data from www.ksh.hu

Figure 8. Average life expectancy for men (1990, 2001, 2008)

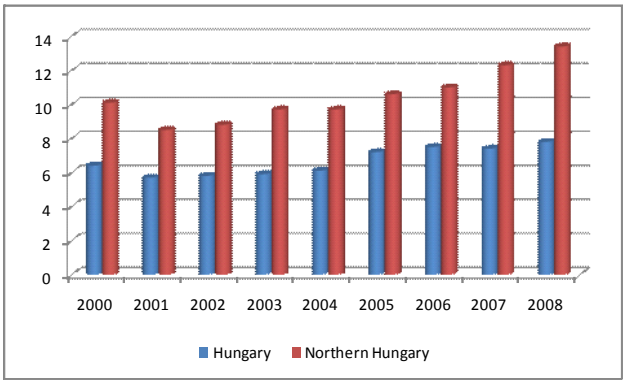
[13] *www.ksh.hu*
[14] *Darók, I. (2006) p10*
[15] *Tóth Szita, K. – Buday-Malik, A. (2006) p 5*
[16] *Siposné Nándori, E. (2009) p 3*



Source: own compilation based on data from www.ksh.hu

Figure 9. Average life expectancy for women (1990, 2001, 2008)

Besides demographic data, the labour market position of the region is also worth assessing. The unemployment rate can be a measure of regional performance (see Figure 10). The trend of the rate is the same in the region as at the national level, but for Northern Hungary it is always higher than the national average. It has been increasing since 2001 and for four years it has been over 10 percent, while the national average has been below 8 percent.



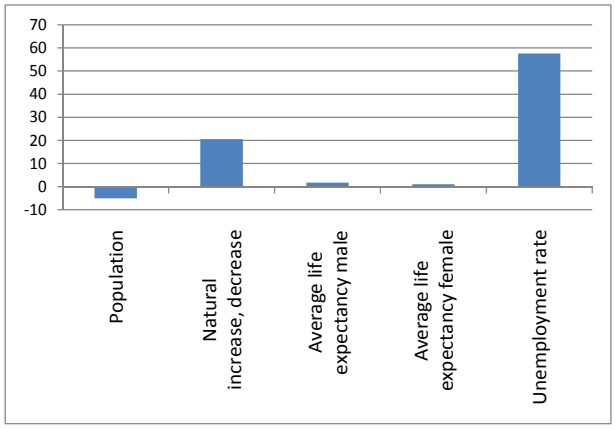
Source: own compilation based on data from www.ksh.hu

Figure 10. Unemployment rate (2000-2008)

Besides comparing the social indicators of Northern Hungary to the national average, the change in these indicators is also examined between 2001 and 2008. Figure 11 shows some of the changes in the indicators mentioned above.

Changes in international and national net migration per thousand inhabitants, however, are not included in the figure, because their values are extremely high (377% and 341%). So net migration has increased most, but most of the other social indicators have also changed unfavourable for eight years. The natural decrease has grown by more than 20%, which worsens the unfavourable trend of net migration. The unemployment rate has also increased considerably, by almost 60%.

A slight improvement of average life expectancy can be seen for the examined period, but this improvement still lags behind the values of other European countries. The size of the population has decreased, which is a direct consequence of the growing natural decrease and the negative net migration.



Source: own compilation based on data from www.ksh.hu and www.registar.hu

Figure 11. Change in social indicators in Northern Hungary between 2001 and 2008 (in percentage)

CONCLUSIONS

The assessment of social aspects of regional performance has many limitations. Data availability is one of them, as qualitative data are rarely available and quantitative data are not sufficient to cover all aspects of social performance. Using quantitative data for the assessment, however, can give some insight in the region's social performance. By comparing regional data to a benchmark or to national level data, information can be acquired about the relative position of the region. Time series can help to determine the direction of changes in social performance.

Another limitation of the assessment is the lack of available indicator-lists. The elaboration of such a list could be useful for the assessment and would make the results of the assessment comparable among regions.

Northern Hungary seems to be in a very difficult situation regarding its social progress and the indices related to sustainability and human development cannot be claimed to be good. A more sophisticated assessment of the region's social performance would be carried out with the inclusion of qualitative indices as well.

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An Investigation into Methods of Restructuring and Reorganizing Industrial Enterprises

TOVAZHNYANSKIY VYACHESLAV
ASSOCIATE PROFESSOR

SUMMARY

Analytical research into existing methods of restructuring and reorganising industrial enterprises has been conducted. An original classification of methodological approaches,which can be used for enterprises emerging from the crisis, has been offered. A new direction for crisis management – reorganizational restructuring – has been proposed.

INTRODUCTION

The integration of Ukraine into the world political and economic structures requires the intensification of transformation processes. One of the most important tasks in this process is the renewal of the effective activity and the increase in the competitiveness of the base link of the economy – industrial enterprises, most of which are rapidly overcoming the consequences of the world economic crisis. Statistics testify that over 40 % of all the industrial production potential of Ukraine is made up of the machine-building complex. The crisis of the last few years has revealed that it was most sensitive to negative changes in the economic situation. Therefore, there is a real requirement to develop effective methods of rehabilitation (restructuring, reorganization, reformation, etc) for enterprises of the machine-building complex, and for the renewal of its economic potential.

Restructuring from positions of modern scientific research is one of the ways of enterprise restructuring. That is, if the reformation of enterprises has any possibilities of transformation and change, then restructuring is one of the concrete methods of reforming enterprise by the structural reorganization of its basic subsystems. In a number of cases, the term «restructuring» is interpreted ambiguously. Sometimes restructuring is understood as the simple division of a large enterprise into component parts: in other words, dismantling the structure and creating autonomous enterprises from the unique whole. A change of organizational structure, dismantling, division, and the selection of the economic personified subsections are only the elements of restructuring, but not necessarily its constituents or purpose. Organizational changes which will be or will not be carried out depend on the aims of the restructuring and on those methods chosen to achieve this goal.

Examining the concept «restructuring», it is necessary to select a few constituents which determine its economic essence. In our view, firstly, it is the maintenance of the process of restructuring; secondly, the object of restructuring; thirdly, the reasons (factors) for restructuring; and, fourthly, the purpose of restructuring.

The research conducted provides evidence that, although the aims of the restructuring process of an enterprise can certainly differ, the basic ones tend to be:

- increase in financial firmness;
- increase in the competitiveness of products, production processes or the enterprise
- improvement of management and increase in production efficiency
- increase in the worth of the enterprise and growth of business value;
- change of property partition and control over activity of enterprise
- bringing in investments for production and an increase of the investment attractiveness of enterprise
- production of more modern products
- increase in efficiency of functioning; the exit of the enterprise from the crisis.

The aims mentioned can be achieved by enterprises both in normal and difficult (crisis) working conditions with the help of different types of restructuring and reorganization. To consider the increase in, and upgrading of, the analysis of restructuring questions in different aspects we have developed a classification of restructuring types (Fig.1).

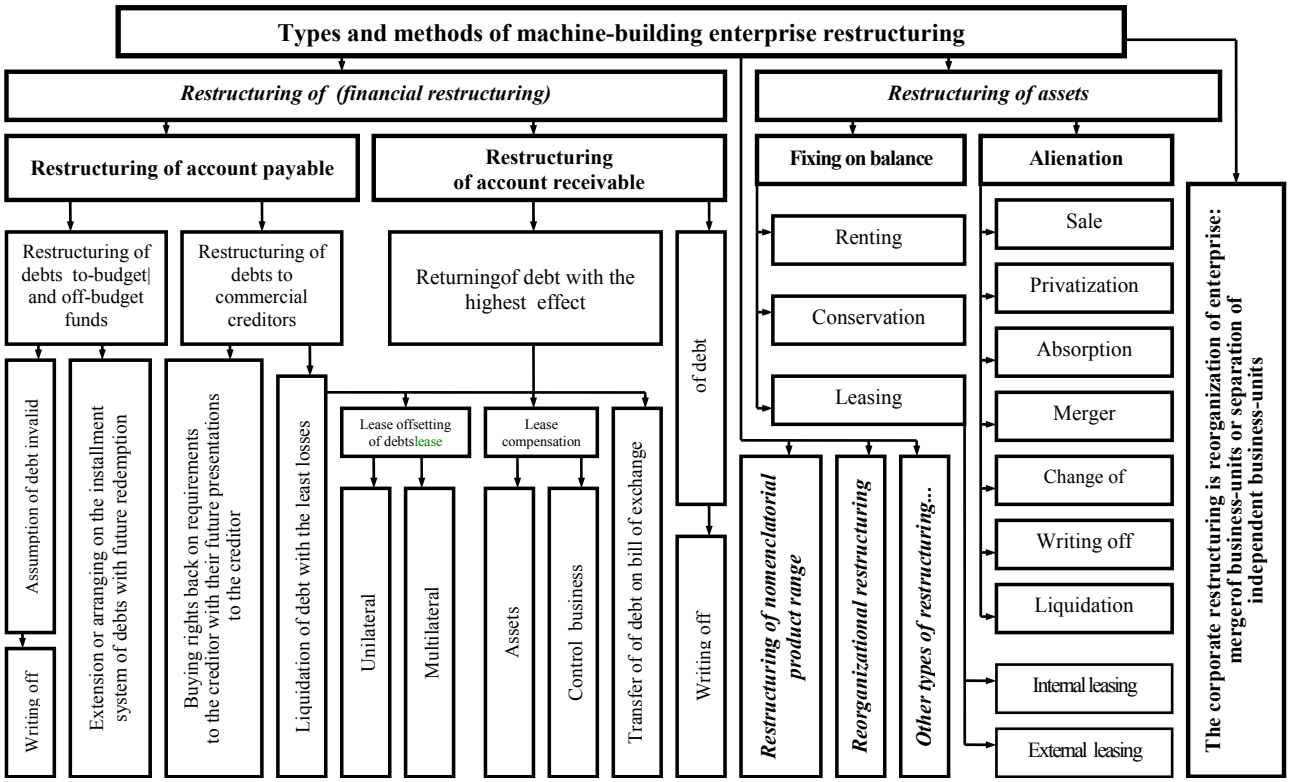

Figure 1. Classification of methods of debt-restructuring of machine-building enterprise (source: own development of author)

Research shows that the varieties of restructuring are not reduced to those which are indicated in Figure 1. To a great extent, the type of restructuring depends on different factors (classification signs). Our suggestions concerning this are given in more detail in Table 1.

Table 1. Classification of types of machine-building enterprise restructuring

Types of restructuring	
By terms of carrying out transformations	
Strategic restructuring	Operative restructuring
By scale of transformations	
Partial restructuring	Complex (complete, global) restructuring
By functional content of transformations	
Production restructuring	Organizational restructuring
Staff restructuring	Financial restructuring
Marketing restructuring	Material and technical restructuring
By directions of transformations	
Legal restructuring	Economic restructuring
By place of transformations	
Internal restructuring	External restructuring
By direction of external (corporate) restructuring (reorganization)	
Nationalization	Partial or complete privatization
Mergers with other enterprises	Absorption of enterprises-debtors
Splitting of enterprise	Bankruptcy of enterprise
Joining of enterprises	Division of a large enterprise into parts
Transformation within the enterprise	Separation of subdivisions and non-core sphere (social and cultural services) from the enterprise

Types of restructuring	
By direction of internal restructuring	
Re-engineering	Change of structure of production technologies park
Change of product mix	Reorganization of production structure
Reorganization of management structure	Reorganization of social structure and organizational culture
By models of conducting transformations	
Evolutional restructuring	Revolutionary restructuring
By objects of financial restructuring process	
Restructuring of business	Restructuring of property complex
Restructuring of debt	Restructuring of property (equity)
Restructuring of production	Restructuring of organizational structure
	Restructuring of commodity nomenclature
By financial and economical state of enterprise	
Restructuring of crisis (insolvent) enterprise	Restructuring of normally working enterprise (corporate, stabilizing restructuring)
By direction of crisis restructuring	
External management	Reorganization
Financial improvement	Liquidation
Procedure in bankruptcy	World agreement
By direction of restructuring of normally working enterprise	
Merger	Joining
Division	Separation
Transformation	
By impact on the object of restructuring	
Restructuring of debt: sale of debt; converting; postponement; offsetting debts	Restructuring of assets: sale of surplus assets; acquisition of property
Restructuring of equity: sale of part of actions; emission of additional actions; splitting of equity	Restructuring of workings contracts: layoffs due to lack of work; temporal dismissal; voluntarily pre-schedule retiring
	Restructuring of business: expansion; reduction; transformation

In 1990, the second stage in the development of the concept of restructuring began. This was related to the expansion of the use of legislation concerning enterprises, which was mainly reduced to the use of traditional measures of anti-crisis management. Not long after, from the beginning of 2000, the third stage began in Ukraine: the restructuring of successfully working enterprises. This was considered as a necessary and effective means of increasing the competitiveness of enterprises. During this process, all the facilities presently used in the developed countries were implemented. Taking into account the aforementioned facts, we propose to name the modern conception of restructuring as the Integration-reorganization conception.

Basic pre-conditions of this paradigm of restructuring are:

- complication of market relations and strengthening of competition
- market globalization and development of new information technologies
- distribution of logistic approaches in the economy
- formation of clusters
- formation of new types of enterprises (extended enterprises, resource-saving enterprises, horizontal enterprises, flexible enterprises)

The distinguishing features of the modern stage of enterprise restructuring are:

- variety of forms of enterprise organization
- flexible structure, oriented to immediate reactions to changes in the external environment;
- development of horizontal corporations and network organizations; priority of external connections and the wide use of logistic principles of running businesses.

If the traditional approach to the restructuring of enterprises derives from an analysis of the cooperation of enterprises (internal environment) with their external environment, then the modern (Integration-reorganization) approach examines the co-operation of three interconnected components: the external environment; business-surroundings; and the internal environment.

The differences of the modern conception of restructuring from the traditional approaches concerning transformations in a machine-building enterprise in the author's interpretation are shown in Table. 2.

Table 2. Difference of the modern integration-reorganization conception of restructuring from traditional approaches

Criteria	*Conception of restructuring*	
	Traditional	*Integration-reorganization*
Purpose of the use	Reactive (response to changes which happened in external environment)	Preventive (reaction to predictable changes of external environment)
Object of restructuring	Separate objects, functions of the enterprise on the whole	Enterprise and its external environment (suppliers, sale, investors, shareholders)
Connection with strategic planning	Transformation on the basis of enterprise development strategy	Not only direct but also reverse connection with the strategic planning
Basic principle	Functional specialization	Horizontal integration
Competitive advantage	Material and financial assets	Personnel, immaterial (intellectual) assets
Leadership style	Authoritarian	Democratic
Role of personnel	Active – that of the administration. Passive and negative – of the rest of personnel	Active and positive of all personnel
Expectation of personnel	Satisfaction of needs	High-quality growth of personnel

Thus, within the framework of the internal environment of the modern enterprise, it is possible to select additional elements which have different functions. For example, in the structure of the enterprises of the machine-building business, the presence of the administrative kernel of the enterprise, and its basic and auxiliary business should be noted. A business kernel is, as a rule, a holding that fixes, directly or indirectly, the relations of property in a group. A company which manages is an organization or a group of organizations which carries out the operative guidance of the key enterprises of a group on the basis of the corresponding agreement. The development, production, export and sale of products are referred to as the basic business of machine-building enterprises. The specialized repair, transport, service and other structures are classified as auxiliary business. The peculiarity of integration-reorganization restructuring in Ukraine is a combination of the development of flexible horizontal structures with aspirations to strengthen control over the business on the whole. The necessity of control strengthening is explained by the imperfection of legal forms of economic activity regulation and the absence of widely acknowledged rules of doing business.

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