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# THE HOLISTIC CONCEPTS OF DISASTER MANAGEMENT AND SOCIAL COHESION - STATISTICS AND METHOD

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Abstract: The paper uses a multidisciplinary approach to underline the importance of some holistic concepts like social cohesion and human ecology, and also to assess environmental and economic specificity of these new ecological and social terms. The structure of the paper consists of an introduction describing the transition from mythological existence to the contemporary holistic view and four sections. While, the first section details the vital elements of the ecosphere in the new holistic sense, the second describes the holistic concept of human ecology, and the third details the significance, importance and impact of the contemporary management disasters and some global statistics. The last section summarize a statistical method known as the social cohesion evaluation, applied by the author in our country, during Romania's admission period to EU, that in conjunction with holistic concept of human ecology represent new necessary analysis in this decade. Some final remarks underline the importance of a new approach in economics based on holistic principle and reciprocity.

Keywords: ecology; human ecology; disaster management; social cohesion.

Jel Classification Code: I32, O15, Q54, Q56, Z13

# **1. INTRODUCTION**

Human nature and its organic thought have their economy, which cannot be ignored otherwise than at the expense of vitality and life on earth. Every civilization has its own kind of culture and its own unique conscience in human evolution. In fact, human history is nothing more than a long repertoire of significantly different combinations between culture and consciousness, redefined by today's systemic, integrating approach, so necessary for salvaging nature, the environment, the ecosphere and, above all, our own human nature. This long journey of thinking, of searching, sometimes sprinkled with moments of real understanding of the real position of humanity within the context of the environment (the ecosphere), is also a long oscillation between surviving and disappearing. The history of humanity errors and discoveries reveals that even our great-great-forefathers, or maybe the first inhabitants of the planet, may have perfected a certain form of culture and a particular form of social order, with the periodic transitions in the relations between them, and their relations with nature of being accompanied by a corresponding change produced in their concept of the vital elements of their environment, and about their relationship with the latter

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(i.e. earth, water, air, fire, which gradually became myths, vital elements, and, ultimately, ostensibly mere resources).

The transformation of the last two thousands years coincides with the change in technology, complemented by a concentration of resources and implicitly by the change of culture. Nature and people are now more separated or even opposed. The next transition, opened by the new metal melting technologies, and measuring the boundaries of the plots of land, the invention of calendars in order to keep track of time, and of writing, for inscribing and conveying messages, with an immediate impact on population growth and the complexity of social organization, generated a first pressure on the environment (the ecosphere). The circle of the gens and the tribe, as well as the responsibility of survival through maternal fertility (the matriarchate of birth in the human species was a defining factor for the primary consciousness of humanity) gave way to the layered-pyramid state characterized by formal hierarchical organization and strict discipline. A new thinking to the earth, similar to the heaven harmony, has generated new relation to the environment (the ecosphere) developed through networks of relationships that reached from the deepest parts of living and non-living nature to the most sensitive areas of human conscience, by a social order rooted in the cosmic principles, the consciousness of heaven and earth protection being much above human understanding. Thus another transformation appears as a way to other values, generated by the progress of different technologies and the sciences' revolution. The concept of quantitative measure arose, which provided human civilization with an inexhaustible trail to follow in knowing nature, with a major impact on the formulation of new theories based on observations and complex reasoning, and thus it have defined a new consciousness in relation to the environment (the ecosphere). But neither the Newtonian mechanistic law (the universality of the laws of motion, confirming that the environment is a divine world, like a clockwork set in motion by the primary force and working harmoniously and eternally according to the strict laws of nature apt to allow the rational mind to know the past, the present and the future), and nor the primacy of the Einstein relativistic law (where humanity, or the people, in their capacity as entities, endowed with mind and conscience, they are free to exploit, for their own profit, nature, environment, the ecosphere... In one respect however, the relativistic conception of the Logos became invincible in environmental issues. Albert Einstein was right when he noted that the problems created by the prevailing mode of thought cannot be solved by thinking the same way of thinking, that a society with relativistic Logos consciousness cannot find relativistic solutions to the problem of protection and survival of the environment (ecosphere). This is the result of a crucial insight into human current state. A new, viable civilization must generate the sustainable development of a culture and consciousness very different from the conception that characterized most of the last century, and an alternative is a human civilization centred on sustainable human development (of both communities, and the environment where those communities live). The new development will quickly choose between extensive development (which has generated an obvious inability to achieve sustainability, and is ultimately pointing towards chaos), and intensive development (which could urge human society towards a new operation mode, of a systemic, aggregate, holistic type). The contemporary transition, which has already started, can be found in Ervin László's model, presented in 2006, in his work titled The Chaos Point: The World at the Crossroads, and this transition is based on a holistic approach, promptly transformed into a major cultural force. The new Holism captures the deepest spiritual instincts: to fulfil oneself as a human being, to create healthy and complete communities, both local and global, to include and to think about all the aspects and dimensions of human nature, and also of the environment, to connect and feel that you are part of the whole meaning and the whole

mystery of existence, to feel part of a civilization in which people think and behave as responsible citizens of the planet that is their home. If, in science, Holism seems limited and overlaps on the principle that processes raw material or the units of unorganized energy of the world, uses and organizes them, endows them with a specific structural, a character and individuality, and finally, with personality, and creates beauty, truth and values for them, contemporary Holos is not completed before it solves numerous issues linked with the need or priority of standing economic and financial growth, just to keep them running and prevent them collapsing, structural and functional problems in the long term, yet based on success criteria for short reference periods, and the day-to-day progress of the environment (the ecosphere), quantifications of social and economic progress in terms of gross national product, but taking into account the quality of human life and the fulfilment of their human needs, conflicts starting with those connected with religious fundamentalism, to the "market fundamentalism" type, etc.

# 2. THE VITAL ELEMENTS OF THE ECOSPHERE IN THE HOLISTIC SENSE

The four cardinal elements of nature, philosophy, mythology, turned theistic or the foundation of religion, can be assimilated to defining the essence of ecology in general; they also became the subject of statistical investigations of an ecological content: the earth, or that reality that defines the specific purpose of studying of ecology, reconsidered as a support of human nature's survival, then water, which superimposed on the clarity qualities of the essential requirements of human existence, air, which is practically identified with the specific breathing of the human being, born of the eternally virginal seed of life's present, and finally fire, which symbolizes the danger of violent degradation and its devastating impact on any environment (ecosphere), which it can turn to ashes... Weather and climate are manifestations of the natural environment, and are characterized both by their complex structure and their temporal variability, and the strong dependence they generate for regions and areas that are generally habitable. Terrestrial climate disasters are natural disasters caused by prolonged rains, prolonged drought, heavy snowfall, very high or extremely low temperatures, severe frost or strong wind. A natural disaster is the result of a combination of unexpected natural events (an event of a physical nature, unpredictable, which can be exemplified by a landslide, a hurricane, a tornado, a persistent heat wave, a dangerous fire, a violent snowstorm, or prolonged torrential rain) and derived human activities. Human vulnerability, in the absence of early behavioural philosophy, and a prompt and appropriate management, leads, in such cases of extreme necessity, to social and economic losses and, much more seriously, to human casualties. Ecology, in its contemporary sense, also holds a vast component of human ecology, and accordingly climate natural disaster management resulting from environmental degradation – and not only because of that – is an activity defined historically, having its own methods and tools, but also focused on statistical information in its major decision foundation.

# A short mythological and environmental history of the vital elements of the ecosphere *Box no.1*

The exhaustive approach to climatic variation, going to terrestrial climate disasters, cannot be rendered into a systematic and practical exposition, in the absence of the four elements considered essential: water, earth, fire and air, or when the mythological elements lack, which can give the necessary understanding of unrecorded and hyperbolized past, much less of the present descending from the past, or the future being born of the seemingly virginal seed of the present. The religious approach contained in the Bible reveals, above all, a personal and omnipotent God, pre-existent in relation to water, air, fire and earth, all of which were created by the primary divine Word. The first Bible verse confirms that in the early creation by God of heaven and earth, through the work of the divine hands, the earth was without form and void. The religious cosmos or the universe, thus created, was defined in three dimensions: the Biblical space consisted of the

heaven or the skies (meaning made of rarefied, thin air), the Biblical mass / weight or size was the very earth or land, and time was being born through he very idea of "beginning"). "In the beginning God created the heavens and the earth". In that primordial cosmos, the inner balance was established, in the spirit of a constant amount of energy in its aggregative or universal approach (in anticipation of the first classical law of thermodynamics). That primeval cosmos / space belongs to the heavens and the earth, but constantly becomes more chaotic through the intervention of water and fire, as elements of transformation and change (second law of classical thermodynamics). Job, the Biblical figure that makes the transition from the Old to the New Testament, even suggests the rotation of the Earth, changing, in his words, like the clay on which a seal is stamped (the divine potter's wheel manipulates the earth as if it were a clay pot revolved continuously, thus printing the pattern of a seal or hallmark. Religion insists on the perishability of heaven and earth, which will perish in time, while God's word will never pass away. The Book of Revelation in the Bible describes angels as being able, in God's dominion, to unleash terrible natural phenomena such as hail, fire, and meteorites that can bring about even physical illnesses harmful to the human body...The Earth, present in all world mythologies, simultaneously symbolizes fertility, being in most cases a female figure, Ki, with the Sumerians, the wife of the sky, Gaia or Demeter with the Greeks, and, less commonly, a male figure, as was the case of Geb, in Egyptian mythology, and also the funeral or infernal earth, posthumously punitive, in which case it became predominantly male: the Greek Hades, Sheol in Hebrew, Djahanannam in Islam. The fertile-funerary bifunctionalism specific to that deity does not however prevent it remaining immortal. A Romanian cosmogonic myth describes the earth's emergence as a result of a cosmogonic diving: "Before the creation of the world there was a vast ocean of water over which God and Satan were walking. When God decided to make the earth, he sent Satan (to the seabed) to take the seed of earth from there in his name, and bring it to him above the water. Satan dived in the sea twice, but instead of taking the seed of the land in the name of God, as was told, he took it only in his name. When he rose back to the surface of the water, all the seed of earth slipped through his fingers. Only the third time, when he went deep down into the waters, did he take the seed of earth in the name of God. When he rose above the water, little earth remained under his fingernails, and the amount he had taken in the name of God, the rest was waterwashed off his hands. With the earth that had remained under the nails of the devil, God made a patty-like lump of earth, on which he reclined to doze. Satan, believing that God was asleep, planned to overthrow him into the water and drown him, to remain the master of the earth, but the more he rolled him, the more the earth grew and spread under God". At least two Romanian proverbs have developed inherently in this context; the first says that God never sleeps, and the second that God's goodness in relation to people, like the breadth of the earth, seems to be boundless. But climate change, partly caused by massive deforestation, are already severely overtaxing the earth, generating landslides, or even turning increasingly extensive territories into desert or semi-desert areas...The eternity of water was integrated into initial chaos, being worshipped by the Sumerians as Nammu, the eternal god of the world's oceans, later renamed Nun by the Egyptians, then contaminated by the Phoenicians as Mot, or the symbol of the primary cosmic mud, renamed Apam-napat in the Aric pantheon, to be metamorphosed by the Greeks in the brother-sister pair who were to become husband and wife, Okeanos and Tethys, the terrestrial and the marine waters respectively, a discrimination which was required by both the seaman, and the Greek spirit. Chinese mythology personifies the two deities able to stem the universal flood, through either the goddess Nu Wa and her brother Fu Xi, or the dragon Yu. A different kind of water, having the symbolic value of impermanence, was used as a tool for measuring the flow of time. It will be imposed on the equally fragile history of humanity by the Babylonians, through their famous water clock, "literally" dripping the minutes; a clock consisting of a vessel which "weighed" three liters of water and marked the passage of six minahs, or six times two double hours, or to put it even simpler, a period of 24 hours...Propitious and life-giving, in its capacity as "live" water, or unpropitious in its capacity as an antechamber of death, like the Styx, ritual as a starting-point in world cultures and mythologies, our "everyday" water will gradually be transformed into a lustral or post-ritualistic water throughout the clerical Middle Ages, becoming magic in contact with the Christian cross, and finally sacred and oracular. The relativized excess of water gradually identifies itself with absolute fecundity and rebirth, as is the case of the Nile, turned, through the flooding, the water of reunification and of the resurrection of the Egyptian god Osiris, while absence of water is synonymous with the hell of prolonged drought, and the best example of which is the millennial toponym Arabia, which translates as "a barren place", a place, in fact, where it snows on average once every forty years. The disaster that is forever linked to water is its flood-related depiction or stance, the universal flood, present in virtually all world mythologies, in approximately 200 separate myths, from the ones woven around the Babylonian and Assyrian Utnapishtims, up to the episode of the miraculous rescue by Vaivaswata of the little fish, or the seventh holy Manu, in Vedic or Indian culture, and it is not absent from the Bible and the Quran, or the Greek legends having as a hero Deucalion, the son of Prometheus, and also the Greek alter-ego of Noah. The oldest story or account of the universal flood, which has survived up to this day, was discovered among the remains of the clay tablets in Asurbanipal's library. In the eleventh tablet in the set of twelve containing the epic story of Gilgamesh, the tremendously impressive recalling of the flood episode belongs to his ancestor, Utnapishtim the immortal, the only human being released from death by the gods."The weather made a terrible sight. We entered the ship and closed the door... As soon as dawn broke, a black cloud rose from the brim of the horizon. It was from thence that Adad (the god of storm) threw his thunderbolt, while Shulla and Hanish (the names of strong winds) go ahead. They walk alongside those who are in charge of the mountains and the valleys. Irragal (or Nergal, god of the underworld) tears the masts, and breaks the dams. Then comes Ninurta (god of war), dispelling all those who stand in his way (after he opens the locks). The Anunnaks (other deities of the underworld) raise the torches, setting fire to the whole country with their blazing fire. The storm (the anger) unleashed by Adad reached up to heaven, and all the light turned into darkness. Brother cannot see brother, the people can no longer be recognized from heaven. For a whole day the storm struck viciously, and the waters covered the mountains. For six days and seven nights the wind struggled in tremendous rage, and the flood destroyed everything ... "Another account, entitled Babyloniaka, mentioned in the era of Alexander the Great, belongs to the priest Berossos, and dates the flood in the fifteenth day of the month of Desios, or the eighth month of the Macedonian calendar, during the reign of Xisurthros, the tenth king of Babylon. The best-known and most popular of the accounts written about the flood is still the fragment in the Bible, although it appears that multiple, distinct sources were gathered there; Noah was saved by his ark after a flood of a length equal to one year of the hero's life, that is from the year 600, in the second month, the twenty-seventh day (Genesis, chap. 7, verse 11) until the year 601, the second month, the twenty-seventh day (Genesis, chap. 7, verses 13 and 14). It can be said, according to the Biblical verses giving details, that that year of Noah's life is an almost contemporary calendar year of about 361 days, when adding the 40 days the flood itself lasted (Genesis, chap. 7, verse 17) to 150 days, when the waters continued to rise on the earth (Genesis, chap. 7, verse 24), plus an additional 150 days when they receded and were drained away (Genesis, chap. 8, verse 3), and finally the 21 days while the Noah sounded for land (Genesis, chap. 8 verses 8-13). The Biblical Flood is the kind of global disaster that almost breaks up the world only to recompose a another, purified one; and here comes the divine promise that there it shall never be repeated: "...neither shall there again be a flood to destroy the people of the earth" (Genesis, ch. 9, verse 11). The variants of the flood myth become interesting by the temperature at which the disaster takes place, when diluvian water is scaled cardinally, now at normal rain temperature-rain, now at one of its limits, a hot, purifying water, as in the Quran, an eternal snow as in the Persian Avesta, or a succession of devastating snowfalls, giving rise to two cycles each consisting of three "Big Winters", as in the old Scandinavian / Norse Edda. Hydrology gives, in the context of contemporary science, the essentials of geology, reducing it, just as the earth depends religiously on water, as in the Biblical wording "the life of the body / flesh is in the blood". Hydrology dissipates almost histologically, discriminating, by oceanography, ocean water, by potamology – that of rivers, by limnology – the water in lakes, by geohydrology – groundwater, and by meteorology the phases of atmospheric water are cyclically integrated. Whether Biblical water is spirit or "ghost", in a word a living water, whether it is turned, through baptism, into life even in the absence of life, whether as an essential element of transformation it dominates the globe, and literally eats up the rocks, whether it is associated to cataclysmic flood, to disaster, in a word, to flood, or to Noah's rescuing ark, thus segmenting, pre- or post-flood, world history, water remains, in the memory of religion, the main direct object of the Biblical miracles, springing even from the rock (be it the rock in Meriba, or any other rock), the major support of energy, strength and power as in "walking on the waters", the constant element of ordering and hierarchy, as in the "parting" of the waters, or creating "water walls". Dried up, or sweetened as in Mara, blood-coloured or transparent up to absolute purity, bringing the fish, or ill-luck and foul stuff into the fishermen's nets, water is important even when missing, or perhaps especially then, that is in the desert... The history of the revaluation of past and present worlds, of the values of human society, and especially of their economy, is equally under the terrifying and red-glowing impact of fire. Purifying, or rather disintegrating language, culture and customs with the Chinese, in a frequently tragic and unwanted sense, it was to fire that most dynasties appealed to annul history. The distance from the Promethean fire, so revered, the sacred fire treasured and worshipped everywhere as the hearth fire, or from the solar fire, either in the masculine stance with the god Shamash with the Babylonians, or the Egyptian god Ra, or effeminate by Amaterasu in Japan, the distance between the causes and the consequences sometimes seems unbelievably great up to the paradise fire symbolized by lightning, which the Indians called Indra, the Greeks - Zeus, the Norse - Thorr, or up to the infernal Biblical fire of hell. That unparalleled gift of Prometheus offered to men, turned into premeditated hell in Nero's time, or a cultural disaster in Alexandria, is able to produce the most severe damage even today, in weather conditions favouring its emergence and development, in both urban agglomerations, and especially in areas less affected by human presence, lying under the heat of sun. The fire in the Bible is devastating, apocalyptic, incinerating and purifying, burning the earth and bringing salvation to all that is on it. Fire becomes the essential element of Doomsday, and its importance in energy entropization brings it close to water. Death and Hades are also surrendered to death, being saved in a lake of fire. Fire and brimstone join heaven and become an eternal, immortal, unconsumed Biblical pyre, which equally swallows both Nadab and Abihu, and the offerings of Gideon and Manoa. The stone and fire fury relies on wind and earthquake to transform the world balance into a catastrophic Calvary. The infinite human spirit does not die, just like inextinguishable fire. Air, deified in its calm aspect as Shu, whom the ancient Egyptians placed between the deities Geb (the earth) and Nut (the sky), is the third major element of life, along with water and fire, providing, in terms of climate, dynamism or promoting stationarity for both. In its violent version, Huracan, in the Mayan civilization, it becomes the divine energy centre of the universe, totally different from Prana in Vedic mythology, the vital air, the primary inspiring / ghost-giving principle. The subtlety of Greek and Roman mythology rises air to the state of ether; Publius Ovidius Naso conferred it weightlessness, and placed it in the upper strata of the sky, in his Metamorphoses and Fasti. The Biblical meaning of the air is dual, as to the original concept of heaven the concept of air movement was gradually added. Wind thus becomes the essential expression of the air and its destructive dynamics, when stored and carefully taken out of its divine chambers, as described by Jeremiah, or redirected southwards, then turned northwards, and returned again to begin again and again the same spins, as presented by the ecclesiastical vision... But the biblical world is waiting for new heavens and new earth, or lands, wherein righteousness and purity will dwell. What is then the angle from which philosophy looks on the original material and its changes? Two of the three great philosophers of Miletus, Thales (624-546 BC) and Anaximenes (585-525 BC), developed their philosophical theories starting from a particular element that they considered vital, water and air respectively. Water represented with Thales the origin of any particular form of life, and also its end, very much as, with Anaximenes, air or the whiff / breath of air each concentrated the original and also final material of the world, the primordial material from which life arose. Furthermore, Anaximenes' theory combined, through the image of air, all the four essential elements, making up a chain of successive transformations. Thus, he considered water as condensed air, while rain water was, in his opinion, wrung or squeezed out of the air, the earth was nothing but strongly compressed water, and finally, fire was nothing but thin air. Anaximenes believed that air, water, earth and fire only exist so that life may exist. Hence, the philosophical journey nature meant to explain nature continues through cultural figures placed at the extremes, and defined as perfect opposites, viz. Parmenides (540-480 BC) and Heraclitus (540-475 BC): the former styled world as eternal, and implicitly its essential elements (everything in existence has already existed, and nothing can be born out of nothing), and the latter glorified eternal motion and change (everything flows), or the transformation of an element into another one. Empedocles (490-430 BC) was the one who would end the ancient philosophical approach, by explaining that all changes in nature occur because the four original elements or materials, which he called "roots", were mixed in various combinations, and then come apart, again and again... The idea of combination would subsequently be defined through the existence of germs or seeds by Anaxagoras (500-428 BC); eventually, Democritus (460-370 BC) would define the atom - the actual meaning of the term being "indivisible". In fact, Democritus closed a complete cycle of philosophical inquiry, essentially illustrative of the original matter and its primary elements or features, and also of change, and opening anew still other questions. Primary stability delineated climate, and primary instability - climate disaster. Water became, from the angle of science, the factor essentially responsible for floods, when prolonged or seemingly ceaseless rainfall occurred, covering a geographic area, following the very rapid melting of large quantities of snow in upland areas, the destruction of dams, landslides dislocating it out of lakes... Fire also turns into an unstable element, as dangerous as water. Drought, excessive heat and great fires / blazes were, and still are, a threat to society because they could easily get out of an apparent control, and expand rapidly in populated areas, causing the destruction of communities, as well as their natural environment (forests, orchards, grain fields, etc.). Land (and earth) offered, ever more frequently, causes of natural disasters, while air and its atmospheric circulation generated a large family of words that designated, gradually and subtly, natural disasters that everyone hears of more and more often: storm, cyclone, typhoon, etc. Their names were gradually personified by giving them human names, but their consequences in terms of the number of deaths is more than we can imagine.

Are indeed earth, air, water and fire the only elements leading, through excess or scarcity, to natural disasters? Aren't human activity, man and human society linked to these imbalances? Very much as the excessive atmospheric circulation of the air can generate dangerous densifications or sudden changes of speed or direction, leading to natural disasters, such as the commonplace storms (e.g. tropical storms, cyclones, tropical cyclones, hurricanes,

tornadoes, typhoons, etc.), so, or even worse, lack of air conduces to the disappearance of life itself. The dramatic effects of the climate disaster thus generated can be such as land destruction by the wind, the occurrence of landslides, floods, famine, and even death. Water in turn is responsible for flooding, where the presence is involved of prolonged rainfall over a geographical region due to the very rapid melting of large quantities of snow in mountainous regions or the destruction of dams. Snow avalanche is also the consequence of excess (frozen) water and threatens mountain communities worldwide. Extreme winters, through their very low temperatures, generate either very cold rains, which create layers of ice on the roads, or sleet or extended snowfall with disastrous effects. More unusual are the discharges of blinding snow light, which can temporarily bring visibility to near zero and endanger people. Drought, excessive heat and fires are as many threats to modern society because they can easily get out of control and monitoring, and can spread very rapidly in areas populated, at times resulting in destroying both the communities and their natural environment (forests, orchards, grain fields, etc.). Above and beyond all these aspects, it can be easily noticed that man, humanity or human society can affect, destabilize, degenerate, and even destroy the normal evolution of natural climate, thus becoming the main factor of the imbalance of the realities described with the rationality specific to the science of geo-physics, or the glaciality of the philosophical idiom. Human ecology thus becomes another component of general ecology, of the survival of both nature and human nature.

# **3. THE HOLISTIC CONCEPT OF HUMAN ECOLOGY**

Despite the alleged similarities with plant and animal ecology, human ecology, as this is the direction to which the above considerations refer, does not consider or analyze ecological processes and phenomena proper, but rather social processes. Developed by the Chicago School, during the second and third decades of the 20<sup>th</sup> century, human ecology is one of the first rigorous systemic sociological approaches that considered the natural environment in explaining social phenomena; the intense promotion of human ecology was favoured by Robert E. Park, Ernest W. Burgess and Roderick McKenzie. The new direction was well under way to gaining full recognition after the world 2002 Summit in Johannesburg, South Africa. Ecology and solidarity thereafter became two inseparable elements, and, as ecology can only be a genuine sign of human solidarity, which "obviously includes the protection and cultivation of land resources" (according to the Vatican document on the World Summit for continued progress in Johannesburg - 2002), the new approach ought to be based on strong ethical values, otherwise the risk of total lack of direction may appear, disappearing the foundation on which the continued progress under investigation can be built and supported, as the very essence of development. The concept of continuous progress is connected with the quality of life and sustainable development, and it requires a process through which the needs of the present are met, without however compromising the ability of future generations to meet their own needs. Human ecology is circumscribed by a whole new perspective of integral and systemic human development.

The complete notion of human ecology primarily consists in ensuring and protecting the moral conditions in human action on the natural environment. The first and fundamental structure for human ecology is and will continue to be the *family*, where man gets the first formative ideas about truth and goodness, and where he learns what loving and being loved mean, and so what being a unique person means, thus forming their own matrix for the future intellectual energies, a matrix that will be completed in the later educational and cultural

processes. In this context, particular attention should be given to a kind of social ecology of human education, of scientific research, or human labour in general. To change the current angle on poverty by which the world's poor are rather a problem than some potential productive and creative actors in society, it will be crucial to create new employment opportunities, education, basic health care, or adequate housing conditions. Human ecology refers not only to economic development, be it sustainable, or only the quality of life described by ecological processes, but rather to social processes, with special emphasis on education, research, continuous cultural training, processes which, through a conceptual transformation, were biologized in order to explain social reality in terms borrowed from the natural sciences based on a holistic and systemic thinking. New models of consumption and production will have to be considered and promoted in accordance with the principles of human dignity and solidarity, from a specific angle specific to human ecology. The current crisis and global recession are the result of the too slow pace of change in the expected directions of human ecology. Contemporary human ecology redefines the human community, humanity itself, through the concept of anthropo-eco-system, as spatial distribution of the living environment of man, and its object includes conducting researches on a human population interacting with the environment, drawing the repertoires of the specific issues affecting human life, such as the harsh climate, natural reserves and the hydrological regime of the water sources, the chemical composition of the water from those sources, the character of the landscape, the vegetation features, the social-economic status, the traditions and customs, the degree of environmental pollution, the level of sanitation of the homes, providing the population with housing, specific activities, food, etc. Human ecology redefines the dignity of the contemporary individual, as a basic feature of the phenomenon of human uniqueness compared to the rest of creation, meaning that man was created after the "image and likeness of God", without however attracting individual selfishness. "This similarity shows that man, the only creature on earth that God wanted for Himself, cannot fully reveal himself otherwise than in sincere self-giving", in the opinion expressed by the Vatican. We can but agree with the above quote, provided that the giving of self finally ensures the welfare of others, too, and that of the future generations, or in other words continuity of progress.

# 4. DISASTER MANAGEMENT AND SOME ALARMING STATISTICAL QUANTIFICATION OF THE STRIKING PHENOMENA OF CLIMATE IMBALANCES

The new science of disaster management involves a number of structured and intensively phased information processes, from the planning of the activities previous to disasters, to forecasting them, from the preparation during, and especially after the disasters, to the prompt response, completed through repair activities and even reconstruction. This science, like the four elements capable, through their excess, of offering its subject, can be also defined as a multidisciplinary and multi-institutional approach, focusing on practical meteorological and hydrological forecasting, on evaluation of the risks of occurrence of the extreme events called extreme climate land disasters, but also on prior or early warning, evacuation and taking steps to mitigate economic and social damage, on the intervention materialized in the rescue missions, on restoring the normal situation, on the rehabilitating the infrastructure and services affected, on the implementation of plans and activities able to prepare the population for other similar events. Myths and legends, religions and religious practices were gradually turned into scientific pursuits and disciplines, from those benefiting from a dominant character of theoretical generalization (as for instance in philosophy), to the predominantly practical ones (e.g. physics); all together they round the group of the information methods and tools necessary to make managerial decisions in the new managerial sciences in full expansion, such as is the case of terrestrial natural disaster management, with some of the main causes predominantly climate-induced. Natural disaster management requires a detailed presentation of the climate characteristics or variables, the statistics of the extreme and rare events, and evaluation of their economic and social impact. Management of natural disasters caused by weather or climate includes: management of the forecast of the disaster-generating weather events, assessing the risk of such events occurring in the various regions of the world, and the practice of disaster management, which should be prompt, but of the "post factum" type, or else done shortly after the extreme events happened. Placed interstitially, between economics, management, and the science of climate processes, this extended interdisciplinary study aims to provide the reader with a useful analysis for understanding extreme climate events, and a valuable set of tools meant to solve some of the associated contemporary issues, both economic, and especially ecological and related to environmental (ecosphere) protection. Over the past decades, there has been a noticeable increase in the number of disasters, and of people affected by those disasters.



The number of reported natural disasters (fig. no. 1 - in cases), and the number of affected persons (fig. no. 2-in millions), between 1900 and 2010

Source: EM-DAT:TheOFDA/CRED,International Disaster Database,<u>www.em-dat.net</u>,Université Catholique de Louvain, Brussels – Belgium și <u>http://unstats.un.org/unsd/</u> enviroment/qindicators

Over the last thirty years, mankind has been facing disasters on an unprecedented scale: an annual average of over <sup>1</sup>/<sub>4</sub> million people worldwide have been affected by natural disasters, with an absolute magnitude ranging between 68 million, and more than 620 million inhabitants. Over the last ten years there have occurred, due to increased environment (ecosphere) imbalance, more and more disasters on the global level, while the area affected by an average ranging between 6 and 21 events dominates the continental areas.

During the same period, the disasters mentioned have caused an estimated average loss of 58,000 lives a year, with an absolute magnitude of between 10,000 and 123,000 inhabitants. The maximum value was reported during 2005, when about one in 25 inhabitants of the world was affected by natural disasters.

From an economic perspective, over the last three decades, disasters have caused annual losses estimated at an average of 65 billion dollars, placed between the maximum level of 230, and the minimum value of 28 billion dollars.

Since 1950 up to now, the estimated cost of natural disasters has increased almost 17 times, and there has been an overall accumulation of hard evidence highlighting the effects on the

natural environment of inappropriate human behaviour, but also the possibility for certain types of disasters, like flooding, to increase numerically, as a direct and immediate consequence of human activity.



Figure no. 3. The geographic areas and the intensity of climate disasters worldwide (2000 - 2010) Source: OFDA/CRED International Disaster Database (EM-DAT) <u>http://unstats.un.org/unsd/enviroment/</u>

Anticipating, mitigating and preventing disasters that can befall vulnerable populations is getting a more and more distinct and extensive shape in the world of science. The economic and social impact and especially the environmental aspects of climatic disasters reveal a number of almost unimaginable consequences of such events, in keeping with the current trend. The statistics of the economic and social impact of climate disasters is characterized by a dynamism which is only comparable with the population explosion in the developing countries. Over the last two decades of the  $20^{th}$  century, more than three million people were killed by natural disasters around the world. Those disasters resulted in accidents and injuries, permanent loss of houses and dire poverty by another billion people, causing economic loss of thousands of billions of dollars. On average, each year, natural disasters throughout the world left some 4 million people homeless, brought about unexpected accidents and more or less serious injuries for another 900,000 people, and finally even killed over 128,000 people. Worldwide, in a single year, namely 2000, there were about 400 reported events like natural disasters, out of which 50 qualifying as major disasters, which required international aid. After the year 2000, the number of the events described approached 600 in some years. It was estimated that the global economy lost, due to natural disasters, more money than it was able to spend on the aid allotted to the development of poor countries, until 1992 (when the two figures were, respectively, 62 and 60 billion dollars). The specialized nature and the relative undersize of the economies of most poor countries, dramatically increases their vulnerability to natural disasters, as opposed to developed economies. Also, in most poor countries, disasters occur with greater regularity, also mainly due to the economy, namely the lack of funds required to implement specific lasting solutions of disaster management. The most notable social and economic consequences of natural disasters include the following broad categories: (a) loss of life / casualties; (b) panic, split and division, or social exclusion (as exemplified by the dissolution of the major senses of community, security and control); (c) increased probability for social unrest, and even violent conflict to occur; (d) destruction of the foundation of the natural resources and the environment; (e) temporary loss of housing; (f) an increasing flow of temporary and / or permanent emigration, and a parallel decrease in, or disappearance of, immigration flow; (g) loss of manufacturing and/or farm production (with the associated implications for employment, the level of income and taxes); (h) damage to infrastructure (transport and communications systems); (i) disrupting, and even completely crippling, of the general economic and specific markets (from the local market to the regional or even national market, from the market of goods and services, to stock markets, etc.), and hence of distribution, amounting to commercial losses; (j) degradation of living conditions, both instantly and in the long or medium term, due to both the unexpected extreme events and the deferral or termination of programs development correlated with real social needs; (k) short-term reduction of the gross domestic product and the income per capita; (1) local, regional or national fiscal budget deficits, as a direct result of urgent reallocations of expenditure; (m) short- and medium-term inflationary pressure caused by market distortions and reconstruction costs, having as sources foreign loans. About one quarter of the world population lives in areas that are subject to a significant risk of occurrence of climate disasters. However, invariably the impact of disasters and, especially, the occurrence of side effects (whether they relate to loss of life or damage to, or destruction of property, to social unrest and economic disorders) is highest where those affected live in obvious concentrations of poor population. Increased vulnerability to natural disaster or exposure to climate disasters are another statistical facts. The social and economic cost of natural disasters due to climate is in a process of continuous expansion throughout the world. The trend is largely attributable to increasing vulnerability in less developed countries, especially in the poor nations, where the population remains, in most cases, more vulnerable to extreme climate events that occur later, after the people experienced a first severe disaster. Many other factors significantly contribute to augment vulnerability, of which a few can be mentioned: a) the demographic explosion, which results in both an increase in population density, and increased investments in urban periphery land (an example being the increased use of land previously considered unsuitable or unsafe), (b) practices opposed to sustainable development, especially those related to urban periphery land; (c) the inability of governments, faced with a rapidly growing population, to provide adequate social services, including services designed to mitigate the impact of disasters; d) degradation of natural resources (easy to illustrate by the transformation into grazing land, or deforestation of huge areas of land previously covered in forests); (e) the increased insecurity of stocks of food and water supplies; (f) rural-urban migration and the pressure of urbanization, leading to a concentration of population in some cities that are increasingly uncertain; (g) the increase in population living below the poverty line and in conditions of illiteracy, and implicitly in the number of those exposed to extreme climatic events; (h) the weak institutional capacity to cope with climate disasters; (i) the inadequate measures of disaster management and the often unsuitable forecasting techniques; (j) the inadequate involvement of local communities in disaster management; (k) inadequate training; (1) inadequate communications, and transport infrastructure inadequate for extreme events; (m) the lack of both measures and strict environmental control provisions; (n) inadequate market mechanisms meant to promptly create buffer zones against disasters and the risks of expansion; (o) increasing global interdependence of economies, leading to the expansion of the impact of single disasters, and (p) global climate change, which is increasing the vulnerability of certain geographic regions to extreme weather events. While some specific internal factors tend to increase society's vulnerability to disasters, still there arise trends of technology conducive to lowering it. Examples of such positive trends are: (a) constant scientific advances in the fields concerning themselves with the knowledge of the processes and phenomena related to extreme or rare events, (b) improved analytical methods, which enable the development and continuous improvement of complex models, (c) expanding communication, which provides real-time adaptation conditions, brought about by the very modern way of understanding communication, and (d) the dynamics of the advanced technical experiments allowing a much improved understanding of the sensitivity of materials and structures, along with the development of new approaches in industrial and design areas. These developments are, however, a partial compensation of the increased confidence in technology, which still remains fragile and sensitive to the contact with extreme or rare events. However, if natural disasters are acknowledged social signification and economic costs, it becomes obvious that sustainable development can be significantly improved by reducing their impact, diminishing vulnerability as a component part of an overall disaster management strategy.

# 5. A STATISTICAL METHOD FOR SOCIAL COHESION'S EVALUATION AND THE IMPACT FOR HUMAN ECOLOGY

The 21<sup>st</sup> century has historically marked the setting up of a number of opposite continental trends, and also of a concept of demographic explosion, whose impact was unprecedented in previous centuries, an explosion that is mainly related to the lack of economic development of the countries and regions lying in the so-called Southern Pole, or the pole of world underdevelopment. At the turn of the 21<sup>st</sup> century, but especially in this new century, the concept of demographic implosion, typical of developed countries no less than the nations in Eastern Europe, and also typical, though surprisingly, even of the countries in transition or convergence to the market economy model of the European Union, has become dominant in the Northern Pole, or the pole of economic overdevelopment.

Humanity is now in the midst of a set of demographic phenomena of major environmental impact, and the new dimensions of environmental protection (of resources), through the multiplication of the available resources, anticipate a change in the evolution of society comparable to the impact of quantum physics in understanding the evolution of the universe. In the last half of a century, numerous meanings and reinterpretations of the concept of development, welfare and environmental protection have been identified from the organic growth, to the era of wasting, which specifically have addressed specific issues like underdevelopment, the contradictions and huge gaps between rich and poor nations, especially focusing on the matter of equal opportunities and participation of the people in the development process. The contemporary language has stressed the importance of economic development, hence another term, apparently simple, which has become over the past decades rather dull and obsessive, namely economic growth. There is growth (relative, of course) if a statistical result of development, defined by GDP, compared with the previous level, gives a positive image, where there is a simple reduction, assimilated through the concept of rate of real gross domestic product: Rhythm  $^{\text{real GDP}}(\%) = \text{Index} ^{\text{real GDP}}(\%) - 100 (\%) > 0$ . Without obscuring the significance of economy, or disavowing its specific language, it can be said that this quantitative growth, expresses rather few complex aspects of contemporary life, which is why it individualizes itself so distinctly, in an interdisciplinary manner, along three directions, through three other conceptualizations: sustainable development (a manner of re-defining development, which focused on the environment and expands the importance of natural environment or of the ecosphere seen as unchanged in a destructive direction and in an integrated system), quality of life (a subjective state of welfare, or a level of satisfaction and fulfilment of people's lives as a result of economic, cultural, social and environmental conditions) and social cohesion.

#### Some definitions and the modern content of the social cohesion

Box no.2

Emile Durkheim was the first who investigated this multidisciplinary concept, anticipating two specific typologies: the mechanical solidarity, generated by the lack of social division of labour (to be found in villages, where all the members of the community are peasants), and organic solidarity, based on social division of labour, where the members of such communities need each other because each ones fulfils complementary functions. The definitions of social cohesion are increasingly diverse: it is variously viewed as a continuous process of developing the values, challenges, equal opportunities in the community based on trust, hope and reciprocity among all Canadians, or as a set of social processes that inoculate the individuals with social sense of belonging to the same French community, or as a situation in which different groups and institutions unite to defy differences, building on individual opportunities, on education, jobs, health, parental responsibility and family welfare, on powerful, secure and supportive communities, on national identity, history, cultural heritage and civil rights, as in New Zealand, or as a link between communities, between people who coexist, interact and support one another by material means, sharing common beliefs, customs, habits or expectations, as in Australia, or else as access to the foundation of basic social relations, such as participation in work activities, family life, politics and civil society activities, as in Denmark. The objective of social cohesion in the European Union implies a reconciliation of the system of organization based on market forces, freedom of opportunities and entrepreneurship, with engaging the values of solidarity and mutual support, which ensure free access to the benefits and provides protection to all members of society. The social cohesion becomes today a central pillar of European development policies (cf. the 1986 European Single Act, according to which economic and social cohesion in Europe must become a target, like the single market, being defined as a form of sustainable and balanced development, intended to secure the reduction of the structural disparities between the regions and countries, and to promote equal opportunities for all). Currently, social cohesion is identified as the concern for maintaining inclusion in a society which thus becomes able to withstand the external shocks and the cyclical effects of the tough world economy. The extended version of the scale and dimensions of social cohesion, in Paul Bernard's opinion, identifies the following aspects: economic (Inclusion/Exclusion, by Equality/Inequality), political (Legitimacy/Illegitimacy, by Participation/Passiveness), and social-cultural (Recognition/Repellence, by Membership/Isolation). Two major directions characterized the quantifying project through social cohesion ever since its inception: I) reducing the regional and structural and disparities, as well as social exclusion within society, which distinguishes the following aspects: a) regional disparities, b) equal opportunities/discrimination against: gender groups, generations, social classes, the disabled, minority groups, c) social exclusion; and II) the strength of the society's social capital, which is also extremely important, and within which the following elements can be identified as relevant: a) availability of social relations, b) social and political activities and involvement, c) quality of social relations, d) quality of society's institutions, and, additionally, e) the specifically European concern with issues relating to social cohesion among European countries. In its first version, the 2001 matrix of social cohesion indicators (EUSI), where the elements were grouped by domains, components, aspects and dimensions, identified and developed indicators for six critical areas: a) population, households and families; b) shelter and housing; c) education and training; d) labour market and working conditions; e) income, living standards and consumption patterns and f) health. The Romanian approach to social cohesion has been achieved by attempting to decrease poverty, and, implicitly, social exclusion. In April 2001, the Anti-Poverty and Social Inclusion Commission (CASPIS) was set up by the Prime Minister's order, the role of which was to coordinate the anti-poverty measures. Finally, the Social Protection Committee has established a list of 18 indicators of social inclusion (10 primary and 8 secondary). The category of primary indicators includes: the poverty rate (lying at a threshold of 60% from the median of incomes), in accordance with sex, age groups, by category of households, by type of household, by area of residence, the ratio between top and bottom quintile distribution of population by income, the persistent poverty rate, the median relative distance, the coefficient of variation of employment rates by region, the long-term unemployment rate, the proportion of the population in the households without employed persons, the proportion of young people aged 18-24 years who have left the education system early; life expectancy at birth, the ratio of the number of people in the lower and upper quintile who consider their health as bad or very bad. The latter category, that of the secondary indicators, includes: the poverty rate threshold of 40%, 50% and 70% of the median income, the poverty rate at a time-anchored threshold (3 years), the poverty rate before the social transfers, the Gini coefficient, the persistence of poverty (compared with the 50% threshold), the share of the long-term unemployed in the total number of the unemployed, the very long-term unemployment rate, the proportion of people aged 16 and older having only a primary level of education, out of all the people aged 16 years and older.

The measuring pattern of social cohesion proposed and realised in this paper is focused on the assumption that social cohesion is determined and supported in a representative proportion by certain *equitable living conditions*, reflected in the existence of *minimum conditions for relating*, and *inclusion or the lack of exclusion*. The motivation is easy to perceive, meaning *meeting the basic needs* (*the existence of the minimum requirements for relating*), which allows people to be willing to relate, while inclusion should materialize the *relating*. In Romania, social cohesion can be estimated by monitoring elements that determine the willingness to cooperate, the feelings of trust and respect for diversity, the sense of belonging and the perceptions of the need for social-political participation and social support. A static model for social cohesion in our country, during Romania's admission period to EU, selects the following questions for the six highly typical dimensions:

Dimensions	Questions
Trust in	Do you think that one can trust most of the people?
people	
Trust in	How much do you trust the institution of the church, government, parliament, the
institutions	judiciary, the army, the police, the city halls, the unions?
<b>Respect</b> for	Do you try to convince your friends, relatives or colleagues to share the same
diversity	opinion or idea you believe in?
Belonging	If you had the opportunity to choose the country for you to live, would you choose
	Romania?
Participation	Apart from weddings, funerals and baptisms, how often have you gone to church
-	lately? To what extent do you think people like yourself can influence the decisions
	taken for your city (country)?
Social	Do you have relations / acquaintances you can trust if it comes to one of the
support	following: illness, consultation, treatment, intervention in the court, the notary, the
~~	lawyer, the mayor, the police, to obtain a credit, in getting a job, in the business
	world ?

Source of questions: BOP, October 2005-2006, data being statistical aggregated using the specific method of evaluation for each dimension.

The model is based on an algorithm for estimating social cohesion, and the conclusion drawn after using several robust indicators was naturally a statistically acceptable one.

		Trust in people	Confidence in institutions	Respect for diversity	Belonging	Participation	Social support
1	Moldavia	27.49	42.44	49.74	75.65	20.83	8.75
2	Wallachia	36.81	39.61	47.25	84.35	16.23	10.89
3	Oltenia	26.70	42.13	49.21	78.53	14.41	12.45
4	Dobruja	31.25	51.10	50.00	87.50	25.66	10.72
5	Transylvania	36.08	38.36	58.24	67.05	19.45	14.33
	Crishana-						
6	Maramuresh	23.78	43.22	59.76	69.51	16.15	21.59
7	Banat	15.12	38.22	60.47	51.16	19.14	13.23
8	Bucharest	41.50	35.89	67.50	77.00	24.77	16.34
Romania		31.67	40.60	54.28	74.89	19.14	12.96

Table no. 2 Indicators of social cohesion in Romania

In order to collate and rank the regions, checklists were used, containing eight value ranks, the length of each rank being given by the ratio of the amplitude of the series (consisting of cohesion values for each region), and the number of ranks. The final results were as follows:

		Indicator of social cohesion $(I_{cs})$	Score
1	Moldavia	41.59	4
2	Wallachia	43.41	5
3	Oltenia	41.69	4
4	Dobruja	47.06	8
5	Transylvania	42.60	5
6	Crishana-Maramuresh	43.35	5
7	Banat	36.71	1
8	Bucharest	47.99	8
	Romania	43.03	5

Table no. 3 Social cohesion indicators expressed by statistical indices

Both regionally and nationally, there was a weak social cohesion, the indicator value failing to exceed 50%, which shows that one in two people have an attitude of deterring exclusion.



Figure no. 4. National dimensions of social cohesion

The graph emphasizes that there are significant differences between regional parts of a national territory, and the low level of cohesion is generated mainly by the very small amounts of *social support and participation*, and also of those of *trust in people* and *confidence in institutions*. The national value of 50% was exceeded only for the dimensions of *belonging* and *respect for diversity*, which, although having higher percentages, have not cancelled the negative effect of the other dimensions. The most cohesive historical regions are Bucharest (due to *respect for diversity*) and Dobruja (due to *belonging*), while the diametrical opposite is Banat (actually, because of weak identification with the national *holos* or social and cultural model). Moldavia and Wallachia are placed below the national average value. The impact of social cohesion for human ecology is enormous, because it offers information about how to change the current angle on isolation by which the world's poor are rather a problem than some potential productive and creative actors in society, detailing many crucial aspects for creating new employment opportunities, education, basic health care, or adequate housing conditions, new respect, trust and conficence.

#### 6. SOME FINAL REMARKS

Globalization as a whole process, the extended transitions of outdated technologies, industry the cyclical nature of industry, and the rapid depletion of resources have almost completely changed the environment, population and the ecosphere in general, over the last decades. The measurement of social cohesion underlines the connections between traditional aspects of all regional areas and the necessity of national politics for human ecology, in a global plan including management disaster and social cohesion. Different parts on the same country's map offer different aspects and specific mitigation and intervention activities for the contemporary disaster management and human cohesion. There are undoubtedly more global than national or local alternatives to stop the transformation of our planetary environment, in the current accelerated destructive manner, which can forever change, and even destroy, the nations' and people's lives and prospects, irrespective of their being at the Southern, or Northern Pole of development. To see that, the clearest pieces of evidence that can be envisaged are the fact that humanity has evolved, and it is not only its technologies that have multiplied, but also its values and beliefs, throughout its turbulent and oscillating history, and there is no reason why it should be unable to resume its natural links with the natural environment (the ecosphere), in a creative way, in the next few generations. The time is indeed crucial, as humanity must, from now on, most carefully consider his own demographic chart as well, to identify a path of sustainable development and human cohesion for the future. The new consciousness of Holos will have to force the people to behave in their private sphere according to Confucius' principle of reciprocity: "Treat others as you would like to be treated yourself', metamorphosed by Mahatma Gandhi, two and a half millennia later, in the following wording: "Be the change you want to see in the world." They were both right: if one develops one's conscience, one has the power to change the world, and therefore, the main priority of humanity remains the same, to do everything we can to activate and initiate the advanced, imminent consciousness, manifesting itself quickly in people's lives on a planetary scale ...

# REFERENCES

- 1. Alexander, D., 2002, *Principles of Emergency planning and Management*, Harpended: Terra publishing
- 2. Confucius, 1993, The Analects. Edited by Dawson, R. Oxford: Oxford University Press.
- 3. Eliade, Mircea, 1980, De la Zalmoxis la Genghis Han. Bucharest: Editura Științifică și Enciclopedică.
- 4. Eliade, Mircea and Apostolos-Cappadona, Diane. 1985, Symbolism, the sacred, and the arts. New York : Diane Apostolos-Cappadona Crossroad.
- 5. Goswami, Amit, Chopra, Deepak, 2000, The Visionary Window: A Quantum Physicist's Guide to Enlightenment. London: Quest Books, Hampton Roads, Publishing,.
- 6. Guha-Sapir, D. Hargitt D., and Hoyois P., 2004, Thirty years of natural disasters: the numbers, Presses universitaires de Louvain, Brussels.
- 7. Laszlo, Ervi, 2006, The Chaos Point, Hampton: Hampton Roads Publishing Company Inc., USA and Piatkus, London.
- 8. Morris, Henry Madison, 2002, The Biblical Basis for Modern Science. Arkansas: Master Books, Green Forest, pp. 131, 234-250, 261-264, 270 and 284-286.

- 9. Isaic-Maniu, Al. (coord), 2003, Dicționar de statistică generală, Ed.Economică, București
- Iwan, W.D, et al. 1998, Mitigation Emerges as Major Strategy for Reducing Losses Caused by Natural Disasters, Science Vol 284, pp. 1947 – 1963.
- 11. Jostein, Gaarder, 2006, Lumea Sofiei, Ed. Univers, Colecția Cotidianul, pp. 36-40.
- 12. Kernbach, Victor, 1983, Dicționar de mitologie generală, Ed. Albatros, pp. 30-31, 54-58, 219-224 and 545-548.
- 13. Penrose, Roger, 1989, The Emperor's New Mind, Concerning computers, Minds, and the Law of Physics. Oxford; New York: Oxford, University Press,.
- 14. Săvoiu, Gheorghe, Iorga-Simăn, Ion, 2008, Mitologie și religie, fizica pământului și filosofie în variația climei și prezența dezastrelor climatice terestre, Progrese in teoria deciziilor economice in condiții de risc și incertidine.Ed. Performantica, Iași, vol V, (2008): pp. 212-218
- 15. Săvoiu Gheorghe, Cristea Alina, 2005, *Coeziunea socială-concept și măsurare*, Ed. Universitară, București.
- Săvoiu, Gheorghe, 2008, Adaptive Management of Global Climate Problem: Bridging the Gap Between Climate Research & Climate Policy, Annals of Oradea University. Fascicle of Management and Technological Engineering, Vol. XVII (VII)
- 17. Săvoiu Gheorghe, 2010, Gândirea statistică aplicată, Editura Universitară, București
- 18. Spignesi, S. J., 2005, *The 100 greatest disasters of all time (100 cele mai mari dezastre din toate timpurile)*, Ed.Lider, Editura cartea pentru toți, București.
- 19. Wisner, B., P. Blaikie, T. Cannon, and I. Davis, 2004, At Risk Natural hazards, people's vulnerability and disasters, Wiltshire: Routledge.

#### WEBOGRAPHY

- 1. http://www.em-dat.net EM-DAT:TheOFDA/CRED,International Disaster Database.
- 2. <u>http://unstats.un.org/unsd/</u> enviroment/indicators Université Catholique de Louvain, Brussels Belgium
- 3. <u>http://www.oecd.org/dataoecd/25/2</u> Social cohesion, public policy and economic growth: Implications for OECD countries, Ritzen J,/1825690.pdf
- 4. <u>http://www.biodiv.org/doc/publications/guide.asp</u>.
- 5. http://www.redlist.org/info/categories\_criteria

# THE [GREEK] CRISIS THAT SHOULD HAVE BEEN AVOIDED

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**Abstract:** We interpret the recent Greek crisis from a fresh perspective. Although the widely held view is that, the Greek crisis was evident in the dim macroeconomic outlook and thus imminent and unavoidable, we suggest that the crisis was also unavoidable but for an entirely different set of reasons; namely the lack of consistent and coherent political development.

Using Greece as an example, we draw upon empirical data to show that the political development attainment level is a critical component of nation branding and a root cause in the Greek crisis. We also support the view that, the lack of brand risk management techniques at the governance level was a key catalyst for the rapid escalation of what at first instance appears to be bad public financial practices and policy making, but is in essence lack of real political development. Thus, the Greek crisis should have been avoided.

Keywords: Nation branding, Greek crisis, European Economic Crisis

JEL classification codes : F55, F59

#### **1. INTRODUCTION & BACKGROUND**

The Greek crisis has dominated many of international news headlines since late 2009; in many ways it still is. The "jury" is still out on whether the Greek economy will default, or not. It is well known that the Greek economy, in May 2010 opted for a financing package totaling  $\notin$ 110 billion, under the "auspices" of the International Monetary fund, the European Commission and the European Central Bank (e.g. PMO 2010, iMF Direct 2010). In line with the terms set within the financing program, Greece is undergoing an austere reform program in order to turn around the tide; the whole effort is about making Greece more competitive and, at the end of the day, capable to repay its debt successfully.

Many of the analyses of the Greek situation focus, almost exclusively on the dim macroeconomic figures and the now infamous "Greek Statistics." Along these lines, the macroeconomic figures regarding public spending, debt, and the "formidable" size of the public sector are often considered as root causes of the Greek problem, which was set in motion largely by the worldwide economic crisis that followed the Lehman Brothers' collapse, as investors got more and more cautious about their positions (e.g. Kouretas and Vlamis 2010). For a macroeconomic interpretation of the Greek see also European Commission (2010a).

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A comprehensive reading of the Greek situation is more likely to unveil and subsequently debunk a number of myths including the following:

- The Greek crisis has been the sole outcome of failed economic policies;
- Greece has been characterized by political stability;
- Political leadership maintains policy continuity and sustainability;
- A strategic vision for the country's development is being shared among ruling parties.
- The Greek people have a shared vision, values and principles regarding competent economic and political development.

These myths are, in essence, related to political development attributes that are frequently taken for granted in developed economies, including the US, Japan, most EU and the Euro zone. In this case however, these same attributes differentiate Greece from its counterparts despite any similarities in deficits, debts or other dim macroeconomic figures.

In this paper we set out to succinctly show that the Greek crisis is more complex than poor public finances and unsuccessful fiscal policies. We look at empirical data corresponding to each of the myths and support the view that the Greek crisis is by and large a problem equivalent to that of a "dysfunctional" organization, namely one with, evidently, ineffective decision making and lack of a long(er) term vision. Or, when seen from a political science perspective, the Greek problem is typical of what Political Science researchers in the 90s would have considered lack of Political development. There are of course alternative and complementary interpretations (for instance, Sklias 2011; Sklias & Galatsidas 2010).

# 2. THE GREEK CRISIS MYTHS

We thus proceed to re-consider the current Greek crisis from a fresh perspective addressing one myth at a time. For each myth we identify one or more statistical indicators or relevant data that falsify (or not) the myth. Obviously the choice of indicators can be debated forever and a different set of indicators is likely to yield different results. In order to illustrate our point, however, we focussed mostly on indicators that tend to resemble risks (i.e. the potential for failure) for each myth as opposed to absolute performance. The reasons for taking such an opposing view is to demonstrate that some data, at least, was indicating that the Greek crisis was coming. Although the magnitude and the reach of the crisis was to say the least unimaginable before 2009, it was nonetheless to be anticipated, even if in another, less significant form that it is at present.

In our empirical research we compare the following Mediterranean countries: Portugal, Italy, Greece, Spain and Ireland; many of our readers may also notice that these countries are used to often form a controversial acronym, used in such comparisons. We choose these countries mainly because they are a favourite comparison group among many leading economists and experts discussing the Greek crisis and its consequences. Another important reason for choosing this group is because in 2010 and early 2011 the problems of the Greek economy appeared to be contagious. Spain and Portugal in particular have been frequently compared to Greece, but Italy and Ireland as well. Portugal and Ireland have also taken a profound economic aid in order to deal with their own debt crises. When available and relevant we also use data for Turkey. We now proceed to discuss the Greek Crisis myths.

#### The Greek crisis has been the sole outcome of failed economic policies

Wish it were true; In reality this is composite myth but there is evidence showing that Greece's problems are more far reaching than poor fiscal policy. Institutions and their functioning play a major role in the effectiveness and implementation of each fiscal policy,

and there are at least two indicators showing that Greece's institutions were below par from their counterparts. For instance in Table 1 we look at the 'Transposition of Community Law' for our selected countries.

	Transposition of Community law (%)							oup	Better or Worse than EU-15 Average				erage?
Year	Greece	Spain	Portugal	Ireland	Italy	EU- 15	AVG	+/-	Greece	Spain	Portugal	Ireland	Italy
2000	90,9	95,6	92,7	93	92,9	93,8	93,02	-0,78	-2,9	1,8	-1,1	-0,8	-0,9
2001	96	97,9	96,2	96,9	96,8	96,7	96,76	0,06	-0,7	1,2	-0,5	0,2	0,1
2002	94,7	96,3	94,9	94,9	95,2	95,5	95,2	-0,3	-0,8	0,8	-0,6	-0,6	-0,3
2003	97,1	99,1	98,1	98,6	97,5	98	98,08	0,08	-0,9	1,1	0,1	0,6	-0,5
2004	96,4	99,1	97,5	98	96,4	98	97,48	-0,52	-1,6	1,1	-0,5	0	-1,6
2005	97,4	98,9	97,8	98,7	97,7	98,7	98,1	-0,6	-1,3	0,2	-0,9	0	-1
2006	97,7	99	97,6	99,3	97,9	98,9	98,3	-0,6	-1,2	0,1	-1,3	0,4	-1
2007	98,3	99,1	98,7	99,4	98,9	99,2	98,88	-0,32	-0,9	-0,1	-0,5	0,2	-0,3
2008	97,1	98,3	97,3	98,3	97,8	98,3	97,76	-0,54	-1,2	0	-1	0	-0,5
2009	97,7	98,9	98,4	98,4	97,8	98,6	98,24	-0,36	-0,9	0,3	-0,2	-0,2	-0,8
								-0,39	-1,24	0,65	-0,65	-0,02	-0,68
								Freq	100,0%	10,0%	90,0%	30,0%	90,0%

Table 1 Transposition of Community Law; Eu-15 & Selected Countries [Source: Eurostat, 2011a]

In our tabulation we try to compare the selected countries to the EU-15 Average as a benchmark, both in terms of frequency and relevant performance. Our reader will notice that Greece is a very consistent underperformer in relation to the other members of the particular group. All the same, the main point of the transposition of Community law is that Greece is lagging behind, consistently and often significantly, in terms of 'Europeanising' itself. While not all of the community law is necessarily directly related to fiscal effectiveness, it is easily seen that Greece lag appears to be systemic, and it shows that the institutional trinity of law making, judicial system, and government is not really as fine-tuned as in other countries. Italy is a close second together with Portugal, but Ireland and especially Spain are good performers and are consistently transposing national law to the European requirements.

#### Greece has been characterized by political stability

Most Governments, in most countries, tend to serve their term unless exceptional political or other circumstances force them to step down. However with the exception of Italy perhaps, Government stability is taken for granted in most cases. In Greece however the Government stability is more or less an illusion. The regular term for an elected Government in Greece is 4 years; That would imply that since democracy was restored in 1974, Greek should now have its 10<sup>th</sup> Government (2011-1974=37yrs  $37 \div 4=9$ ). The truth is that Greece is now in its 17<sup>th</sup> Government i.e. nearly 1,7 times as many governments as would have been expected if in complete 4-year terms. This is before taking into account multiple cabinet shuffles during some terms and the frequent ruling party shifts.

In fact, the high-level are like in Table 2:

Statistic	Measurement
	(*)
Average term duration (Completed terms, incl. coalition	2,16 years
Cabinets):	
Average term duration (Completed terms, Single party only):	2,86 years
Conservative Party:	7 times
Socialist Party:	7 times
Successions (Con-Soc or Soc-Con)	4 times
Coalition Government:	3 times

 Table 2 High Level Greek Government Statistics

#### (\*)Based on data available by The General Secretariat of the Government, 2011

We termed these statistics 'high Level' because if one considers cabinet shuffles and the pre-election times (where no policy-related decision making is allowed to take place) the figures become much worse; the average government duration drops below the 2yrs mark (instead of the normative 4 years), before even taking into account partisan successions (i.e. as policy shift indicators), or local government results and their potential effect on the central government.

In other words, political stability only exists on paper; the practice it is not really there.

# Political leadership maintains policy continuity and sustainability

Counting government term durations also lead us to look at other ways in which political (in)stability may unfold itself.

While the root causes for this type of instability may be numerous and hard to pinpoint exhaustively, we note one of the most prominent ones. The election law has been changing almost as swiftly as the Greek governments. In particular the election system has changed six (6) times since the first election law and the establishment of democracy in 1974 (Table 3).

Law Reference	Change No.
Electoral Law Presidential Decree 65/1974	0 – Starting Point.
Electoral Law 626/1977	1
Electoral Law P.D. 895/1981	2
Electoral Law 1516/1985	3
Electoral Law 1847/1989	4
Electoral Law 1907/1990	5
Electoral Law 3231/2004	6

Table 3 Shifts in the Government election system

Of course one could argue that in a 'healthy' Democracy, politicians always strive to improve upon a representative system of democracy, and we could not agree more with such an observation. In fact, table 5 only shows exactly that; the inherent faults of the representative democracy do not allow the Greek politicians to get their republic's election law right in the first place. A closer look at the different election laws is likely to unveil that with each succession the law affects more significantly the parliament seats of the first and

second party and less so the characteristics of the seat representation beyond the first two, as most election results show.

All these numbers indicate a high degree of instability in the most important development drivers of all: Governance and Leadership. Poor public financial performance becomes less of a surprise all of a sudden.

# A strategic vision for the country's development is being shared among ruling parties

According to Marc Roche, in 1999 the Greek Government asked from Goldman Sachs to find ways to help hide part of Greek deficit. The "solution" appeared to be to keep military expenditures from being recorded in public expenditures. In addition Goldman Sachs also used Credit Default Swaps and helped the Greek Government to protect their debt from exchange fluctuations. Roche goes further to argue that Goldman Sachs succeeded (Roche, 2011). The story continues; as the European Commission notes, successive Greek governments from alternate political parties repeatedly revised the public finances figures. This happened twice in the last decade, and in particular in 2004 (socialist to conservative succession) and in 2009 (conservative to socialist succession).

Looking ate this 'interplay' between the ruling parties each time one came to power, implies directly that Greece's public finance monitoring system was largely a matter of partisan interpretation as opposed to a standardised approach of tidy book-keeping as one would expect from a reliable, responsible, Euro state. We simply quote the European Commission's view on this matter:

"... In both cases, in the aftermath of political elections, substantial revisions took place revealing a practice of widespread misreporting, in an environment in which checks and balances appear absent, information opaque and distorted, and institutions weak and poorly coordinated." (European Commission, 2010b, p.20)

This is the gist of the now infamous "Greek Statistics" approach.

We contrast this with the General Government debt and deficit figures for the past 15 years or so. The figures are again self explanatory (Table 4).

Years	General Government Debt (% of GDP)	General Government Deficit (% of GDP)
1995	97.0	-
1996	99.4	-
1997	96.6	-
1998	94.5	-
1999	94.0	-
2000	103.4	-3.7
2001	103.7	-4.5
2002	101.7	-4.8
2003	97.4	-5.6
2004	98.6	-7.5
2005	100.0	-5.2
2006	106.1	-5.7
2007	105.4	-6.4
2008	110.7	-9.8
2009	127.1	-15.4
2010	142.8	-10.5

<b>Table 4 Greek Go</b>	vernment	Debt &	Deficit
[Sources: Eurostat,	2011b and	Eurostat	2011c]

Please note that government debt was declining only in the periods between 1997 and 1999, and between 2002 and 2003; other than that it has been consistently on the rise; this long term trend, presumably, should have raised the alarms long time before 2009. It is also notable, that according to Eurostat, Greece never met the 3% deficit yardstick. Or, in other words, Greece's financial performance was never up to par; or so it seems. This is a consistent performance, consistently shared and pursued among the interchanging ruling parties.

# The Greek people have a shared vision, values and principles regarding competent economic and political development

For this myth we use data from the Transparency International (TI) Corruption Perceptions index, as tabulated in table 5.

						Group			
Year	Greece	Ireland	Spain	Portugal	Italy	Avg	Greece– Group	Turkey	Greece - Turkey
1999	36	15	22	21	38	26,4	-9,6	54	18
2000	35	19	20	23	39	27,2	-7,8	50	15
2001	42	18	22	25	29	27,2	-14,8	54	12
2002	44	23	20	25	31	28,6	-15,4	64	20
2003	50	18	23	25	35	30,2	-19,8	77	27
2004	49	17	22	27	42	31,4	-17,6	77	28
2005	47	19	23	26	40	31	-16	65	18
2006	54	18	23	26	45	33,2	-20,8	60	6
2007	56	17	25	28	41	33,4	-22,6	64	8
2008	57	16	28	32	55	37,6	-19,4	58	1
2009	71	14	32	35	63	43	-28	61	-10
2010	78	14	30	32	67	44.2	-33.8	56	-22

 Table 5 Selected Countries & Turkey Corruption Perception Index Ranks
 [Source: Transparency International, 2010]

Sadly, this is another area where Greece has been steadily making negative progress. Keeping in mind that the TI index is based on perceptions as opposed to facts it goes to show that the Greeks, as self aware as they may be, have been caught in a bad spin and cannot (?) snap out of it (CPI, 2010). From this perspective however it appears that the 'true' Greek economy, in addition to all the other problems we have discussed thus far, is not really functioning transparently, and in fact transparency is worsening over time. We are aware that the TI index is not representative of the Greek people or of their beliefs; but we do believe it is highlighting a significant and universal problem. The Greek performance only shows that the problem in Greece has gotten significantly worse, and that the Greeks are not really effective at stopping this downfall and reducing the problem as much as possible.

# **3. SUMMARY AND CONCLUSIONS**

Having seen more than a few Greek statistics it is easily seen that the Greek crisis appears to be a complex problem; it also appears to be deeply rooted in the fabric of its society, implying that the crisis is more than purely economical, and a successful resolution is

likely to require more than mere austere fiscal policies and public spending cuts. We note that our analysis of the Greek state implies, by and large, problems in institutions and more importantly state-level and institutional decision making; in other words the state's way of having processes and quality assurance structures in place. This institutional and institutional functioning deficit is equivalent to the lack of political development in political science terms (for instance, Koutsoukis K. 1999).

So, going back to the Greek situation we proceed to look at some of its most important myths: **The Greek crisis has been the sole outcome of failed economic policies.** As we have demonstrated the failed fiscal policies are but the icing on the cake. In essence the Greek crisis is deeply rooted in poorly performing institutions at all levels affecting interactions at both the internal and the external environments.

**Greece has been characterized by political stability**. As we have shown when considering the Governance and Leadership driver, political stability is largely superficial; on average the Greek governments barely complete half a term in office.

**Political leadership maintains policy continuity and sustainability.** The polarisation between the ruling parties in the past few decades has been the dominant force behind the variable election system and the frequent revisiting of the financial performance reporting system, known as "Greek statistics."

A strategic vision for the country's development is being shared among ruling parties. More or less it follows from the previous two myths that the shared development vision has fallen victim to partisan polarisation.

Our analysis lends itself well as an explanatory device in the case of the Greek crisis. If the Greek governments had been prudent enough to look at these figures at least, they would have noticed that the situation was worsening slowly but surely. Thus, this is one crisis that could have, and should have been avoided – the first step in effective crisis management (Augustine, 1995).

# REFERENCES

- 1. Augustine, N; (1995); *Managing the crisis you tried to prevent*; Harvard Business Review, November-December 1995.
- 2. Corruption Perceptions Index; (2010); Short methodological note, Transparency International.
- 3. European Commission; (2010a) The Economic Adjustment Programme for Greece; Directorate-General for Economic and Financial Affairs, European Commission; available online at: ec.europa.eu/economy\_finance/publications *last accessed on 23/2/2011*
- 4. European Commission, (2010b), *Report on Greek Government Deficit and Debt Statistics*, European Commission.
- 5. Eurostat; (2011a). *Transposition of Community law.* http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pco de=tsdgo220 -Last accessed 29/04/2011
- 6. Eurostat. (2011b). General government debt. 29/04/2011 <u>http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=tsieb09</u> <u>0&plugin=1</u> -Last accessed 29/04/2011

- 7. Eurostat. (2011c). General government deficit (-) and surplus (+). <u>http://epp.eurostat.ec.europa.eu/tgm/refreshTableAction.do?tab=table&plugin=1&pco</u> de=teina200&language=en -Last accessed 29/04/2011
- General Secretariat of the Government, The; (2011); [In Greek] The Government Cabinets form 1909 until present, The General Secretariat of the Government [Greece]. Available online at: http://www.ggk.gov.gr/?page\_id=776 -Last accessed on 20/4/2011
- iMF Direct; (2010-05-02); Key Links for the Greek Financing Package, International Monetary Fund, http://blog-imfdirect.imf.org/2010/05/02/key-links-for-the-greek-financingpackage/-Last accessed May 2011.
- 10. Kouretas G.P and Vlamis P. (2010) *The Greek Crisis: Causes and Implications* PANOECONOMICUS, 2010-4, pp. 391-404.
- 11. Koutsoukis K; (1999); [In Greek] *Political Development: Introduction to the Theory and Methodological Approaches and Empirical Research*; Papazisis Publishing, Athens.
- 12. Prime Minister's Office PMO; (2010-05-02); (*Prime Minister's speech, May 2 2010*), Hellenic Republic, Prime Minister's Office, http://www.primeminister.gr/english/2010/05/02/meeting-of-cabinet-prime-ministers-speech/ -*Last accessed May 2011*.
- 13. Roche, M; (2011); The Bank: How Goldman Sachs govern the world, Athens, Metaihmio.
- 14. Sklias P, and Galatsidas G; (2010); *The Political Economy of the Greek Crisis: Roots, Causes and Perspectives for Future Development*, Middle Eastern Finance and Economics, Issue 7, 2010, pp. 166-177.
- Sklias P; (2011); *The Political Economy of the Greek crisis in the Framework of the European Monetary Union*, in Botsiou K. και Klapsis A., The Global Economic Crisis and the Case of Greece, The Constantinos Karamanlis Institute for Democracy Yearbook 2011, Springer Publications, pp. 67-76.
- 16. Transparency International. (2010). Corruption Perceptions Index. <u>http://www.transparency.org/policy\_research/surveys\_indices/cpi</u> –*Last accessed on* 02/05/2011.

# GREEK BANKS IN THE BALKAN COUNTRIES: CONCLUSION DERIVED FROM THE ANALYSIS OF THEIR BALANCE SHEETS

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Abstract: During the 1990s the Greek economy has flourished, with the help of the banking system, which, at the same period, has undergone considerable deregulation. The stock market "explosion" at the end of the decade has provided the necessary funds for the expansion of many Greek Banks in various countries and particularly those of the Balkan area. Some Greek companies had already expanded their business activities in these countries, which at the time were in the process of transition to the market economy, thus giving to the Greek Banks the incentive to follow their clientele. The expansion of Greek banks in the Balkans was such that they obtained significant market shares in some of the area's countries.

In the current paper we make an effort to examine the feasibility of the expansion of Greek banks in these countries, focusing especially on their financial efficiency. To that end the Balance Sheets of the parent banks, as well as those of their Balkan subsidiaries and associate companies where they held an equity share were studied and analyzed.

Our main conclusion is that the activities of the Geek banks in the area were successful and had positive effects to their profitability and they reinforced their overall financial state.

*Keywords*: Banking System, balance sheets, financial analysis, profitability, efficiency, Balkan area.

JEL Classification Codes: M41, G21, F36

# **1. INTRODUCTION**

There are two periods of internalization for the Greek banking system internalization. The first one ends in 1986 with the establishment and the development of a network of foreign owned banks in Greece, which obtained a relatively low market share, never surpassing 10% of the total market, in both deposits and loans, although they created forty (40) branches in the country. In contrast to this "passive" first period, the next one (after 1986) is characterized as "active" because of the internalization strategy Greek banks followed, mainly in the Balkan area (Giannitsis, 1999). This internalization expresses the dynamism of Greek banks, in the form of penetration through direct investment, the transfer of technology and the export of financial products aiming at the creation and the expansion of their market share in the area (Kouniakis S., 1997). The banking sector in Greece obtained new characteristics and was influenced by the international trends by expanding to other countries (Giannitsis, 1982).

Some years ago, the greek banking presence abroad was limited to the servicing of Greek diaspora in North America, South Africa, Germany and the international financial centres of London and Paris. As in the more developed countries of Europe and North America, the internationalization observed since in Greece reflected the dynamism of the national productive system, as it was expressed by its ability to enter foreign markets through direct investments. Greek banks, following the expansion of the Greek industry, have established subsidiaries in Romania, Moldavia, Albania, Georgia etc, obtained equity shares in existing local banks (Bulgaria) or established branches and agency offices (as in Bulgaria, Romania and Albania). The Balkans are considered a single economic area (Psiroukis, 1993) and the expansion of the Greek banks in it aimed at the improvement of their profitability, taking into account the maturity of the Greek market, especially in retail banking (Lidorikis A., 2005). There was a substantial number of Greek businesses that created logistics centers, production facilities, subsidiaries etc in the Balkans. These businesses had important reasons to expand into foreign markets, like the saturation of the domestic market, the intensification of competition, the low production cost, the abundance of cheap raw materials, the market size etc. Banks were forced to follow their clientele (Chatzidimitriou G., 1997), aware of the credit risk in Greece (Mantzounis D., 2005.)

# Examples:

In Bulgaria settled some of the largest food manufacturing industries such as Delta, Chipita, Lulis Mills, textile companies and tourism companies such as the Daskalantonakis Group, the Nikas Group, Goody's, the Greek Bottling Company (Coca Cola), Intracom, the Varytinis Company, Michaelides Tobbacco, Mailis, etc. In Albania Intracom and Michailidis Tobacco. In Romania Lulis Mills, Katselis, Delta, ELGEKA, "Gregory Meals", Everest, the Greek Bottling Company (Coca Cola), Intracom, the Varytinis Company, Mailis, etc. In FYROM Elbisco with the acquisition of Zito Luks, the Delta Group, the Nikas Group, the Greek Bottling Company (Coca Cola), Michailidis Tobacco, etc.

The presence and activities in the Balkans was appropriate and easier for various reasons including:

(A) The orientation towards privatization and the reform of rural property ownership (land not belonging solely to the state anymore);

(B) The operation of market mechanisms and the development of private trade, with the abolition of state monopolies in foreign trade and the liberalization of imports and exports;

(C) The financial and banking reforms in cooperation with the International Monetary Fund and the World Bank as well as the presence of the European Bank for Reconstruction and Development and the European Investment Bank;

(D) The fact that the maturation of the Greek market and the dynamism of the banks could not be invested in expansion in countries of western Europe, because of the intense competition;

(E) The existence of growth prospects as the per capita consumption fell short of the average European levels, while there was also an increase in the marginal propensity to save;

(F) The modernization of the structure of the banking system with a central bank, commercial banks and specialized financial institutions as well as the guarantee to foreign banks of the same terms of competition (privatization of banks);

(G) The fact that Greek banks have more expertise and experience of operating in adverse conditions (high inflation, currency instability, etc.);

(H) The improvement of macroeconomic factors in the Balkans: After a period of macroeconomic restructuring they had reached a very satisfactory rate of economic growth and had overcome many problems of the past. At the same time there were made substantial

investments in the productive capacity and the infrastructure. Bulgaria and Romania joined the European Union, while others were in the preparation phase;

(*I*) The high credit growth - Due to economic development businesses required more loans for their investments while the local capital markets were not fully developed. Alongside, because of the improvement in living conditions, households also increased their borrowing;

(J) The large privatization projects that required the inflow of foreign capital and knowhow, resulting in the majority of the used funds to be controlled by foreign banks;

(K) The specific economic and cultural relations between Greece and these countries (Stergiotis, 1996).

The results of extroversion of the Greek banking system is similar to that of large international banks, since 40% of the profits of banks in developed countries come from abroad (Commercial Bank, 2006). For instance, over 50% of ABN-AMRO's total revenues come from its international operations (Pattakos G., 1996). The banking market in these countries could be further improved, since in the mid '00s financing to GDP was 25% in the Balkans, 77% in Greece and 114% in the Eurozone. Lending to individuals as a percentage of GDP was 12% in the Balkans, 33% in Greece and 55% in the Eurozone. Furthermore, the percentage of lending to households and enterprises as a percentage of GDP was 14.5% for Albania and 44% for Bulgaria, respectively, while for Greece it was 76% and 104% for the eurozone (Mantzounis D., 2005).

However, there were a number of challenges, including:

(I). The large deficits, inflation and lack of confidence because of bank failures in the past.

(II). Although there was a high yearly growth rate of around 4-5%, these countries competed with China in attracting foreign investment by increasing labor costs as well as labor productivity.

(III). Private consumption favored the expansion of credit to households, however, it brought along the risk of the increase of bad debts, which were then at satisfactory levels. Also, the percentage of loans in foreign currency, mostly for housing loans, was large and therefore posed monetary risks.

(IV). Competition was intensified, as the 2/3 of the banks' assets in the Balkans were controlled by foreign banks. In addition to Greek banks the following banks have a significant presence in the area: Austrian Erste Bank, which after the acquisition of BCR has a 14% market share in Romania, the also Austrian Raiffeisen Zentral Bank which holds the first place in Albania and Serbia and the third in Romania, the French Societe General which is second in Romania, the Italian Unicredito which holds the first place in Bulgaria, the Hungarian OPT Bank which is the second largest bank in Bulgaria, and others. (V). In the past acquisitions were made at a valuation of about 1-1.5 times of the book value. Later, however, valuations have increased, reaching about four times the book value (Commercial Bank, 2010), making these investments too expensive for Greek banks which turned to organic growth instead.

It should be also noted that for the period examined (2007-2009) Greek banks faced severe challenges that threatened not only their profitability but their whole existence. In mid 2007 the situation of the wholesale credit markets appeared to have deteriorated sharply, causing liquidity problems in the banking sector, leading Greek banks to be unwilling to give out new loans and to be extremely selective about the businesses they financed. The intensification of the upset in the international financial markets also proved a serious factor

that influenced the Greek banking system, being far from helpful to remedy the situation. In fact the economy was quickly slipping into a recession.

To stabilize the banking sector, the government decided in October 2008 to subsidize Greek banks with public funds by offering both new capital to the banks as well as state guaranteed loans to businesses that met some criteria. However, it was observed that a considerable part of the assets of the banks was devaluating fast while, at the same time, the slowdown in the credit expansion was affecting their profitability negatively.

It was decided that the Greek banks would be subsidized with 28 billion Euros, in order for the market liquidity to be restored. However, only a small portion of these funds was actually used finding its way to the banks. The Greek finance minister at the time, Mr. Papathanasiou, admitted his disappointment concerning the rate of absorption of the subsidy funds offered. According to the Bank of Greece, only about 4 billion of public funds were exchanged with preferred equity to strengthen the capital of banks. Even worse, six months after the announcement of the subsidy plan no money was actually given to the banks yet.

All of the above resulted in a sharp decrease in the lending by banks. According to the Bank of Greece, by June 2009 business loans were down by 62,7%, home loans by 52,5% and consumer loans by 68%. To make things worse, the government decided that it was prohibited for the banks that had received any kind of subsidy to pay out dividends in cash, meaning that the greatly decreased profits could only be turned into new shares that would be distributed to the existing equity holders. They, in turn, would have to sell their shares through the stockmarket in order to obtain liquidity.

It is obvious that a liquidity crisis turned into a profitability matter, driving deposit interest rates very high, as lending, the main source of profit for banks, was decreasing dramatically.

# 2. SUBSIDIARIES OF THE GREEK BANKING GROUPS

Since the late '90s Greek banks through the acquisition of local banks or by organic growth managed to develop a remarkable network of subsidiary banks in the Balkans. The study of the balance sheets of the banking groups, of the parent banks and of their subsidiaries operating in the Balkans provides interesting findings. For the scope of this paper only the years 2007-2009 were taken into account, in order for the conclusions not to be affected by the economic crisis. Also, it should be noted that Greek banking groups in addition to their domestic and foreign bank subsidiaries also have a large number of other businesses belonging to the financial sector in Greece and abroad, such as Leasing companies, Mutual Fund companies, Property Management Enterprises, etc.

It should also be taken into account that in the present study we have considered the Greek Banking Groups which have a significant presence in the Balkans, however, these Groups are also present in other third countries as well as in several Western European countries (UK, France, Germany, etc.) and the East (Poland, Ukraine etc.). The Groups examined are: the Group of National Bank of Greece, the Emporiki Bank of Greece Group, the Piraeus Bank Group, the Eurobank and Alphabank Groups.

The percentage of the total assets of all the Groups in the entire Balkan area in relation to the total assets of the Groups in 31.12.2009 amounted to about 10%, while the parent banks of the Groups had the remaining 90%. However, the percentage of the main banking activity, lending, in Balkan countries, is only about 80% of that of the parent banks, thus indicating a higher rate of investments in other forms (such as in shares, government and private bonds, etc.) than in Greece. The reason is that Balkan countries have adopted the market economy

system only in the last two decades and their economies were in transition for a substantial period of time.

The percentage of before tax profits of the Balkan subsidiaries in comparison to those of the Groups' ones is much higher and it even increases from one year to the next. Specifically, in 2007 it was 13%, reaching 19% in 2008 and 23% in 2009, while the parent networks are less profitable proportionately and gradually decrease their share in the same period (from 64% in 2007 to 32 % in 2010). The differentiation in effectiveness and its causes will be considered in the next paragraph.

# If data is broken down by banking group:

The National Bank of Greece, the oldest and largest in the country with presence in over 10 countries, owns the United Bulgarian Bank in Bulgaria, the Banca Romaneasca in Romania, Finansbank A.S.in Turkey, the Vojvodjanska Banka A.D. Novisad in Serbia and the Stopanska Banca A.D.- Skopjie in FYROM (the latter two were not included in the present study because of inadequate data). The assets of all those subsidiaries account for 17% of the group's total assets, while the parent bank's percentage is the remaining 73%. It should be noted that the Turkish subsidiary Finansbank holds about 12% of the assets of the Group by itself. The importance of this fact for the Group can be seen from the profitability (before tax) of this particular subsidiary, which accounted for 23% of total profitability and 70% of parent profitability in 2007. Because of the different taxation, in 2009 the profits (after tax) of Finansbank exceeded those of its parent National Bank of Greece.

EFG Eurobank is the second largest Greek bank and it owns the Eurobank Tefken Bank in Turkey, the Eurobank Bulgaria in Bulgaria and Bankpost in Romania. The total assets of all its subsidiaries amount to close to 6% of the Group's assets, having shown a decreasing trend over the last three years. Proportionately EFG Eurobank's strongest presence is in Bulgaria. Pre-tax profits, despite their decline, reinforce considerably the Group's profitability, since the last three years the profitability of the parent bank has been decreasing sharply, dropping to zero in 2009. Only the Romanian subsidiary Postbank seems to maintain a reasonable level of profitability.

Alphabank, third largest Greek bank and second in size in the private sector, owns Alphabank Romania in Romania with an impressive network of 167 stores, Alphabank A.D. Skopjie in FYROM, and Alphabank A.D. Srbijia in Serbia. The assets of the Group's Balkan subsidiaries amount for only 8% of the Group's total assets, a percentage that has increased considerably during the last three years. The Romania Alphabank is the most important subsidiary accounting for 7% of the Group's assets and 65% of all subsidiaries. However, it is important to note that throughout the Balkan network of the Group, loans do not appear to be supported by deposits, which severely limits the possibility of high growth of the bank in the area.

Emporiki Bank of Greece owns Albania Emporiki Bank S.A. in Albania, Bulgaria Emporiki Bank S.A. in Bulgaria and Romania Emporiki Bank S.A. in Romania. Despite the fact that the development of its Balkan network has been relatively small, with its assets amounting only for 2% of the Group's assets, its profitability (due solely to the Romanian subsidiary) improves overall profitability, since the parent Bank has been operating at a loss, with losses increasing from one year to the next. These subsidiaries profits become even more valuable considering that, as in the case of Alphabank, the loans given out are not financed by deposits, meaning that the necessary funds are obtained by other, more expensive, sources like the inter-bank market.

Finally, Piraeus Bank owns the Bulgaria Piraeus Bank in Bulgaria, the Romania Piraeus Bank in Romania, the Tirana Bank in Albania and the Serbia Beograd Piraeus Bank in Serbia. The assets of these subsidiaries amount to 10% of the total Group's assets, while the same percentages hold for the deposits and the loans. However, the profitability of the Balkan subsidiaries of the Group account for about 16% of its total profitability, with the Romanian and the Bulgarian subsidiaries making the major contributions.

# **3. THE EFFICIENCY OF BANK SUBSIDIARIES**

Regarding the determining factors of banks' efficiency, there are several approaches that are sometimes contradictory.

According to the theory of "structure conduct performance hypothesis" there is a positive relation between profitability and concentration. R. Weiss (1974) claimed that market concentration can create collusion with competitors and thus monopoly profits. Smilrock (1985) however, in a study which included the data of 2'700 banks of the State of Kansas, has shown that it is not concentration that increases profitability, but the market share obtained.

In contrast, Berger and Hannan, (1994) according to the efficient market hypothesis, argue that companies with more efficient scales of economy, along with good management and technology, have lower cost per unit and thus higher unit profit. On the other, Ghandoldberg and Rai, (1996), having studied data on 11 European countries, did not find a strong correlation between profits and market concentration.

Kapopoulos- Siokis (2002), using data for the period 1996-1999 for all Euro-zone countries and making an econometric approach, concluded that the improvement of operational efficiency and capital adequacy has a positive impact on bank profitability, while the real interest rate has a negative effect.

Bourke (1989), based on the reported results of 90 out of the 500 largest banks in the developed countries of Europe and America for the years 1972-1981 and applying the method of regression, found a positive relation between profitability and capital adequacy, liquidity, interest rates and market concentration. In the same study he found a negative correlation of profits with personelle expenses to a lesser degree. Similar results regarding the relation between capital and profitability were shown in a study by Berger (1995), which examined the American market for the years 1983 -1989.

Demirguc-Kunt and Huisinga (1989), also applying the method of regression, found out that earnings are positively correlated with capital adequacy and the degree of inflation, indirect taxes, concentration as well as the level of per capita income. The same economists in another study (1998), while investigating the effect of the development factor in bank profitability, claimed that in countries where the financial system is less developed the banks' profit margins are higher.

Regarding interest rates Staikouras and Steliaros (1999) concluded that there is a positive relation between interest rates and bank profitability, as predicted by Samuelson. When interest rates fall profits increase and vice versa, due to the fact that deposit rates can be increased but funding rates are often fixed, thus decreasing the gap between them. The difference between short and long term interest rates increases at the end of a recession period and diminishes at the end of a development one. In countries with low inflation long term interest rates are constant (Hardouvelis, 1994).

Flannery, in two of his studies in 1981 and 1983 respectively, processed data for 15 large U.S. banks and found that long-term bank profits are not affected by changes in interest

rates, since this rise affects equally the financial income and the expenses of banks, ultimately balancing profits. In contrast, in the short run the rising of interest rates reduces profits.

Perry (1992) correlating profitability and inflation argues that if inflation is rising and banks change interest rates in time, it is likely for them to increase their profitability, while, if they delay, expenses will rise faster than revenues with a negative effect on profitability. Also, most researchers associate the low profitability of the banking system with regulation, mainly because of the mandatory deposits it requires, as well as the compulsory structure of the banks' portfolios.

In a study on the Greek banking system and the deregulation of the decade 1993-2002 (Chouliaras, 2009), it was found that there is a strong correlation between bank profitability and stock market boom and the spread and the loan–deposit ratio.

As far as the issue of banking efficiency in economies in transition is concerned there are different points of view, focusing on different. One popular approach has been the comparison of the efficiency of foreign owned banks to those of domestic ownership. In this aspect Berger (Berger et al, 2000) concludes that foreign owned financial institutions are less effective than domestic ones, a finding on which Miller and Parkhe (Milles S., Parkhe A, 2002) agree after conducting a broad study considering profit efficiency in fourteen different nations. On the other hand Bonin, (Bonin J.P. et al, 2004) argues that foreign owned banks are more cost – efficient than domestic ones and that they provide better service. The same conclusion is partially reached by Glaveli (Glaveli N. et al, 2006) considering the point of the bank service quality, in a study with evidence from five Balkan countries.

It is widely accepted that economies in transition undergo considerable deregulation, providing new opportunities to international financial enterprises and banks in particular. From this point of view the Greek banking system was the first to undergo such deregulation leading to extensive mergers and acquisitions which benefited the larger banks (Mantzaris J., 2008) and in turn led to their expansion in the Balkans. This was the natural thing to do according to Morck and Yeung (Morck R., Yeung B., 1991) who claim that operating abroad gives banks the opportunity to follow their customers. They also argue that multinational banks have the advantage of transferring intangible assets such as technology and reputation from the home country to the subsidiaries. This is consistent with Williams' (Williams B., 2002) "defensive expansion theory" which claims that such transfer is also possible; between subsidiaries. Hence, banks that operate abroad might be able to transfer resources such as technology or employees with increased skills and experience in terms of risk management, regulatory and reporting practices, gained from working in more sophisticated and advanced environments. Finally, Grigorian and Manole (Grigorian D.A., Manole V., 2002) conclude that the banking sectors in transition economies have experienced major transformations throughout the 1990s. While some countries have been successful in eliminating underlying distortions and restructuring their financial sectors, in some cases financial sectors remain underdeveloped and the rates of financial intermediation continue to be low. This was the case in the Balkan area, thus giving Greek banks the opportunity to cover that gap.

In their study of 12 Greek banks operating abroad during the period 1998 - 2001 Kosmidou and other researchers (Kosmidou et al, 2005) found that the profits of the subsidiaries operating abroad are related to the profits of the parent bank, the trade relations between Greece and the host country, the difference of the GDP growth between the two countries, the years operating in the host market and the time trend. The size of the subsidiaries was found to be related to the size of the parent bank, the trade the GDP growth, the years of operation and the time trend.
To examine the efficiency of the Balkan subsidiaries of Greek banks key ratio indicators, such as Return on Assets and Return on Equity were used. Based on the first one we concluded that efficiency (though gradually declining from 21% in 2007 to 12% in 2009) is considerably greater in the subsidiaries than in the parent banks (their ROA declined from 12% in 2007 to 2% 2009). The reasons for this change are attributed to two factors. The first factor is the greater leverage caused by the relation between loans and deposits. For the Balkan subsidiaries this relation varies from 1.13 to 1.19, while for the parent banks from 1.06 to 1.1. The second reason has to do with the differentiation in the level of interest rates. The ratio for interest income to total returns for the Balkan subsidiaries in the three years ranged from 8.8% to 10.1%, while in the parent companies it ranged from 4.6% to 6.1%. A third reason could be found in the spread between loans and deposits, but the relevant data was not available to examine. However, we conclude that the higher the level of interest rates, the greater the spread must be. Besides the ratio "financial results" (i.e. the difference between credit and debit interest) is almost double for the Balkan subsidiaries (ranging from 4.4% to 5.2%) compared to that of the parent banks (ranging from 1.8% to 2.2%). Finally, a hypothesis without supporting evidence is the opinion of efficiency differentiation because of lower level in wages and salaries in those countries.

A minor difference is observed in the ROE ratio which for all Balkan subsidiaries ranges from 11% to 19%, while for the parent banks is from 3% to 18%.

#### Findings by Bank Group:

#### - National Bank of Greece:

Efficiency is similar to what has been described above for all banks. The subsidiaries ROA is double (from 1.7% to 2.8%) of that of the parent bank (from 0.4% to 1.5%). Respectively the subsidiaries ROE ratio much in the same way ranges from 17.5% to 24.8% (percentages judged as too high, even without a benchmark) while the parent bank's ratio ranges from 4.9% to 15.8%. The causes of greater efficiency are also similar to those for all banks: a higher level of interest rates (0.154 to 0.188 versus 0.063 to 0.86), an increased loan-to-deposit ratio (from 1.004 to 1.215 versus 0.811 to 1.001) and possibly larger spreads (financial result to assets ranging from 0.056 to 0.069 versus 0.024 to 0.025).

At this point it should be noted the contribution of the Turkish subsidiary Finansbank with its efficiency ranging from 1.9 to 3%, which, because of its size in relation to the total, boosts overall efficiency. The reasons lie mainly in interest rate levels (which keep increasing over time) and not in leverage, which is similar to that of the parent bank. The United Bulgarian Bank also presents a higher efficiency, which however, is due mainly to greater leverage (from 1.437 to 1.679).

#### - Eurobank

Unlike all the banks, Eurobank's efficiency is not greater in its Balkan subsidiaries compared to that of the parent bank. However, it is interesting to see that efficiency declines faster in the parent bank than in its subsidiaries. Ceteris paribus, the reasons for this are found in the weaker link of the loans to the deposits, which for the subsidiaries ranges from 0.865 to 0.915 and from 0.917 to 0.980 for the parent bank. Furthermore, the Romanian subsidiary Bankpost presents an exception to this trend with its efficiency remaining steady.

#### - Alphabank

Alphabank is at the other end of the spectrum as far as the enhancing of the Group's profitability by its subsidiaries' contribution is concerned. Specifically, the Balkan subsidiaries not only do not contribute to the Group's efficiency but rather decrease it, mainly due to the operation at a loss of Srbija Alphabank and Skopje Alphabank. The performance of all subsidiaries ranged from -0.2% to 14% compared to the parent bank's that ranged from 0.6% to 11% respectively. This happens even though the relation of loans to deposits is considerably higher in the subsidiaries (1.650 to 2.141 for the subsidiaries and 1.186 to 1.511 for the parent bank). The situation appears somewhat better for the Romanian Postbank, the efficiency of which, although reduced from year to year, does not turn negative. The cause may lie in the different leverage of capital, which in this case is greater and therefore the subsidiary's ROE appears better than those of the other Balkan subsidiaries.

#### - Emporiki Bank of Greece

The Emporiki Group presents the opposite situation to that of Alphabank. While the profitability of the parent bank not only decreased but even became negative (from 0.2% in 2007 to -2% in 2009), the ROE of all its subsidiaries is positive and gradually increases (from 0.5% in 2007 reaches 2.1% in 2009). The satisfactory results are due solely to the Romania Emporiki Bank S.A. (it is negative for all other subsidiaries) whose ROA increased from 1.4% in 2007 to 10.1% in 2009. The greater efficiency is the result of the reasons described for all banks, meaning the better leveraging (ranging from 1.138 to 2.157 for the Romanian subsidiary as opposed to the parent bank's 1.036 to 1.402), the slightly higher interest rates (0.6 versus 0.5) and probably the improved spreads (financial results to total assets ranging from 0.027 to 0.038 for the subsidiary versus 0.018 to 0.028 for the parent bank).

#### - Bank of Piraeus

As in the previous case, the Balkan subsidiaries of the Group enhance its profitability. Specifically, the performance of all subsidiaries is consistently over 1% (from 1.2% to 1.8%) whereas the parent bank's performance has been reducing from 1.2% in 2007 to 0.4% in 2009. Excluding the Serbian subsidiary, all other subsidiaries are more efficient than the parent bank. The Bulgarian subsidiary's efficiency remained stable, while there was a gradual efficiency decrease for the Albanian one. However, the causes of efficiency for all banks and by bank do not hold true in the case of this particular group.

## 4. CONCLUSIONS

The dynamism of the deregulated Greek banking system and of the stock market boom at the end of the last decade offered the necessary funds for the expansion of Greek banks in several countries, particularly the Balkans. The expansion of Greek banks in the Balkan area has been noteworthy as they obtained significant market shares in some countries.

This paper attempts to investigate the feasibility of expansion of banks in these countries, by examining particularly their economic efficiency. To this end we have studied and analyzed the balance sheets of both the Greek parent banks as well as those of their subsidiaries and calculated the main performance indicators - ratios. The study was limited in finding the causes of differences in financial, not operational issues. The main conclusion is that, in general, and in most cases, the movements of the Greek banks were successful and that they had positive effects on their overall profitability and efficiency.

#### REFERENCES

- 1. Berger A. (1995) "The relationship between capital and earnings in banking" Journal of Money, Credit and Banking" Vol 27, No 2.
- 2. Berger A. (1994), T. Hannan "The efficiency cost of market power in the banking industry" Finance and economics discussion series. Federal Reserve System (U.S.).
- 3. Berger A., De Young R., Genan H., Udell G. (2000) "Globalization of Financial Institutions: Evidence from cross-border banking performance". Brooking –Wharton papers on Financial Service 3, pp.23-120.
- 4. Bonin J.P., Hasan I., Wachtel P., (2004) "Bank performance efficiency and ownership in transition countries". Journal of banking & Finance, Volume 29, Issue 1, pp 31-53.
- 5. Bourke P. (1989) "Concentration and other determinants of bank profitability in Europe, North America and Australia" Journal of Banking and Finance Vol 13 No 1.
- 6. Chatzidimitriou G.(1997) "Reasons and strategies internalizations and the Greek enterprises" in "Market without frontiers" Quarterly Review of International Economy and Policy" Issue 2. Sept-Nov.
- 7. Chouliaras V (2009)"The Greek Banking System in the Unified European Market", Thesis, Democritus University of Thrace, Komotini,
- 8. Commercial Bank of Greece (2006) "The Greeks and foreign banks in Southeastern Europe". In "Look in Economy" Issue 15. Nov-Dec
- 9. Demirguc-Kunt A., H.Huizinga (1999) "Determinants of commercial bank interest margins and profitability: some international evidence", The Word Bank Economic Review Vol 13, No 2.
- 10. Demirguc-Kunt A., H.Huizinga (1998) "Financial structure and bank profitability" World Bank Policy Research Working paper 2430.
- 11. Flannery M. (1983) "Interest rates and bank profitability" Journal of Money, Credit and Banking, vol 15 No 3.
- 12. Giannitsis T (1999) "The changing nature of internationalization of the Greek financial sector" στο "Modern banking in the Balkans and West-European capital in the nineteenth and twentieth centuries" Edited by K. Kostis, Ashgate.
- 13. Giannitsis T. (1982) "The foreign banks in Greece. The post-war experience" Gutenberg. Athens.
- 14. Glaveli N., Petridou E., Liassides C., Spathis C., (2006) "Bank service quality: evidence from five Balkan countries", Managing Service Quality, vol.16, ISS:4, pp380-394.
- 15. Goldberg L., A Rai (1996) "The structure performance relationship for European banking" Journal of Banking and Finance Vol 20.
- Grigorian D.A., Manole V., (2002) "Determinants of commercial bank performance in transition: An application of date envelopment analysis", Comparative Economic Studies, 2006, IMF Working Paper No.02/146, IMF Washington DC.
- 17. Hardouvelis G. (1994) "The challenge after the liberalization of markets" Bulletin of Hellenic Banks Association. 3rd Quart
- Kapopoulos P, Siokis F. (2002) "Market's structure, concentration and profitability in the European Banking System. An econometric study" Bulletin of Hellenic Banks Association. 1st quartester

- Kosmidou K., Pasiouras F., Tsaklaganos A., (2005) "Factors influencing the profits and size of Greek banks operating abroad: a pooled time-series study", Applied Financial Economics, 15:10, pp. 731-738.
- 20. Kouniakis S. (1997) "The Greek banking presence in the Balkans and The Black Sea Countries" Bulletin of Hellenic Banks Association. Sept.
- 21. Lidorikis A. (2005) "The Greek banks in the region of Balkans and Southeastern Europe" Bulletin of Hellenic Banks Association. 4th quart.
- 22. Mantzaris J. (2008) "Management of Businesses and Organizations", vol A, Giourdas Publications, Serres 2008.
- 23. Mantzounis D. (2005) "The extension of Greek Banks in the region of Southeastern Europe" Bulletin of Hellenic Banks Association. 4th quart
- 24. Miller S., Parkhe A., (2002) "Is there a liability of foreigness in global banking? An empirical test of banks x-efficiency", Strategic Management Journal 23, pp 55-76.
- 25. Morck R., Yeung B., (1991) "Why investors value multinationality", Journal of Business 64, 1991, pp.165-187.
- 26. Pattakos G. (1996) "Banks. Modernization through internationalization and mergers" Bulletin of Hellenic Banks Association. 2nd quart
- 27. Perry P. (1992) "Do banks gain or lose from inflation" Journal of Retail Banking no 14
- 28. Smirlock M. (1985) "Evidence of non relationship between concentration and profitability in banking" Journal of Money, Credit and Banking" Vol 17 No 1.
- 29. Staikouras C., M.Steliaros (1999) "Defining factors of profitability of greek banking institutions", Bulletin of the Hellenic Banks Association. 19-20/3rd and 4th quart, pp. 61-66
- 30. Stergiotis K. (1996) "The banks in Balkans" Special Edition of Ionian and Popular Bank.
- 31. Weiss R. (1974) "The concentration profits relationship and antitrust" in W. Goldschmid, J. Weston "Industrial concentration: The new learning" Boston 1974.
- Williams B., (2002) "The defensive expansion approach to multinational banking: evidence to date", Financ.markets Inst.Instrum.11, 2002, pp.127-203.

## TABLE : BALANCE-SHEETS AND RATIOS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
							ALL G	ROUPS						
2007	192268	287003	20082	171540	19179	10852	8328	4768	4002	0,017	0,237	1,12	0,029	0,06
2008	238502	333659	17638	202603	24405	14833	9571	3369	3597	0,010	0,191	1,17	0,029	0,07
2009	241801	349849	25342	206475	20306	10615	9689	1855	1346	0,005	0,073	1,17	0,028	0,05
						ALL PA	RENT (G	REEK)BA	NKS					
2007	157721	262518	16969	148329	15523	9621	5902	3058	2549	0,012	0,180	1,06	0,022	0,05
2008	194701	323491	14818	176683	19819	13454	6365	1032	676	0,003	0,070	1,10	0,020	0,06
2009	194310	335946	21095	179937	15509	9326	6193	602	215	0,002	0,029	1,08	0,018	0,04
						ALL BA	LKAN S	UBSIDIARI	ES					
2007	19944	29716	3357	16949	2612	1292	1437	628	553	0,021	0,187	1,17	0,048	0,08
2008	26054	38875	4019	21957	3860	2164	1697	628	549	0,016	0,156	1,18	0,044	0,09
2009	23671	36032	3768	20982	3651	1793	1869	427	370	0,012	0,113	1,12	0,052	0,10
						NATION	AL BAN	K OF GRE	ECE GRO	DUP				
2007	54693	90385	6470	60530	5736	2686	3051	1902	1644	0,021	0,294	0,90	0,034	0,10
2008	69898	101323	5972	67657	6941	3361	3580	1937	1584	0,019	0,324	1,03	0,035	0,09
2009	74753	113394	8453	71194	6552	2611	3940	1252	963	0,011	0,148	1,05	0,035	0,08
						PAREN	(GREE	K) BANK						
2007	39958	71059	6536	49259	3440	1630	1811	1032	915	0,015	0,158	0,81	0,025	0,08
2008	53440	83820	6434	56291	4066	2018	2048	633	480	0,008	0,098	0,94	0,024	0,07
2009	58129	91220	8224	58081	3677	1456	2231	403	225	0,004	0,049	1,00	0,024	0,06
TOTAL BALKAN SUBSIDIARIES														
2007	10982	15758	1796	9153	1695	819	876	445	391	0,028	0,248	1,20	0,056	0,15
2008	13929	19866	2193	11464	2232	1180	1052	389	337	0,020	0,178	1,21	0,053	0,16
2009	12534	19580	1952	12483	2358	1011	1347	342	303	0,017	0,175	1,00	0,069	0,18
						UNITED	BULGA	RIAN BAN	К					
2007	2508	3128	382	1745	195	54	141	105	94	0,034	0,275	1,43	0,045	0,07
2008	3434	3945	479	2045	303	125	178	111	99	0,028	0,231	1,67	0,045	0,08
2009	3318	4149	522	2165	326	130	195	46	41	0,011	0,088	1,53	0,047	0,09
						FINANS	BANK A	S.						
2007	7349	10965	1283	6847	1408	716	692	328	286	0,030	0,255	1,07	0,063	0,19
2008	9061	13677	1484	8648	1761	941	820	261	222	0,019	0,176	1,04	0,060	0,19
2009	7927	13326	1194	9212	1822	759	1063	293	260	0,022	0,246	0,86	0,080	0,23
						EUROB	ANK GF	ROUP						
2007	45638	68389	5359	36151	5980	3976	2004	1050	831	0,015	0,196	1,26	0,029	0,08
2008	55878	82202	4623	45656	7488	5103	2385	818	677	0,010	0,177	1,22	0,029	0,09
2009	55837	84269	6314	46808	5987	3646	2341	398	316	0,005	0,063	1,19	0,028	0,07
						PAREN	(GREE	K) BANK						
2007	37325	68272	3910	38939	5345	3874	1471	854	705	0,013	0,218	0,95	0,022	0,07
2008	43570	93065	3190	44467	6827	5291	1536	263	236	0,003	0,082	0,98	0,017	0,07
2009	42015	99856	3745	45807	5311	3979	1332	0	3	0,000	0,000	0,91	0,013	0,05
					TO	TAL (BAL	KAN) S	UBSIDIAR	IES					
2007	3058	6731	572	3484	484	261	223	84	75	0,013	0,147	0,87	0,033	0,07

2008	4474	8030	615	5169	828	533	294	95	82	0,012	0,155	0,86	0,037	0,10
2009	2750	4762	573	3007	468	304	165	22	18	0,005	0,038	0,91	0,035	0,09
						EURO	BANK TE	FKEN						
2007	407	1250	124	524	125	94	31	10	8	0,008	0,081	0,77	0,025	0,10
2008	505	1582	124	816	208	172	36	7	5	0,005	0,059	0,61	0,023	0,13
2009	612	1753	201	841	197	150	47	13	10	0,007	0,063	0,72	0,027	0,11
						EURO	BANK B	ULGARIA						
2007	1375	2208	221	1668	162	62	100	42	39	0,019	0,190	0,82	0,045	0,07
2008	1858	2714	239	1924	257	130	127	51	45	0,019	0,214	0,96	0,047	0,09
2009	2138	3010	373	2166	272	154	118	9	8	0,003	0,024	0,98	0,039	0,09
						BANK	POST							
2007	1277	3273	227	1293	198	106	92	32	29	0,010	0,142	0,98	0,028	0,06
2000	2110	3734	292	2429	303		IJZ		31	0,010	0,147	0,00	0,055	0,09
2007	12072	5/50/	//201	3/665	3406	1801	1605	085	851	0.018	0.23	1 21	0 020	0.06
2007	50704	65216	3940	42546	4406	2608	1798	625	513	0,010	0,20	1 19	0,023	0,00
2000	51300	69480	5973	42916	3875	2000	1762	502	391	0.007	0,100	1,10	0,020	0.05
2005	01000	00400	0010	42010	00/0 P	ARFNT ((	GREEK	BANK	001	0,007	0,004	1,10	0,020	0,00
2007	35267	54039	2740	23334	3106	1879	1227	613	457	0.011	0.224	1.51	0.023	0.05
2008	42189	66738	2369	33816	4118	2768	1350	395	334	0.006	0,167	1.24	0.02	0.06
2009	41810	67848	4775	35258	3339	1995	1344	567	428	0.008	0.119	1.18	0.02	0.04
					T	OTAL (BA	LKAN) S	UBSIDIAR	RIES	-,	-, -	, -	- , -	- ] -
2007	2540	2705	353	1546	201	118	, 198	37	33	0,014	0,107	1,64	0,074	0,07
2008	3114	5119	430	1888	349	218	131	43	40,7	0,008	0,1	1,65	0,026	0,06
2009	3950	5846	404	1845	362	211	162	-9	-14	-0,002	-0,02	2,14	0,028	0,06
						SRBIJ	A AD							
2007	223	478	93	305	32	14	18	2	2	0,005	0,023	0,73	0,038	0,06
2008	233	550	139	324	55	25	29	8	8	0,014	0,057	0,71	0,054	0,10
2009	387	691	117	80	38	25	12	-24	-26	-0,035	-0,21	4,85	0,018	0,05
						ROMA	NIA ALP	HA BANK						
2007	2237	2113	233	1181	162	102	176	34	30	0,016	0,146	1,89	0,083	0,07
2008	2742	4380	265	1483	283	187	96	37	34	0,008	0,14	1,84	0,022	0,06
2009	3459	5011	265	1706	311	181	142	18	15	0,004	0,068	2,02	0,028	0,06
0007	70	445	07	<u> </u>	0	SKOP.				0.040	0.055	4.04	0.044	0.05
2007	/9	115	27	60	6	2	4	1	1	0,013	0,055	1,31	0,041	0,05
2008	139	189	25	80	11	6	5	-1	-1	-0,009	-0,07	1,73	0,029	0,06
2009	105	145	22	59	13	5	8	-3	-3	-0,023	-0,15	1,77	0,056	0,08
					COMM	ERCIAL I	Bank of	GREECE	GROUP					
2007	19577	27208	880	18127	1395	644	751	46	25	0,002	0,052	1,08	0,028	0,05
2008	23710	30029	227	18364	1672	1023	649	-396	492	-0,013	-1,74	1,29	0,022	0,05
2009	22124	28426	1136	15494	1103	562	542	-583	-530	-0,021	-0,51	1,42	0,019	0,03
					P	ARENT (O	GREEK)	BANK						
2007	18408	26805	839	17767	1311	622	688	61	49	0,002	0,073	1,03	0,026	0,04
2008	22019	29655	201	17999	1578	996	581	-396	-487	-0,013	-1,97	1,22	0,02	0,05

2009	21111	28100	1113	15061	1032	530	503	-569	-587	-0,02	-0,51	1,40	0,018	0,03
					т	OTAL (BA	LKAN) S	UBSIDI	ARIES					
2007	317	413	49	190	22	9	13	1	0,9	0,005	0,039	1,66	0,032	0,05
2008	475	606	84	184	37	18	18	5,	5,2	0,009	0,062	2,58	0,031	0,06
2009	509	635	71	226	42	21	20	13	13	0,021	0,189	2,25	0,032	0,06
					/	LBANIA	EMPORI	KI BAN	K SA					
2007	141	171	19	75	9	4	5	1	1,1	0,008	0,074	1,88	0,033	0,05
2008	159	182	25	68	12	6	6	-0,6	-0,6	-0,004	-0,03	2,34	0,035	0,06
2009	178	211	28	79	14	7	7	-1,3	-1,5	-0,007	-0,05	2,26	0,037	0,07
					В	ULGARIA	EMPOR	RIKI BAN	NK SA					
2007	102	122	12	50	4	1	3	-1,2	-1,9	-0,01	-0,1	2,04	0,025	0,03
2008	206	241	20	65	12	6	6	-1,9	-1,9	-0,008	-0,1	3,16	0,025	0,05
2009	219	242	23	69	14			-3,4 K CROI	-3, <i>1</i> ID	-0,014	-0,15	3,17	0,032	0,06
2007	30288	46427	3082	22067	2662	17/15	03 DAN	785	651	0.017	0 255	1 37	0 02	0.05
2007	38312	5/880	2876	22007	3808	2738	1150	385	331	0,017	0,233	1,57	0,02	0,05
2000	37688	54280	3466	20000	2789	1684	1104	286	206	0,007	0,104	1,00	0,021	0.05
2005	07000	04200	0400	00000	2100	PAREN	T (GRFI	FK) BAI	NK	0,000	0,000	1,20	0,02	0,00
2007	26763	42343	2944	19030	2321	1616	705	498	423	0.012	0.169	1.40	0.017	0.05
2008	33483	50213	2624	24110	3230	2381	850	137	113	0.003	0.052	1.38	0.017	0.06
2009	31245	48922	3238	25730	2150	1366	783	201	146	0.004	0.062	1,00	0.016	0.04
					TOTAL	. (BALKA	N) SUBS	SIDIARI	ES	-,	-,	.,	-,	-,
2007	3047	4109	586	2576	211	85	, 126	59	52	0,014	0,101	1,18	0,031	0,05
2008	4061	5253	697	3252	414	214	200	95	84	0,018	0,136	1,24	0,038	0,07
2009	3927	5208	768	3421	421	246	175	60	50	0,012	0,078	1,14	0,034	0,08
						ROMA	NIA PIRA	EUS B	ANK					
2007	1001	1495	240	485	76	28	49	19	14	0,013	0,079	2,06	0,033	0,05
2008	1572	2306	282	973	212	114	98	49	41	0,021	0,172	1,61	0,043	0,09
2009	1523	2371	321	1268	228	163	65	26	19	0,011	0,081	1,20	0,027	0,09
						TI	RANA B	ANK						
2007	292	475	50	359	32	13	19	9	6	0,018	0,174	0,81	0,041	0,06
2008	385	573	70	372	43	20	23	11	9	0,019	0,158	1,03	0,04	0,07
2009	404	596	82	398	40	19	21	13	12	0,022	0,162	1,01	0,035	0,06
						BEOG	RADE PII	RAEUS	BANK					
2007	183	336	88	155	20	10	10	3	5	0,008	0,031	1,17	0,03	0,06
2008	248	298	107	89	28	11	18	3	2	0,01	0,028	2,78	0,06	0,09
2009	326	424	102	212	31	9	22	-6	-5	-0,013	-0,05	1,54	0,052	0,07
		COLL	JMN CO	NTENT :			•							
	1	Loans Total a	ecote				ð Q	Prof	it before ta	X				
	2	Total e	auity				9 10	ROA	11 101 1110 ye 4	a				
	4	Denosi	ts				11	ROF	Ē					
	5	Interes	t income	S			12	Loa	_ ns/deposits	;				
	6	Interes	t expens	es			13	Net	interest inc	ome/tota	l assets			
	7	Net inte	erest inc	ome			14	Inte	rest income	es/total as	ssets			

# **TEMPORARY EMPLOYMENT IN RUSSIA: WHY MOSTLY MEN?**<sup>1</sup>

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**Abstract:** The paper deals with temporary employment on the Russian labour market. The main focus is the gender differences of determinants for being temporary employed in Russia. The puzzle here is that Russia is completely different from European countries where women are most likely to have temporary work. The general question for the paper is why? The household survey of NOBUS (held in 2003 by State statistical centre with World Bank participation) is used to answer the question. The results of the survey prove that gender differences for the probability of temporary employment do exist and the main factors that explain these differences are education and marital status.

*Keywords:* temporary employment, gender, determinants of the probability, decomposition for gender differences

JEL Classification Code: J21, J41

#### **1. INTRODUCTION**

Temporary employment has considerably spread in Russia after the break down of the Soviet Union. If we compare the number of temporary workers with the number of unemployed in 2007 we will see that the former exceeds the latter. It is incredible but while the problem of unemployed is highly discussed the phenomenon of temporary employment was practically neglected by both scientists and policy makers.

Politicians are tend to perceive all employed as a homogeneous bulk of workers, but it is not so. Labour legislation for permanent and temporary employment is different. Moreover the employers' and employees' behavior is different due to the limited labour contract relations: employers do not invest in temps' training, pay less money and etc.; employees could work carelessly and be disloyal as they are not interested in accumulating specific capital. As previous research showed temporary workers are always paid less than permanent ones, they usually hold positions which do not require high education and qualifications, they face with uncertainty in the future and finally temporary workers could comprise social exclusion (Booth, et al, 2000; Gustafsson, et al., 2001; Booth, et al., 2002; Hagen, 2002; Graaf-Zijl, 2005).

The research of temporary employment is of great value for the state as it deals with many social problems. In order to make the appropriate social policy decisions in this field we need to understand the mechanism of temporary employment formation.

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Looking at the situation in the world, we could see that Spain, Mexico, Portugal and Turkey had the highest rate of temporary employment (more than 20%) in 2000 while Russia, USA, Poland, Slovakia and Ireland had the smallest one (about 4-5%) (see figure 1). The diversity continues later on but the leaders in share of temporary workers changed (see figure 2). For example Poland could be added to the leaders' list as more than 28% of its labour force work on temporary basis. Russia moved to the middle of the distribution and got such neighbors as Norway, Greece, Turkey and Iceland.

Males and females have different reasons for taking part in temporary work. In most western countries women tend to be more involved in temporary employment than men (see figure 3). Their motivation often links to small children, family problems, and a wish to work part-time (Boeri, Del Boca and Pissarides, 2005). For young men this temp work could be a chance to get a permanent job (Hubler and Hubler, 2006). Children and family are not of such importance for them while they make a decision to work on temporary contracts.

The dynamics of temporary employment in Russia is given in Figure 4. During the last 16 years the proportion of temporary employment has gradually increased from 2,5% in 1992 to about 12% in 2007 in Russia. Now more than 8 million people are working on temporary basis in this country. Russian men are constantly more engaged in temporary employment than women. In 2007 the rate of temporary employment was about 14% for men and almost 10% for women.

Many scientists interpret the problem of temporary work in terms of "bad" and "good" jobs then they consider temporary employment to be the former<sup>2</sup>. In this case women will have more chances to be engaged in precarious work, as they usually face with gender inequality in access to good and well-paid jobs. According to this approach it is possible to speak about gender discrimination in many European countries where women are overrepresented in temporary "bad" employment (Boeri, Del Boca, Pissarides, 2005; Tucker, 2002).

Could we speak about the absence of discrimination in Russia? Does the higher percentage of temporary employed men mean that women are not pressed out to bad instable jobs in the periphery<sup>3</sup> of the labour market? What determines the work on temporary contract? Are there any differences for men and women? These questions are to be covered in the paper.

The main goal of the study is to determine the factors of temporary work for men and women in Russia. The contribution of the paper is that it adds to the literature describing Russian extreme case and explaining this phenomenon. The paper has the following structure. The literature review goes in the next paragraph. The third paragraph is devoted to the data description and methodology. The fourth paragraph contains the discussion of the results. Finally I give the conclusions.

<sup>&</sup>lt;sup>2</sup> "While some workers engaged in non-standard work enjoy good incomes, job stability, adequate protections from health and safety risks in the workplaces and opportunities for training and development, many do not have such conditions. Many may be in '**precarious'** jobs, that is work with low wages, low job security, higher health and safety risks, little or no control over workplace conditions or hour of work, and limited opportunities for training and skill development. Evidence suggests that the former category is more likely to be self-employed or **temporary** workers" (Tucker, 2002)

<sup>&</sup>lt;sup>3</sup> See for example the theory of segmented labour markets in Doringer and Piore (1971) and Lindbeck and Snower (1988).

#### **2. LITERATURE REVIEW**

The problem for all researchers who focus on temporary employment issue is that there are no unique and standard definitions. Frequently authors explain what they mean by temporary employment in accordance with the available data in a country and it is always difficult to compare the results between different countries. Despite such a diversity of the definitions there are more or less clear norms of determining the temporary employment.

European Labour Force Survey (LFS) gives the following explanation of what *temporary employment* means: "A job may be considered temporary if employer and employee agree that its end is determined by objective conditions such as a specific date, the completion of a task or the return of another employee who has been temporarily replaced (usually stated in a work contract of limited duration). Typical cases are: (a) persons with seasonal employment; (b) persons engaged by an agency or employment exchange and hired to a third party to perform a specific task (unless there is a written work contract of unlimited duration); (c) persons with specific training contracts".

I follow the broader OECD definition that *temporary employment* is "*dependant employment of limited duration*". All other jobs are referred to as 'permanent' jobs. Temporary employment includes a great variety of types<sup>4</sup>:

- Fixed-term contracts, that have a specified duration or a predetermined ending date.
- Temporary agency workers, who are placed by a temporary work agency (TWA) to perform work at the premises of a third-party customer enterprise.
- Contracts for a specific task, a contract of work that lasts as long as is necessary to complete specified task.
- Replacement contracts, for example to replace workers on leave for family-related reasons.
- Seasonal work, taking place only at certain periods of the year (e.g. harvesting).
- On-call work, which is performed only on an as-needed basis.
- Daily workers, who are hired on a daily basis.
- Trainees, meaning apprentices and other workers with a training contact that qualifies them for a salary but does not guarantee them a permanent position at the end of the training period.
- Persons in job creation schemes, individuals hired under public programs to stimulate the employment of disadvantaged categories of workers (e.g. youth, the long-term unemployed, and the disabled), when these jobs are of limited duration.

So I determine **temporary employment as employment by explicit or implicit contract limited in time**. The available data I'm going to use allows marking out only three types<sup>5</sup> of temporary work in Russia. They are the following: fixed-term contracts, contracts for a specific task and oral-based employment.

Scientists use different approaches to identify factors that influence temporary employment in a country. The closest one for us is labour supply approach. For example such explanations of temporary employment growth as global changes and technological progress (Mills and Blosfeld, 2005; Auer, 2005), institutional factors (Scarpetta, 1996; Uzzi and Barsness, 1998; Cebian et al, 2000; Cahuk and Postel-Vinay, 2001; Lindbeck and Snower,

<sup>&</sup>lt;sup>4</sup> OECD Employment Outlook, 2002

<sup>&</sup>lt;sup>5</sup> The compared types of temporary employment according to OECD list with types of temporary work that could be identified in Russia are bolded and italicized.

2002; Olsen and Kalleberg, 2004; Kahn, 2007; Salladerre and Hlaimi, 2007) and labour demand factors (Uzzi and Barsness, 1998; Housman, 2001; Employment Outlook, 2002) are not in our focus as the available individual employees' data set does not allow us to test all these assumptions.

No doubts, technological progress and globalization have influenced Russian labour market as the structural changes took place in economy. The production sector has shrunk dramatically while services have grown considerably. Such sectors as construction, public administration sales and some others (where males occupy most positions) have raised their shares. Very strict Russian employment protection legislation<sup>6</sup> influences the percentage of the temporary employment as well. It is softened by bad law enforcement that causes the rise of temporary employment. So employers are interested in hiring temps in Russia as they could shorten labour costs in this way. Unfortunately these three blocks of explanations could not be checked within the paper because of the data I use.

The previous studies of labour supply approach illustrated that temporary workers are usually (except for UK) young and less educated people with lack of working experience (Polivka, 1996; Russo, Gorter, Molenaar, 1997; Booth, Francesconi, Frank, 2000; Hipple, 2001; Employment outlook, 2002, Valenzuela, 2003). The same conclusions were done by Salladerre and Hlaimi (2007), based on the European Social Survey. They claim that the younger the respondent is the more likely he/she will be a fixed-term employee, this supports the fact that temporary employment seems to become a stepping stone to a permanent job.

Many studies demonstrated that exactly women are more frequently associated with this kind of flexible labour arrangements (Hipple, 2001; Employment outlook, 2002; Boeri, Casey, Alach, 2004; Del Boca and Pissarides, 2005; Salladerre and Hlaimi, 2007). It is interesting that the birth of a child and change of marital status are the push factors to step into temporary employment (Wiens-Tuers and Hill, 2002; Boeri, Del Boca and Pissarides, 2005).

An episode of unemployment leads to a decline in the future probability to find an employment of unspecified duration, but raises the probability for temporary work (Chalmers, Kalb, 2000; Guell, 2000; Guell, Petrolongo, 2000; Booth, Francesconi, Frank, 2000; Salladerre and Hlaimi, 2007).

The most relevant publication for this paper was written by Boeri, Del Boca and Pissarides (2005). They hold the study for several European countries and analyzed temporary employment determinants from a gender perspective. They showed that males and females have different reasons to be temps. For instance, marital status, small kids and preference for shorter working hours were the main factors of temporary employment for women while they were not so important for men.

Unfortunately, the phenomenon of temporary work attracts not enough scientific attention in Russia. There are some highly valuable publications written by V. Gimpelson (2004, 2006, and 2007) and R. Kapelyushnikov (2001, 2006) on the topic of non-standard employment in Russia, but they do not cover the problem of determination of temporary work concerning gender dimension.

Taking into account all the existed research I suggest the following hypotheses to test for Russian case by regression analysis on the basis of the individual data set.

<sup>&</sup>lt;sup>6</sup> Permanent standard workers enjoy rather good protection in Russia: employers have to notice the employees about the redundancy in advance of 2 month; they also have to provide the severance pay to the redundant employees. At the same time the issue of temporary employment in Russia remains strictly regulated even after the New Labour Code of 2002 was introduces. However the list of cases when an employer could hire a temporary worker was broadened and self-employers were allowed to employ fixed-term contractors.

H1. It is statistically significant that the probability to be temporary workers is higher for men in Russia.

H2. Younger people are more likely to be temporary employees, as they do not have the necessary experience and acquired knowledge is not enough to get good well-paid permanent jobs. This is true both for men and women

H3. Employees with lower levels of education have better chances to be temporary workers. This is true both for men and women, but taking in account the fact that men are generally less educated than women enhances the influence of education factor for men.

H4. I assume that the number of small children will raise the probability to have a temporary contract especially for women. It is difficult for women to re-entre labour market after the child birth, as they face with the discrimination in access to good and well-paid jobs. So they more frequently agree to have less attractive temporary jobs. Such women could also work temporary because of the low level of their reserved wage rates.

H5. Having a spouse positively affects the probability of being temporary employee for men and negatively for women. Getting married men become more responsible and would agree to have any job to support their families. So in case they could not find a good permanent job, they would agree to be temporary workers. Women on the contrary will try to look for permanent job as they can afford to have a longer job matching period as they have the husbands' support.

In order to test these assumptions the empirical analysis is needed. Let me turn to the data description.

#### **3. DATA AND METHODOLOGY**

There are at least three data sets in Russia that could be used to investigate temporary employment. They are Labour Force Survey (LFS), conducted quarterly by the Rosstat; Russian Longitudinal Monitoring Survey (RLMS), hold yearly by the Institute of Sociology, Demoscope and HSE; and Household Survey of Social Welfare called NOBUS, conducted by the World Bank and Rosstat in 2003. Table 1 shows the advantages and disadvantages of these data sets. The possible identification of temporary workers and free access to NOBUS makes it the most appropriate for the research goals. However it is not a panel study. The Labour Force Survey has almost the same questionnaire as NOBUS, but unfortunately it is not officially opened.

The current research is based on the representative household survey NOBUS held by Russian Federal Statistical Service in Spring 2003. NOBUS consists of 117 thousand people and contains detailed information about many aspects of respondents' lives, including their labor market experiences, health and incomes. The part of the questionnaire about employment is taken from the Labour Force Survey, conducted by Rosstat.

The sample is restricted by the respondents' age (15-65 years old). The army people were also deleted from the sample as they comprised a small amount and were not under the focus. So the total number of employed equals to 46685 people, and almost 11% of them are temporary workers (see table 2)<sup>7</sup>. More than one third of temporary employees work without

<sup>&</sup>lt;sup>7</sup> NOBUS is rather representative for labour market in Russia. Comparing NOBUS with the data from LFS for 2003 we could see that the rates of temporary employment from these two sources are rather close to each other 11,8% (LFS data) and 10,8% (NOBUS data); the rates of temporary employment for men and women are also very much alike. LFS gives 13,5% for men and NOBUS shows 12,4%; the figures for females are 10,2% (LFS data) and 9.2% (NOBUS data)

written agreements, while the rest of them have fixed-term contracts or contracts for particular tasks.

The identification of the permanent and temporary workers is based on the four possible answers to the question about the respondents' type of hiring: 1) employment unlimited in time; 2) fixed-term employment; 3) contract for particular task; 4) oral-based employment. In accordance with this question I assigned individuals to one of the two categories: permanent employees or temporary workers. The temporary workers are those who answered that they are fixed-term contractors, contractors for particular tasks or hired by unwritten agreements.

After describing the structure of temporary employment I move step by step to reveal the differences of the probability to be a temporary worker for men and women in Russia. Firstly, I estimate probit regression model for all employed. Secondly, I assess this model adding the same variables multiplied by the female dummy. Thirdly, I apply the Fairlie decomposition technique for the probit model to identify and quantify the separate contributions to the gender differences. And the last step here was the estimation of the multinomial logit regression model (with 5 outcomes) separately for men and women.

Now let me dwell on each model that was used in more details.

1. The probit regression model of temporary employment for the total sample looks like this:

$$\Pr(Y_i = 1) = F(a + X_i * b + K_i * h + U_i * d + e),$$
(1)

Y is the dummy for temporary (=1) or permanent employment (=0).

a, h, b, d – vectors of coefficients,

Xi - set of personal characteristics of the respondent:

- dummy for sex (1 female, 0 male)
- dummies for five age groups of 10 years,
- dummies for three educational groups (lower than secondary, secondary + secondary professional, tertiary);

Ki – set of family characteristics:

- marital status (have a spouse -1; do not have a spouse -0);
- number of children under 1 year old
- number of children from 1 to 3 years old
- number of children from 4 to 6 years old

Ui – set of the local labour market characteristics:

- type of the settlement (urban or rural);
- level of regional unemployment
- dummies for regions (43)

2. On the second step I add the interactions of all the variables with female dummy (f) (1 – female, 0 – male) to the probit specification:

$$Pr(Y_i = 1) = F(a + X * b + K * h + U * d + f * X_i * b + f * K_i * h + f * U_i * d + e), (2)$$

This step allows us to see if there is any impact of the female dummy for the factors included into the equation.

3. Next I evaluate the Fairlie decomposition for the probit model described above to reveal the gender differences of temporary work. The most common approach for identifying and quantifying the causes of gender differences is the technique of decomposing inter-group differences in mean levels of an outcome into those due to different observable characteristics

across groups and those due to different effects of characteristics of groups<sup>8</sup>. Usually the technique is attributed to Blinder (1973) and Oaxaca (1973), but it requires coefficient estimates only from linear regressions and cannot be applied directly if the outcome is binary. I have probit regression model with binary outcome in the paper, that is why I use the Fairlie's method of decomposing for logit or probit models. It was firstly described by Fairlie (1999) for analysis of the causes of the back/white gap in self-employment rates<sup>9</sup>.

$$\overline{Y}^{W} - \overline{Y}^{M} = \left[\sum_{i=1}^{N^{W}} \frac{F\left(X_{i}^{W}\beta^{M}\right)}{N^{W}} - \sum_{i=1}^{N^{M}} \frac{F\left(X_{i}^{M}\beta^{M}\right)}{N^{M}}\right] + \left[\sum_{i=1}^{N^{W}} \frac{F\left(X_{i}^{W}\beta^{W}\right)}{N^{W}} - \sum_{i=1}^{N^{W}} \frac{F\left(X_{i}^{W}\beta^{M}\right)}{N^{W}}\right]$$

F - cumulative distribution function from standard normal distribution

X – row vector of independent variables

 $\beta$  – vector of coefficient estimates for gender

I assume that the most valuable factors that explain the gender difference of having a temporary contract in Russia are education, marital status and children. See the hypotheses described above.

4. The fourth step of the research analysis is aimed on solving at least two methodological problems of the probit model applied. Firstly, dealing with the probit regression I use only the sample of employed (those who are unemployed or non-active are not observed). So the selectivity problem rises up.

Secondly temporary workers are very heterogeneous group with different educational levels, qualifications and incomes. Taking this into account I divide the subsample of temporary employees into two parts: 1) fixed-term contractors plus contractors for particular tasks and 2) oral-based agreements. The preliminary statistical analysis showed that these two groups differ in wages, education and qualifications. Those jobs on oral agreement comprise the worst conditions of the informal sector: low payment, no social security, uncertainty and etc.

In order to tackle these two problems I estimate multinomial logistic regression which has five possibilities for the outcome: 1) permanently employed, 2) fixed-employed, 3) employed by oral-agreements, 4) unemployed and 5) non-active. It is done in order to see the difference for those in really "bad" informal sector of precarious jobs and for those who could have rather good, well-paid temporary jobs. But this step does not eliminate all the heterogeneity problems we have here.

The evaluation of the multinomial logit regression is made separately for men and women. The equation looks like:

$$P(y_{it+1} = j | y_{it} = 0) = f(x'_{it}\beta), j = 0,1,2,3,4$$

The reference category for comparison is permanently employed. The list of the independent variables is the same as I take for the probit regression model.

<sup>&</sup>lt;sup>8</sup> Farlie R. An Extention of the Blinder-Oaxaca Decomposition Technique to Logit and Probit Models. IZA Discussion Paper # 1917, January 2006

<sup>&</sup>lt;sup>9</sup> The thorough discussion of how to apply the non-linear decomposition technique is provided in Fairlie (2006).

#### 4. RESEARCH RESULTS

According to the NOBUS data of 2003 the rate of temporary employment for men (12,4%) exceeds the rate of temporary employment for women (9,2%); the same is true if we divide temporary employment into two parts: for the fixed-term contracts, 8,0% and 5,6% accordingly, and the oral-based agreements, 4,3% and 3,6%, (see table 2).

Table 3 shows the structure of Russian employment by gender and by such characteristics as education, professional group and industry. It is worth to emphasize that the level of education among employed Russian women is generally higher than that among employed men. About 57% of employed males take low qualified positions like graft workers, operators and etc, while only 27% of employed females are concentrated here. Such industries as agriculture, fishing, manufacturing, construction and transport are more popular among males. While the most part of employed women is engaged in public sector and trade.

Now let us turn to the statistics for temps. It is interesting that only 14,4% of temps have higher education, what is true both for men and women (see table 4). Only 20% of temporary workers occupy such positions as clerks and higher, all the rest are placed in low qualified positions. It means that temporary workers are less educated and less qualified. It allows us to suppose that men have better chances to become temporary workers in Russia as they have generally lower level of education lower professional qualifications than women. This could be additional illustration to the third hypothesis to explain why men are more likely to be temporary workers in Russia.

Turning to the industry structure of permanent and temporary employment in the table 4 we could see that most of the temporary employees are concentrated in trade (34,6%), budget sector (15,1%) and construction (12,7%). The biggest proportion of male temps work in trade (21%) and in construction (20,5%). Rather high percentage of them work in budget sector (14,5%) and agriculture (13,1%). Temporary employment covers jobs in those industries where men do prevail, such as construction, agriculture and public administration (except trade). So another assumption to explain the male predominance in temporary work is professional and industry segregation.

The results from the regression analysis are placed in table 5. The 1<sup>st</sup> specification includes such independent variables as gender, age, education, marital status, number of children, type of the settlement and regional unemployment rate. The second one consists of all the same variables plus interactions of each variable with female dummy.

Let me start with the brief description of the determinants of the temporary employment in Russia. According to the estimates of the probit regression model, the probability of being a temporary employee is higher for males than for females. Young, less educated employees tend to have more chances for temporary contracts. The possibility of temporary employment declines if a respondent has a spouse. In case a person lives in a city and there is high unemployment rate in a region than the probability to become a temporary worker increases.

The second specification (see table 5) shows us the differences of the determinants of temporary employment for men and women. By including the interactions with female dummy we get the effect of being a woman. Firstly, I should emphasize that influence of female dummy on the possibility of being a temporary worker remains constantly negative. Secondly, such factors as older age groups, marital status, number of very small children and type of settlement play different role for men and women in choosing the type of contract.

Russian males of 45-65 year old are less likely to be temps comparing with men from the middle age group. While Russian females on the contrary have better chances to be temporary workers in case they are older than 44 or younger than 35. The negative impact of

tertiary education for women becomes stronger. It means that my assumption that men are more likely to be temps because of a lower level of education proves to be true. Such a determinant as marital status becomes insignificant for women while the number of children of less than 1 year old and a type of settlement become significant and rather strong. Those females who live in the cities have higher possibility to work temporary. Women with small children are unlikely to have temporary contracts. So the 4<sup>th</sup> hypothesis about positive influence of small children didn't come true. This outcome is different from the previous research, done in other countries, where women tend to have temporary job in case they have small children (Boeri, Del Boca and Pissarides, 2005).

The results of Fairlie decomposition for temporary employment showed that gender difference equals to 0,031 (table 6). As it was expected one of the largest factors explaining this gender difference is education (about 11%) and another one is marital status (-13,4%). It is definitely important for women to have or not to have a spouse when they make a decision to work temporary. Married women are less likely to be temporary employees while married men on the contrary have better chances to work on temporary basis. This outcome speaks for the third hypothesis that having a spouse has different impact on the probability of temporary employed for men and women: positive for men and negative for women The regional unemployment rate and the number of small children in a family explain a small portion of the gender gap (2,5% and 1,5% correspondently). Finally, age and type of settlement explain virtually none of the gender gap. The decomposition revealed that group differences in all of the included characteristics explain roughly 29,5% of the gender gap in temporary employment. It means that unobserved characteristics which were not included into the model explain the rest part.

It is worth to mention once again that we deal with heterogeneity problem and sample selection bias here. That is why it is necessary to dwell on the results of the multinomial logistic regression with five possible outcomes. The reference category is permanent employment.

Russian men are more likely to have fixed-term employment (comparing with permanent one) in case of young age (up to 35 years old) and high regional unemployment rate (table 7). These are the only two factors which proved to be significant for males concerning the probability of fixed-term contracts. Dealing with oral-based agreements we have several more. Men in Russia tend to work on oral-based agreements if they are too young (up to 25 years old), less educated, have small children under 1 year old and in case of high regional unemployment rate. The probability for such informal employment decreases if a man has tertiary education or has a wife. This means that males with families tend to have permanent employment but not the most unstable oral-based work. So the determinants that are insignificant for more attractive fixed-contracts have rather strong influence on the probability for oral-based contracts (they are education, number of children less then 1 year old and marital status). I could suppose that family factors are important for men when they chose between permanent and informal employment but not when they chose between fixed term contracts and permanent ones.

The results of multinomial regressions slightly differ for women (table 8). Females of younger age (up to 34 years old) have higher probability to be fixed-term contractors or work on oral-based agreements then to be permanently employed. On the contrary women of older age (45-54 years old) would rather be permanently employed then have any type of temporary job. Like men only those women with primary education level tend to be employed on oral-based agreements. University diploma raises the probability to be permanently employed females. Having a spouse decrease the probability of being temporary employed, they would

rather be permanent employees. Women who have small children have lower chances to work on oral-based agreements. Such a result is close to those results for men. It is easier for a female to find a temporary job than a permanent one in case they live in the cities. The regional unemployment rate increases the possibility of working on oral-based agreement comparing to having a permanent job. We could see that the determinants of fixed-term contracts and oral-based agreements are very close for women unlike for men.

To sum up the results I should say that the probability to be a temporary worker in Russia is significantly higher for men than for women. It determines by such personal factors as young age, low level of education, marital status and number of small children. The most part of the observed gender differences is explained by education and marital status. Finally I'd like to emphasize that the results of all the models applied to explain the determinants of temporary employment for men and women in Russia go in line with each other. When I do multinomial regressions I have slightly different factors explaining the probability of being fixed-term contractors and working on oral-based agreements. This is true for both men and women.

### **5. CONCLUSIONS**

The paper was aimed at disclosing the determinants of temporary employment for men and women in Russia. It answers at least three main questions:

- 1. Who are the temporary workers in Russia?
- 2. What determines to be temporary employee for men and for women?
- 3. What explains the gender difference in these determinants?

Following the OECD definition I determine the temporary employment as **employment by an explicit or implicit contract limited in time**. About 12% of all employees in Russia have temporary contracts it means that they get almost no social security, suffer from the lack of career opportunities and receive smaller wages. More over temporary workers always feel uncertain about their future what could lead to the different social problems (for example low birth rates and etc), that is why it is very important to investigate the factors of the temporary employment growth in a country.

The statistical data provided by ROSSTAT show that the level of temporary employment has been constantly growing in Russia since 2000 and now it is around 14% for males and 10% for females. The temporary workers in Russia are mostly young, low educated and low qualified people working in construction, trade, public sector and agriculture. This finding is in line with the previous research in many other countries (Employment Outlook, 2002), while male predominance in the temporary employment is an extreme case.

Empirical analysis on Russian labour market allows giving the following explanations for this fact. Firstly, this could be caused by structural economic changes and industry segregation in the country: the majority of temporary workers are engaged in male industries such as public administration, fishing, construction and trade. Secondly, temporary employees in Russia as well as in many other European countries are less educated (usually they have only primary or secondary education) and have lower qualifications (they occupy nonqualified blue-color positions as a rule). Women in Russia have better education on average and occupy higher positions than men (except top management), that is why they have less chance to be temporary employed. Significant impact of education factor that was revealed in the regression models showed that this assumption could be true. Thirdly, it was showed that official or unofficial marriages increase the possibility of temporary employment for men and cut down for women. This finding is within the theoretical framework and does not go against the previous results.

On the whole the applied econometric model confirms the higher probability to work temporary for men. The determinants of temporary employment are different for men and women in Russia. With the help of Fairlie decomposition I assess the gender difference and found out that such factors as education and marital status explain the largest part of the gap. It is interesting that having small children decreases the probability of being temporary workers for women in Russia. While in many European countries exactly small children make women work on temporary basis.

To dwell on the practical contribution of the study I should mention that this research is the first attempt to investigate temporary employment in Russia. No doubts it will be the first ground to create the public, politic and scientific discussion on this topic. The deep analysis of the temporary employment determinants helps to disclose the mechanisms of "bad" jobs segment creation and income inequality growth among employed population concerning gender differences.

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#### REFERENCES

- 1. Gimpelson V.E. (2002) Temporary or non-permanent employment in Russia: data, rate, dynamics. Preprint, HSE, WP3/2004/02 (in Russian).
- 2. Gimpelson V., Kapelyushnikov R. (2006) Non-standard employment and Russian labor market. *Voprosi Economiki* 2006-01-31, cc.122-143. (in Russian).
- 3. Gimpelson V., Kapelyushnikov R. (2006) Nestandartnaya zanyatost v rocciskoi economike. Izdatelski dom GU-VSHE. (in Russian).
- 4. Kapelyushnikov R. (2001) Rossiski rinok truda: adaptaciya bez restrukturizacii. Moskva. GU-VSHE. 309 c. (in Russian).
- 5. Addison, J. And Teixeira, P. (2000) The Economics of Employment Protection. Bonn. Institute for the Study of Labour. Discussion Paper. October, No. 381
- 6. Auer P. (2005) Protected Mobility for Employment and Decent Work: Labour market security in a globalised world. Employment Strategy Papers ILO, #1.
- 7. Blanchard, O. and Landier, A., (2001) The Perverse Effects of Partial Labour Market Reform: Fixed Duration Contracts in France. National Bureau for Economic Research, Working paper. No. 8219.
- 8. Blinder A. (1973) Wage Discrimination: Reduced Form and Structural Variables. Journal of Human Resources. 8, 436-455.
- 9. Blossfeld H.-P., Klijzing E., Mills M. and Kurz K. (2005) Globalization, Uncertainty and Youth in Society. Routledge Taylor and Francis Group, London and New York.
- 10. Boeri T., Del-Boca D. and Pissarides Ch. (2005) Women at Work: an Economic Perspective, OXFORD UNIVERSITY PRESS.

- 11. Booth, A., Francesconi, M., Frank, J. (2000) Temporary Jobs: Stepping Stones or Dead Ends?. Bonn. Institute for the Study of Labour, Discussion Paper. October, No. 205, 41 p.
- 12. Booth, A., Francesconi, M., Frank, J. (2000) Temporary Jobs: Who Gets them, What are They Worth, and Do They Lead Anywhere? Working paper.
- 13. Booth, A., Francesconi, M., Frank, J. (2002) Labour as a Buffer: Do Temporary Workers Suffer? Bonn. Institute for the Study of Labour, Discussion Paper, December, No. 673, 26 p.
- Cahuk P. And Postel-Vinay F. (2001) Temporary Jobs, Employment Protection and Labor Market Performance. Bonn. Institute for the Study of Labour. Discussion Paper. February, No. 381, 40 p.
- 15. Casey, C., Alach, P. (2004) 'Just a temp?' Women, Temporary employment and lifestyle // Work employment and society, Volume 18(3): 459-480.
- Cebian, I and others (2000) Atypical Work in Italy and Spain: the Quest for Flexibility at the Margin in Two Supposedly Rigid Labor Markets. Kalamazoo, Michigan W.E. Upjohn Institute for Employment Research.
- 17. Chalmers, J. and Kalb, G. (2000) Are Causal Jobs a Freeway to Permanent Employment? Australia. Monash University, Department of Econometrics and Business Statistics. Working Paper. No.8
- 18. Doeringer, P. and Piore, M., 1971, Segmented Labor Markets and Manpower Analysis, Lexington, Mass.
- 19. Employment Outlook (2002) // OECD. Paris: OECD
- Graaf-Zijl M., 2005. Compensation of On-Call and Fixed-Term Employment: The Role of Uncertainty. *Tinbergen Institute Discussion Paper* No.120/3Guell M. (2000) Fixed-term Contracts and Unemployment: An Efficiency wage Analysis. Industrial Relations Section Working Paper. No. 433
- Guell, M and Petrolongo, B. (2000) Worker Transition from Temporary to Permanent Employment, Center for Economic Performance, London School of Economics, Discussion Paper, No. 438
- 22. Gustafsson, S., Kenjoh, E. and Wetzels, C., 2001, Employment Choices and Pay Differences between Non-Standard and Standard Work in Britain, Germany, Netherlands and Sweden, *Tinbergen Institute Discussion Paper* No. 086/3.
- 23. Farber H. (1993) Are Lifetime Jobs Disappearing? Job Duration in the United States:1973-1993. National Bureau of Economic Research Working paper No 5014.
- 24. Fairlie R. (1999) The Absence of the African-American Owned Business: An Analysis of the Dynamics of Self-Employment. Journal of Labour Economics. 17(1): 80-108.
- 25. Fairlie R. (2006) An Extention of the Blinder-Oaxaca Decomposition Technique to Logit and Probit Models. IZA Discussion Paper # 1917.
- 26. Ferber M. & Waldfogel J. (1998) The Long-term Consequences of Nontraditional Employment. Monthly Labor Review.
- 27. Hagen, T., 2002, Do Temporary Workers Receive Risk Premiums? Assessing the Wage Effects of Fixed-Term Contracts in West Germany by a Matching Estimator Compared with Parametric Approaches, *LABOUR*, 16, 4, pp. 667-705.
- 28. Hipple St. Contingent Work in the Late-1990s. (2001) Monthly Labor Review. pp. 3-27.
- 29. Hipple S. & Stewart J. (1996) Earnings and benefits of contingent and noncontingent workers. Monthly Labor Review.

- Houseman, S. (2001) Why Employers Use Flexible Staffing Arrangements: Evidence from an Establishment Survey, Indusrial and Labour Relations Review. Vo 1 55, No. 1, pp 149-170.
- Hubler D., and Hubler O. (2006) Is There a Trade-off Between Job security and wages in Germany and the UK? Bonn. Institute for the Study of Labour, Discussion Paper. No. 2241, 31 p
- 32. Kahn L. (2007) Employment Protection Reforms, Employment and the Incidence of Temporary Jobs in Europe: 1995-2001. IZA Discussion Paper No.3241.
- 33. Kalleberg A. Nonstandard Employment Relations: Part-time, Temporary and Contract Work. *Annual Review of Sociology*, Vol. 26 (2000), pp. 341-365.
- Kalleberg A., Reskin B. and Hudson K. (2000) Bad Jobs in America: Standard and Nonstandard Relations and Job Quality in the United States. *American Sociological Review*, 65, pp. 256-78
- 35. Lindbeck, A. and Snower, D.J., 1988, *The insider-outsider theory of employment and unemployment*, MIT-Press, Cambridge/Mass. and London
- 36. Lindbeck, A., Snower, D. (2002) The Insider-Outsider Theory: a Survey. Bonn. Institute for the Study of Labour. Discussion Paper, No. 534, 54 p.
- 37. Neumark D. (2000) Changes in Job Stability and Job Security: a Collective Effort to Untangle, Reconcile, and Interpret the Evidence. National Bureau of Economic Research, W.P. 7472, Cambridge
- 38. Oaxaca R. (1973) Male-Female Wage Differentials in Urban Labour Markets. International Economic Review. #14, 693-709.
- 39. Olsen K. and Kalleberg A. (2004) Non-standard work in two different regimes: Norway and the United States. Work, employment and society, Vol. 18(2), pp 321-348.
- 40. Polivka AE. (1996) Contingent and alternative work arrangements, defined. Monthly Labor Review, 119 (10), pp. 3-9.
- 41. Polivka AE., Nardone T. (1989) On the definition of 'contingent work'. Monthly Labor Review, 112 (12), pp. 9-16
- 42. Russo, G., Gorter, C., Molenaar, D. (1997) Temporary Jobs and Temporary workers. Labour Region and Environment, Tinbergan Institute. Working Paper, No.133/3
- 43. Salladarre F. and Hlaimi B. (2007) Analysis of the Determinants of Temporary Employment in 19 European Countries, working paper in progress
- Scarpetta, S. (2000) Assessing the Role of Labour Market Policies and Institutional Settings on Unemployment: A Cross-Country Study. *OECD Economic Studies*. 1996. No. 26, pp 43-98
- 45. Termination of Employment Digest. Geneva: ILO.
- 46. Tucker D. (2002) 'Precarious' Non-Standard Employment a Review of the Literature. Working paper of Labour Market Policy Group. // <u>www.futureofwork.govt.nz</u>
- 47. Uzzi B. and Barsness Z. (1998) Contingent Employment in British Establishments: Organizational Determinants of the Use of Fixed-Term Hires and Part-Time Workers. Social Forces, Vol. 76, No3, pp 967-1005.
- 48. Wiens-Tuers B.and Hill E. (2002) How Did We Get Here from There? Movement into Temporary Employment. Journal of Economic Issues, Vol. XXXVI No.2.
- 49. Valenzuela A. (2003) Working Day Labour: Informal and Contingent Employment. Center for Study of Urban Poverty. Paper under Review.

Table 1. The comparison of the Russian data sets for labour statics. Dr. 5, REMD and RODOR	Table	1.	The com	parison	of the	Russian	data sets	for labour	studies:	LFS,	RLMS	and NO	BUS
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	LFS	RLMS	NOBUS
Representative for Russia	+	+	+
Related question for identification of a			
temporary employee	+	-	+
Panel survey	-	+	-
Any retrospective information about job	-	-	-
Free access to the data	-	+	+

Table 2. The number, rate and structure of employment types by gender, NOBUS data, 2003

Type of employment	Number of	% of all employ	Num observ	ber of vations	Rate		Structure		
	observat ions	ed (NOBU S Data)	Women	Men	Women	Men	Women	Men	
Total		100							
employment	46685								
Permanent	41686	89,3	22267	19419	90,8	87,6	53,4	46,6	
<b>Temporary:</b>	4999	10,8	2257	2742	9,2	12,4	45,1	54,9	
Fixed-term	3144	6,8	1363	1781	5,6	8,0	43,4	56,6	
Oral-based	1855	4,0	894	961	3,6	4,3	48,2	51,8	

Table 3. The structure of employment by gender and education, professional qualification and	d
industry, %, NOBUS data, 2003	

	Women	Men
Education		
Primary	27,1	37,1
Secondary	48,4	44,2
Tertiary	24,5	18,6
Professional groups		
Senior managers	2,1	4,5
Professionals	17,7	11,0
Technicians	24,8	14,8
Clerks	9,5	1,7
service workers	18,4	10,8
Skilled agricultural workers	2,3	6,9
graft workers	7,8	25,4
Operators	3,1	10,7
Elementary occupations	14,3	14,1
Industry		
Agriculture, hunting, forestry and fishing	6,5	12,8
Mining, quarrying and manufacturing	14,3	21,3
Electricity, gas and water supply	2,4	5,4
Construction	2,9	11,3
Wholesale and retail trade; repair of motor vehicles,		
motorcycles and personal and household goods, hotels and		
restaurants	16,6	8,4
Transport, storage and communications	6,0	13,3
Financial intermediation, real estate, renting and business		
activities	2,9	1,8
Public administration and defense; compulsory social		
security, education, health, social work, other community,		
social and personal service activities	39,7	17,6
Other activities	8,6	8,1

	]	Permanen	t	Temporary			
	total	men	women	total	men	women	
Education							
Primary	30,8	36,2	26,1	40,3	43,2	36,7	
Secondary	46,5	44,5	48,3	45,3	42,4	48,9	
Tertiary	22,6	19,2	25,6	14,4	14,4	14,4	
Professional groups							
Senior managers	2,8	3,4	2,3	1,6	2,3	0,7	
Professionals	15,8	12,2	18,7	6,2	5,6	6,8	
Technicians	21,6	16,2	26,2	10,8	10,7	11,0	
Clerks	6,0	1,8	9,7	4,4	1,8	7,4	
Service workers	12,9	9,3	15,9	27,6	13,0	44,3	
Skilled agricultural workers	4,2	6,4	2,4	3,3	4,8	1,5	
Graft workers	16,9	27,3	8,0	14,0	21,3	5,6	
Operators	7,1	11,7	3,2	4,5	7,2	1,4	
Elementary occupations	12,7	11,7	13,6	27,7	33,2	21,4	
Industry							
Agriculture, hunting, forestry and							
fishing	9,5	12,8	6,6	9,8	13,1	5,9	
Mining, quarrying and manufacturing	18,6	22,9	14,9	9,5	10,6	8,2	
Electricity, gas and water supply	4,1	5,9	2,5	1,6	1,7	1,5	
Construction	6,2	10,0	2,9	12,7	20,5	3,2	
Wholesale and retail trade; repair of							
motor vehicles, motorcycles and							
personal and household goods, hotels							
and restaurants	10,1	6,7	13,1	34,6	21,0	51,0	
Transport, storage and							
communications	9,8	13,9	6,3	6,4	8,9	3,4	
Financial intermediation, real estate,							
renting and business activities	2,5	1,8	3,0	1,7	1,7	1,7	
Public administration and defense;							
compulsory social security, education,							
health, social work, other community,		10.0				1.50	
social and personal service activities	30,9	18,0	42,1	15,1	14,5	15,8	
Other activities	8.3	8.1	8.5	8.6	8.1	9.3	

Table 4. The structure of temporary/permanent employment by education, professional<br/>qualification and industry in Russia, %, NOBUS data, 2003

Table 5. Determinants of the temporary employment in Russia, marginal effects of<br/>probit regression model, specification 1, NOBUS data, 2003

Total temporary employment	Specif	ication 1	Specification 2 (*female)		
i otar temporar y empioyment	Marg. ef.	St. er.	Marg. ef.	St. er.	
Female (0- be male, 1 - be female)	-0,029***	0,003	-0,064***	0,012	
15-24 years old	0,071***	0,006	0,040***	0,008	
25-34 years old	0,025***	0,004	0,013**	0,006	
35-44 years old					
45-54 years old	-0,033***	0,004	-0,040***	0,005	
55-65 years old	-0,020***	0,005	-0,034***	0,007	
Primary level of education	0,026***	0,003	0,021***	0,004	
Secondary level of education					
Tertiary level of education	-0,029***	0,003	-0,014***	0,005	
Being married/cohabiting	-0,032***	0,004	-0,030***	0,006	
Number of children of 1 and less years old	0,002	0,007	0,019**	0,009	
Number of children from 2 to 3 years old	-0,003	0,006	0,004	0,008	
Number of children from 4 to 6 years old	0,002	0,005	0,003	0,007	
Living in the city	0,015***	0,003	0,006	0,004	
Regional unemployment rate	0,002***	0,000	0,002***	0,001	
15-24 years old*female dummy			0,060***	0,013	
25-34 years old*female dummy			0,024***	0,009	

35-44 years old*female dummy			
45-54 years old*female dummy		0,017**	0,009
55-65 years old*female dummy		0,040**	0,016
Primary level of education*female		0.010	0.007
dummy		0,010	0,007
Secondary level of education*female			
dummy			
Tertiary level of education*female		0 020***	0.007
dummy		-0,020	0,007
Being married/cohabiting *female dummy		-0,006	0,007
Number of children of 1 and less years		0 010***	0.015
old*female dummy		-0,040	0,015
Number of children from 2 to 3 years		0.021*	0.012
old*female dummy		-0,021	0,012
Number of children from 4 to 6 years old		-0,005	0,010
Living in the city*female dummy		0,020***	0,007
Regional unemployment rate*female		0.001	0.001
dummy		0,001	0,001
Control for regions	yes	У€	es
Number of observations	45 357	45	357
Pseudo R2	0,045	0,0	)48
note	e: *** p<0.01, ** p<0.05, * p<0.1		

Table 6. Results of Fairlie decomposition of gender di	lifferences for the probability of being
temporary employed in Russia, N	NOBUS data. 2003

Total gender difference	0.031583					
Explained gender difference	0,002044					
Pr(Y!=0 G=0) =	0,123404					
Pr(Y!=0 G=1) =	0,091821					
Total number of observations	45357					
Number of observations (male)	21539					
Number of observations (female)	23818					
	Coefficient	Stand. Er.	%			
Age	-0,00016	0,000647	-0,5			
Education	0,003438	0,000859	10,9			
Being married/cohabiting	-0,0042227	0,0008511	-13,4			
Number of children of 1 and less years old	0,0004726	0,0002315	1,5			
Number of children from 2 to 3 years old	0,0000312	0,0000566	0,1			
Number of children from 4 to 6 years old	-0,0000174	0,0000353	-0,1			
Living in the city	-0,0001551	0,0001186	-0,5			
Regional unemployment rate	0,0007857	0,0001395	2,5			
All included variables			29,5			
Control for regions	yes	yes	yes			

## Table 7. Coefficients of multinomial logistic regression for men in Russia, NOBUS data, 2003

Based category – be permanently	Fixed-term contracts		Oral-based agreements		Unemployment		Non-activity	
employed	Coeff.	St. er.	Coeff.	St. er.	Coeff.	St. er.	Coeff.	St. er.
15-24 years old	0,478***	0,093	0,215*	0,116	0,296***	0,090	0,478***	0,093
25-34 years old	0,255***	0,073	-0,059	0,099	-0,045	0,080	0,255***	0,073
35-44 years old								
45-54 years old	-0,459***	0,078	-0,495***	0,103	-0,062	0,077	-0,459***	0,078
55-65 years old	-0,334***	0,117	-0,594***	0,178	-0,361***	0,138	-0,334***	0,117
Primary level of education	0,051	0,057	0,403***	0,071	0,487***	0,057	0,051	0,057
Secondary level of education								
Tertiary level of education	0,090	0,071	-0,896***	0,140	-0,404***	0,095	0,090	0,071
Being married/cohabiting	-0,091	0,074	-0,611***	0,096	-0,962***	0,072	-0,091	0,074

Number of children of 1 and less years	0,091	0,113	0,404***	0,139	0,182	0,131	0,091	0,113
Number of children from 2 to 3 years old	0,021	0,101	0,083	0,139	0,028	0,117	0,021	0,101
Number of children from 4 to 6 years old	0,040	0,085	-0,005	0,115	0,119	0,089	0,040	0,085
Living in the city	0,102	0,063	-0,039	0,077	-0,370***	0,056	0,102	0,063
Regional unemployment rate	0,029***	0,010	0,037***	0,011	0,078***	0,007	0,029***	0,010
Control for regions								
Constanta	-2,844***	0,139	-2,991***	0,166	-2,504***	0,117	-1,120***	0,077
Number of observations	33 428							
Pseudo R2	0,165							

## Table 8. Coefficients of multinomial logistic regression for women in Russia, NOBUS data, 2003

Based category – be	Fixed-term contracts		Oral-based		Unemployment		Non-activity	
employed	Coeff	St.er	Coeff	St er	Coeff	St.er	Coeff	St.er
15-24 years old	0.940***	0.092	0.772***	0 111	0.914***	0.083	2.202***	0.043
25-34 years old	0.383***	0.085	0.430***	0,101	0.307***	0.076	0.434***	0.045
35-44 years old	0,000	0,000	0,100	0,.01	0,001	0,07.0	0,101	0,010
45-54 years old	-0.214**	0.086	-0.449***	0.108	-0.078	0.075	0.375***	0.041
55-65 years old	0,183	0,130	-0,309*	0,186	-0,820***	0,185	2,902***	0,046
Primary level of education	0,016	0,068	0,545***	0,075	0,505***	0,056	0,970***	0,028
Secondary level of education								
Tertiary level of education	-0,297***	0,077	-1,168***	0,133	-0,706***	0,088	-0,817***	0,043
Being married/cohabiting	-0,312***	0,065	-0,402***	0,082	-0,144**	0,061	-0,090***	0,029
Number of children of 1 and less years old	0,032	0,156	-1,091***	0,322	-0,048	0,152	0,879***	0,067
Number of children from 2 to 3 years old	-0,003	0,118	-0,226	0,167	0,167*	0,100	0,192***	0,060
Number of children from 4 to 6 years old	-0,055	0,100	0,169	0,109	0,061	0,082	-0,116**	0,050
Living in the city	0,199***	0,073	0,441***	0,090	-0,292***	0,056	-0,334***	0,029
Regional unemployment rate	0,002	0,014	0,034***	0,007	0,068***	0,006	0,055***	0,005
Control for regions								
Constanta	-3,068***	0,155	-3,767***	0,154	-3,202***	0,110	-1,955***	0,063
Number of observations	41 031							
Pseudo R2	0,190							



Figure 1. Temporary employment in 2000 in OECD countries and Russia (% of total number of employees) Sources: OECD Employment Outlook 2002, Russian LFS



Figure 2. Temporary employment in 2000 and 2007 in European Countries and Russia (% of total number of employees)

Sources: European LFS (Eurostat data on line) and Russian LFS http://epp.eurostat.ec.europa.eu/tgm/graph.do?tab=graph&plugin=1&pcode=tps00073&language=en&toolbox=s ort





Sources: Boeri, Del Boca and Pissarides (2005); the figures for Russia were estimated and added by the author on the basis of LFS data.





Source: authors calculations on LFS data, provided by Rosstat

# THE SOCIAL CAPITAL AS BASIS FOR DEVELOPMENT OF THE HUMAN CAPITAL

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Abstract: The strong side of the "theory about the human capital" is that it redefines the labour of hired workers in the developed countries. The workers become capitalists in the sense that they acquire a lot of knowledge and skills which have an economic preciousness. As an outcome from the "capitalisation" of acquired knowledge and skills, one will not meet on the labour market "hired workers and capitalist undertakers, but two autonomous groups of "capitalists", each of them realising an undertaking behaviour in the market relations. We are witnesses of crash in ideas and paradigms about the world, the world's development, and the tendencies which determine this development. Is there a relation between the economic growth and social development today? Do the three generators of development work – the technologies, institutions and values? Where is the place of people in the process as individuals, as groups, as teams, as society in general? Here are some questions we will be looking an answer for, in our study.

*Keywords:* social capital, structure of the integral capital, content of the social capital, human capital, essence of the human capital, economic growth.

JEL Classification Codes: A12, D83, J24, P16, Z13.

### **INTRODUCTION**

The basic idea we are using as authors is that the term "capital" is to be implied broader and more thoroughly. The knowledge gathered about essence and functions of capital allow us to define a generalizing category such as "**integral capital**". It in turn has a complex structure including a number of capital components, as well as the interactions, interdependences and reciprocities between them. In references the following capital components have already been specified for sure: "*physical capital*", "*human capital*", "*social capital*", *information capital*".

The main reason which most often prevents the reaching of an optimal /uttermost/ condition of a particular national economy is namely the *hesitant, marketeering type* of development and manifestation of the elements of **integral capital**. It concerns the three main types of capital within the overall structure of national integral capital – *physical, human and social* capital. Their combination in terms of time and place is dynamic and changeable. The differences in terms of range, depth and abrupt changes of fluctuations in the accumulation and development of each of the capital components preconditions *contingent periods of* 

accumulation of the ascending sections of the oscillatory curves, which can create conditions for economic prosperity and welfare.

The reaching of sustainability and permanence of growth and economic development is a *short-term phenomenon* and holding it in the long term requires an exceptionally **active**, **adaptive economic policy.** It presupposes good knowledge of the "cycle" of any of the capital components and adequate "anti-cyclic" policy for suppressing the negative effects from the "descending" phases of the oscillations in the manifestation and the scope of capital substructures – physical, human and social capital.

If we assume that the length of the cycle of "physical capital" is determined by the "life cycle of technologies", it shall have life expectancy of about 40 years. This is the statistically proven life expectancy of a technology.

Cyclicity of "human capital" is determined by a complex of factors and among them the leading ones are "average life expectancy" and "demographic growth", educational infrastructure and the cognitive capacity of individuals. At an average life expectancy of about 80 years we can assume that the range of the cycle of "human capital" is nearly two times bigger than the one of "physical capital".

Of course, the considered cyclic manifestations are mainly hypothetical. It is not rare that investments in "human capital" turn out to be irretrievable. Mass epidemics, political cataclysms (wars, hostilities, revolutions, etc.) become the reason for the perishing of thousands and even millions of people. With their death a considerable amount of "human capital" which has been accumulated in a preceding historical period is lost.

With "human capital" a tendency towards shortening the period of efficient use is observed. There are even theories which explain that human capital is productive only up to a certain, almost youthful age (30-35 years of age) and after that it turns into non-productive. At the same time the period for preliminary preparation (accumulation) of "human capital" grows. In terms of time, the time for training grows at the expense of diminishing the time during which the individual applies his/her knowledge. What is more, today it is not possible with only one education in youthful age to maintain "human capital" in productive and creative capacity (condition) until the time of loss of labour capacity because of old age.

From time to time it is necessary the individuals to leave the business sector or the nonprofit sector in order to supplement their studies or to re-qualify, in order to return to the working environment and after that, in particular periods of time, this minicycle "education – work" is repeated again. The reason for this "intermittent" cyclicity of development of "human capital" is the quick moral aging of knowledge, as well as the quick amortization of social needs from one or another type of benefits, services or experiences.

#### **1. GENERAL CONCEPT OF SOCIAL CAPITAL**

The term "social capital"<sup>1</sup> was used first by Linda Judson Hannifan when describing the educational centers in the village municipalities in 1916. It was in the 1970s that the term was first used by an economist. That was the economist Glen Laurie, who described with this concept the "absence of small businesses among the black people".

<sup>&</sup>lt;sup>1</sup> Actually, Biome-Baverk used the term "social capital" much earlier than the second half of the 19<sup>th</sup> century, but with another conceptual content. The distinguished representative of the Austrian subjectivist economic school considers "social capital" as "means of production", which in their capacity of "intermediate products" have their place between labour and nature and lead to a new quality of production method defined by Baverk as a capitalist method. (See Demostenov, S.S. Theoretical Political Economy. – part II. – Sofia: "St. Kliment Ohridski", 1991, p. 452.

The greatest merit for the wide use of the term "social capital" in the period after the 1980s goes to the sociologist James Coleman and the political scientist Robert Putnam.

Robert Putnam defined "social capital"<sup>2</sup> as "characteristics of the social organization such as trust, norms and structures, which can improve the efficiency of society by facilitating the coordinated efforts". (Putnam, R., 1993)

Francis Fukuyama, in his turn, defines "social capital" as a "capacity arising when trust prevails in society or in part of it. It could be epitomized in the smallest social group, the family, as well as in the largest of the groups – the nation and all the other groups in between." (Fukuyama, F., 1997)

"Social capital", Fukuyama writes, "*produces wealth and therefore has economic value* (our italic – MT; JA) for the national economy. Besides, it is a prerequisite for all forms of group activity in contemporary society, from managing the local drugstore to lobbying in the Congress to raising children."(Fukuyama, F., 2001)

In the "Age of Access", Jeremy Riffkin provides arguments for the thesis that "social capital" is created in the cultural sphere and that each infringement on culture is infringement on the natural environment of business development, characterized by trust, mutual help, support, sustainable interpersonal relations and sense of belonging to a particular social entity or group: "People establish communities, they elaborate complex codes of social behaviour, they reproduce common meanings and values and develop social trust in the form of social capital" (Riffkin, J., 2001), as Riffkin explicates.

Social capital together with physical and human capital forms the overall, integral capital of a society. Therefore, social capital is a basic structural element within an integral capital structure.

Unlike "physical capital", which could be object of individual, group or public property, "human capital" may be individual property only. "Social capital" could not be subjected to such type of relations and institutionalizing as "one's own property" of an individual, group or society. It is usually assumed that it has national projections, yet it is perhaps more reasonable to acknowledge the "culture-based projections" of the phenomenon "social capital".

#### 2. CONTENT AND SCOPE OF SOCIAL CAPITAL.

Social capital is a complex integral category. It includes various types of ingredients in its scope and content. There are both quantitative and qualitative components comprised therein. The majority of them are subsystems. That would prompt us that we may apply for part of the ingredients also the system approach in the analysis of the social capital. The scope of the social capital comprises:

- the level of trust between the economic agents themselves and between them and the institutions;

<sup>&</sup>lt;sup>2</sup> In Prof. S.S. Demostenov's view, "social capital" is comprised in the "intermediate products" which are created as a result of the direct production (the combination of labour and land). These "intermediate products" are means of production. They are intermediate according to Prof. Demostenov, since they stand between man and nature. This thesis was taken from Biome-Baverk's book "Capital and Capital Income". Baverk calls the "intermediate products" (the means of production) "social capital" from the "viewpoint of the social entity, or in other words, from the viewpoint of the whole human race." That is a surmise on the largely "global dimensions and manifestations" of the "social capital", although Baverk substitutes it, or at least mingles it with physical capital (See Demostenov, S.S. Theoretical Political Economy. – part I. – Sofia: "St. Kliment Ohridski", 1991, p. 299.)

- the institutional establishment of a national and regional-integrated economy;
- the level of the achieved law and order and on a national scale;
- the abilities of the representatives of a particular nation to form associations for the attainment of various pragmatic goals;
- the development of collectivism and mutual support between the people of a particular nation or integrating community.

The nature and forms of manifestation of "social capital" have their relation and direct connection to the nature and content of contemporary money. Investment in social capital, at the same time, is largely related to expenditure of money. For example, establishing various institutions maintaining law, order and security, incentives for the economic activity of the households and the individuals, etc.

As it was made obvious from the abovementioned ingredients of social capital, part of them can be measured in quantitative terms. For example, the level of trust in society or the relative share of voluntary labour within the total value of labour in a particular economy. Some other elements of social capital such as the system of positive values or the role of traditions and common law are difficult to be evaluated in quantitative terms. That means that we cannot construct a precise and adequate mathematical apparatus to evaluate social capital. With physical capital we can rely on the accounting valuation of assets. When measuring the value of human capital, we can use for the evaluation the value of the financial investment in human capital. For greater level of precision, we can add the amount evaluation of investment in time through the value of the alternative applications of the time factor.

The social capital depends on an enormous complex of factors and above all on the factor of "*time*". Social capital consists (also) to a great extent of traditions, morals, beliefs, customs, habits, from the formed, as a result from the hundreds of years old, and not rarely, of thousands of years old folk psychology, with its idiosyncratic stereotypes, shaped personal qualities, values, moral, ethics and aesthetic perceptions.

# **3.** THE LEVEL OF TRUST IN SOCIETY AS A BENCHMARK FOR SOCIAL CAPITAL

R. Coase's research proves that an efficient market exchange would require precise definition of the property rights over the objects of this exchange. There should be clear relations between the respective subjects and objects of property. A market functions on the basis of the transactions (contracts) between the economic agents. It is understood that by force of the concluded contract the seller shall provide the goods or services agreed in the contract, while the buyer shall pay for them the stipulated price as an amount in cash or in kind (other goods or services). The contracts between the economic subjects can be laid down in writing, or they may be stipulated verbally or be taken for granted as a tacit agreement for a transaction by following the purchase and sale's rules and procedures. For example, visitors in a restaurant, bar, or any other place of entertainment, do not conclude preliminary contract for the transaction. Taking their seats in the restaurant, the visitors-customers make the tacit agreement that they shall pay their bill for what they will consume.

In reality, the sales and purchases contracts differ largely from the "ideal contract". Actually, there is no such thing as a perfect contract in real life. There are faults that could be found even in the most precisely detailed contract. Contracts concern the future, and one cannot foresee everything in it. People's honest behavior is what turns the imperfect contracts into working mechanisms. If we want to rely on such an honest behavior on the part of the

market contractors that we come across within the market interaction there should be trust<sup>3</sup>. It is of foremost importance for the reduction of the market transaction allowances. The lack of trust calls for insurance and reinsurance, it requires making research about the partners, calls for making references for past periods of the activity of the partnering business agents. This involves additional costs, waste of time, which is valuable resource. This also calls for expense of "human capital", and quite often of "physical capital" (currently, mostly employment of technical network resource).

In another definition of his, F. Fukuyama defines "social capital" as a "set of informal values or norms shared by the members of a particular group<sup>4</sup> enabling the cooperation between them. If the members of a group become assured that the others will act decently and honestly, there will be trust arising between them.

An interesting perspective in the view on the nature and content of the concept of trust is offered by Giddons and Pierson. "Trust", according to the abovementioned authors, "is initially generated by those contexts, which generate risk as well – business relations ...Trust has another aspect, which is more closely oriented towards the future, no matter who you put your trust upon or what is entrusted. In order to be efficient, trust should be mutual, since it provides security in the face of future fortuitous events." (Giddens, A. and Pierson, C., 1998).

The quotation cited outlines several main points of major importance:

<u>First:</u> trust is a concept, which evolves historically. If, in Antiquity, it had religious grounds and sources, nowadays, it is the expression of the desire to minimize risk and insecurity of a business initiative.

<u>Second</u>: trust contains, first of all, the reflection of future in terms of expectations, attitudes, and psychological aptitude, yet it has its grounds in past events.

<u>Third:</u> in a psychological aspect, trust is an expression of suppressed anxiety, yet it requires substantial "psychological allowances", when it has to be proclaimed and demonstrated.

<u>Fourth:</u> trust does not go only one way as a communication result. It suggests mutuality and reciprocity. It cannot be based on blind faith, particularly in the long run.

<u>Fifth:</u> trust is something that people need in psychological aspect. It is an element of the "basic security of a person".

According to the opinion of another group of writers: Reiser, Rousso and Stein,"the level of trust can be measured in different ways. For example, through the amount of the

<sup>&</sup>lt;sup>3</sup> Trust has various projections and manifestations. By and large, we could differentiate "social trust". It is exemplified by acknowledging, recognizing, respecting and relying on the social structures and institutions, and in the first place of the state and its institutional bodies – the court, the procurator's office, the army, the police,, etc. For example, in 1958 in the USA, 73 percent of the inquired Americans expressed their assurance in the appropriateness of the actions of the federal government in "most cases' and "nearly always", while in 1994 this assurance dropped to 15 % of the total number of the interviewed. Another type of trust is "individual trust" - issuing from the relations of cooperation between the individual citizens. Within an economic context it is important to have "trust in the business environment" in a country or a regional integrating community. This is a kind of "combined" social and individual trust. It is actually required as a "capital substratum" and "by-product of the social norms" that is to be manifested both on a microeconomic level (between households and businesses as the main participants on the market) and on macroeconomic level (between consumers, manufacturers, exporters, importers, creditors and the state).

<sup>&</sup>lt;sup>4</sup> "Sharing values and norms does not generate social capital on its own, since those values could be wrong. Let us have a look at South Italy, for example, a part of the world, which is almost entirely characterized by a lack of social capital and mutual trust, although there are strong social norms existing there.... Mafia is characterized by an extremely strict code of behaviour, the so-called *omerta*, and the individual Mafiosi are often called *"men of honour"*. These norms, however, are not applied outside the close circle of the Mafia.", (See. Fukuyama, F. The Great Divide, p. 36)

deposit paid in advance with a transaction. It is quite curious that the respective indicator coincides for countries such as Belarus, Ukraine and Russia, about 40%, while, at the same time, in Hungray, the Czech Republic and Poland, it is for example -10 %. (Reiser M., Rousso, A., Stein, F., 2003)

There is one possible option for quantitative estimation of social capital, namely though the deposit, which should guarantee the future business relations.

## 4. PROBLEM IN DEFINING THE CATEGORY OF "HUMAN CAPITAL"

The serious problem in defining the category of "human capital" ensues from the widely spread idea of "substituting" the concept of "qualified work force" with the term "human capital" (Shtetinin, V. P., 1999). It is considered that "a number of essential features and actions, related to human aptitude to labour and its contemporary highly developed state, are assigned to the category of human capital" (Shtetinin, V. P., 1999).

The truth is that the category of "human capital" is *eternal, beyond historical* and has a much more *complex contents* than the one assigned to it in the elementary Marxist formulations. "As a phenomenon human capital originated long before scientific knowledge made statements about it ... As early as the dawn of human civilization, the first accumulated and reproduced experience is already a sign of capital characteristic, which is typical for man. It is typical for people to accumulate and transfer experience and knowledge, as well as the accumulation of this process over time. At the same time they are the symbols of prosperity of human civilization" (Kazakov, A., 2003). Obviously, the category "human capital" is not solely and exclusively connected to the "market type of organization". What is more, it is the main category in a forthcoming future "era of access", which surpasses the simple market exchange of alienated and appropriated wealth and takes humanity to the heights of "access to wealth", without change of ownership and the high transaction costs attributable to it. Human capital is far from being just a metaphor. Its availability and absence within a national economy is easily *perceptible*. All leading countries in the world are strong precisely because of their significant resources in "human capital" in the form of educated individuals, powerful company teams of competent specialists, experts and leaders. As R. Gilpin notes "a region advanced in the accumulation of knowledge often expands its production leadership" (Gilpin, R., 2003). In this case we can state that K. Marx is right in his observation that at a certain stage of the development of mankind "knowledge transforms into a force of production". Today the owners of this "force of production are not the industrial and financial tycoons, but the millions of intellectual workers, employed experts and consultants, working in the leading business sectors of the contemporary global economy.

The most essential feature of "human capital" are not the work habits and the production skills, but the *knowledge*, *competencies*, *attitudes and the ability to take professional and business challenges*, *lifelong learning and investing continuously in the professional and personal improvement*.

In relation to today's necessity to "manage the streams of knowledge" Nordstrom and Ridderstrale note that "a great part of the knowledge, which is necessary for the management of companies, is stored in the separate individuals. This means that leadership is already transforming above all into an ability to attract and keep "grand" people, the people with the necessary qualities. This refers to management of the stream of attention and care" (Nordstrom, K., Ridderstrale, J., 2003). Here we refer to the attention and care on behalf of the employers (private business, the state, non-governmental non-profit organizations, etc.) to the holders of "human capital".

In this case we have to take into consideration this fact and to consider "human capital" on a broader basis and to include in it "the capital of knowledge", and why not "the entrepreneurial skills, proficiency and attitudes", too. There are also grounds for this in the econometric research, which has gained reputation in the field of the theory of "human capital", "which is concentrated on measuring the profitability of the different investments in education" (Franz, W., 1996)

In conclusion we can generalize about human capital:

**First.** Human capital is a phenomenon which is the fruit, the result of the combined influence of a huge complex of systems. Among them the greatest and the most decisive significance have those which mediate and precondition the preservation and development the genotypical and phenotypical determinants of human capital. As such can be defined the following systems:

- education;
- health care;
- social security;
- legal;
- financial;
- requalification, etc.

**Second.** Human capital is strongly dependent on natural law and the traditions in a given national – production system. This refers at least to such practices as transferring heritage between the generations, supervision, practical training on the working place, etc. In this sense we can say that human capital to a great extent is the result not only of the newly originating knowledge. It is above all the result of cultural and value-based transfers between the different historical periods.

**Third.** Human capital, which in the past used to be the product of the classic educational system which included primary, secondary and higher education, today is to a greater extent the result of in-company and in-institutional training. This is a very seriously employed practice in the global – operating corporate structures. In the developed Western countries the so-called "company universities" are more and more common and they as if replace the classic academic institutions. The latter are limiting their activity and prepare personnel mainly for the central and the local administration and for governmental structures – education, health care, ecology, etc.

**Fourth.** Human capital is definitely not "work force". In the contemporary conditions it is rather a "mental, "intellectual" and above all "creative" (building and constructive) force. At the same time it is owned as a monopoly by a limited number of individuals, but not more than one fifth of mankind. Being a relatively "insufficient" capital benefit, human capital is attracted and absorbed by the economically developed and leading countries such as the USA, Great Britain, Germany, etc.

# 5. SPECIFIC CHARACTER OF THE INTERACTION BETWEEN PHYSICAL, HUMAN AND SOCIAL CAPITAL

To a considerable degree investments in social capital **derive from** the ones in human capital and especially from the investments of non-financial type.

The "quality human" as A. Pechey characterizes the role of the human factor, is the leading determining factor in world development. On the quality of human "material" there depends mostly the strength, ability to function and the positive and constructive role of the social capital functioning through it and for it.

The deficit in social capital influences directly the dynamics of social growth and thus it influences the development of each and every society. No matter social capital isn't destroyed easily and is kept even in most difficult conditions even on much narrower scale – family, clan, and ethnos; along the line of feedback its erosion leads to erosion of human capital and from there to erosion of physical capital as well. Therefore, every macro-economic policy aimed at reaching high and sustainable economic growth presupposes respective efforts, costs and investments, as well as innovations in the form and ways of generating social capital. The latter provides to a considerable degree the macro- and mega-environment for developing the remaining components of capital structure. Social capital has influence also on natural characteristic features which people have in a specific geographical area. They were defined above as "natural capital". Usually the deficit in social capital leads to abuse and waste of "natural capital". On the contrary, where social capital is developed enough its numerous forms of manifestation, mainly as associations between people and as charity and volunteer work, help for keeping, re-cultivating and improving nature and natural characteristics.

The general conclusion of the whole analysis is that in order to generate social capital, in order to maintain the necessary compliance and harmony between structural components of integral capital – physical, human, social, information and natural capital – investments in all forms are necessary both as financial costs for a certain type of activities and as intellectual, cognitive, educational, controlling, monitoring and other efforts, also as using the time resource which often turns out to be most scarce having in mind the comparative shortness of human life.

The modern level of development of global media presupposes new levels of manifestation of social capital. In respect to media, information and communication networks social capital already manifests itself not only on national and regional level, but even on global, universal level. As Prof. A. Nedyalkova points out in her paper "Media globalization is a power which makes its way in all spheres of life and influences their development... Uniting in huge media and communication complexes is actually concentrating activities and capitals, actual appearance of enormous industrial-and-financial corporations which include also means of communication and media influence... Global media in turn are trying to subject to their will the state system and political power. As a long-lasting result this influence forms behaviour of producers and users, it influences the economic activity of an individual" (Nedyalkova, A., 2004) The logical consequence from such influence is the influence on the social activity of the individual as well and generally on the social behavior of individuals.

The globalization itself also generates social capital through the transfer of trust /for ex. trust in big and world famous brands/ or through the transfer of control and monitoring where there are high levels of corruption and this prevents foreign investments as well as national and regional development. As it is pointed out in the paper of F. Kunev, K. Tenekedzhiev and D. Toneva: "Globalization is a new source of social capital by providing intensive exchange of ideas and culture without boundaries. This is the subject matter of mimetic – science which describes spreading and sustainability of ideas in analogy with genes." (G. Kunev, K. Tenekedzhiev, D. Toneva, 2001)

In modern globalizing economics, a tendency of dematerialization of the welfare goods and means of production is present. We become witnesses of a transformation of the investment activity from the field of the "physical capital" to the field of the "human capital".

While in the "physical" and "human" capital direct investments can be made under the form of money, time and efforts, the investments in "social capital" do not have direct money expression. The social capital components are more result of "accumulation" of status, values, and possibilities, potential. In this sense, for the social capital necessary is an investment of

"time" and may be "efforts" for the formation of a status-quo of the economic relations and interactions, supported by some level institutionalization of the groups, nets, processes, and interactions formed. Typical in this respect are the post services with their spread networks and formed relations among customers, partners and post offices as institutions. Parallel similar formations maintain the railway, air- and intercity transport companies and often the forwarding companies in the system of linear shipping.

The institutionalization of some "welfare good" as a component of the "social capital", for example, the post office services, creates an algorithm in which the other composite substructures – The "physical" and "human" capital are integrated. In such case, we can look at the institutionalization as a process of localization of the capital integration of the three components – the human, physical and social capital.

Much more important for social capital is its qualitative nature. The number of the organizations and institutions in a society can be largely indicative for some aspects of social capital, yet, by far, they cannot characterize it in its entire variety and complexity.

In addition to the whole complexity of explanations about the essence, character and role of the human capital, one more important precision should be made. Side by side with the increasing role of the processes for improvement of the educational level of the population in some countries and regions, side by side with the increasing importance for the growth of the production experience, the qualification and prequalification of specialist of specialists, employees and experts, parallel with the formation of undertaker's skills and managerial abilities, for a great number of people, a very important role for economic and social development have certain individuals who are bearers of "human capital" of specific quality. Of course, the role of such individuals is helped by the specific social-historical conditions, by their ability to show their skills and give a social manifestation of the efficiency of their individual "human capital".

Gary Becker, the man who gained the scientific recognition of the category "human capital" says: "I believe that people take rational decisions and try to foresee the outcomes of these decisions. They are influenced by the stimuli. Whit the help of markets, rationality and stimuli, a clarification in problems such as racism, education and family can be made." (Becker, G. S., 1967)

The pro-market theories would have remained in the lobbies of the Chicago and Harvard universities and the hotels of the Swiss resort Mon Pelerine, had it not been for persons and politicians like Keats Joseph and Margaret Thatcher, like Messahisa Nanto – director of the Bureau of Industrial policy to the Japanese Ministry of International Trade and Industry, like the Stanford University graduate Kim Je Ik – an architect and supporter of the economic liberalization of South Korea, like Singapore leaders Li Kuan Yu and doctor Go Ken Sui and their economic advisor – the Dutch Albert Vincemius and many other leaders and intellectuals from North America, Europe, Asia and Latin America.

A conclusion has to be made that the raising of the educational, cultural, technical and technological level of nation and a region is necessary but still insufficient condition for the realization and efficiency of the human capital. The additional circumstance for manifestation of the investments and the accumulations in "human capital" and the economic success and prosperity following its effective use and business combining, for the development and welfare of society, is the availability of leaders, intellectuals who are able to perceive and give meaning to the positive economic theories. The word is about theories that give priority to the market, to its regulative, renovating, allocate and motivating role. These people, leaders must be able to withstand the implementation of a market economic policy against the strong resistance of the entire complex of local group interests – of national and regional producers,

importers and exporters, syndicates, religious and cultural organizations, etc. The thing they do, the thing with which they contribute for the economic development and prosperity is their ability to change the "social capital" by using the features of their own individual "human capital". They manage to point out the mistakes of the economic policy during the period preceding their initiatives. More than this, they manage to offer programs, packages of measures for quick reactions in emergency situations. Most of all they manage to return the trust of people in market, to recover the confidence in national currency, to put order and law that are necessary for the contractual beginning of the market relations and interactions.

In places where politicians, economists, intellectuals have succeeded in eliminating the obstacles in front of the free market development (no matter the political system - dictatorship, regime, autocracy or democracy – M.T and J.A) high rates of economic growth are observed and subsequently – economic and society development and prosperity. This refers even to "communist China": the reforms of Dun Xiaoping turned China from a poor and backward country in the 60's and 70's of XX c into the second economy in the world in the beginning of XXI c and the only economy with a potential to supersede USA economy in the future.

The interaction between the "physical" and "human" capital is mainly on microeconomic level while the interaction of the "human" and "social" capital is on all levels – micro-, macro-, mezo-, and mega economic. Furthermore, here we are not discussing simply a mechanical interaction. The "human" capital cannot manifest itself out of the context of the "social" capital. The type, size, the cultural forms of the "social capital" determine the efficiency of the "physical" and "human" capital combinations.

#### SOME MUTUAL CONCLUSIONS:

**First:** Modern physical capital requires more intellectual creative labor that has to "move" the intellectualized contemporary technologic, production and logistic systems. This circumstance presupposes development of the other capital component – the human capital – in adequate size and proportion. Some "proportionality" and "synchronization" in the development of the capital components is necessary accordingly. It is result of the relationship and interdependence of the various components of the integral capital.

**Second:** The link between the physical and human capital is predominantly on microeconomic level as a functional interaction between the material and immaterial production factors and the human factor. On all other levels the interaction between the physical and human capital realizes itself as a managerial influence of the human capital over various volumes and configurations of physical, human and social capital.

Third: The link between the physical and social capital is made by the operative active action and fictionalization of the human capital. In modern times, this action presupposes inclusion of the information capital into the integral capital structure as well. If the human capital makes the physical capital "alive", the social capital itself, would be, in a way, the macroeconomic and macro-political environment allowing effective investment and use of physical capital. Without an adequate social capital as a "quality" and "content", the owners of physical capital would not be able to realize themselves as "effective owners". In other words, they would not have been able to receive an economic advantage in the proper quantity and way from the investments made by them in physical capital.

**Fourth**: One of the books of F. Fukuiama – "Trust: Social Values and Creation of Wealth" is based on the idea that "It is more likely that the successful market economy is not
a consequence of steady democracy but from the preceding factor of the social capital" (Fukuyama, F.,1997)

In modern economy, the role of the social capital becomes more decisive. It turns into a sort of value because the human capital which is in direct relation and interaction with the social structures by creating and developing them, today, more than ever has the freedom and responsibility to choose. The choice of today's "human" capital owners (speaking about the choice of where to invest this "capital") is based on the better alternative only regardless of its geographical location, form and scales.

#### **REFERENCES AND CITATIONS**

#### Book

- 1. Becker, G. S., Human Capital and Personal Distribution of Income. Ann Arbor, Mich.: Institute of Public Administration, 1967.
- 2. Franz, W., The Market of Labor. Sofia: Altenbourg, Forum 2000, 1996, p. 107.
- 3. Fukuyama, F. The Great Divide. Sofia: RIVA, 2001, p. 34.
- 4. Fukuyama, F., Trust: Social Values and Creation of Welfare. Sofia, RIVA, 1997, p. 26.
- Giddens, A. and Pierson, C., Conversations with Anthony Giddens: Making Sense of Modernity. – Cambridge: Polity, 1998, p. 108-109.
- 6. Gilpin, R., Global Political Economy: Understanding of the International Economic Order. Sofia: "Damyan Yakov", 2003, page 151.
- 7. Nordstrom, K., Ridderstrale, J., Funky Business: The Business of the Future. Sofia: Info DAR, 2003, page 222.
- 8. Putnam, R., Making Democracy Work: Civic Traditions in Modern Italy. Princeton: Princeton University Press, 1993, p. 167.
- 9. Riffkin, J., The Age of Access. Sofia: Attica, 2001, p. 16.

#### Journal

- 1. Reiser M., Rousso, A., Stein, F., Firms Trust? Evidence from a Survey of 26 Transition Economist. Collegium Budapest, 2003, Cited after Kornai, Y. Honesty and Trust in Transition Economy. //Economic Issues, № 9, 2003, p. 5.
- Shtetinin, V. P., Human and Material Capital: Similarities and Differences. // M∋ and MO, №8, 1999, page 55-61, page 57.

#### Conference paper or contributed volume

- Kazakov, A., Formation and Development of Human and Social Capital. // Wealth and Economic Development in an Efficiently Functioning Market Economy. - Sofia: "Stopanstvo", 2003, page 75.
- Kunev G. et al., "Globalization and holistic approach" /G. Kunev, K. Tenekedzhiev, D. Toneva -//First scientific conference of students and lecturers - VOU, 2001,p. 122-127, p. 124.
- Nedyalkova, A., "Global aspects of economic growth" // Annual of, volume X, 2004, p. 13-24, p. 22.

# OPTIMIZATION MODELS OF RAIL TRANSPORTATION UNDER THE FINANCIAL CRISIS

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**Abstract:** This paper proposes an analysis of the most used models to optimize the rail transportation. Are presented a series of optimization models of labor efficiency in this sector, but also elements that gives the information on the competitiveness of this mode of transport.

Keywords: railway, railway optimization, optimization models for railway

JEL Classification Codes: C32, C39, D85, L92, L96

## **INTRODUCTION**

In rail transport, smooth running of the work requires coordination of productive activity, a significant human and material potential. Need for employment in economic and social process has led to the need to address possible problems of traditional problem-based treatment, organization activities and decision making in this regard. Also need to obtain reduced costs of railway transport as, actually positive influence on cost of goods and increasing the number of passengers approach led to the adoption and use of operational research models, econometric and stochastic in order to obtain results as best of economic, social and technical

#### **1. MODELS FOR OPTIMIZATION OF RAIL IN THE LITERATURE**

Fundamental basis to optimize program of movement and loading / unloading of trains is the plan with a single line which determines the number of trains serving the line connecting two terminal stations in a fixed period (Bussieck et al, 1997). Many researchers have tried to solve real problems by adding different constraints and conditions on this basis.

Thus, works of Morlok and Peterson (1970) are known as some of the old in problem of finding solutions to optimize train movements. The purpose of these approaches is to minimize the amount of fixed costs for trains, variable costs for transport, handling and storage of goods, and the opportunity costs of using rail equipment, providing goods and timely delivery of time-dependent.

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Jovanovic and Harker (1991) have developed the model SCAN-I to build schedules and plans to crossing of the trains, with emphasis on robustness and eliminate random happenings during travel. They considered a discrete and combinatorial optimization algorithm for finding optimal solutions to various problems in the rail to assess whether a calendar is possible based on deterministic assumptions

Kraay et al. (1991) built the MINLP problem for variable speed train (for cases of routes with speed limits), while Jovanovic and Harker (1991) formulated a mixed problem with integer variables for fixed speed. The objective is to minimize delays trains and fuel costs. The result has allowed greater flexibility in programming and reducing fuel costs.

Kraay and Harker (1995) have developed a real-time programming model for freight rail transportation.

Carey and Lockwood (1995) presented the timetable problem on a single rail line assuming a constant speed for each train. They built a timetable and a program to minimize the total delay to maximize speed and line length train loading and unloading.

Higgins et al. (1996) developed a model to optimize the programs of movement the trains on with a single line rail corridors. The objective of this work is to determine a lower limit that will allow finding the optimal solution of the problem in reasonable time.

Marin and Salmerón (1996) have developed a model aggregate steady state planning in freight, the train routes have been determined (including stations), their frequency and number of cars used by each service. Costs include a fixed fee for each train, handling costs and investment costs in delay and additional trains. Constraints refer to the number of cars on each track segment, the number of cars that are used in each yard and the number of trains.

Nozick and Morlok (1997) formulated a discrete time problem to minimize total cost of moving the walls and platform wagons loaded and empty train determined size. They developed a procedure that follows an iterative solving of linear programming problems and some rounding fractional values to determine result feasible integral solutions.

Chang et al. (2000) developed a model for the planning multi-purpose passenger transport services. They determined the optimal allocation of rail passenger services on an inter-city high line speed without secondary lines.

Ghoseiri et al. (2004) have also developed a model for the planning multi-purpose passenger transport services. Design objective is to minimize fuel cost and total travel time.

## 2. OPTIMIZATION MODEL FOR ORGANIZING A TRAIN

Optimum method of organizing a train (Train Set Organizing Optimization-TSO) aims to form a train for Freight with the new generation facilities and highly trained and professional experts, and is one of the most common methods used in the management of railway transport.

The main objectives of the TSO are: efficient transport, using rail transport fleet reasonably, promoting cooperation between different departments involved in the shipping procedure.

Methodology has several levels of action: the national railway network, or local rail network and operating on a group of operators.

Nationally, the main concerns in the rail network are: Decision types of trains, lining up, number of trains, and detailing their routes. Railway network objectives include improving transport capacity and speed of operation, cost reductions, balancing the pace of work in the divisions and allocation of new employment or redundancies between different stations/stations nationwide.

In addition to the tasks that the staff railway station, establishing a seal, forming a train according to the norms required by the railway network, on all types of freight cars, are involved to in this process a series of operations relevant, such as collection or delivery, handling, loading/unloading and checking cars. The main concerns of the railway station personnel are conducting operations efficient, economical and safe, rational use of transport devices such as railway lines, shunting locomotives, marshalling hump; setting with specialized programs, operations steps and cooperation between those working in the steps of the framework program of railway network.

Due to the complexity of processes occurring in the formation and movement of trains for transporting goods, can be made simplifying assumptions of the model, namely:

- 1) the rail transport offer is less than demand, the scope of TSO is to fully utilize the transmission capacity;
- 2) topographic structure of the railway network is a circle of railway lines, this assumption is made to specify the continuous nature of transport;
- 3) the main line is double, to run to run simultaneously two trains between two stations, running in opposite directions;
- 4) under the railway network between the technical stations A and B, there are not others of the same type;
- 5) unit of workload related to handling and transshipment cargo operation is the same for all technical positions, for the same train at each station is assigned technical time to complete the same load.

Based on these assumptions, decision makers of rail network wish density trains (as measured by time intervals between any two adjacent trains in circulation) and train length is as large as possible to achieve maximum transport capacity. However, for safety reasons, the density is determined by the length of railway network and the seal is determined by the driving force of the locomotive / locomotives used.

Sometimes these constraints are ignored, because a greater length train seal leads to lower operating costs. Operating efficiency is done by the number of trains sorted and transshipment cargo per unit time, while operating cost unit is the cost for one train. On the other hand, the operating time for maneuvers and transshipment of goods, which affect costs will increase if the seal length increases.

## 2.1. Theoretical formulation of the model TSO

Be 
$$x = (x_1, x_2, ..., x_n) \in X \subset \mathbb{R}^n$$
 (1)  
 $y = (y_1, y_2, ..., y_n) \in Y \subset \mathbb{R}^n$   
 $F, f: X \times Y \to F(\mathbb{R})$ 

where:  $x_i$  is the length of the train seal in station *i*,

 $y_i$  is the density of the train seal in the station *i*,

It's desired, to obtain a maximum transfer capacity of freight at a certain time:

$$\max_{x \in X} F(x, y) = \frac{a_1 \cdot \sum_{i=1}^{n} w_i \cdot x_i}{\sum_{i=1}^{n} w_i \cdot y_i}$$
(2)

with  $\sum_{i=1}^{n} w_i \cdot x_i / \sum_{i=1}^{n} w_i \cdot y_i$  average number of wagons loaded/unloaded per time unit.

It is considered that the length of the seal is determined by the limits of locomotive power and the useful length of the line of departure-arrival. Restrictions can be generated by total weight, wagons-locomotive-load which can not exceed its upper limit, namely:

$$\sum_{i=1}^{n} w_i \cdot x_i < m \tag{3}$$

Seal length can not be very close to the threshold of safety,  $c_1$  is the minimum time between any two trains, according to the list of "rules of safety".

$$\sum_{i=1}^{n} w_i \cdot y_i > c_1 \tag{4}$$

where n is the number of technical railway stations in the network rail;

 $w_i$  relative weight of the station *i* and the railway network;

 $a_1$  time period (if  $a_1 = 24$ , then  $a_1 / \sum_{i=1}^n w_i \cdot y_i$  is the average number of trains running

on the network within 24 hours;  $a_1 \cdot \sum_{i=1}^n w_i \cdot x_i / \sum_{i=1}^n w_i \cdot y_i$  is the number of seals in the network

per day, with  $a_1 > 0$ );

*m* maximum number of cars in a seal covered by the "road safety".

Of economically seeks to minimize costs:

 $\min_{y_i} f_i(x_i, y_i) = -b_1 \cdot x_i - b_2 \cdot y_i$ (5)

where:  $\min_{y_i} f_i(x_i, y_i)$  indicates efficient seal, maneuvers necessary to lower costs as and time and the term  $\dots -b_1 \cdot x_i - b_2 \cdot y_i$  indicates the length of time remaining seals in the station with higher costs.

Stations with the technical mean have their own time limits for sorting and transshipment of goods:

$$c_2 \le \frac{x_i}{y_i} \le c_3 \tag{6}$$

There is also a period of time for technical stations to complete the operation:  $y_i > c_4$ 

#### 2.2. Example of application of the model TSO

It is assumed that trains sorted and loaded/unloaded coming from the direction of station B, which has different location of station A. Distribution of weights of wagons is in Table 2 and the engine used is type SS1 (137 tons, 1.9 units of length). Useful length of a car is calculated from front face shutter to rear front shutter (11 m). Real length of the wagon is obtained by multiplying the usable length with a characteristic coefficient (for example, for a wagon type B23, actual length is): $11 \times 2, 1 = 23, 1m$ ).

The type of wagon used (WT)	Empty wagon Weight (WS) (tone)	Weight of goods to be loaded (tone)	Share a type of car, all cars in the train (%)	Coefficients to determine the actual length
B23	38	40	3	2,1
P64A	26	58	3	1,5
G70	23	58	9	1,1
G60	23	50	50	1,1
G70	23	55	35	1,1

Tabel nr. 1 Distribution of wagons in a train

Within a month, the station has managed both technical passenger transport and the passenger. In the application considered = 24, and weight train seal should not exceed 3,500 tonnes, length of line used to the destination station is 890 m. If the braking distance, for trains to stop safely, is 30 meters, the maximum train length is 860 meters.

The length of a train, which forms in the station A, using data from Table 1, will be:  $l_1 = 2,1 \times 0,03 + 1,5 \times 0,03 + 1,1 \times 0,09 + 1,1 \times 0,5 + 1,1 \times 0,35 = 1,142$ 

and final weight:

$$w_1 = (38+40) \times 0,03 + (26+58) \times 0,03 + (23+58) \times 0,09 + (23+50) \times 0,5 + (23+55) \times 0,35 = 66,95$$
  
The maximum number of empty wagons in a train is given by:  
$$m_e = (860 - 1,9 \times 11) / (1,142 \times 11) = 66$$

and the maximum number of loaded wagons into a train is:

 $m_l = (3500 - 137)/66,95 = 50$ 

It is considered  $m = \min\{m_e, m_l\} = \min\{66; 50\} = 50, c_1 = 0, 2$  because, if carried out safely transport was considered as the range (distance) between two adjacent trains from the network graph to be 10 km, which means 0.2 hours of travel between two stations.

$$\begin{cases} b_1 = 0,4 \\ b_2 = 0,6 \end{cases}$$
 is the weight of the length and density of trains at the station  
$$\begin{cases} c_2 = 30 \\ c_3 = 150 \end{cases}$$
 is the minimum respectively maximum number of maneuvers that up with

trains that can be made per hour, and  $c_4 = 0,68$  is the shortest time needed to complete the maneuver and transshipment operations in station A.

With these assumptions and values, the objective function becomes:

$$\max_{x \in X} F(x, y) = \frac{24x}{y} \text{ with } x < 50 \text{ si } y > 0,2$$
  
and relation (5) can be written as:  
$$\min_{y_i} f_i(x_i, y_i) = -0, 4 \cdot x - 0, 6 \cdot y$$
$$\begin{cases} 30 \le \frac{x}{y} \le 150\\ y > 0,68 \end{cases}$$

with

Optimal solution for this example is the point  $(x^*, y^*) = (50;1,67)$ , the objective functions have values:  $F^* = 718,6$  and  $f^* = -21,002$ , which determines the maximum transfer of the rail network of 718.6 trains a day, if the rail network decision-makers determine the average number of trains to 50, following that, the station A to determine the range time between two adjacent trains at 1.67 hours.

The model applied to optimize handling and loading activities in Station A, leads to reasonable results and can be helpful in organizing trains.

However, because of model restrictions, many practical details have not been taken into account in it.

## **3. OPTIMIZING PROCESSES IN ROMANIAN RAILWAYS**

In rail transport, the activity is complex in preparation and execution of transport, working more specialized branch railway, broken, in turn, in more technical specialties: building and maintaining lines (lines, telecommunications and signaling equipment, buildings, bridges, tunnels, locomotives, coaches) and organize the operation activity.

Due to the considerable development of the work technologies, the number of operations and the complexity of the logical interdependencies between them, in recent years, there has been an important change in the way of representing the processes by switching from the Gantt chart representation, to the representation of other systems, of which, some of the most important used by Romanian railway network are: block diagram, signal graph and activity's graph.

Among the models with which an analysis can be done to optimize the processes, can be listed: critical path method and specific models of theory expectation.

#### 3.1. Optimization of train traffic organization

Organizing the movement of trains is an important issue in the rail transport, because it depends to large extent results of operations. These problems, witch can be solved with some difficulty with linear programming models, find a general solution by algorithms Ford-Fulkerson (which optimizes the transport in a network in a single transport capacity) and Fulkerson algorithms (which optimize the transport in a network with more transportation capacity assumptions).

The endowment of railway with locomotives equipped with ERTMS systems and asynchronous motors is a large-scale investment and operation of locomotive fleet is a very important problem.

By optimizing the schedule of locomotives are seeking a better use of the locomotives according to timetable of train and depending on type of the trains, how to exploit them (holding teams or not), characteristics of traffic sections, of the available locomotives park, etc. In general, the locomotives schedule change is made with timetables, and regular time intervals. Usually, the schedule of locomotive is made with the change of train's timetables, and periodically from time to time.

Following the introduction of new electronic traction control (Siemens and ICOL traction type computers) and asynchronous traction motors, the question of optimizing schedule of locomotives, and thus optimize traction staff schedule, which will lead to savings rolling stock and staff in operating activities.

From mathematical point of view, the schedule of locomotives problem or traction staff schedule, are problems solved by some classical models of operational research: simplex algorithm, the algorithm Ford-Fulkerson, Hungarian algorithm, and castling method. Route optimization and training plan of freight trains have a special importance, for rail transportation, forming a fundamental set of problems for freight transport efficiency.

Circulation of a freight wagon between loading and unloading stations raises two principle issues:

- cargo wagon, considered as a unit, must be guided between loading and unloading stations so that to travel on a route, which in economic terms is better than other possible routes, i.e. the choice of optimal route;
- cargo wagon passing by the departure station to the receiving station, is subject
  of a category of optimization problems whose aim is to minimize the number of
  sorting of wagons or training plan optimization of freight trains.

The organization of development preparation trains plan consists, at the principle, of 68 activities. The introduction of new IT systems within and between CFR regional railways, the development of specialized programs to optimize processes with qualified personnel allow enable the plan of trains' preparation.

The implementation of IRIS system allows an integrated approach to activities, whether it takes place in different companies, but ensuring privacy of each company. Among the methods used to determine the optimal travel route for wagons are:

- virtualization distances method;
- virtualization method, with respect to time of real distances.

### 3.2. Optimization of operating decisions for fleet cars using Markov chains

Markov processes are based on assumptions:

- a phenomenon characterized by a particular state evolves by passing instant at the end of a period of time *t* to another state;
- the times are equal and can be considered as a unit of time;

In these circumstances, it is considered that the phenomenon evolves step by step, or that jump out at the end of a state to a state whose probability of existence is given by:

$$p_{j}(1) = \sum_{i=1}^{N} p_{i}(0) \cdot p_{ij}$$
(7)

where  $p_{ij}$  - probability of passage or transit from state *i* to state *j*;

 $p_i(t)$  - probability of state *i* at time *t*;

 $p_i(0)$  - probability of state *i* at baseline 0;

N – number of different states of the system.

State probability phenomenon, at time t + 1 is therefore:

$$p_{j}(t+1) = \sum_{i=1}^{N} p_{i}(t) \cdot p_{ij}$$
(8)

For example, if you want to determine the optimal size of fleet cars, after the exit from the active fleet of wagons send to repair, is considered the problem:

- be a railway network, on which is considered to be n main points (knots) noted

 $C_i$ ; i = 1; n) concentration of a particular fleet type cars  $V_k$ .

Between these nodes there is an exchange of loaded and empty wagons, that is a cross currents of cars that can hardly be avoided.

- always within 24 hours, there is a medium balance, i.e. an average number of cars that are parked for loading, unloading or other operations.
- a monthly average daily park, estimated to be, for example, 1,200 cars, many of them get (calendar) date for submitting to periodic repairs and overhaul, which includes:
  - knowledge development park cars in a predetermined period (for example, three months);
  - active park needs to allow permanent use of wagons required level;
  - between the centers are formed currents of cars whose percentage distribution is known, including the number of cars that is always in the center of origin considered, is also associated crossing matrix a column representing the weight of wagons repaired and a line representing state probability of this phenomenon.
  - knowledge development park cars in a predetermined period (for example, three months);

- active park needs to allow permanent use of wagons required level;
- between the centers are formed currents of cars whose percentage distribution is known, including the number of cars that is always in the center of origin considered, is also associated with crossing matrix a column representing the weight of wagons repaired and a line representing the probability of state this phenomenon.

The weights  $C_i - C_j$ ;  $i, j = \overline{1;n}$  are the probabilities of state, the existence of the park in the center, and  $C_1 - C_j$ ;  $j = \overline{2;n}$  represent probabilities of transition after a period t to another state (if deemed weights as daily average monthly, t representing a month).

Distribution of cars park on the period considered, resulting from the application of Markov chain, for example, for 10 knots, allowing the extraction of conclusions, namely:

- a) considering that the initial state is valid at time t = 0, and weights expresses monthly average daily values (so step *t* is equal to one month), can be inferred that: at t = 1, the park will decrease by 60 cars, at t = 2, the park will fall by another 70 cars or 130 cars combined, at t = 3, the park will fall by another 64 cars, or combined 194 cars;
- b) for repair, periodic or capital a car, is needed about a month. To meet the traffic stood at 1,200 cars /day is necessary to increase the park, up to 1,270 cars.

#### 3.3. Markovian model for the analysis of labor mobility in a railway network

Labour mobility, defined as responsiveness and adaptation of individuals or groups of people to the challenges of socio-economic environment is therefore a social phenomenon dependent on time and space. If deemed appropriate time scale, can identify that part of the workforce experiencing changes from time to another. It is assumed that at some point, an employee would be employed in any of the departments considered in the analysis I proposed. The number of employees in the system is assumed to remain the same for the entire period of analysis.

It is assumed that the number of employees who changed jobs during any interval is known. Also, it is assumed that their distribution is also recorded.

Assuming that the present experience and qualifications of employees in a department influences the choice of other departments, Markov chain model gives a real approximation of behavior of employees in the workforce rail network subsystems.

Be  $\{S_n, n = 0, 1, 2, ...\}$  the state employees at a time and *n* is the number of observations. Transition probability matrix can be estimated using statistical data and information on the characteristics of labor mobility in the respective units.

Propensity of certain categories of employment not to change the workplace for a long time, determine the division of human resources in the railway system into two categories: one that includes those people who do not change their place of work, and another, including people who change work.

If we consider *m* units of activity, with  $s_i$  (i = 1, 2, ..., m) the fraction *i* containing the population that do not change their workplace, and, then crossing probability matrix for the entire population of railway facilities is:

$$\mathbf{P} = \begin{pmatrix} s_1 + (1 - s_1)R_{11} & (1 - s_1)R_{12} & \dots & (1 - s_1)R_{1m} \\ (1 - s_2)R_{21} & s_2 + (1 - s_2)R_{22} & \dots & (1 - s_2)R_{2m} \\ \vdots & \vdots & \ddots & \vdots & \vdots \\ \vdots & \vdots & \vdots & \vdots & \vdots \\ (1 - s_m)R_{m1} & (1 - s_m)R_{2m} & \dots & s_m + (1 - s_m)R_{mm} \end{pmatrix}$$
(9)

For the first n steps of the transition probabilities, it is assumed that no changes occur in the first category of labor.

Then: 
$$\left\|P_{ij}^{(n)}\right\| = \mathbf{S} + (\mathbf{I} - \mathbf{S})\mathbf{R}^n$$
 (10)

with  $\lim_{n\to\infty} R^n = \mathbf{\Pi}'$ , where the matrix  $\mathbf{\Pi}'$  is identical lines, each line representing the limit vector:  $(\pi_1, \pi_2, \dots, \pi_m)$  for category of employees who changed jobs.

Be  $\{p_i^{(n)}\}_{i=1}^m$  the employee distribution after n transitions.

For vector:  $p^{(n)} = (p_1^{(n)}, p_2^{(n)}, ..., p_m^{(n)})$  obtain:  $p^{(n)} = p^{(0)}S + p^{(0)}(I - S)R^n$ , and for  $p^* = \lim_{n \to \infty} p^{(n)}$  obtain:  $p^* = p^{(0)}S + p^{(0)}(I - S)\Pi'$ .

In practical problems, the application of the Markov model requires estimation of transition matrix elements and the number of employees in each category in each unit/ regional departments review.

#### 4. CONCLUSIONS

The issue addressed by these models to optimize the rail is wide and each of them aims to optimize certain sectors in this field.

The rapid development of computers and IT technology have enabled the development of more complicated models using various operational research techniques and probability theory, models which can be obtained through quantitative and qualitative information on specific rail optimization problems.

Models presented can be applied to optimize various sectors of the Romanian railway transport, and allow a technical, economic and social X-rays of the current situation, it. Adaptation of models used in optimizing rail from other EU Member States to the actual situation in Romania will allow a comparative analysis of the competitiveness of the sector

#### SELECTIVE BIBLIOGRAPHY

- 1. Assad A. A., (2002), Models for rail transportation, www.linkinghub. elsevier.com;
- 2. Cacchiani V., (2006), *Models and Algorithms for Combinatorial Optimization Problems arising in Railway Applications*, <u>www.amsdottorato.cib.unibo.it</u>;
- 3. Galli L., (2009), *Combinatorial and Robust Optimisation Models and Algorithms for Railway Applications*, Universita di Bologna, <u>www.or.deis.unibo.it</u>;
- 4. Komaya K., (1991), A New Simulation Method and its Application to Knowledge-Based Systems for Railway Scheduling, Proceedings of the Railroad Conference, pp. 59-66;
- 5. Kroon L, Wagner D, Geraets F, Zaroliagis C, (2006), *Algorithmic Methods for Railway Optimization*, <u>http://drops.dagstuhl.de;</u>
- 6. P. Vansteenwegen and D. Van Oudheusden, (2007), *Decreasing the passenger waiting time for an intercity rail network*, Transportation Research Part *B*, vol. 41, pp. 478-492, 2007;
- 7. Salido M. A., Barber F., (2009), *Mathematical Solutions for Solving Periodic Railway Transportation*, Hindawi Publishing Corporation Mathematical Problems in Engineering, Volume 2009, Article ID 728916.

## DOMESTIC INSURERS IN POLAND AND THE GLOBAL CRISIS

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**Abstract:** The article contains the analysis of the impact of global crisis on Polish insurance sector. The main areas of the crisis impact on the activity of Polish insurance companies has so far been the change in the assets value and the associated decline in the profitability of investment activity. The danger arising from the economic downturn has not been realized so far in the Polish insurance sector. Although the premium written is high, the structure of the portfolio in life insurances is changing. In 2008, however, a significant retreat from saving insurance policies with capital funds in the direction of structured products is observed. A significant increase in premiums written resulted in a good financial situation of Polish insurance companies. Despite the turmoil in financial markets it also seems that solvency of Polish insurance sector is unthreatened as measured by statutory ratios.

Keywords: insurance companies, Polish insurance market, global crisis

JEL Classification Code: G22, G01

#### 1. INTRODUCTION

The global financial crisis that began in mid-2007 in the USA affects the global economy in the scale compared to the Great Depression of the 30s. Since the source of this crisis was the collapse of the US real estate market and the liberal credit policy in the scope of mortgage loans the first institutional beneficiary of the financial crisis was the banking sector. However, other institutions including insurance companies have been affected by the consequences of the crisis.

This article aims to analyze the impact of financial crisis on Polish insurance companies. The impact of crisis will be considered at three levels:

- the impact of changes in macroeconomic environment on the activities of insurance companies;
- the impact on the financial situation of Polish insurance companies;
- the potential consequences of affinity of domestic insurers to international capital groups.

The study relates to the years immediately preceding the financial crisis (2005-2006) and the period of 2007 – the first half of 2010.

# 2. THE EFFECTS OF THE INFLUENCE OF THE CRISIS ON INSURANCE COMPANIES

As a result of the financial crisis, the market value of insurance companies has dropped significantly. In case of life insurance companies, the depreciation of their trading is higher than of other companies. Property insurance companies have been less severely affected by this situation (Figure 1).



**Figure 1. AM Best Index for life insurance (a) and non-life (b), versus S&P 500 index** *Source: www.ambest.com/stox* 

The downturn of insurance companies and the breakdown of the financial markets have become a major problem not only for the shareholders of insurance companies but also for the insurance companies themselves which as the effect of such activity have a limited access to external financing. Such a situation becomes, paradoxically, an opportunity for insurance companies based on the idea of mutuality (mutual insurers) when the investors limit their investment activity due to incurred losses (Laux C., Muermann A. 2006). Moreover, mutual companies, for which the problem of limited access to external financing is quite common also in the stable market<sup>1</sup> can take advantage of internal financing in a more efficient way.

Depreciation of assets is another result of the impact of current financial crisis. It was the hardest blow for the insurance companies from the American market. The value of the assets in the insurance sector dropped there by the amount of USD 125 billion (representing - 3.2% of assets). However, it did not bypass European institutions (decrease by about USD 17 billion) which are also on the list of insurance companies that recorded the largest depreciation of assets in terms of their value (Figure 2).

Serious consequences for the insurance sector result from the source of the current crisis. Insurance or guaranteed mortgage debt repayment and the insurance of collateralized mortgage bonds are the areas where the risk associated with an increased scale of compensation and benefits payment is realized. An additional burden for the insurers may become the third party liability claim compensations of directors and board members (D&O) and for damage and omissions (E&O).

In the case of mortgage loans insurance or guarantees of their repayment the insurance loss is estimated to approximately USD 10 billion, in the case of underwriting of mortgage-backed securities to approximately USD 50 billion<sup>2</sup>.

<sup>&</sup>lt;sup>1</sup> Capital motif is indicated as the main cause of mutual transformation of plants out in public limited companies. <sup>2</sup> The projected losses shall amount to 0.05% and 0.27% of the total assets of the insurance sector. (T. Hess, K. Karl ,C. Wong, 2008, p 6)



**Figure 2. Depreciation of assets as a result of financial crisis (since December 2008)** *Source: (F. Blom, J.W. Kuenen, 2009, p. 12)* 

The economic downturn brings a decline in the insurance sales. Swiss Re Experts predict significant differences in premiums written changes in different insurance markets and the slow breaking of recession in 2010 (Table 1)

Country	Global				Real	growth o	f premiur	ns			
	market	200	)8	20	09	20	10	20	11	20	12
	snare (2008)	Life	Non	Life	Non	Life	Non	Life	Non	Life	Non
	(2000)		life		life		life		life		life
USA	28,03	-3,6	-5,8	-12,2	-2,8	-2,9	-0,5	2,8	1,7	3,6	3,3
Canada	2,43	-0,1	0	3,4	2,4	4,7	1,9	4,4	2,6	4,7	3,3
Japan	12,44	1,4	-4	4,7	-1,1	0,3	1,7	1,9	1,9	2	1,9
UK	7,61	-31,9	-1,3	-11,3	1	6,7	1,1	2,7	1,1	3,7	3,6
France	6,96	-14,1	0,8	16,2	1,3	4,9	0,8	4,3	1,6	4,3	2
German	5,86	-1,5	-2,6	6	3,3	8	-1	-2,3	1,8	0,7	2,5
У											
World	100	-7,3	-1,4	-0,1	0,2	4,4	1,3	4,1	2,8	4,4	3,7

Table 1. Real growth of premiums in different countries in the years 2008-2012 (in%)

Source: Based on (Hess 2008, SwissRe 2010)

The effects of the recession are also evident in the increase of claims payments. Product line characterized by the largest connection with the effects of the outlook in non-life insurances are credit insurances and insurance guarantees. In the context of current financial crisis, this problem concerns not only the mentioned question of the increase in liabilities for mortgage loan insurance and the guarantees of its repayments. The aim of all financial insurances is to provide protection in a situation where a contractor is unable to meet their obligations (usually financial). As a result, during the economic recession, when the number of bankruptcies, composition agreement proceedings and the unemployment rate rise the burden of claims of this type of insurance increases. The variability of results may be very large - in case of warranty activity (very popular in the US market), with an unfavorable business outlook the claims indicators can reach the level of several hundred and more

percent (J. Kukiełka, 2003, p 40-41). Another characteristic feature of the alleviation of the economy is also the increase in the number of insurance frauds in property insurances.

The most visible effects of the financial crisis, however, are observed in investment activities of insurance companies. The essential purpose of insurance companies' deposits is not to make profits from investments but to secure their future obligations to policyholders. Hence, they are usually characterized by relatively low risk and a significant diversification, and time synchronization of the obligations and deposits. Investment activity of insurance companies is in addition, in most countries, fortified with a number of restrictions resulting from the provisions of insurance law and control activity of the supervisory bodies. Despite the cautious investment policy, insurance companies cannot, however, be unaffected by the dramatic decline in the value of financial asset – the drop of the shares value on the weakened capital market or the reduced profitability of other securities dependent on the market interest rates. This translates into a deterioration of their financial performance, both in the form of realized and unrealized losses on assets. These effects are particularly acute for life insurance companies, where the investment activity is closely related to insurance activities.

The negative effects of market downturn may be weakened, however, because the continuation of insurance activity and continual inflow of insurance premiums allow for financing of claims from current operations, without the need to dispose of the assets in the market seized with crisis.

Life insurers who have savings products in their portfolios, where the risk is borne by the insurer (so-called unit-linked) transfer the investment risk in full to their customers. In case of life insurance the weakening of investment operation performance may be associated with the risk of a mass resignation from long-term savings policies and lack of continuation of short-term single-premium policies, thus reduction of premium written and the need for increased withdrawals.

Negative effects of the financial crisis should also be sought in connection with the possibility of a "domino effect" occurrence. Insurance companies as a part of a larger financial group may be affected by problems which originate in other entities of the group (mainly from the banking sector). (CEA, 2008)

The effect of drop in the sales of insurance products for both property and life, may also be associated with the decrease or even lack of confidence in financial institutions in general. The reputation risk is a characteristic component of current financial crisis.

## 3. THE SITUATION OF THE POLISH INSURANCE SECTOR

In life insurances the tendency of premiums dynamics and GDP are similar in the years 2000-04 with the dynamics of life insurance being of a few percent higher (Figure 3). The situation has radically been changing since 2005. It is happening so thanks to short-term products with an investment fund, which allow to avoid the capital gains tax. In 2008 life insurance companies experienced a record-breaking growth in insurance premiums. The earlier popularity of unit-linked products has ended. The policyholders liquidated or discontinued those insurances (due to losses on deposits), acquiring more and more often the so called structured products – with no capital fund and with the guaranteed protection of capital or profit. The amount of the premium for the policies with a single-premium payable with the capital fund has dropped from PLN 7.24 billion in 2007 to 2.07 billion with a parallel increase of the premium in insurances without investment funds with a single-premium

payable up to the amount of PLN 22.9 billion (from 4.34 billion in 2007). The first quarter of 2009, however, is a period of economic collapse in savings insurances.

Life insurances have noted a decline in insurance premiums collection by 0.41 points (compared to the first quarter of 2008) when in a corresponding period the premium growth amounted to 11.33 points. A decline of products with the capital fund is still being recorded by nearly 20 percentage points but there is a slight increase in insurance class 1 - 4.9 points.

Life insurances record a decline in insurance premiums collection by nearly 30 percent (as compared to the 1st half of 2008) but most of it is the result of nearly 40 percent drop in structured products. In addition, during this period there is still recorded a decrease in premiums collection of products with capital fund by nearly 15 percentage points. This decrease is at the same time accompanied by a very large increase in the amount of claims paid (in the insurance class 1 by more than 250 percentage points in comparison to mid-2008), which may indicate a reluctance to continue these insurances by insurance companies' customers.

This phenomenon indicated high sensitivity to new solutions of financial institutions' customers. In bank activities a new solution that allowed avoidance of the capital gains tax, has been created. This product was based on the breakdown of the entire value of the deposit into multiple smaller ones, each of which was determined in such a way that the interest accruing each day did not exceeded the minimum level specified in the Tax Act (at the interest rate of 5.5% and the capitalization every 1 day, the maximum account balance from which no tax on capital gains shall be calculated amounts to PLN 16 557.72). It was to be assumed that most customers of insurance companies have moved their savings to banks.

In the year 2010 we can observe a phenomenon of stabilization and the growth of life insurance market is similar to changes in GDP. Although the level of premiums collection for class 1 (structured insurances) is lower than this realized in the difficult year of 2009 but at the end of the 3rd quarter of 2010 a rise by almost 30 percent of the insurance written with the capital fund was recorded.



Figure 3. Dynamics of gross written premiums in life and non-life insurances and GDP growth in the years 1996-2010 (in%)

Source: Own calculations based on FSC and GUS

In case of non-life insurance companies since 2000 the dynamics of premiums shows a trend similar to the dynamics of GDP. The decline in the dynamics of GDP in 2007 and 2008 did not move, though, to the decline in the dynamics of premium, which even slightly increased (10.95% in 2007 and 11.31% in 2008). In the first quarter of 2009, however, a decline in the dynamics of premium is observed (it "follows" the drop in the dynamics of GDP, which amounted to 100.8%) to 104.54% (when in the first quarter of 2008 it amounted to 112.41%). A high premium growth was recorded in compulsory third party liability insurances – with the exception of third party liability insurances for farmers and drivers (86%), third party liability insurances for the navigation (73.7%), insurance guarantees (42%)legal protection insurances (25%). There was a decrease in revenues from insurance of objects in transit by 17.6%, on hull by 26% and loans by 16%. There is still a small share of financial insurances in the portfolios of Polish insurers (5.7%), which ultimately has not resulted, and will not result in significant adverse effects observed in these insurances in the event of an economic crisis. Only about 1.8% of the gross premiums are the insurance products that reduce the mortgage risk in Poland (S. Kluza, 2008) so very sensitive to a possible real estate crisis. Lack of abrupt changes in the financial position of the national insurance companies also stems from the extremely conservative product structure of Polish insurers. Nearly 55% of the products are motor insurances (over 31% are the third party liability insurances for drivers) and another 22% are property insurances against the elements and other risks.

As evidenced in the above analysis, the effect of the current economic slowdown has so far been rather poorly visible for the Polish insurers premiums collection, although it was noticeable for the global insurance market – the drop in premiums written in life insurance amounted to -7,3% in 2008 (in 2007 increase 8.8%) and property by -1,4% (up 0.2% in 2007) (Table 1).

To assess the impact of turmoil of financial markets on life insurance companies the technical result analysis is important together with its constituent results from the business of insurance and from investments, and the gross profit (Figure 4).



**Figure 4. Financial Results in non-life insurances in 2005-the first half of 2010** *Source: Own calculations based on KNF* 

In the 2nd half of 2007 a distinct change in performance of life insurance companies can be observed. The loss on investment activity is accompanied by a higher positive result on insurance activity. This situation reaches its extreme in the first half of 2008 when the loss on investments exceeds PLN 3.6 billion and at the same time is accompanied by an extremely high technical result of PLN 5.25 billion. The 2nd half of 2008 brings an alleviation of the situation. So, pronounced losses on investment activity are undoubtedly the result of the situation on the financial market. The profitability of investment activity in 2008 in life insurance companies was -7.86% (in the 1st half of 2008 -4.68) and in 2007 5.06% while in the preceding years it was close to 10% (9.55% and 10.28% respectively in 2005 and 2006). The situation is clearly normalized in 2009. In the 1st half of this year the result on investments is positive and in the 2nd half of the year it is record high – higher than 1.7 billion, the best in the studied period 1st half of 2007. The profitability ratio of investment amounts to respectively 3.95 (in the 1st half of 2009) and 11.6% (in the 2nd half of 2009). In the 1st half of 2010 the result on investments reaches the value close to years 2005 and 2006, that is the period preceding the start of financial crisis. Significant changes in the investment activity taking place in insurance companies in 2007-2009 require a deeper analysis (Table 2).

			,			
Item	2007		2008		2009	
	Total	(1)	Total	(1)	Total	(1)
I. Investment income	4 961.2	2 666.1	4 312.9	3 098.5	6 271.7	2 954.2
II. Unrealized gains on investments	1 905. 0	440.9	855.0	275.8	2 838.5	370.5
III. Investments charges	672.6	265.6	8 067.7	571.9	707.9	80.9
IV. Unrealized losses on investments	2 615.3	549.3	3 282.3	913.9	327.3	164.5
V. Investments returns	3 578.3	2 292.2	-6 182.1	1 888.6	8 074.9	3 079.3

 

 Table 2. Components of the result on investments in life insurance in years 2007-2009 (in million PLN)

(1) with the exception of investments relating to insurance, where the policyholder bears the risk of allocation *Source: as Figure 4* 

Throughout the entire year of 2007 insurance companies eventually reach a positive result on investments only thanks to a very good 1st half of the year. In 2008 the source of losses on investment activity is already clearly visible – apply only to the investments corresponding to products in life insurance where the investment risk is borne by the policyholders. In addition, it should be added that a significant proportion of losses on the investment activity is the unrealized losses (III) resulting exclusively from the decline in the value of financial instruments below their acquisition value and the latest revaluation – in 2008 unrealized losses constituted almost half of the result on investment activity. A reverse situation is brought by the year of 2009 where over 35% of the result on investments are also due to investment revaluation. This time, however, it is a positive result arising solely from the increase in the market value of financial instruments. As one can see accounting operations have a very significant impact on the outcome of the investments of Polish insurers – the effect of revaluation of financial instruments. It is worth noting that the balance of the years 2008-2009 of all unrealized losses and profits on investment activity of

insurers is almost neutralized (it amounts to PLN 83.9 million). This justifies the voices raised in the environment that financial instruments evaluation method adopted in recent years affected the performance of insurers during the crisis in an unnatural way.

A significant change of the result on insurance activities of life insurance companies also requires a deeper analysis. A very clear loss in the 1st half of 2007 stemmed from an increase in insurance technical provisions for unit-linked products by the amount of over PLN 7 billion (in the analogous period of 2006 these provisions increased by PLN 1.3 billion).

The increase in provisions was caused by a rapid increase in the sales of these insurances (mainly short-term) – the written premium for 2006 amounted to PLN 9.06 billion and in the 1st half of 2007 almost PLN 7.5 billion. As a result of the resignation from class 3 insurances (with the investment fund) in 2008 the balance of the technical provisions decreased by more than PLN 9 billion compensating the increase in life insurances class 1 (structured products) positively influencing the results of insurance business.

The drop in the sales of life insurances and the realized claims payments in 2009 resulted in the need to release of further technical provisions, which resulted in reduction of losses in insurance activity<sup>3</sup>. Thanks to these activities and strong investment performance in the 2nd half of 2009 life insurance companies showed a profit in the amount of nearly PLN 5 billion at the end of this period.

Non-life insurance companies in the entire study period achieved positive results on the investment activity (Figure 5). Throughout 2008 the profitability of investments was 7.53% and was better than the year 2007 by over 3 percentage points and only slightly worse than the profitability for the years 2005 and 2006 (about 2 percentage points). In 2009 profitability of investments is even better - 8.21%. High results on investment activity in 2008-2010, however, are the result of the income from shares in subsidiaries. In the 1st half of each of these years, the largest life insurer in Poland PZU Życie paid to the biggest Polish property company dividends – in the amount of PLN 2.167 billion in 2008, PLN 1.419 billion in 2009 and PLN 3.12 billion in 2010.

After "clearing" the results of investment activity from this emergency, one-off amount the profitability of the investments drops in 2008 to the level of 2.42% in 2009 to the amount of 5.63% and in 2010 to 2.61%. The results on investment activity in 1st halves of years 2008-2010 are respectively – 0.5 billion, 1 billion, 1.08 billion. Thus they become comparable to the period 2005-2007 and to 2nd halves of the years under study. These comparisons indicate that the financial crisis had no significant influence on activities of Polish property insurers.

In the 2nd half of 2008 the technical result of insurers dropped. This decline is mainly caused by an increase in the dynamics of administrative costs and provisions for outstanding claims<sup>4</sup>. It should be noted, however, that the result of Polish insurance sector in 2008 is the second result after 2006 since 1991. Although clearly, the key contribution here is the high result of investment activity, which (as already mentioned) is the result of rather high dividend income from PZU Życie.

<sup>&</sup>lt;sup>3</sup> Result on insurance activity in life insurance is not equivalent to the technical result since in the analyzed examples it is calculated by excluding from consideration the result on investment activity.

<sup>&</sup>lt;sup>4</sup> From 1 Oct 2007 to the end of 2008 in the costs appears the so called Religa tax (named after the then Minister of Health) that is a mandatory flat fee in the amount of 12% of the premiums from third party liability insurance for drivers paid to the National Health Fund (the fund being the source of public health care financing) intended for treatment of traffic accident victims.

Despite the negative technical result of property insurers in the 2nd half of 2009 the final result for the sector for 2009 is also satisfactory. The technical result of non-life insurers in the 1st half of 2010 is negative largely due to the spring and summer floods, storms and torrential rains.

According to information from the Polish supervision in the period of May-June the amount of about PLN 1 billion compensation for these losses was paid (including about 61% is the share of the reinsurers). However, due to the high profitability of investments the sector's result for the 1st half of 2010 is positive. If, on the other hand, the aforementioned dividend was to be subtracted, it would oscillate around 0.

The value of assets of Polish insurance sector, despite the decline in the value of investments, systematically increased until the end of 2008. A slight decrease in the value of assets can be observed in life insurances in the 1st quarter of 2009 (by 2.3%) and it mainly results from the decline in the value of investments at the risk of the policyholder.



**Figure 5. Financial results in life insurances in 2005-the 1st half of 2010** *Source: as Figure 4* 

Unfavorable trends in investment activity had not effect on solvency of insurance companies. In accordance with the rules of Solvency I and their implementation in the Act on insurance activity essential requirements for the assessment of solvency concern the coverage of required solvency margin and guarantee fund with available solvency margin and the possession of assets in the amount of no less than gross technical provisions (Act of 22 May 2003 on insurance activity, Art. 146.1, 154.1) (Table 3).

			•	•				
Item	tem 2007		2008		2009		2010	
	30.06	31.12	30.06	31.12	30.06	31.12	30.06	31.09
			Provis	sions cover i	ratio			
Life	112.20%	108.80%	107.40%	108.70%	112.20%	109.00%	108.70%	108.60%
Non life	152.30%	153.90%	157.30%	155.30%	153.40%	116.40%	122.90%	122.50%

Table 3 Statutory solvency ratios in 2007-2009

Activity monitoring ratio								
Life	324.80%	347.30%	242.70%	290.50%	300.20%	349.50%	283.40%	306.70%
Non Life	695.00%	666.80%	645.50%	647.00%	707.10%	364.80%	346.60%	371.80%

Source: Prepared on the basis of reports KNF

The analysis of the provisions cover ratio indicates its good and stable level, particularly in the scope of property insurances in non-life there is even observed a growing trend, however, slowed down in the 2nd half of 2008 and resulting from higher dynamics of assets than of provisions (13.3% - the average annual increase rate of investments in 2007-08, and of the provisions at the same time 10.1%). There is also a clear change of this ratio in the 2nd half of 2009 and in the year 2010. As before, it results from a higher increase in provisions than the increase in assets (from 30.06.2009 to 30.06.2010 provisions increased by 4.8% and assets only by 1.6%). For life insurances this trend is reverse since the already mentioned significant increase in provisions (average annual rate of 13.01%) exceeded the increase in investments (11.46%).

However, it undergoes an insignificant change in the 1st half of 2009 and is stabilized in 2010 reaching the proper level from years 2007-2008. However, it should be noted that according to information from the financial supervision, insurance companies, despite opportunity arising from existing legislation, do not show all assets held to cover technical provisions (have no such obligation).

Solvency margin cover ratio for life insurances decreased in the 2nd quarter of 2008 to rise slowly until 2009 inclusive and to drop slightly in 2010 (in connection with the dividend paid by PZU Życie) and then to rise in the 3rd quarter of 2010. The increase in solvency margin primarily associated with the increased risk for short-term structured products was accompanied by a decline in the value of available solvency margin. In case of non-life insurances the increase of solvency margin associated with the increase in gross premiums was also accompanied by the increase in the level of available solvency margin. The situation is changed dramatically in the 2nd half of 2009 as in the 3rd quarter of the year the largest property insurer is making advance dividend payment for 2009 in the amount of PLN 12.7 billion<sup>5</sup>, which causes a decrease in available solvency margin of the entire property insurance department by 48.3%. Despite this the cover ratio is the level of available solvency margin is very good.

## 4. FOREIGN CAPITAL IN THE POLISH INSURANCE SECTOR

Since the beginning of formation of a competitive insurance market in Poland (since the Act of 1991) there is a noticeably high involvement of foreign entities in capital investments in Polish insurance companies. According to the data at the end of the 1st quarter of 2010 the share of direct foreign investments in the primary capital of life insurers amounted to 71.90% and non-life 83.58%. The countries from which most foreign capital came are Austria (32%), Germany (21%), and the Netherlands (18%) (Figure 6).

 $<sup>^{5}</sup>$  PZU result for the year 2009 was only at the level of PLN 2.51 billion. So high dividend was the result of blocking the payments from previous years and the agreement entered into by the State Treasury with Eureko ( in 2009 the owner of 32 % stake in PZU ), where this dividend was a part of the compensation. This settlement agreement that ended the dispute, in which Eureko demanded the sale of a majority stake in PZU.



Figure 6. The structure of foreign investments in Polish insurance companies as of the second half of 2010

#### Source: Own calculations based on information KNF

Such a situation obviously favors the integration of Polish insurance market with the world market and the transfer of knowledge and experience from developed markets to a relatively young and still growing insurance market in Poland, but it also increases the sensitivity of the risk during the global downturn. On the Polish insurance market operate insurance companies being a component of financial groups in which are present entities that have suffered significant losses as a result of the financial crisis – AIG (AIG Polska TU<sup>6</sup> and PAPTUnŻiR AMPLICO LIFE S.A.<sup>7</sup>), ING Group (ING TUnŻ SA.) or KBC Group (TUiR WARTA S.A. and TUnŻ WARTA S.A.).

According to KNF data 8 of the national insurance companies have passed to the supervision authority information on the presence in the group of entities sensitive to the collapse of mortgage market failure in the USA. It is therefore possible to reduce the capital results of the group and to transfer the financial problems of banks to insurance companies (the risk of loss of the bank's reputation and its lowered rating, financial flows aimed at improving liquidity of the entities at risk in the group). (S. Kluza, 2008)

#### 5. ACKNOWLEDGEMENT

The main area of impact of the crisis on the activity of Polish insurance companies has so far been the change in the assets value and the associated decline in the profitability of investment activity. As no insurance company had in its portfolio structured instruments based on mortgage loans (according to KNF data) therefore the decline in the value of assets was associated with the decline in the value of shares listed on the stock market, treasury securities with the interest rates dependent on market exchange rates and the participation certificates in the investment funds.

<sup>&</sup>lt;sup>6</sup> The company abandoned the business in Poland (after almost 19 years of operation on 6 May 2009.) and now operates as a branch Chartis Europe S.A. based in Paris, France.

<sup>&</sup>lt;sup>7</sup> 1 November 2010 the company MetLife Inc. Finalized a purchase transaction of American Life Insurance Company and as a result Amplico Life is operating also within the framework of combined structure of insurance companies.

In light of the analysis carried out it seems that the situation on the Polish market has stabilized. At the same time, property insurers have had to face new difficulties – an exceptionally cold winter of 2010 and several flood waves. The year 2011 and those following shall still remain quite difficult years for the insurance market. The increased credit and market risk and the risk of macroeconomic environment and the resignation from insurance policies are the main areas of risk to which insurance companies will be exposed in this period.

The perspectives for global insurance are good (preliminary estimates for 2010 indicate an increase of 4.4% of life insurance written premiums and an increase of 1.3% in non-life insurance) and the forecast for Poland is very good. There is a two-digit increase expected in life insurance premiums. In case of property insurances Poland and Russia are perceived as main markets of Central and Eastern Europe with the dynamics of premiums at the level of more than 12% (T. Hess, 2008).

The crisis situation could not have been left without the response from regulatory bodies. The EU proposes to accelerate works on the introduction of a new system to assess solvency of insurance companies (Solvency II), which is to include the assessment of the risks occurring in the insurers activities and to motivate insurance companies to implement risk management systems. As a result of the crisis there was a need to review some previous works within the framework of Solvency II.

## REFERENCES

- 1. Blom F., Kuenen J.W. (2009), *Building a Crisis-proof Insurance Sector in The Netherlands*, Boston Consulting Group, BV
- 2. CEA (2008), Eight key messages on the financial turmoil, CEA, Brussels
- 3. Hess T., Karl K. , Wong C. (2008), Global insurance review 2008 and outlook 2009: Weathering the storm, Economic Research & Consultin, Special Report, Swiss Re,
- 4. Kluza S. (2008), Wpływ kryzysu na amerykańskim rynku kredytów hipotecznych na polski rynek ubezpieczeń, CASE,
- 5. Kukiełka J., Poniewierka D. (2003), *Ubezpieczenia finansowe. Gwarancje ubezpieczeniowe, ubezpieczenia transakcji kredytowych*, Oficyna Wydawnicza Branta, Bydgoszcz-Warszawa
- 6. Laux C., Muermann A. (2006), *Mutual versus Stock Insurers: Fair Premium, Capital, and Solvency*, CFS Working Paper Series from Center for Financial Studies, No 26
- 7. SwissRe (2010), World Insurance in 2009. Premiums dipped but industry capital improved, *Sigma* nr 2

## THE IMPACT OF CORPORATE SOCIAL RESPONSIBILITY (CSR) POLICIES ON PERCEPTIONS AND BEHAVIORAL INTENSION OF GREEK CONSUMERS

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Abstract: During the last five years Greece has witnessed the exposure of an unprecedented number of corporate related events that had a significant impact on the public opinion (huge financial scandals, various corruption accusations, etc). These events dramatically increased the negative perception of consumers towards large companies operating in Greece. Corporate Social Responsibility (CSR) may be considered as an effective initiative that protects and strengthens the image and reputation of implementing companies, especially at a time that their status has been severely damaged by numerous distressing reports. The World Business Council for Sustainable Development (2000) defines CSR as a business commitment that supports sustainable economic development and, at the same time, contributes to the quality of life of employees, their families, the local community and society in general. Companies that implement CSR try to establish a positive business reputation and enhance the corporate brand name by taking actions that lead in the development of a competitive advantage, while at the same time contribute to the demands of various third parties. These companies shift from solely focusing on profits and tend to include financial, environmental and social goals in their core business strategies. Therefore, many researchers argue that the CSR policy is an activity mutually beneficial for both the business and society. However, several doubts about the effectiveness of these policies are being expressed. The purpose of the present study is to measure the perceptions of consumers about Greek Large Companies (GLC) and examine the influence of the implementation of CSR policies on consumers' perception and consumers' behavioral intention. The results of the quantitative research (N=454) highlighted the negative perceptions of Greeks towards GLC but, at the same time, revealed the statistically significant positive effect of CSR policies on consumers' perceptions and behavioral intention.

*Keywords:* Corporate Social Responsibility, CSR, consumer's perceptions, behavioral intention, Greece.

JEL Classification Codes: M14

## 1. INTRODUCTION

During the last decade, a significant number of news reports around the globe have severely damaged the image of large corporations. Incidents like the highly publicized financial scandals (Enron, WorldCom, etc), corruption among corporate executives (Monsanto, Exxon, etc) and sweatshop labor by clothing and sports shoe manufacturers (Nike, Reebok, etc) have increased the publics' negative perception for large companies.

In the Greek business context the corporate environment is not especially characterized for its transparency, social sensitivity and healthy competition. For example, despite the reduction in corporate taxes during the last years, Greek large companies continue to evade taxes in an enormous rate (Kostarelou, 2008). Stergiou (2008) calculates the percentage of Greek companies that evade taxes at 89%. Moreover, working conditions in the Greek workplace are poor, despite the fact that Greece has no heavy industry. Based on official evidence, in 2008 there were 142 fatal accidents and 113 in 2009 (To Vima, 2010). Furthermore, many companies operating in Greece have been accused of extreme profiteering. According to Theodoropoulou (2010), the price difference of milk between producer and consumer reaches approximately 400%. As a consequence, the Greek Competition Commission imposed fines in companies operating in various sectors of the economy that exceeded 100 million Euros for the year 2009.

All of the above, though not always connected with exclusively Greek-owned organizations, create negative feelings and perceptions to consumers for all domestic companies. To avoid the development of such a negative climate, companies seem increasingly eager to be seen as socially responsible and ethical (Maignan and Ferrell, 2003).

Historically, organizations felt that their sole responsibility was to provide maximum financial returns to shareholders. However, many modern theorists argue that companies have broader responsibilities. According to Carroll (1991), companies have an implied social responsibility, since it is society that allowed them to operate within the community. This responsibility requires companies to contribute financial and human resources in order to improve the quality of life in the community itself (Dean, 2004).

Corporate Social Responsibility (CSR) has been defined as the commitment of a business to contribute to sustainable economic development, while at the same time working with employees, their families, the local community and society at large to improve their quality of life (World Business Council for Sustainable Development, 2004). Carroll (1991) is credited with providing the shape of the concept, identifying four key areas in which a firm may be held responsible: economic, legal, ethical and, returning something to the community, through philanthropy, or discretionary gestures. One broad framework used to categorize CSR initiatives includes actions under the domains of employee relations and diversity programs, ethical treatment, product design, marketing programs, the environment, human rights, and corporate governance (Kinder, Lydenberg, Domini & Co. Inc., 2006).

Moreover, Angelopoulos (2006) underlines that the benefits of promoting CSR are not limited to the external environment of the company (better reputation, expansion of the client base, penetration of new markets), since CSR initiatives may also have an significant impact on the internal environment (increase in employee productivity and loyalty, development of competitive advantage). Additionally, companies may become more effective in the recruitment and retention of talented employees, as people may have positive fillings when working for a socially responsible company (Cone *et al.*, 2003; Drumwright and Murphy 2001).

However, in a Danish study, Schultz and Morsing (2003) found the use of CSR for marketing communication purposes to be distasteful to some consumers. Stuart (2004) argues that if brands over-emphasize their CSR policies, consumers may perceive the brand as self-interested, leading to the creation of negative feelings. Webb and Mohr (1998) found that consumers do their shopping based on price, quality or convenience, rather than choosing retailers because of the social causes they support. Dean (2004) argues that the actions undertaken by companies as a part of the CSR program may be partly altruistic, but may also be employed in their own corporate interests.

Despite the above, it can not be disputed that CSR is highly correlated with customer loyalty, which is a strategic point for all enterprises (Oliver, 1999; Reichheld, 1993). According to Petrick and Sirakaya (2004), customer loyalty constitutes a critical orientation for the organization, since it helps maintaining existing customers while, at the same time, averts them from seeking cooperation with other companies.

Although there is a lot of disagreement regarding the significance of loyalty, most empirical studies focus on behavioral intention (Guenzi and Pelloni, 2004). According to Zeithaml *et al.* (1996), the perceived quality of a product or service is highly related to the customer's behavioral intention. According to Bloemer and Ruyter (1998) and Oliver (1997), customer loyalty is interpreted by two basic structures, the commitment and the consequence. Zeithaml *et al.* (1996) claims that the favorable behavioral intention includes elements such as the recommendation of the service to others and the smaller sensitivity towards the price. These opinions are used to estimate the behavioral intention in the framework of the present study.

The purpose of the present study is dual: (a) record the perceptions of Greek consumers about Greek Large Companies (GLC) and (b) examine the influence of the application CSR policies on consumers' perceptions and behavioral intention. The present study is empirical (it is based on primary data), explanatory (examines cause and effect relationships), deductive (tests research hypotheses) and quantitative (includes the analysis of quantitative data collected with the use of a structured questionnaire).

The following section includes the presentation of the proposed hypotheses of the present study, while in the third section the research methodology is being presented. Results and conclusions are discussed in the sections 4 and 5 respectively.

## 2. HYPOTHESES DEVELOPMENT

According to Tsagarestou (2001), most consumers in Greece do not perceive CSR as a genuine act of social concern from the side of the large organizations. They believe that the selfish profit motive overshadows corporate social contribution and the promotion of social work is, mostly, advertising in nature. According to Michas (2008), the corruption accusations and the numerous scandals of the last period have dramatically muddled the image of large Greek organizations in general.

Thus, we can hypothesize that:

H1. The perceptions of Greek consumers towards Greek large companies are negative.

The main outcomes of a coherent CSR program are expected to have an impact of the behavioral intention of consumers. More specifically, a CSR program is hypothesized to (a) increase purchase intension (Mohr and Webb, 2005), (b) create positive word of mouth (Hoeffler and Keller, 2002) and (c) make consumers develop a willingness to pay higher prices for a specific product or service (Laroche *et al.*, 2001).

From the above it can be hypothesized that:

H2. The perceptions of Greek consumers towards Greek large companies have a positive impact on behavioral intension.

Academic research suggests that consumers expect companies to go beyond delivering economic outcomes and contribute to society's welfare and sustainability by being socially-responsible; and will support them if they do so (Sen and Bhattacharya, 2001). A survey by the Institute of Communications (2010) showed that 52.6% of Greek consumers have rewarded a socially responsible company (either by buying a product or through positive comments made about the company) or have thought to do so. The same survey showed that

66.7% of Greek consumers have "punished" a socially not responsible company or have thought to do so. It is quite interesting to build on these findings, exploring a causal relationship.

Thus, it is hypothesized that:

H3. The application of a CSR policy has a positive impact on the perceptions of Greek consumers towards Greek large companies.

## 3. RESEARCH METHODOLOGY

#### 3.1 Sample and measurement

The sample of the present study is constituted by 454 Greeks consumers. 48.5% are males, and 51.5% females. The age mean is about 37 years (M=36.52, S.D =12.47). 89% of the respondents are of moderate or good economic status, while 64% had graduated from university.

The measurement instrument is a structured questionnaire consisting of 55 statements (items), categorized in four conceptual sections. In the first section 24 statements (items) are used to determine the perceptions of the Greek consumers towards Greek large companies. These items were developed after an extensive review of the relevant literature. The answers were given in a 7-point Likert scale, where 1 means 'absolutely negative perception' and 7 'absolutely positive perception'.

The second section consisted of 3 statements (items) which are used to measure the 'behavioral intension' construct. These statements were adapted from the work of Zeithaml *et al.* (1996). They measure (a) the intention of re-supplying a service in the future, (b) the intention to suggest a service to others and (c) the sensitivity of the price. The statements were evaluated with a use of a 7-point Likert scale, where 1 means 'absolutely negative intention' and 7 means 'absolutely positive intention'.

The third section is constituted by the same 24 statements (items) as the first one. The only difference is that before filling out the third section, responders were informed that their answers should concern a company which had recently provided 3% of its net profits for social purposes. The answers were given in the same 7-point Likert scale as the ones in the first section.

Finally, the fourth section of the questionnaire is constituted by 4 questions referring to the demographic data of the respondents (gender, age, economic situation and level of education).

## 3.2 Scale reliability and validity

Several tests were performed to establish the content validity, the construct validity and the reliability of the questionnaire. These tests are needed in order to ensure the appropriateness of the research instrument.

Content validity refers to the extent in which a measurement reflects the specific intended domain of content (Carmines and Zeller, 1991). In the present study, content validity was ensured thought an extensive review of the relevant literature. Moreover, the questionnaire was pilot tested with the use of a panel of experts (academics and professionals) before taking its final form. All the variables used are adopted from various previous studies and are considered to be valid and reliable.

After ensuring content validity, the next step was the control for the construct validity and the reliability of the questionnaire. Construct validity seeks an agreement between a theoretical concept and a specific measuring device or procedure. Reliability is one of the most important criteria for evaluating research instruments (Chu and Murrmann, 2006) and refers to the extent to which a variable, or a set of variables, is consistent in what it is intended to measure (Hair *et al.*, 1995).

Exploratory Factor Analysis (EFA) was used for ensuring construct validity, since items from various different studies were incorporated and the structure of the factor model was not known or defined beforehand. For the appropriate statistical analysis, the following measures have been examined (Sharma, 1996; Hair *et al.*, 1995; Nunnaly, 1978):

- For the extraction of factors the method of 'Principal Component Analysis', using the varimax method of orthogonal rotation was used. According to Sharma (1996) and Hair *et al.* (1995), the varimax rotation is one of the most reliable and popular methods of rotation.
- For determining the appropriateness of the factor analysis the following measures were examined: (a) the correlations of the entry table, (b) the 'Bartlett's test of Sphericity' (it should be statistically significant at the 0.05 level), (c) the statistical test of 'Kaiser-Mayer-Olkin' (KMO) (values over 0.8 are satisfactory, while values over 0.6 are acceptable).
- For determining the number of the extracted factors the criterion of 'eigenvalue' was used. Factors whose 'eigenvalue' is over one are selected.

	Factors and Variables	Loadings	
Fac	tor 1: Interest towards community and employees ( $\alpha = 0.908$ )		
1	Greek Large Companies (GLC) protect the health of the consumers.	0.655	
2	GLC do not pollute the environment with their operations.	0.683	
3	GLC consistently pay their debts to pension funds.	0.560	
4	GLC do not evade taxes.	0.480	
5	GLC are interested in improving social life.	0.542	
6	GLC pay attention to consumers' safety.	0.693	
7	GLC take actions to protect the environment.	0.732	
8	GLC recompense satisfactorily their employees.	0.603	
9	GLC look after the safety of employees.	0.677	
10	GLC are interested in improving citizens' quality of life.	0.699	
Fac	tor 2: Honesty and transparency ( $\alpha = 0.874$ )		
11	GLC do not gain outrage profits at the expense of consumers.	0.565	
12	GLC do not overprice their goods or services.	0.586	
13	GLC do not intertwine with the political power.	0.806	
14	GLC do not delude the consumers.	0.601	
15	GLC do not affect the political developments of the country.	0.767	
16	GLC are not involved in politics.	0.787	
Fac	tor 3: Contribution to economic prosperity ( $\alpha = 0.806$ )		
17	GLC reduce unemployment in the country.		0.781
18	GLC contribute to the prosperity of citizens.		0.676
19	GLC contribute to the economic development of the country.		0.707
Fac	tor 4: Behavioral intention ( $\alpha = 0.897$ )		
20	I intend to become a future customer of this company.		0.840
21	I intend to recommend the products or services of this company to my acquaintances.		0.836
22	I intend to buy products or services of this company, even though they are slightly		0.839
	more expensive than those of its competitors.		

## Table 1. Exploratory Factor Analysis and Reliability Analysis

- For testing the significance of the variables (items), their factor loadings were used. For a sample size of more than 150 observations a loading over 0.45 is considered to be significant.
- For testing the reliability (internal consistency) of the constructs the 'Cronbach's Alpha' measure was used. Values greater than 0.7 are considered to be valid.

The Exploratory Factor Analysis (EFA) for the 27 items of the first two sections of the questionnaire produced four distinctive factors. Five items included in the first section of the questionnaire were deleted because of their factor loading (less than 0.45).

The second EFA, consisting of 22 items, also produced a four factor solution that explained 64.87% of the variance. The KMO with a value of 0.930 and the significance of the Bartlett's test (0.000) indicated a good fit of the data. The four factors were named (a) "Interest towards community and employees", (b) "Honesty and transparency", (c) "Contribution to economic prosperity" and (d) "Behavioral intention".

The first three factors measure the perceptions of the Greek consumers towards large organizations, while the fourth factor measures the dependent variable of the study used for the control of the second hypothesis (behavioral intention).

The results of the second EFA are presented in Table 1 above.

## 4. **RESULTS**

For testing the first hypothesis of the study, the mean scores and the standard deviation of the three factors that are used to measure the 'perceptions of Greek consumers toward Greek Large Organizations (GLC)' were calculated (see Table 2 below).

	Factors	Μ	S.D
1	Interest towards community and employees	2.870	1.053
2	Honesty and transparency	2.538	1.158
3	Contribution to economic prosperity	3.730	1.285

 Table 2. The perceptions of Greek consumers towards Greek Large Companies (GLC)

Given that perceptions were measured on a 7-point Likert scale, the results reveal that the Greek consumers do not think very highly of GLC's. Actually, their perceptions are rather negative, as indicated by the mean of each of the three factors (2.870, 2.538 and 3.730 respectively).

Therefore, the first hypothesis is fully supported by the empirical data.

The second hypothesis was tested with the use of 'Multiple Regression Analysis' (Stepwise method). 'Behavioral intention' was the dependent variable and 'interest towards community and employees'', 'honesty and transparency' and 'contribution to economic prosperity' were the independent (predictor) variables. The results are presented in Table 3 below.

Table 3. The relationship between perceptions and behavioral intention

Dependent variable	Independent variables	β	t	Sig. t				
Behavioral intention	Interest towards community and employees	0.549	12.220	0.000				
	Honesty and transparency	0.028	1.244	0.145				
	Contribution to economic prosperity	0.128	2.848	0.005				
$R^2 = 0.401, F = 150.758,$	$R^2 = 0.401, F = 150.758, Sig. F = 0.000$							

Firstly, it should be underlined that the statistical analysis displayed the appropriateness of the empirical data for regression analysis, since the F- statistic is significant. Moreover, results indicated that only the beta coefficients of the first and third factor are statistically significant at the 0.05 level.

The variable that has the higher positive impact on 'behavioral intention' is the one measuring the 'interest towards community and employees' ( $\beta$ =0.549 and Sig.=0.000), while 'contribution to economic prosperity' had a smaller positive impact ( $\beta$ = 0.128 and Sig.= 0.005) on 'behavioral intention'.

Thus, the second hypothesis is partially supported by the empirical data.

For testing the third hypothesis of the study, an Analysis of Variance (ANOVA) was performed. The three dimensions measuring the perceptions of the Greek consumers towards Greek large companies (interest towards community and employees, honesty and transparency, contribution to economic prosperity) were used as pairs for the comparison. As mentioned in paragraph 3.1., consumers were asked to answer the same set of questions twice; during the second time they were informed that the company for which their answers were expressed had recently provided 3% of its net profits for social purposes.

The results of the analysis are presented in Table 4 below.

Pairs	Factors	Μ	S.D.	t	df	Sig. 2-tailed
Pair 1	Interest towards community and employees (Before-After)	-0.169	0.701	-5.151	453	0.000
Pair 2	Honesty and transparency (Before- After)	-0.149	0.810	-3.913	453	0.000
Pair 3	Contribution to economic prosperity (Before-After)	0.187	1.431	2.778	453	0.006

 Table 4. Perception differentiation towards Greek Large Companies (GLC)

The results indicate that the perceptions toward Greek Large Companies after the implementation of a CSR policy were improved for two out of the three dimensions (interested towards community and employees, honesty and transparency) (sig.<0.05). On the contrary, perceptions for the third dimension (contribution to economic prosperity) were worsened (sig.<0.05).

Thus, the 3rd hypothesis is partially supported from the empirical data.

## 5. CONCLUSIONS

The aim of the present study was to determine the perceptions of Greek consumers towards Greek large companies and examine the effect of the application of CSR policies on consumers' perceptions and behavioral intention. A structured questionnaire was administrated to Greek consumers and 454 valid were returned. Before conducting the appropriate statistical analysis, the questionnaire was thoroughly controlled for its content and construct validity.

The empirical results indicate that the perceptions of Greek consumers are negative for all three dimensions of perceptions that were measured in the questionnaire of the study (interest towards community and employees, honesty and transparency, contribution to economic prosperity). One can argue that these results are quite expected and should be considered as normal, since large companies in Greece are consistently accused, especially during the last five years, for profiteering, tax evasion, corruption, poor labor conditions etc. In alignment with Michas (2008), the present study concludes that the recent corruption accusations and economic scandals significantly tarnish the image of big Greek companies. Despite that, it should be noted that the less negative perceptions of the three dimensions were presented in the dimension measuring the companies' contribution to the economic prosperity of the country. Secondly, the results of the statistical analysis indicate that when consumers believe that a company has a genuine interest for the community and its employees and consistently makes affords to contribute in the economic prosperity of the country, a positive intention towards buying products from that company is established. Hence, CSR policies may positively affect behavioural intention. Despite that, the empirical results failed to establish any relationship between the dimension of honesty and transparency and consumers' behavioural intention.

These findings are in the same line with Hill (2000), who argues that corporate initiatives that support and promote social prosperity may lead to an increase in the added value of the existing products. Moreover, previous studies conducted in Greece, also found a positive correlation between social responsibility and the intention to become customer of a company (Institute of Communications, 2010). However, it is strange and difficult to interpret the inability of the present study to establish any significant statistical relationship between "honesty and transparency" and "behavioral intension".

Thirdly, the empirical results indicate that the implementation of CSR policies improves the perceptions of Greek consumers toward large companies in two of the three dimensions, namely "interest towards community and employees" and "honesty and transparency". However, despite the considerable improvement, perceptions still remain negative (below 4 on a 7-point Likert scale). These results are in line with Nikolaou (2006), who argues that despite the significant increase in Greek citizens who positively evaluate responsible corporate actions, the majority is not, still, convinced that large companies work in the right direction to build a better society.

On the other hand, the negative relation between the implementation of CSR policies and the third dimension of consumers' perceptions (contribution to economic prosperity) is quite noteworthy. As the empirical data indicated, Greek consumers believe that when a company implements a CSR policy contributes less in the economic prosperity of the country. Perhaps, Greeks feel that the costs for the application of social responsibility policies are passed on consumers and, therefore, negatively affect economic prosperity. This view is in line with Tsakarestou (2001), who argues that the selfish profit motive overshadows corporate social contribution and the promotion of social work is often perceived as advertising.

In general, results indicate that Greek consumers will react positively towards companies which implement social responsibility policies. However, it seems that consumers should firstly be convinced about the sincerity of the companies' intentions. Obviously, they will not appreciate a social responsibility policy of a company, if at the same time the company is charged with tax evasion, interweaving, profiteering, poor treatment of workers.

It seems that in a business environment such as the one in Greece (not particularly distinguished for its honesty and transparency), the shift in the perceptions of the consumers requires not only good communication policies, but an effort to consolidate the philosophy and the practices of most companies.

## REFERENCES

- 1. Angelopoulos, K. (2006), Social Environmental Responsibility and Employment, 18th Greek Conference Network of Environmental Organizations, Retrieved at 06/03/2011 from: http://www.pandoiko.gr/ CongressSuggestion18-1, in Greek.
- 2. Bloemer, J. and De Ruyter, K. (1998), "On the relationship between store image, store satisfaction and store loyalty", European Journal of Marketing, 32 (5), pp. 499-513.
- 3. Carmines, E.G. and Zeller, R.A. (1991), Reliability and viability assessment, Sage Publications, Thousand Oaks, California.
- 4. Carroll B.A. (1991), "The Pyramid of Corporate Social Responsibility: Toward the Moral Management of Organizational Stakeholders", Business Horizons, 34 (4), pp. 39-48.
- 5. Chu, K.H. and Murrmann, S.K. (2006), "Development and Validation of the Hospitality Emotional Labor Scale", Journal of Hospitality & Tourism Research, 27 (6), pp. 1181-1191.
- 6. Cone, C.L., Feldman, M.A. and DaSilva, A.T. (2003), "Causes and Effects", Harvard Business Review, 81 (July), pp. 95-101.
- 7. Dean, H.D. (2004), "Consumer perception of corporate donations, effect of company reputation for social responsibility and type of donation", Journal of Advertising, 32 (4), pp. 91-102.
- 8. Drumwright, M.E. and Murphy, P.E. (2001), Corporate societal marketing. In: Bloom, P.N. and Gunlach, G.T. (Eds.), The Handbook of Marketing and Society, Sage Publications, Thousand Oaks, California, pp. 162-183.
- 9. Guenzi, P. and Pelloni, O. (2004), "The impact of interpersonal relationships on costumer satisfaction and loyalty to the service provider", International Journal of Service Industry Management, 15 (4), pp. 365-384.
- 10. Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C. (1995), Multivariate Data Analysis, Prentice-Hall International, New Jersey.
- 11. Hill, C.W.L. (2000), International Business: Competing in the Global Marketplace, The McGraw-Hill Higher Education Press, USA.
- 12. Hoeffler, S. and Keller, K.L. (2002), "Building brand equity through corporate societal marketing", Journal of Public Policy & Marketing, 21 (1), pp. 78-89.
- 13. Institute of Communications (2010), Corporate Social Responsibility CSR 2010, Retrieved at 03/07/2010 from: http://dl.dropbox.com/u/14714405/CSR2010/03%20CSR2010%20%28tables%29.pdf, in Greek.
- 14. Kinder, Lydenberg, Domini & Co. Inc. (2006), Socrates: The Corporate Social Ratings Monitor, Retrieved at 03/10/2006 from: http://www.kld.com/research/Socrates/index.html.
- 15. Kostarelou, E. (2008), "Mini tax, surer profitability and...tax evasion", *Eleftherotypia* 31/05/2008. Retrieved 06/03/2011 from: Newspaper. at http://www.enet.gr/online/online\_text/c=114,dt=31.05.2008,id= 21342664, in Greek.
- 16. Laroche, M., Bergeron J. and Barbaro-Forleo, G. (2001), "Targeting consumers who are willing to pay more for environmentally friendly products", Journal of Consumer Marketing, 18 (6), pp. 503-520.
- 17. Maignan, I. and Ferrell, O.C. (2004), "Corporate social responsibility and marketing: an integrative framework", The Journal of the Academy of Marketing Science, 32(1), pp. 3-19.
- 18. Michas, T. (2008), "Greeks, the big crooks in Europe", Eleftherotypia Newspaper, 25/09/2008, in Greek.
- 19. Mohr, L.A. and Webb, D.J. (2005), "The Effects of Corporate Social Responsibility and Price on Consumer Responses", Journal of Consumer Affairs, 39 (1), pp. 121-147.

- 20. Nikolaou, E. (2006), "Business Excellence", *Magazine "Capital"*, April 2006, Issue 195, in Greek.
- 21. Nunnally, J.C. (1978), Psychometric Theory, McGraw-Hill, New York.
- 22. Oliver, L.R. (1999), "Whence consumer loyalty?", *Journal of Marketing*, 63 (special issue), pp. 33-44.
- 23. Petrick, F.J. and Sirakaya, E. (2004), "Segmenting cruisers by loyalty", Annals of Tourism Research, 31 (2), pp. 472-475.
- 24. Reichheld, F.F. (1993), "Loyalty-based management", *Harvard Business Research* (March-April), pp. 64-73.
- 25. Schultz, M. and Morsing, M. (2003), "The Catch 22 of Integrating CSR and Marketing: Findings from a Reputation Study of Danish Companies", *Conference Proceedings, MSI, Boston University, School of Management*, pp. 17-19.
- 26. Sen, S. and Bhattacharya, C.B. (2001), "Does doing good always lead to doing better? Consumer reactions to corporate social responsibility", *Journal of Marketing Research*, 38 (2), pp. 225-243.
- 27. Sharma, S. (1996), Applied multivariate techniques. John Wiley and Sons Inc, USA.
- 28. Stergiou, L. (2007), "Tax Evasion: A history of 3,000 years", *Kathimerini Newspaper*, 02/02/2007, Retrieved at 06/03/2011 from: http://portal.kathimerini.gr/4dcgi/\_w\_articles\_kathextra\_9\_02/02/2007\_180523, in Greek.
- 29. Stuart, H. (2004), *Risky Business: Communicating Corporate Social Responsibility*. In: J. Wiley and P. Thirkell ((Eds), Marketing Accountabilities and Responsibilities, Proceedings of the Australia and New Zealand Marketing Academy Conference, [CD Rom].
- 30. Theodoropoulou, P. (2009), "Speculation-mammoth at the expense of consumers", *Aggeliaforos Newspaper*, 09/03/2010, Retrieved at 03/02/2011 from: http://www.agelioforos.gr/default.asp?pid=7&ct=1&artid= 31510, in Greek.
- 31. To Vima (2010), "Labour Inspectorate Corps: It is ascertained a decline in fatal labor accidents in ten months", *To Vima Newspaper*, Retrieved at 02/12/2011 from: http://www.tovima.gr/society/article/?aid=371118, in Greek.
- 32. Tsagarestou, M. (2001), "The Corporate Social Responsibility in Greece", *Greek Network* for the Corporate Social Responsibility, Retrieved at 12/02/2011 from: http://www.csrhellas.org/csr\_last2/ portal/images/stories/files/DiktioElliniko.pdf, in Greek.
- Webb, D.J. and Mohr, L.A. (1998), "A Typology of Consumer Responses to Cause-related marketing: From Skeptics to Socially Concerned", *Journal of Public Policy & Marketing*, 17 (2), pp. 226-238.
- 34. World Business Council for Sustainable Development (2000), "Corporate Social Responsibility - Meeting changing expectations", Retrieved at 12/02/2011 from: http://www.wbcsd.org/DocRoot/hbdf19Txhm k3kDxBQDWW/CSRmeeting.pdf.
- 35. World Business Council for Sustainable Development (2004), "Cross Cutting Themes Corporate Responsibility 2004", Retrieved at 20/04/2004 from: www.wbcsd.org.
- 36. Zeithaml, V.A., Berry, L.L. and Parasuraman, A. (1996), "The behavioral consequences of service quality", *Journal of Marketing*, 60 (2), pp. 31-46.

# MARKET ORIENTATION AND REGIONAL DEVELOPMENT: STRATEGIC AND STRUCTURAL ISSUES FOR THE AGRIBUSINESS SECTOR IN BALKANS

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Abstract: In the countries of South Eastern Europe, within the European Union, there are regions where the agri-food sector plays a vital role in socioeconomic terms. The aim of this paper is to examine the relationship between the market orientation concept and the Regional development. It explains the structure of the market from the perspective of small- and medium-sized agri-food producer organizations and discusses marketing strategy implications. Based on an extensive literature search the paper by focusing on key components of the market orientation concept such as, organizational culture, innovation, customer orientation, marketing co-ordination, coalitions and collaborations, explores their impact on regional development.

*Keywords:* Market orientation, innovation, collaboration, agri-food, regional development.

JEL Classification Codes: Q13, R11

## **1. INTRODUCTION**

The primary sector of the economy in the countries of South Eastern Europe, within the European Union, held and continues to occupy an important position as a sector of economic activity and as a factor in maintaining social and economic cohesion of their regions.

Greece became a member of the European Union in January 1999 and Bulgaria and Romania became official members on January 2007 with agriculture being one of the most debated topics in the accession negotiations. As almost the half of the population of Bulgaria and Romania and the one third of the population of Greece lives in rural areas, there is no doubt that the rural economy and the regional development is of vital importance.

Despite the fact that Bulgaria and Romania have a common history of many years under communist regime and Greece, unlike the other candidates, has long tradition as a market economy, Greece is similar to the other two countries in that they are all dominated by small and rural farmers. Small scale producers are generally faced with many constraints deriving from the "industrialization" of agriculture, the market instability and volatility, the international competition, the rapid changes in the marketing channels and the climate change.

Therefore, looking to the future, the agribusiness sector in these Balkan countries, acting in an increasingly competitive and highly volatile environment has to become more market oriented in order to meet the current demands of the globalized economy. Having new modern small - and medium - sized agrifood producer organizations as driving force, the market orientation philosophy should form the basis for any regional agricultural effort.

Based on the above, following the Introduction, the Second Section defines the notion of market orientation and discusses the role of small producer organizations from a regional development perspective. Section Three presents the main socio-economic characteristics and developments in the study area. Section Four explores the effects of market oriented agribusiness organizations on regional development by focusing on key strategic attributes such as, organizational culture, innovation, customer orientation, marketing co-ordination, coalitions and collaborations. Ending we conclude that the "market oriented neo-producer organizations" are critical for sustainable agriculture development in Balkan agricultural regions and market orientation is a core element for promoting regional development and sustainable rural livelihoods.

## 2. BACKGROUND LITERATURE

## 2.1 Market orientation

Within Marketing concept the meaning of "Market orientation" intangible factor has received considerable attention from researchers during the last decades. The Market orientation has been conceptualized from many different general perspectives such as behavioral and cultural. The definitions of the most acknowledged importance among the used ones about its "Core concept" are:

- "market orientation is defined as organization wide generation of market intelligence pertaining to current and future customer needs, dissemination of intelligence across departments, and organization wide responsiveness to it" (Kohli and Jaworski, 1990).
- "market orientation consists of three behavioural components and two decision Criteria- *customer orientation, competitor orientation, interfunctional coordination,* long-term focus and a profit objective –" (Narver and Slater, 1990).
- "we define customer orientation as the set of beliefs that puts the customer's interest first, while not excluding those of other stakeholders such as owners, managers, and employees, in order to develop a long-term profitable enterprise" (Deshpande, R. et al, 1993).
- "Market orientation represents superior skills in understanding and satisfying Customers" (Day, 1994).

Market orientation as an important firm-level factor, proactively or reactively, has an effect on organizational performance by improving current knowledge and skills and by developing new knowledge and skills (Jaworski and Kohli, 1993; Narver and Slater, 1990 Kyriakopoulos and Moorman, 2004). Although findings suggest that a market orientation is positively related to business performance in different types of markets and companies (Deshpande, Farley and Webster, 1993; Slater and Narver, 1994; Pelham and Wilson, 1996), the structure and the organizational culture of a company affect the notion of creating superior value to customers through continuous firm innovativeness.

Market orientation can be approached by two distinctive behaviours which are the market-driven and the market driving behaviour (Jaworski et al, 2000). Market-driven behaviour is characterized as reactive, it generates innovation and places the customer at the start of the processes. Market driving behaviour is characterized as proactive, it produces innovation and creates new customers and markets by shaping the structure, preferences and behaviours of all market stakeholders. (Hills and Sarin 2003; Kumar, Scheer, and Kotler 2002).

## 2.2 Regional development and producers collaborations

Cooperative organizations are a particular and globally formed type of economic activity which is amenable to specific rules that combine effectiveness with social sensitivity. As characteristically has been said, cooperatives are "an economic system with social substance". They are based on the values of self-help, self-responsibility, democracy, equality, equity and solidarity and they put these values into practice by following the principles of Voluntary and Open Membership, Democratic Member Control, Member Economic Participation, Autonomy and Independence, Education, Training and Information, Co-operation among Co-operatives, Concern for Community, according to the latest ratification of the International Cooperative Alliance, (ICA, 1995).

There are rural organizations that exist for different purposes and at different levels. They can take many forms, ranging from formal institutions, such as cooperatives, to informal producer groups and regional farm associations. In this study we focus on the small agribusiness producer organizations (POs) which are considered as formal rural organizations that are established on the initiative of the producers themselves, with the objective of improving farm income through improved production, marketing, and local processing activities and thus, to provide a common solution to shared problems that face the producers in an region (Rondot and Collion, 2001).

These rural Organizations are essential mechanisms for promoting rural development and sustainable rural livelihoods (FAO, 2006). According to ILO "The impact of Cooperatives in providing income to rural populations creates additional employment through multiplier effects including enabling other rural enterprises to grow and in turn provide local jobs". Farm families can benefit from Cooperative Organizations as their operation in the region helps increase the stability of the farming sector, improves their access to the markets for their products and strengthens the farmers' position in the agri-food chain (ILO, 2007).

From a local economic development perspective, the operation of co-operatives and other farmer/producer organizations has multiple contributions in their rural regions. This is due to the fact that they use local inputs that might be left unexploited and unused, enable job creation and, thereby, raise local incomes and generate regional taxes. They can also be a source of foreign exchange. Small Producers Organizations stimulate employment, sales, and incomes which are key aspects for local development (Trechter and King, 2000).

## **3. THE STRUCTURE IN THE STUDY AREA**

During the lat decades, agribusinesses in Romania and Bulgaria faced two major challenges: ongoing structural changes in the transition from a communist command regime to a market economy and preparations to meet the challenge of European Union (EU) accession. Since these countries joined the EU the agribusiness landscape has changed rapidly under the new rules and regulations but yet needs more adaptations.

Both countries have a common history of many years under communist regime which has affected their perception of collective actions. Because of wider economic, historical, political and social considerations and having the negative experience of "co-operation" with large-scale collective farms, agricultural producers remained suspicious to being reorganised in co-operatives and other farmer/producer organizations once again (FAO, 2006). Nowadays within the EU, the farmers, particularly the small ones, in order to anticipate the complexities of new realities as well as to benefit from the CAP taking simultaneously advantage of the financial support available though the European Union, they have to change their organizational culture and to focus on the creation of strong associations and new generation cooperative organizations which better support the needs of their members. In Romania, a total of 44 producer groups are recognized based on national legislation and 4 producer groups and 1 producer organization are recognised based on EU regulation no. 1182/2007 (EDV, 2009). In Bulgaria 1156 Cooperatives with 726,305.5 ha agricultural land (Euricse, 2011) were found to operate in 2007. In contrast, in Greece, which is a full member of EU since 1999, there are over 6,350 co-operatives with 746.812 members and 114 Associations of Agricultural Cooperatives, number which is amongst the highest in Europe (Ministry of rural development and food, 2009). Greece, being many steps ahead from the other two countries could act as a source of exchange of information for the transition of the other two Balkan countries.

Romania is three times as big as Bulgaria and two times as big as Greece in population but Romania and Bulgaria have a very low rate of GDP and PPS per inhabitant in comparison to Greece and the Eu-27. The percentage of population at risk of poverty in all the three Balkan countries is very close and above the percentage of EU-27 (table 1).

	Population on 1 January	GDP per inhal	Population at risk of poverty		
	2009	EUR	PPS		
EU-27	499 185 059	23 600	23 600	17	
BG	7 606 551	4 500	10 400	21	
GR	11 260 402	21 100 p	22 300 p	20	
RO	21 498 616	5 800	10 400	23	

Table 1. Population, GDP per inhabitant (EUR and PPS) and population at risk of poverty

(1) At-risk of poverty rate after social transfer – the share of persons below a defined poverty line, which is set as being below 60% of the national median equivalised disposable income.

P provisional PPS Purchasing power standard

Source: Based on Eurostat (online data codes: demo\_pjan, nama\_gdp\_c, ilc\_li02)

The distribution of the population by the degree of urbanization in the three countries for 2009 (table 2) is higher in sparsely populated areas being 60, 7% in Romania, 53, 8 in Greece and 49, 8 in Bulgaria.
	Densely populated area	Intermediate urbanised area	Sparsely populated area
EU-27	47,2	26,5	26,3
BG	42,4	7,8	49,8
GR	36,7	9,5	53,8
RO	38,3	1,0	60,7

Table 2. Distribution of population by degree of urbanisation, $2009 (\%) (1)$	Table 2.	Distribution	of population	y degree of urbanisation	, 2009 (%) (1)
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(1) Degree of urbanisation: Densely populated area: 500 inhabitants/km2 or more. Intermediate urbanised area: between 100 and 499 inhabitants/km2.Sparsely populated area: fewer than 100 inhabitants/km2.

Source: Based on Eurostat, EU-LFS (online data code: lfsa\_pgauws)

Studying the statistical data from Eurostat and according to Table 3 there are noticeable differentiations among the rates of the agricultural holdings in the study area.

Table 3. Utilised Agricultural Area (UAA)*, gi	rowth rate of UAA and average UAA per
Holding, 2003, 20	05 and 2007

	UAA for holdings >1 ESU (1 000 ha)		Grow (%)	Growth of UAA (%)		Average UAA / holding (ha)			
	2003	2005	2007	2003/0	05 2005/07	7 2003/07	2003	2005	2007
EU-27	16 633	161740	160 827	0.1	- 0.6	- 0.5	20.4	20.7	22
BG	2 629	2 488	2 867	- 5.4	15.3	9	16.7	21.1	24.3
GR	3 877	3 906	3 996	0.7	2.3	3.1	5.9	5.8	5.6
RO	10 624	10 337	9 498	- 2.7	- 8.1	- 10.6	8.8	8.4	11

Source: Based on Eurostat agricultural statistics 2008-2009

In Greece the number of agricultural holdings has increased in the period 2003–2007. The data in 2007, shows that, in Greece, about 711 100 agricultural holdings had an economic size of at least one European size unit (ESU) compared to 678 100 in 2005, which counts a 4.9 % increase and these farms made use of 4.00 million hectares (ha) of utilized agricultural area (UAA), which counts a 2.3 % more than in 2005 (Eurostat, 2008).

In the case of Bulgaria and Romania the number of agricultural holdings was reduced by over 25 % between 2003 and 2007. 64% of Romanian farms produced mainly for own consumption (Eurostat, 2009) whilst in Bulgaria farms under 1 European Size Unit (ESU) suffered a significant reduction (-10%), while the number of farms with at least 1 European Size Unit (ESU) decreased by 0, 2% (Eurostat, 2010).

In 2007, about 117 800 agricultural holdings in Bulgaria had an economic size of at least one European size unit (ESU), compared to 118 100 in 2005 and these farms made use of 2.87 million hectares (ha) of utilized agricultural area, (15.3 % more than in 2005), which

makes the average size of a holding in Bulgaria 24.3 ha. In 2007, 17 % of the agricultural area was farmed by its owners and the regularly employed family labor force decreased by 10 % from 2005 to 2007 (Eurostat 2010). In Romania 1.6 million farm holdings are less than 1 hectare and 1.1 million are less than 3 Ha, 290,000 are in the range of 10-20 Ha and 255 are more than 2,000 Ha (the latter are cultivating 11% of the utilized agricultural area (Ministry of Agriculture & Development, 2007).

Taking into account the agricultural structure in these three Balkan countries, the need for the small producers to be organized in modern market orientated producer group organizations in order to provide options for small producers to organise and improve their livelihoods and to achieve their development and prosperity is imperative.

# 4. STRATEGIC ISSUES

### 4.1 Market orientation and the strategic attributes in small agrifood POs

Market orientation (MO) conceptualization has focused on two general perspectives, the behavioural and the cultural. It mainly consists of three behavioural components which are: customer orientation, competitor orientation and interfunctional coordination which have been proven to enhance organization performance.

The agricultural globalization generated the need for structural and organizational adjustments of small agribusiness co-operative organizations with the aim to accommodate the end-user demand. The extent to which cooperatives rely on their definitional attributes results in different organizational forms. These forms can range from traditional ones (i.e., free, open, and voluntary association based on the principle of equality) to neo-institutional reengineered models (Kalogeras *et al.*, 2007).



Figure1. Market orientation of neo-producer organizations

A MO concept which entails a focus on consumers, competitors, and broader market conditions, is a prerequisite to the neo-institutional model for the agrifood producer organizations (POs) to facilitate the response to new market challenges. In an attempt to reconceptualise the meaning of "market oriented neo-producer organizations" (figure 1) either from the approach of " market- driven neo-producer organizations" or from the approach of "the market-driving neo-producer organizations" and to understand the process involved in creating and implementing a MO concept, the small agrifood POs have to put an emphasis on

the industry specific key strategic attributes as Organizational culture, Innovation, customer orientation, marketing co-ordination, coalitions and collaborations.

# 4.1.1 Organizational culture

Organizational culture has been defined by Deshpande and Webster (1989) as "the pattern of shared values and beliefs that help individuals understand organizational functioning and thus provide them with the norms for behaviour in the organization". Being a member-based organisation entails a number of challenges. It has been found that, in organizations that involve membership, members' attitudes and perceptions impact on the performance of such organizations. The members may behave in ways that help the group to function more effectively or they may behave with apathy towards their organizations and organizational activities (Bhuyan, 2000; Tyler & Blader, 2001). In an attempt to be reorganized into neo-institutional models, POs have to change their organizational culture and attitudes into market oriented ways of thinking and acting (Manzano, J.A. et al, 2005).

Although in each Balkan country, at national or even regional level, cultures present important differences in unique characteristics for historical, political, economical or geophysical reasons, a shared neo- cooperative culture has to be established. Since, as it has been argued by Hofstede (1993), the corporate or organizational culture is a different phenomenon from the national culture residing mainly in the visible practices of the organization, organizational culture may be consciously changed.

Cooperatives must develop an informed membership that understands and supports the operating policies, financing methods, and objectives of the neo-Producer Organizations, which will result in having actually active members. Also, cooperatives should pursue to develop a better stakeholders and public understanding of their objectives and benefits to rural communities, consumers and farmer-members (USADA, 1988).

# 4.1.2 Innovation

Several studies in marketing journals put an emphasis on the role of innovation in facilitating the MO – performance and suggest that a firm's innovativeness is associated with superior performance, because it is the best way to gain a competitive edge and renew competitive advantages. Specific attention has been given to technical and administrative innovation, product innovation and radical or incremental innovation (Schindehutte, M., Michael H. Morris, M.H. and Kocak, A., 2008). Oslo Manual identifies innovation as "a new significant improved product (good or service), or process, a new marketing method, or a new organizational method, business practices, workplace organization or external relations" (OECD, and Eurostat 2005, p.46).

Organization's innovativeness refers to the ability of an organization to create and implement new ideas, products, and processes, as well as to the new product performance and represents the degree to which the firm generates new, timely and creative new product or service introductions, based on its accumulated knowledge of customers, competitors and technologies (Deshpande et al, 1993; Kirca, A.H., Jayachandran, S., and Bearden, W.O., 2005).

Under this perspective the keys to success for the neo-Producer Organizations are product, process, marketing and organizational innovations. Small scale producers organizations which are generally lacking in knowledge, information and recourses, can enhance their strategic and organizational skills, by focusing on communication, effective channels of information, skills transmission and the accumulation of knowledge, within organisations and between them (OECD and Eurostat, 2005).

# 4.1.3 Customer orientation

Customer orientation is a core element of the traditional marketing concept that puts the customer in the centre of the firm's thinking about strategy and operations since Drucker argued that "there is only one valid definition of business purpose: to create a customer" (Drucker, 1954 p.39), and it is one of the main components in the MO construct, encompassing customer analysis and customer responsiveness (Narver and Slater, 1990; Kohli and Jaworski, 1990). In the context of the agrifood sector the concept of market oriented farming industry implies an understanding of customers' current and changing food needs and contemporary consumer demands by the farmers in order to be able to create superior value for them.

In the Balkan countries where the fragmented agriculture is a structural weakness, it is very difficult if not impossible for the small farmers to meet the emerging needs of the globalized markets. The indirect relationship with customers in most cases, due to intervention of the agents in the chain, makes it more difficult. The role of the "market oriented neo-producer organizations" is to focus on the ability to understand and respond innovatively to existing and emerging consumer demands.

# 4.1.4 Marketing co-ordination

Haeckel (1997) views the marketing as the function of business and not simply as a function of business and its key contribution is to serve as a link between the customer and various processes within the organization (Day 1994). Market orientation can be viewed as a process for defining markets, quantifying the needs of different customer groups and developing and communicating value propositions both externally to customers and internally to all those that are responsible for delivering them (McDonald and Wilson, 2004). Regarding the Producer organizations, in order to transform from the traditional ones to neo-producer organizations, a new entrepreneurial orientation is required to stimulate market orientation (Matsuno, Mentzer and Ozsomer, 2002). Marketing coordination will constitute the platform for the implementation of their market oriented innovative strategies. Acting as market institutions they need to develop effective marketing coordination within (members, organization's departments) and beyond their boundaries (among all the chain members e.g. traders, retailers, agribusinesses, food processing companies) in order to coordinate all the involved parties' efforts towards what customers value the most. This will create their competitive advantages.

# 4.1.5 Coalitions and collaborations

The producer Organizations need to have marketing information data bases in order to collect, assess and distribute the information producers need to improve their produce and meet the current and changing needs of their customers. This need can be better served by the development of cooperation agencies.

Relying on dynamic multi-agent networks, "market oriented neo-producer organizations" can accumulate knowledge by linking their members to new ideas, resources, incentives and opportunities from beyond their rural regions (Berdegué, 2008). By focusing on collaborative networking processes that aim at transferring knowledge they can encourage innovation and improve their market position. F The rural regions in the study area need to establish a collaborative environment where the producer groups and organizations can joint efforts with regional, national or international organizations and institutions to produce and deliver value to members, customers, suppliers, industry associations and generally in the community.

# 4.2 Market oriented small agrifood Pos and Regional Development

It is generally agreed by many scholars that agriculture is essential for reducing poverty since the growth of a dynamic agriculture and agro-industry benefits the rural regions by enhancing labour productivity and increasing wages (Timmer, 2008). In the sub-regions of the study area producer organizations are "hidden" forces for local development. The establishment of market oriented small agrifood POs can result in productivity and quality of agricultural production, farm returns, economic stability for rural households, food security, innovation and knowledge transfer between complementary sectors at the regional level, all of which result in regional development and cohesion.

The relation among the market oriented Producer Organizations and the regional community is interacted. A market oriented regional community influences the creation and operation of modern producer organizations and inversely the market oriented producer organizations can be instrumental in regional development (figure 1). Socio economic development is increasingly related to the capacity of regional economies to change and innovate (Commission, 2009).

In this context, regions as social partners can play an important role. Market oriented regions can become the primary level units where knowledge is transferred, investments in research and innovation are allocated, new regulatory frameworks are built to encourage industry and investments, by spending above the average for education and by investing in eco-innovation and socio-innovation.

# CONCLUSION

Although the contribution of agriculture to the country's main macroeconomic indicators is constantly declining during the last decades, it still plays a vital role in the Balkans economy, society, and culture. In the Balkan countries within the EU the role of market oriented producer Organizations is crucial and can be seen as key driver for growth for their rural regions.

Acting collectively from their production and processing, to distribution and storage, enables most of the small scale producers to produce what the customers' want, when they want it, at a price they can afford. By adopting a marketing oriented philosophy and by focusing on key components of the market orientation concept - such as, organizational culture, innovation, customer orientation, marketing co-ordination, coalitions and collaborations, producer organizations can increase production of safe and healthy food and make it available at lower prices than ever before. Through their economic activity the new, market oriented model of Producers' Organizations could be a powerful tool for the regional development. By offering increased economic traffic, employment opportunities, support for essential community structures, and potential declines in out migration (Madane, 2002; Gordon, 2004) neo- producer organizations can be used in contributing to both the economic and social needs of the region.

On the other hand market oriented Regions can be a spatial platform for innovative entrepreneurship. Thus the "market oriented neo-producer organizations" are critical for sustainable agriculture development in Balkan agricultural regions and market orientation is a core element for promoting regional development and sustainable rural livelihoods.

#### REFERENCES

#### Book

- 1. Haeckel, Stephan H., 1997. "*Preface," in Reflections on the Futures of Marketing*, Donald R. Lehmann and Katherine Jocz, eds. Cambridge, MA: Marketing Science Institute, ix-xvi
- 2. Drucker, P. 1954. The Practice of Management. New York: Harper and Row Publication, Inc.
- 3. OECD, Eurostat (2005), Oslo Manual; *Guidlines for Collecting and Interpreting Innovation Data*.
- 4. 3rd ed., OECD publishing, Washington, DC.
- Trechter, D. and King, R.P., 2000. *The impact of new generation cooperatives on their communities*, edited by David Trechter and Robert P. King. Washington, DC: U.S. Department of Agriculture, Rural Business/Cooperative Service, 2000, pp. 68-76. (RBS research report 177)
- 6. Timmer, P. and Akkus, S. 2008. *The Structural Transformation as a Pathway out of Poverty: Analytics, Empirics and Politics,* Working Paper 150, Center for Global Development, Washington, DC.

## Journal

- 1. Berdegué. J.A., 2008. Rural producer organisations in Chile. Capacity.org, Vol. 34, pp. 10
- 2. Day, George S. and Prakash Nedungadi, 1994. Managerial Representations of Competitive Advantage. *Journal of Marketing*, Vol. 58, pp.31-44.
- 3. Deshpande, R. and Frederick E. W., 1989. Organizational Culture and Marketing: Defining the Research Agenda. *Journal of Marketing*, Vol. 53, p.p.3-15.
- 4. Deshpande, R. et al, 1993. "Corporate Culture, Customer Orientation, and Innovativeness in Japanese Firms: A Quadrad Analysis," *Journal of Marketing*, Vol. 57, No.1, pp. 23–37.
- 5. Gordon, J., 2004. Non-traditional Analysis of Co-operative Economic Impacts: Preliminary Indicators and a Case Study. *Review of International Co-operation*, Vol. 97, No 1, pp.6-47.
- 6. Hills, S. B., and Sarin, S., 2003. From Market Driven to Market Driving: An Alternative Paradigm for Marketing in High Technology Industries. *Journal of Marketing Theory and Practice*, Vol.11, No.3, pp.13–24.
- 7. Jaworski, B. J. and Kohli, A. K., 1993. Market Orientation Antecedents and Consequences. *Journal of Marketing*, Vo. 57, No.3, pp. 53–70.
- 8. Jaworski, B.J. et al, 2000. "Market-Driven versus Driving Markets," *Academy of Marketing Science* Vol.28, No.1, pp. 45–54.
- 9. Kirca, A.H. et al, 2005.Market Orientation: A Meta-Analytic Review and Assessment of Its Antecedents and Impact on Performance. *Journal of Marketing*, Vol. 69, p.p. 24–41.
- 10. Kohli, A.K. and Jaworski, B.J., 1990. "Market orientation: the construct, research propositions, and managerial implications", *Journal of Marketing*, Vol. 54, No. 2, pp. 1-18.
- 11. Kumar, N. et al, 2000. From Market Driven to Market Driving. *European Management Journal*, Vol. 18, No.2, pp. 129-142.
- 12. Kyriakopoulos, K. and Moorman, C., 2004. "Tradeoffs in marketing exploitation and exploration strategies: The overlooked role of market orientation." *International Journal of Research in Marketing*, Vol.21, No.3, pp. 219-240.
- 13. Madane, M., 2002. Co-operative Rejuvenation through Self-help Groups and Other Alternatives. *Review of International Co-operation*, Vol. 95, No 1, pp.104-114.
- 14. Manzano, J.A. et al, 2005. Market orientation and innovation: an inter-relationship analysis. *European Journal of Innovation Management*, Vol. 8, No. 4, pp. 437-452.
- 15. Matsuno K. et al. 2002. The Effects of Entrepreneurial Proclivity and Market orientation on Business Performance. *Journal of Marketing*, Vol. 66, No 3, pp.18-32.

- McDonald, M., and Wilson, H., 2004. Marketing, Existential Malpractice an Etherised Discipline: A Soteriological Comment. *Journal of Marketing Management*, Vol. 20, No 3, pp. 387-409.
- 17. Narver, J. C. and Slater, S. F., 1990). The Effect of a Market Orientation on Business Profitability. *Journal of Marketing*, Vol. 54, pp. 20–35.
- Pelham, A. M. and Wilson, D. T., 1996. "A Longitudinal Study of the Impact of Market Structure, Strategy, and Market Orientation on Small-Firm Performance," *Journal of the Academy of Marketing Science*, Vol.24, No.1, pp. 27–44.
- 19. Schindehutte, M. et al, 2008. Understanding Market-Driving Behavior: The Role of Entrepreneurship. *Journal of Small Business Management*, Vol. 46, No.1, pp. 4–26.
- 20. Slater, S. F. and J. C. Narver (1994), "Does Competitive Environment Moderate the Market Orientation-Performance Relationship?" *Journal of Marketing*, Vol.58, No.1, pp. 46–55.

#### Sources

- 1. Eurostat, 2008. Farm structure in Greece. http://epp.eurostat.ec.europa.eu/statistics\_explained/index.php/Farm\_structure\_in\_Greece
- 2. Eurostat, 2010.Farm structure in Bulgaria http://epp.eurostat.ec.europa.eu/statistics\_explained/index.php/Farm\_structure\_in\_Bulgaria
- 3. Eurostat GDP and main components Current prices. http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nama\_gdp\_c&lang=en
- Eurostat statistics in focus 08/2009-Farm Structure Survey in Romania 2007 <u>http://epp.eurostat.ec.europa.eu/cache/ITY\_OFFPUB/KS-SF-09-080/EN/KS-SF-09-080-EN.PDF</u>
- Eurostat statistics in focus 16/2010- Farm Structure Survey in Bulgaria 2007 <u>http://epp.eurostat.ec.europa.eu/cache/ITY\_OFFPUB/KS-SF-10-016/EN/KS-SF-10-016-EN.PDF</u>
- 6. Eurostat agricultural statistics 2008-2009 in <u>http://epp.eurostat.ec.europa.eu/portal/page/portal/product\_details/publication?p\_product\_cod</u> <u>e=KS-ED-10-001</u>
- 7. Euricse Darina Zaimova, 2011. "Cooperative movement in Bulgaria: Development, challeges and opportunities" in <u>http://www.euricse.eu/node/1657</u>
- 8. Commission of the European Communities, 2009. Reviewing Community innovation policy in a changing world.*COM* (2009) 442 final in http://ec.europa.eu/enterprise/policies/innovation/policy/regional-innovation/index en.htm
- EDV International Business and Cooperation and the Ministry of Economic Affairs, 2009. "10044017 Market survey Romania - Fruits and Vegetables" in <u>http://handelsbevordering.nl/fileupload/IM\_Roemenie\_fruit\_juni\_2011/Market\_survey\_Romania - Fruits\_and\_Vegetables.pdf</u>
- 10. Food and Agriculture Organization of the United Nations, 2006. "Promoting farmer entrepreneurship through producer organizations in Central and Eastern Europe", *Institutions for Rural Development/6*.
- 11. Ministry of rural development and food (2009): "National Plan of strategic agricultural development 2007-2013", Greece.6<sup>th</sup> edition.
- 12. Ministry of Agriculture and Development (2007): "National Rural Development programme 2007-2013", Romania. in <u>http://romlandagrifund.com/romania-and-agriculture</u>
- 13. ILO (2007): *Cooperatives & Rural Employment*. COOP Fact Sheet No. 1, August 2007.in www.ilocarib.org.tt/.../Fact%20Sheets/factsheet-ruralemployment-coops.pdf
- 14. International Co-operative Alliance 1995. Declaration of the international co-operative alliance on
- 15. Cooperative identity. Co-operative principles. Manchester.

# INFORMATION AND COMMUNICATION TECHNOLOGIES AS AGRICULTURAL EXTENSION TOOLS

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Abstract: Knowledge and innovation society are becoming priorities to the welfare and quality of life of the rural population. This is based substantially on scientific and technological progress. Information and Communication Technologies (ICTs) accelerate rural development by contributing to more efficient management and rapid knowledge dissemination. ICTs are defined as a different set of technological tools and resources used for communication and for the creation, processing, dissemination, storage and information management. The rapid revolution in modern agriculture has led to investigations in many regions. One of them is the rural region of the prefecture of Pella that exists many years in the agricultural sector. The objective of this research is to evaluate the adoption of ICTs among farmers and determine the importance of agricultural extension as an information source in the region of Central Macedonia. For this purpose, the approaches of summary statistics in combination with multivariate statistical analysis techniques have been used. In particular, through the statistical package SPSS (v.16.0), there were employed two correlation methods: (a) the categorical regression model and (b) the two-step clustering. The primary research data were collected using a specifically constructed questionnaire, supplemented by personal interviews with farmers of the prefecture of Pella. The sampling result was to collect a general sample of 303 valid questionnaires.

**Keywords:** Categorical Regression, Central Macedonia, Information and Communication Technologies, Rural development, Two-step clustering

JEL Classification Codes : C420, D190, R580

# **1. INTRODUCTION**

During the last decade a number of occasions was resulted from scientific research and technological progress (Baily and Lawrence, 2001; Jorgenson, 2001; Litan and Rivlin, 2001). That progress is based mainly on the improved productivity and circumstantially on the changes on labour relations. More concretely, this progress is owed partly to the integration of hardware and software in production processes, in the growth of new services and products (including internet) and in the improved contacts between enterprises and consumers (including e-commerce).

The basic adoption theory of a lurking idea is that the individuals, that will likely adopt this idea (adopters), do not adopt it independently but they are also influenced by other adoption decisions. In agricultural production, most producers that have adopted an innovation were prompted by the possibility that other producers will imitate them as well. The higher the probability the more powerful the motive. The early adopters' influence to late majority is often called "word of mouth communication" (Rogers, 1995:292). This term refers to a much broader set of phenomena from producers who simply talk to each other. For example, a producer is affected by another simply by observing his/her behaviour (Kibwana et al., 2001).

The preparation of this research was accrued from the need to be investigated the extent of ICTs adoption in agriculture. The conducting of this research was defined geographically in a region of Greece with long term history in agriculture, Pella's Prefecture; therefore it is possible to be a useful source of information. In particular the aim is to examine to what extent producers have been adopting ICTs. This is the case of producers in Pella's Prefecture.

The following sections refer to innovations in agriculture and in particular in ICTs, summarize the main features of Pella's Prefecture. It then moves on to present the methodological framework of analysis and the main results of statistical investigation. Finally, comments are made on the results, some policy extensions and ideas for more research and further exploitation of results are being presented.

# 2. INNOVATION IN AGRICULTURE

Founding father of the diffusion of innovations theory is Everett M. Rogers. According to Rogers (1995), initially, an innovation is adopted by a small group of people / innovators, who are followed shortly by the early majority, who then are copied by the late majority, etc. Adoption is perceived as a linear process driven by a copy behaviour or imitation principle (Rogers, 1995; Crawford and Di Benedetto, 2000: 228): initially, an innovation is adopted by a small group of innovators, soon followed by the early adopters, which are copied by the less innovative early majority etc.

Using Rogers (1995) five adopter categories of: innovators, early adopters, early majority, late majority and laggards as a framework several general factors related to innovative behaviour are identified in the diffusion literature. When contrasted with laggards, innovators tend to be younger, more formally educated individuals who actively seek information about new ideas (Rogers, 1995; Scheuing, 1989).

In the future, according to Akca et al. (2007) knowledge will manage of the world, provided that it gives power to the people, in states, to direct governmental and nongovernmental organizations. Specifically, ICTs are one of the key areas of future technology to make its presence strongly felt in the early 21<sup>st</sup> century (Ege, 2002; Michailidis and Papadaki-Klavdianou, 2010).

The ICTs' emergence started with the so-called "information revolution" (Jankowski and Van Selm, 2001:217) or "technological revolution" (Sheth, 1994: 11), the evolution from industrialism to "postindustrialism" (Lyon, 1995), or from an industrial society towards an "information society" (Servaes and Heinderyckx, 2002: 92; Ricci, 2000: 142). On the supply-side, as well as on the demand-side, things kept evolving.

Heeks (1999) defined ICTs as "recording, processing, storage and reporting electronic tools". ICTs are the engine of innovation and technological development. In particular, information technology has developed rapidly, on one hand because of better functionality of electronic circuits and on the other hand due to software development, so within 50 years came from a 40 tones massive computer (ENIAC) in a palmtop. Computers, in the late 20<sup>th</sup>

century, are able to control complex manufacturing and other processes, manage large databases and carry out a very large volume of arithmetic operations needed in space technology, in nuclear power plants, meteorological departments, research centers etc.

Internet and its applications contribute to communication's active facilitation, particularly in improving the speed of data transfer and information internationally. Apart from these, the contribution of internet growth in the creation of world village is also due to the reduction of communication cost as well as data transport and information from one end of the world to another.

The new emerging data, make necessary the use of advanced information and communication systems by the Greek rural businesses. Technological advances have significantly reduced the one-dimensional approach to electronic information. Now desktop computers are only one of many tools available to retrieve and process information. Today's users are in possession of a number of technologies, from very complex, such as laptops, mobile PDA type, to very simple, such as portable storage drives USB type, all available to facilitate the work of transport and information storage (Bills et al., 2006).

Over the past twenty years, ICTs have been dramatically developed affecting all social, economical and cultural activity. They include: computer equipment (computers, terminals, printers, electronical storage parts etc.), communication equipment and software.

In the near future, both change in labour relations and qualifications of workers make it necessary to optimize the capacity of producers for successful involvement in the operation of agricultural system so that to become modern producers who can cope with current conditions and problems. Agricultural development which increases farm incomes and ensure sustainability of the natural resources in production is central to overall economic growth and development. ICTs offer a wide range of opportunities to knowledge management in agricultural development.

ICTs adoption in agriculture is influenced by several factors, some of these are the type of agricultural population, its development pace and the heterogeneity in the character of individuals, as well. Over the years, the attitude parameters of producers towards the adoption of innovations are changing. This is the fact that at a more recent moment in time producers who initially abstained decide later to adopt these technologies (Diederen et al., 2002).

Age proved to has a direct correlation with the decision of using a computer. Elderly producers do not use many sources of information as their younger colleagues; it is more likely to rely on their experience (Batte et al., 1990a; Huffman and Mercier, 1991; Batte et al., 1990b). Results from a series of studies in the U.S. and UK, show that farm size is associated with the adoption degree of using the computer and its e-information. Producers with large farms and thus higher economical status tend to have more positive attitudes in ICTs' adoption (Batte et al., 1990b; Fearne, 1990; Schnitkey et al., 1991).

According to Lasley et al. (2001) regardless of the technological expertise level, Iowa producers in the U.S. want a wide range of information channels for agricultural activities. Furthermore, these data showed that regardless of the number of available advanced ICTs, there is a strong preference for direct, personalized communication.

Study of Samathrakis et al. (2005) came to the conclusion that ICTs adoption by producers in the Greek livestock occurs at very low levels. In a research carried out in the U.S. by La Rose et al. (2007) covering four counties, one in Michigan, one in Kentucky and two in Texas, regarding the benefits of the Internet , it was proved that before processing the information people must first believe that have the ability to use this innovation in order to achieve these results. According to a research of Michailidis et al. (2008), held in Greece and particularly in western Macedonia, producers respondents were not generally able to identify

either the costs or time saving, or production profits that resulted from their access to such technologies. However, through statistical analysis it was determined that the special assessment that producers have got on ICTs appeared to be associated with the use of e-mail, e-banking, education, weather and social and recreational uses. In recent years there has been a growing awareness of the role and potential importance of broadband in rural areas. There are a number of empirical studies relating to access to broadband and ICTs use in rural environments in the U.S. (Strover, 2003; Strover et al., 2004) suggesting that there are significant differences in the availability of broadband services between urban and rural areas (Grubesic, 2003; Grubesic and Murray, 2002, 2004). ICTs potential to promote new learning objectives, change traditional teaching practices and develop new teaching methods has been recognized by many researchers (Wilson and Lowry, 2000; Papadaki-Klavdianou et al., 2000; Michailidis et al., 2009).

## **3. METHODOLOGY**

The research took place at Pella's Prefecture, located in Macedonia and belongs to the region of Central Macedonia. It is bordered to the north by the Former Yugoslavian Republic of Macedonia (FYROM), to the east by Kilkis' Prefecture, to the south east by Thessaloniki's Prefecture, to the south by Imathias' and Kozani's Prefectures and to the west by Florina's Prefecture. Its capital is the city of Edessa. The Prefecture occupies an area of 2.505,8 Km2 the majority of which is covered by farmland, forests and pastures. It has an area population of 132,386 inhabitants.

It has a particularly high rate of employment in primary sector. In recent years, it is also observed an intense activity in the secondary sector and primary in tertiary where tourism and culture emerge as economic sectors with particular outlook and positive contribution in improving the living standards of local residents. The primary data research, collected using a specially constructed questionnaire, supplemented by personal interviews with producers in the Prefecture of Pella. The research lasted from March to May 2008. The reliability and validity of individual sections/questions in the questionnaire have been checked by the statistical technique of Categorical Principal Components Analysis using the statistical program SPSS for Windows version 16.0 (SPSS, 2008). The results of repeated measurements are consistent and therefore the measurement procedure is reliable because the equivalence factor (reliability)  $\alpha$ -Cronbach (0,712) is sufficiently high. In regard to validation, the categorical principal components analysis has distinct effects on the validity structure and on the validity of distinct multidisciplinary variables investigated. To the remaining sections of the questionnaire, the reliability and validity tests are based on previous international research literature, which made the relevant controls and therefore do not need to be repeated.

As a sampling frame are defined the nominal lists, from which the sample is selected. In this paper, the available nominal lists were the lists taken from Edessa's Municipality. As sampling unit was one person from each list. Participants were selected at random from the compiled lists. For the purposes of this research, the minimum required sample was set at 303 people, for confidence interval 95% (a = 0.05) and acceptable means of error  $\pm 4\%$ , according to Crimp's type (1985) mentioned concerning the determination of sample size for random  $n = \frac{pqZ^2}{2}$ 

sampling:  $n = E^2$ . Where: n is the sample size, Z is the reliability coefficient, E is the acceptable margin of error, p is the rate that we want to assess and q equals to 1-p.

For the best description of the situation prevailing in the agricultural population of Pella's Prefecture on the extent of ICTs adoption was applied descriptive statistical analysis

through SPSS v.16.0 (SPSS, 2008) which investigated forty-eight (48) attitudes/views, using the five-point Likert scale (where 1=extreme negative attitude and 5=extreme positive attitude), eleven (11) affirmation-denial variables and five (5) of simple choice. For the statistical investigation of individual characteristics and attitudes/views of the producers in Pella's Prefecture about the adoption degree of ICTs, with parallel segmentation of those in given distinct groups (clusters) was selected the method of two-step cluster analysis which is being used when some of the variables are categorical or suspected to be linear the relation between variables (SPSS, 2003). The technique of two-step cluster analysis is an exploratory tool designed to identify clusters of similar observations from a large number of them, based on categorical and/or continuous variables (features) group, with statistical controls proceedings of independence of variables and regularity controls of distribution of continuous variables and polynomial division of the categorical. Two-step cluster analysis uses as a measure of similarity between the clusters the logarithm of maximum likelihood distances. The choice of clusters' optimal number is based on the information criterion by Bayes (BIC) of Schwartz or criterion by Akaike (AIC). Furthermore, the two-step cluster analysis program provides results of descriptive statistical measures and frequencies in each cluster and the number of observations in clusters. For the search of the dominant determinant characteristics of each cluster were audited by Kruskal-Wallis and Mann-Whitney combined with  $\chi 2$  tests in frequency tables.

To investigate the relationship of the producers' characteristics in clusters and the adoption of ICTs was preferred, in each cluster, the method of categorical regression (Meulman et al., 2001), which is an extension of classical statistical technique of regression analysis and is used when some of the variables are numerical (interval or ratio) or suspected that the relation between variables is linear (SPSS, 2008). Categorical regression quantifies data of categorical variables with the performance of numerical categories, while having as a purpose the excellent linear regression of transformed variables (Kooij and Meulman, 1997). Thus, is given the predictability of the dependent variable values for any combination of quantified variables. Variables categories are quantified in a way so the square of the multiple correlation coefficient between the dependent variable and the independent group, to be maximum. The effect of each independent variable on the dependent variable the sign of regression coefficient indicates the direction of change of the dependent variable.

# **4. RESULTS**

From the descriptive statistical analysis the results are as expected and are described the use of statistical tools and standard deviation. Almost all the respondents are producers as a main occupation (74.6%). The female gender constitutes a minority as the head farm, not an unexpected situation for the Greek agricultural households (7.6%). The largest percent has the age between 36 and 45 years (42.9%). The majority of respondents are married (71.9%) with four-member families (45.9%) and come from agricultural families (98.7%). Regarding educational level most of the producers in the sample have got elementary education (primary, 26.4%) and have graduated from High School (22.4%). The annual gross farm income and the total annual gross income of the largest percent of respondents is low (5,000-10,000  $\in$ ). It is determined that, basically, the agronomist-producer communication is carried out by conventional means, personally and by telephone. Specifically, after the personal communication (85.2%) follows the communication through telephone (66.3%) and the communication of innovations, about

55.8 percent has got advanced technology television in possession. About 51.8 percent has got a computer, but those who use it are basically the children of the household (65%). The vast majority of the producers in the sample had never ordered anything through internet (88.4%). Half of the respondents agree (52.5%) that innovation's meaning is directly linked to increased production costs. Yet, they believe that ICTs can contribute in increasing their income, which is why about 44.5 percent interests to adopt ICTs. Respondents mostly use mobile phone (73.2%), very few computer (23.5%), few the internet (20.2%), fewer teletext (13,9%), about 12.2 percent has got e-mail and the lowest use of ICTs have the fax (7,6%), DSL (7,6%) and GPS (5,9%). Yet, about 59.1 percent of respondents is willing to adopt ICTs. Confidence degree of respondents in ICTs is high as about 90.4 percent is gathered at the first three scale degrees (very much, very and enough). Most respondents (51.2%) agree that new technology adoption improves their social status. It is investigated that about 70.3 percent responded negatively that there are no people in their close environment (friends, relatives, neighbors) adopting innovations in agriculture. With regard to innovations in education the respondents who participate or have participated in training seminars (45,9%) agree that ICTs are being used, for example video projector, computers, internet etc. About 52.5 percent believes that the agronomists are adequately informed about ICTs. The respondents believe that they can acquire the necessary knowledge about ICTs, in order of priority, with frequent contact with the agronomist (91,8%), with seminars (90,8%), being based on their experience (75,3%), with informative booklets (62,3%) and with reading appropriate books (33,4%). The majority agrees that the age has an important role in the adoption of ICTs and that they do not have difficulty in ICTs' application. Finally, the sample's producers were asked to make their self-criticism with regard to the ICTs use. It is observed that most of them declare that are expert users (54,4%), about 23,4 percent considers that it belongs in the category of laggards, about 9,6 percent is the advanced users category, follows the category of those who are not interested (8,3%) and finally about 4,3 percent declared that it is identified with innovative users.

Using the gathered data from the responses of the producers and with the application of two-step cluster analysis, after being tested for its size through the technique of nonlinear principal components analysis, was resulted the optimum solution of four clusters. Of the 303 observations 85 are included in the first cluster, 74 in the second, 70 in the third and the remaining 74 in the fourth cluster. The basis for selecting the clusters was the demographic characteristics of the respondents (Table 1).

		N	% of Combined	% of Total
Cluster	1	85	28,1%	28,1%
	2	74	24,4%	24,4%
	3	70	23,1%	23,1%
	4	74	24,4%	24,4%
	Combined	303	100,0%	100,0%
	Total	303		100,0%

 Table 1. Clustering distribution

A search is carried out for possible relations between demographic characteristics of producers and ICTs adoption, at each one of the clusters separately. Further, the results of categorical regression for the four clusters of producers are presented in Table 2. It is found that the producers of the second cluster are differentiated, in some way, by the producers in other clusters, as to the willingness degree of adopting ICTs.

Specifically, it was found that the producers in the second cluster can be classified as innovators, the producers in the first and third cluster as early adopters and finally the fourth cluster producers as laggards.

As regards to the distribution of observations in different clusters, it is also confirmed from Table 2, that the first cluster is constituted mainly by married, male producers of Aridaia, aged of 36-45 years, with medium education (High school), coming from agricultural family, with agricultural annual income of 15,000-20,000€, non-agricultural annual income of 15,000-20,000€ also, who reside in four-membered households. The second cluster is differentiated as for the region (Exaplatanos), the educational level (middle or superior education), the number of household members (three), their annual agricultural income (>35,000€) but also their non-agricultural annual income (>35,000€). The third cluster is differentiated concerning second as for the region (Aridaia), the marital status (single), the educational level (basic or medium education), the annual agricultural income (5,000-10,000€) but also their non-agricultural annual income (5,000-10,000€). Finally, the fourth cluster is differentiated in relation with the second as for the region (Aridaia), the age of producers (46-60 years), the educational level (basic education), the number of household members (four), the annual agricultural income (5,000-10,000€) but also their nonagricultural annual income (5,000-10,000€).

Variables	1 <sup>st</sup> Cluster	2 <sup>nd</sup> Cluster	3 <sup>rd</sup> Cluster	4 <sup>th</sup> Cluster
Gender	Male	Male	Male	Male
Ochidei	87.0%	89.2%	97.1%	97.3%
Δαρ	36-45 years	36-45 years	36-45 years	46-60 years
Age	47.0%	55.4%	51.4%	48.6%
Place of residence	Aridaia	Exaplatanos	Aridaia	Aridaia
Thate of residence	38.8%	25.7%	61.4%	36.5%
Marital status	Married	Married	Single	Married
Wantar status	88.2%	69.0%	68.6%	97.3%
Number of household	4	3	3	4
members	65.9%	44.6%	37.1%	55.4%
Origin from agricultural	Yes	Yes	Yes	Yes
family	100.0%	98.6%	97.1%	98.6%
Educational level	High school	Lyceum General	Lyceum Technical	Primary
	41.2%	33.8%	27.1%	59.4%
	Priv. employee-	Civil servant	Priv. employee-	Retired -
Main occupation	Producer	Producer	Producer	Producer
	15 000 20 0006	47.3%-29.1%	5 000 10 0006	5 000 10 000C
Agricultural income	55.20%	255,000 E	12.8%	50.4%
	55.5%	40.0%	42.0%	59.4%
Non-agricultural income	15,000-20,000€	>35,000€	5,000-10,000€	5,000-10,000€
I ton agricultural meonie	47.0%	27.0%	72.8%	58.1%

Table 2. Distribution of categories of demographic characteristics for clusters

The following Table (Table 3) presents the observations' interpretation of each cluster. Concretely, the first cluster represents medium aged (36-60 years), male producers of Aridaia who have intentions to adopt ICTs but do not have satisfactory income so as to proceed in such investment, in other words they are producers of high interest but no innovators. The second cluster represents middle aged producers of Exaplatanos with high income (innovators). In the particular cluster, despite the overwhelming majority of males in all clusters, it is worth to be noticed that it is observed the biggest gathering of female producers.

The third cluster represents medium age residents of Aridaia, with mixed education, who will adopt innovations after being preceded the producers of second cluster. And finally, the fourth cluster represents elderly (46-60 years), traditional producers of Aridaia with low income  $(5,000-10,000 \in)$ .

Cluster						
1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>			
Middle aged, males, primarily	Middle aged (36-45	Middle aged (36-45	Elderly with low			
producers but also private	years), males, primarily	years), single, males,	education,			
employees, with mixed	producers but also civil	primarily producers	traditional			
education, residents of Aridaia,	servants, residents of	but also private	producers of			
of high interest but no	Exaplatanos with high	employees, residents	Aridaia, pensioners			
innovators and with total	educational level and	of Aridaia, with mixed	of low income			
income 15,000-20,000 €	very high income	education.	(5,000-10,000 €).			
	(> 35,000€).					

Table 3. Interpretation of observations of clusters

Categorical regression gave factor price of multiple determination  $R^2$ =0.313, which indicates that 31.3% of the variance of the transformed values of the dependent variable is explained by the transformed values of independent variables involved in regression equation. Furthermore, the variance analysis gave a value of F=3.908, corresponding to a zero level of statistical significance, indicating the good fit of categorical regression model to transformed data. As regards to the relative importance of independent variables, which are indicated to the adoption degree of ICTs, is observed by Table 4, that slightly high values (>0.100) of relative importance show the variables of the Number of Members of Household, the Occupation, the Comprehensive Income (annual), the Use of ICTs in Seminars and the Observation of Innovation/ICTs Seminars.

 Table 4. Standard regression coefficients

	Standa Coeff	rdized icients		C	Correlations		Ŧ	Tolerance	
	Beta	Std Error	F	Zero- Order	Partial	Part	e e	After Transf ormati on	Before Transfor mation
Gender	.064	.061	1.098	.044	.074	.062	.009	.931	.911
Age	.067	.068	.963	.070	.070	.058	.015	.755	.561
Place of residence	152	.061	6.176	160	174	147	.078	.930	.938
Marital status	127	.072	3.167	020	126	105	.008	.681	.684
Number of household members	211	.069	9.406	154	213	181	.104	.735	.864
Educational level	.068	.065	1.093	095	.074	.062	021	.826	.710
Occupation	178	.066	7.341	310	190	160	.176	.809	.827
Total income	298	.062	23.095	346	324	284	.329	.909	.851
Use of ICTs in Seminars	.191	.062	9.413	.230	.214	.181	.140	.899	.829
Observation of Innovation Seminars	.138	.063	4.848	.247	.155	.130	.109	.890	.849
Adoption of innovations by people around	.048	.066	.528	.192	.052	.043	.030	.790	.778
Adoption of innovations by family	.064	.063	1.021	.118	.072	.060	.024	.883	.771

Dependent variable: Willingness to adopt innovation/ICTs

Particularly, from the standardized regression coefficients (Table 4), of independent variables, higher price shows the one that corresponds to the variable: Total Income and follow, in sequence, the variables: Occupation and ICTs Use in Seminars.

From the zero-order coefficients (Table 4) those of higher rates are the coefficients which are related to the Total Income (r=-0.346), Occupation (r=-0.310) and Observation of Innovation/ICTs Seminars (r=0.247), indicative of bilateral relation (negative in the first two and positive in the third) connecting each of the corresponding independent variables on the dependent, disregarding the presence of all others.

The partial correlation coefficients (Table 4), with the removal of linear relation of other variables, both from this independent as from dependent variable, are being presented with a higher price in the variables of Total Income, Number of Household Members and with successively lower prices in other variables. The rate -0.324 of partial correlation coefficient of Total Income explains the percent of 10.49 of the variance (-0.3242) of regular values of the dependent variable, when the effects of all other independent variables will remove. In terms of the partial correlation coefficients (Table 4), the highest is presented to be the correlation between the dependent variable and the variable of Total Income. The relative importance of independent variables (Table 4) is higher for the variable of Total Income, followed in order by the variable of Occupation and Observation of Innovation/ICTs Seminars. Collectively these variables explain the 64.5% of total importance. Multicollinearity lack is particularly obvious from the very high levels of independent variable without being explained by other independent variables.

# **5. CONCLUSION**

This paper investigates the possible relations between the variable referred to the adoption degree of ICTs (dependent) and the other independent demographic variables. From the descriptive statistical analysis it is resulted that with regard to basic innovations made in Pella's area is observed that there is no special action. Mobile phone is used by almost all the producers. The majority of producers have got a computer at their disposal, but the household members who use it are primarily the young aged, their children. The producers do not proceed, apart from some exceptions, to further activities related to e-services, e-commerce and e-banking, while most of them do not even know their meanings. In terms of entertainment and comfort, most producers tend to modernization and thus to a corresponding familiarity. The cautious attitude towards new technologies by the producers is interpreted in some way by the fact that they believe the meaning of innovation is directly linked to increased production costs. With regard to social factors, social promotion through the adoption of new technologies might play a role for the producers. Most of them agree that innovations contribute to the ease and convenience of life, increasing production efficiency and effectiveness, entertainment, professional recognition and prestige.

The vast majority of the producers agreed that frequent contact with the agronomist can provide the necessary knowledge for the mentioned technologies. The result obtained shows that ICTs can complement and not replace traditional methods, suggesting the possibility of increasing rather than reducing the demand for extension of such education/training. They are mainly based on their experience as most of them classify themselves in the category of "expert users", very few feel for themselves that are innovators, while those who describe themselves as "laggings" and "not interested" maybe few but not non-appreciable as a number. Furthermore, almost all the producers believe that ICTs have contributed to their life improvement, from enough to very much.

Practically, the results of this research could be useful in selecting a appropriate policy to promote ICTs as they determine the scope of such a targeted policy. In addition, these results indicate the need of separating the population of producers into clusters in order to be assessed in more detail the diffusion parameters of innovations in each cluster and be reclaimed more personalized adoption of ICTs policies.

Applying two-step cluster analysis are revealed a number of interesting results. Specifically, four clusters of producers and, more importantly, significant differences among the four clusters on the variables relating to the use of ICTs are identified. In other words, producers of Pella's Prefecture behave differently, as to the degree of ICTs adoption, according to the cluster in which are classified.

Future cross-country research about this issue would be a useful complement to the results presented here, so as to be presented the effectiveness of statistical methods and to identify and list the possible developments in the dissemination of innovations, in relation to information and communication.

# REFERENCES

- Akca, H., M. Sayili and K. Esengun (2007). Challenge of rural people to reduce digital divide in the globalized world: Theory and practice. *Government Information Quarterly*, 24, 404– 413.
- 2. Baily, M.N. and R.Z. Lawrence (2001). Do we have a new Economy? *American Economic Review*, 91(2), 308-312.
- 3. Batte, M.T., E., Jones and G.D., Schnitkey (1990a). Computer use by Ohio commercial farmers. *American Journal of Agricultural Economic*, 72 (4), 935–945.
- 4. Batte, M.T., E., Jones and G.D., Schnitkey (1990b). Farm information use: an analysis of production and weather information for midwestern cash grain farmers. *Journal* of *Production Agriculture*, 3(1), 76–83.
- Bills, D. B., S. Holliman, L. Lowe, E. Ochola, S. Park, E. Reed, C. Wolfe, and L. Thudium-Zieglowsky (2006). The New Mobile Scholar and the Effective Use of Information and Communication Technology. Retrieved April 16, 2009, from http://www.firstmonday.org/issues/issue11\_4/bills/index.html.
- 6. Crawford, M.C. and C.A., Di Benedetto (2000). New Products Management, sixth ed. Irwin McGraw-Hill, Boston.
- 7. Diederen, P., H., van Meijl and A. Wolters (2003). Modernisation in agriculture: what makes a farmer adopt an innovation? International Journal of Agricultural Resources, *Governance and Ecology*. 2(3-4), 328-342.
- 8. Ege, A. A. (2002). Innovation systems in OECD countries and situation evaluation for Turkey. Thesis for Expertisation in State Planning Organisation, Ankara.
- 9. Fearne, A.P. (1990). Communications in agriculture: results of a farmer's study. In: Proc. Symp. On Communications in Agriculture, Royal Agricultural Society of England Annual Conf., Wye College, April, pp. 371-380.
- 10. Grubesic, T. H. (2003). Inequities in the broadband revolution. *Annals of Regional Science*, 37(2), 263-289.

- 11. Grubesic, T. H. and A. T. Murray (2002). Constructing the divide: Spatial disparities in broadband access. *Papers in Regional Science*, 81(2), 197-221.
- 12. Grubesic, T. H. and A.T. Murray (2004). Waiting for broadband: Local competition and the spatial distribution of advanced telecommunication services in the United States. *Growth and Change*, 35(2), 139-165.
- 13. Heeks, R (1999). Information and Communication Technologies, Poverty and Development. Development Informatics Working Paper Series (5).
- 14. Huffman, W.E. and S., Mercier (1991). Joint adoption of microprocessor technologies: an analysis of farmer decisions. *Review of Economics and Statistics*, 73(3), 541-545.
- Jankowski, N. and M. Van Selm (2001). ICT en samenleving. Vier terreinen voor empirisch onderzoek. In: Bouwman, H. (Ed.), Communicatie in de informatiesamenleving. Lemma, Utrecht, pp. 217–249.
- 16. Jorgenson, D.W. (2001). Information technology and the US economy. *American Economic Review*, 91(1), 1-32.
- 17. Kibwana, O.T., M. Haile, L. van Veldhuizen and A. Waters-Bayer (2001). Clapping with two hands: bringing together local and outside knowledge for innovation in land husbandry in Tanzania and Ethiopia: a comparative case study. *Journal of Agricultural Education and Extension, Netherlands*, 7(3), 133-142.
- 18. Kooij, A. J. van der and J. J. Meulman (1997). MURALS: Multiple regression and optimal scaling using alternating least squares in Bandilla W. and Faulbaum E. (eds), Softstat '97.
- 19. La Rose, R., J. L. Gregg, S. Strover, J. Straubhaar and S. Carpenter (2007). Closing the rural broadband gap: Promoting adoption of the Internet in rural America. *Telecommunications Policy*, 31, 359-373.
- 20. Lasley, P., S. Padgitt and M. Hanson (2001). Telecommunication technology and its implications for farmers and Extension Services. *Technology in Society*, 23, 109-120.
- 21. Litan, R.E. and A.M. Rivlin (2001). Projecting the economic impact of the Internet . *American Economic Review*, 91(2), 313-317.
- Lyon, D. (1995). The Roots of the Information Society Idea. In: Heap, N., Thomas, R., Einon, G., Mason, R., Mackay, H. (Eds.). Information Technology and Society. Sage Publications, London, pp. 54–73.
- 23. Meulman, J. J., W. J., Heiser, and SPSS (2001). SPSS Categories 11.0. Chicago: SPSS Inc.
- 24. Michailidis, A., A. Marantidou, A. Koutsouris, A. Papadaki-Klavdianou and V. Samathrakis (2008). Adoption of Information and Communication Technologies among Farmers in the Region of West Macedonia. Proceedings of the International Advanced Workshop on Information and Communication Technologies for Sustainable Agri-production and Environment, May 22-23, 2008, Alexandroupolis. Edited by Salampasis, M., Andreopoulou, R. and Batzios, C., pp. 339-349. AWICTSAE 2008.
- 25. Michailidis, A. and A. Papadaki-Klavdianou (2010). Diffusion of ICTs in Agriculture: Comparative Analysis between the regions of Greece. Presented at the Agrotica's 3rd National Conference for Alternative Agriculture and Renewable Energy Sources, Thessaloniki, Feb. 5 2010, Greece.
- 26. Michailidis A., Papadaki-Klavdianou A. and Charatsari C., (2009). Building Bridges: adoption and diffusion of information and communication technologies among farmers in North Greece. Proceedings of 19th European Seminar on Extension Education: Theory and practice of advisory work in a time of turbulence, 15-19 September, Perugia/Italy, pp. 255-260.

- 27. Papadaki-Klavdianou A., Polychroniadou-Alichanidou A., Vafopoulou-Mastrogiannaki A. (2000). Innovations and training in the agribusiness complex, the case of the cheese sector in Greece, synthesis report of a study in various product chains in five European countries (Greece, Spain, Belgium, The Netherlands, U.K.) CEDEFOP/Panorama.
- Ricci, A. (2000). Measuring information society. Dynamics of European data on us age of European data on usage of information and communication technologies in Europe since 1995. Telematics and Informatics, 17: 141–167.
- 29. Rogers, E.M. (1995). Diffusion of Innovations. Free Press, New York.
- Samathrakis, V., M. Salampasis, Ch. Batzios, M. Adroulidakis and G. Arabatzis (2005). Adoption of ICT in the Greek Livestock Sector: Results of a Research in the Prefecture of Thessaloniki, EFITA/WCCA.
- 31. Scheuing, E.E. (1989). New Product Management. Merrill, Columbus, OH, pp. 297–318.
- 32. Schnitkey, G.D., M.T. Batte and E. Jones (1991). Farm accounting systems and information usage. *Review of Agricultural Economics*, 13, 103-117.
- 33. Servaes, J. and F. Heinderyckx (2002). The new ICTs environment in Europe: closing of widening the gaps? *Telematics and Informatics*, 19, 91-115.
- 34. Sheth, J.N. (1994). Strategic importance of information technology. In: Sheth, J.N., Frazier, G.L., Dholakia, R.R. (Eds.), Advances in Telecommunications Management. Strategic Perspective on the Marketing of Information Technologies, Jai Press Inc, Greenwich, London, 4, 3-16.
- 35. SPSS (2003). SPSS Base 12.0 User's Guide, Chicago Inc., Chicago.
- 36. SPSS (2008). SPSS Categories 16. A Software Package, Version 16.0, Chicago, SPSS Inc.
- 37. Strover, S. (2003). The prospects for broadband deployment in rural America. *Government Information Quarterly*, 20(2), 95-106.
- 38. Strover, S., G. Chapman and J. Waters (2004). Beyond community networking and CTCs: Access, development, and public policy. *Telecommunications Policy*, 28(7-8), 465-485.
- 39. Wilson B. and Lowry M. (2000). Constructivist learning on the Web. Retrieved January 20, 2009, from http://ceo.cudenver.edu/~brent\_wilson/WebLearning.html.

# BROADBAND RANKING OF REGIONS AND ITS METHODOLOGICAL BASIS

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Abstract: Access networks plays an essential role in some sectors of the economy. Its speed basically defines the utility of the system. In Hungary, in 2009 the average guaranteed download speed was just 1 Mbit/s, and a little more than the tenth part of subscribers had 4 Mbit/s or more data rate. For satisfaction the claims of today and immediate future needs broadband - capacity of at least 50 Mbit/s infrastructure. To build of such infrastructure in those regions, which less attractive commercially for service providers, state intervention is necessary. The country and EU provide financial sources but is not enough to the necessary developments. Many ICT infrastructure developments has happened on many settlements in Hungary, but not always on the most suitable places. My aim is to rank regions based on the ICT development of them, because it is worthy to focus time and resources, where these will be return as quickly as possible. In my opinion the target of the developments would be worthy to select on the basis of usefulness. Complex regional indicator is necessary to this objective which can be applied on settlements level and on the basis of it these can be ranked. It is important to have regard to such social-economic factors which really correlate with existence of broadband networks. In this article I present the Hungarian regions situation in broadband network respect, and the methodological basis of to construction of a regional network indicator. I sketch scope of possible earmarkable elements – which are accessible statistical indicators in connection with broadband networks - and applicable model for it.

Keywords: broadband network, regions, rank, investment decision support, efficiency

JEL Classification Codes: O39, R11, M15

## **1. INTRODUCTION**

The penetration of the broadband internet infrastructure is shaping the nature of traditional ICT sectors and also the society as a whole. The growing availability of high bandwidth is likely to enhance business growth opportunities for service providers (Picot & Wernick, 2007), furthermore it can enhance economic opportunities in rural areas by stimulating the development of home businesses and telecommuting and by facilitating access to education and training. (LaRose et al, 2011). Large-scale NGN (Next Generation Network) infrastructure development is going on worldwide. For EU it is also a priority issue and it has developed different strategies, programs for network development and provide financial support for implementation too. The development ideas are closely interlinked with governmental supports which help to those regions where there is no or not suitable high

speed network infrastructure and the return of investment is not provided on market conditions (Commission of the European Communities, 2006).

In the interest of efficient resource allocation can be important to assess the general characteristics of the regions. Obvious methodology and monitoring system for it have not yet been worked out in the Hungarian subsidy practices of broadband developments. In my article I present the theoretical and methodological fundamentals of such indicator which may help network development efficiently and effectively. By the indicator it should be possible to realize ideas of state high speed network infrastructure developments in such a way for they should be targeted and effective.

Furthermore, with realization of investment, development analyses will play an important role. The main goal of these analyses is to answer the question whether or not the investment in chosen broadband access technologies is profitable (Zagar & Krizanovic, 2009). Since it's about investment which cover larger geographical area, can be relevant the measuring and calibrating of efficiency on regional or settlement level, the index may assist in these processes. Although, there is wide range of those composite indexes which related to measure of ICT development, and these indices measure different aspects of the information society (Emrouznejad et al, 2010), but they don't give answer on the question what the standard of ICT developments of a region within a country. But, this would be essential for selecting the regional development way, which is well-established economically.

## 2. BROADBAND INFRASTRUCTURE AS CAUSE AND EFFECT

Figure 1. shows where the conditions was given – which necessary to a profitability service – , the development has happened by investments of service providers, on business basis. But those rural regions which are less attractive in a business point of view, state intervention is necessary to build up a modern hard-infrastructure. But in my opinion about the scarcity of financial resources which available for this aim, it is useful to consider the place of use, build up NGN infrastructure, where bigger efficiency can be reached. If it built up on the not suitable place, people would use only a tiny fraction of the capacity. However, those areas, that have reached a certain level of development, to realize network with public aid, would promote further improvements there.



Figure 1. Broadband network infrastructure as cause and effect

I classified the factors – which have an effect on return, consequently on investments – in three main factor groups. The first is the set of social factors. This includes, inter alia, the demographic, educational and characteristics of internet use. Fact, that the business-based infrastructure building requires economies of scale.

Key factor in costs is the distance of the customer. Thus, more densely populated areas are far less expensive in terms of investments per customer. (Höffler, 2007). Also important the people's relation with broadband access. Ryszard Struzak lays down as follows: The fact that half of the people surveyed do not need or want high speed access at home may indicate that a significant part of society has another hierarchy of needs and values, and does not know, does not understand, and/or does not appreciate the benefits such access can offer. Bottlenecks are households and small enterprises in rural areas and poor social strata. To change this attitude, additional stimulus programs and resources are required (Struzak, 2010). There is little information about broadband usage and the types of services that customers choose more frequently based on their socio-economic background (Koutroumpis, 2009).

The second factor group the general economic characteristics. Inside this very important thing the economic sector which is typical of given region. Economic performance is lower in those regional economies still highly geared towards agriculture and manufacturing sectors and with relatively low incomes. It results lower ICT spending, fewer investment, infrastructure and service development (Preston et al, 2007). Furthermore ICT characteristics of public sector – which on regional level means local governments and public bodies - have to be considered .

The characteristics of enterprises (penetration, usage, etc.) got in the third group, because in Hungary small and medium sized enterprises mean one of the biggest business sector considering their number. This sector employ 70% of employees of national economy, and their contribution to GDP reaches 50% (Hungarian News Agency, 2008).

If these factors don't reach a sufficient level of development, telecommunication companies are not willing to invest in modern infrastructure development in rural areas because the expected profit is of high uncertainty (Moutafides & Economides, 2011). About it – like USA – in Hungary the large and medium sized cable companies typically operate in

both metropolitan and non-metropolitan areas, the small companies almost exclusively operate in rural areas. In contrast to the large cable providers' billion dollar upgrades, the infrastructure of small companies often decades-old, obsolete, and, they often serve only a few thousand, if not a few hundred, households (Wood, 2008). Therefore, state intervention and initiatives are necessary to redress market failure (Moutafides & Economides, 2011), but in this case the efficient allocation of financial resources is also important.

# **3. SITUATION OF BROADBAND IN HUNGARY**

First of all I present the change of internet usage by the BIX (Budapest Internet Exchange) data traffic statistics. In Hungary BIX is the only one center to handle of the Internet data traffic, so in particular the data traffic is focus there. The statistics is given in Figure 2. Clearly that the data traffic is continuing to grow to 2009, from this year a slight decrease took place. Because the number of subscription have been steadily increasing in these years, the explanation for the decrease probably is that service providers started to optimize the data traffic by proxy servers.



**Figure 2. Data traffic per user in case of average and maximum traffic** (*Source: Own calculation by data of www.bix.hu*)

Therefore the invisible data traffic for BIX increased, the load of BIX and the quantity of data traffic which flow through on it dropped. Obviously that in spite of traffic optimize, the data traffic per user is growing, just it doesn't reach to BIX. On the basis of data traffic values I made a computation in reference to find out how much data rate belongs to the average and maximum data traffic, the result of which is given in Table 1.

Table 1. Relation b	between data	traffic and	data rate
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Év	Number of internet subscribers	Data traffic per user in the case of average traffic (Gbit/s)	Required data rate for average data traffic (kbit/s)	Data traffic per user assume maximum traffic (Gbit/s)	Required data rate for maximum data traffic (kbit/s)
2005	1.000.737	11	94,21	21	179,87

(Source: Own calculation by data of www.ksh.hu and www.bix.hu)

2006	1.329.625	17,2	110,88	39	251,41
2007	1.832.023	31,4	146,91	64,5	301,77
2008	2.310.914	46,6	172,84	107	396,87
2009	2.803.543	64,8	198,12	143,5	438,73
2010	3.340.868	73,6	188,83	164	420,76

Values are calculated in 2010 the data rate per user must be 190 kbit/s at least, in case of average data traffic. All year assume maximum data traffic of given year this value is greater than 420 kbit/s. Since the subscribers not use the network at the same time, this value is growing. On the basis of it, the broadband penetration may deceptive, because this definition means 128 kbit/s data rate, which no broadband at all at today's requirements. Building up and developing access network infrastructure are well-established in Hungary according to my calculations, every year more and more people subscribe to internet connection and more and more subscribers will require connection with really high data rate. The average value of it 420kbit/s already, and have to be prepared to further increase.

About it, another issue, the quality divide has become more and more important. Only some years ago the analysis of penetration was focused on who had an internet connection and who did not. Now, the relevant questions are: how good is it? How fast? And, how fast is fast? Thus, the broadband gap can no longer be seen as a penetration divide. It is becoming more and more a quality and capacity divide, and therefore, a divide in the range of services people can access and use. (Vicente & Bernabé, 2010)

In addition the investments of business (service providers), the state and EU investments also contribute significantly for the developments. Similarly to the other Member States, Hungary also spent considerable amounts for network development. From 2004 to 2006, the two most significant infrastructure related tender were the ECOP (Economic Competitiveness Operational Program)-4.4.2 (for local governments) and ECOP-4.4.1 (for small and medium sized enterprises). This theme is being continued under eEurope's successor initiative, i2010, where inclusion is one of three main pillars. Making ICT products and services more accessible, including in Europe's less-developed regions, is an economic, social, ethical and political imperative (Herdon & Houseman, 2007). After these projects the developing will continue (partly EU sources), because one of the strategic objectives of EU and Hungary also to increase broadband penetration (e.g. Digital Renewal Action Program, EU 2020 strategy).

Fact, that rural areas are in most cases not served at all with high speed access and even when served, the supply is inadequate and consists of lower quality and higher prices (Moutafides & Economides, 2011). Figure 3. shows that faster than 1 Mbit/s guaranteed data rate available on a little more than one-third of Hungarian settlements.



Figure 3. Distribution of maximum guaranteed download speed which is available in the number of settlements in 2009

(Source: Horváth, 2009)

So developments are required, but the efficiency of use of financial resources is also important, therefore developments are worth to implement where the return and the positive socioeconomic impacts expected as soon as possible. My aim is to prepare an index for supporting the selection of targets (the field of use of financial resources), which can be applied on regional and settlement level.

# 4. METHODOLOGICAL BASIS OF CONSTRUCTION A REGIONAL NETWORK DEVELOPMENT INDEX

# 4.1 Process of the index construction

Figure 4. shows the process of constructing a complex index.



**Figure 4.** Process of the index construction

(Source: Own editing by Hanafizadeh et al, 2009)

My aim is to measure the development related to network infrastructure on regional and settlement level. Since this won't be a general ICT index, such data are required which correlate to high speed network, like usage and access attributes. After filling the important data gaps and removing the distorting data In the next step the correctness of data set and methodology chosen must be checked with multiple statistical analysis.

For additivity the distinct units of measurement should be eliminated. It may given by the formula, which shows figure 5.



#### Figure 5. Formula for converting hard data for additivity

The basis of it, the standard formula of NRI (Networked Readiness Index) for converting hard data, adapted for regional level. In step six it come the synthesis of the indicators, finally the value of the index should be determine for each region, and the degree of deviation will give the level of backward.

#### 4.2 Factors which can be involved in the index

The factors, which important to determination of differences in cross-country broadband penetration, also can explain regional differences within a country (Bouckaert et al, 2010). Because of this I determined the three main group and the scope of factors for certain groups on the basis of NRI components, that there are three important stakeholders to consider in the development and use of ICT: individuals, businesses, and governments. (Dutta et al, 2004) I chose NRI because I make an index for decision support of NGN investments, and NRI contains such social, economical and technological components which are related to broadband network. There is a general macroeconomic and regulatory environment for ICT in which the stakeholders play out their respective roles. Furthermore, the three stakeholder's degree of usage, and readiness to use and benefit from ICT (Dutta et al, 2004). Since the index prepares for regional comparison, of course, the groups contains different components from the NRI. Necessary such data, which are available on regional level, or may be calculated from existing data.

On regional level table 2 contains those factors which presumed are in directly or indirectly connection with existence of network infrastructure. In the table show those data which may be involved in the index.

Factors linked to network infrastructure	Factors linked to Individual network characteristics		Public sector characteristics	
Number of internet subscribers	Employment	Number and size of enterprises	Territorial characteristics	
Characteristics of	Unemployment	Number of IT enterprises	Number of settlements with local e-government	

Table 2. Factors which can be taken into account for the calculation of the index

access network	Average income	Website of enterprises	Local e-government services		
settlements and households with optical access	Communications characteristics	Assets	Population and population density		
use of e-business and degree of internet use	Number of persons with higher qualification	IT investment and R&D	Settlement composition of region (number of cities and municipalities)		

To check that socioeconomic data and factors of three stakeholders really correlate with the network I make correlation tests. I have made calculations on county level, with 19 elements. About its distortion impact, the capital didn't get into the elements. First I examined the correlation between the number of internet subscriptions and eleven variables. Table 3 shows the result of the calculation.

Certain data max be excluded from components because there is not or there is not significant correlation between two variables. So the unemployment (V3), the average income (V5), the number of municipalities (V8) and the area of the county (V10) won't be included into the index.

Fable 3.	<b>Result</b> of	the correlation	calculation
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		V2	V3	V4	V5	V6	<b>V7</b>	<b>V8</b>	V9	V10	V11
V1	Pearson Correlation	0,979	0,236	0,878	0,328	0,794	0,832	0,051	0,953	0,439	0,931
	Sig. (2-tailed)	0,000	0,331	0,000	0,170	0,000	0,000	0,834	0,000	0,060	0,000
	N (number of counties)	19	19	19	19	19	19	19	19	19	19

(Source: Own calculation by data of www.ksh.hu)

Between number of internet subscriptions (V1) and the number of persons with higher qualification (V2), the number of enterprises (V4), the population density (V6), the number of cities (V7), the population (V9) and the number of households (V11) the calculation shows significant correlation.

Correlation test have to make with each factor which related to the existence of network infrastructure. Since among the variables there are which have an effect on each other also, multi-colinearity analysis should be made. Finally scope of data and factors which may be included into the index actually, can be determined with factor analysis.

After the data analyses, and verification of applicability, the next step is the weighting, namely, should be determine the proportion of three components in the indicator. My preliminary choice is the contribution of business, public and household sector to macroeconomic performance as a percentage. Since this value is different regionally, the base is the total national economy contribution. Accordingly in the main index the share of the enterprise sector would be 60% (about it important role in employment and contribution of GDP), and the share of the public and private sector would be equally 20%. These proportions are preliminaries, in the final period – if necessary – this factor variable easily

# 4. CONCLUSION: USABILITY OF REGIONAL RANK

In my opinion a rank can be defined among regions or settlements by on the basis of the indicator, in respect of factors related to network infrastructure. The rank can help to realize targeted developing and improving of infrastructure, furthermore this enables to intervene on that place which is bottleneck.

For calculating the index I wouldn't use only those data which measuring directly (e.g. number of accesses and their speed), but I also take account of actually use, capacity utilization, readiness of people, penetration of different e-services. And the characterizations of SMEs also can involved to the calculation

The final result probably a regional indicator, the methodology of which I described in my article. By it determining of broadband situation of regions and settlements would be easier. Furthermore, we can be identified those areas which show gaps before the building up of infrastructure.

About the structure of the index the backwardness can be identified in two ways. On the one hand, which the stakeholder group (households, enterprises of public sector) shows the largest gap, can be exactly determined. On the basis of it the selection of target groups will be easier. On the other hand the objective areas also can be determined, namely, infrastructure, information technology assets or human resource development is necessary.

## REFERENCES

- 1. Bouckaert J. et al, 2010. Access regulation, competition, and broadband penetration: An international study. *In Telecommunication Policy* 34., 661-671.
- 2. Budapest Internet Exchange. www.bix.hu
- Commission of the European Communities, 2006. Bridging the Broadband Gap. [Online] <URL: <u>http://eur-lex.europa.eu/</u> LexUriServ/LexUriServ.do?uri=COM:2006:0129:FIN:EN:PDF> [2007.09.02]
- 4. Dutta S. et al, 2004. The *Networked Readiness Index 2003-2004, Overview and Analysis Framework*. In The Global Information Technology Report, Eds. 2003-2004. The World Economic Forum, Geneva, Switzerland.
- 5. Emrouznejad A. et al, 2010. An alternative measure of the ICT-Opportunity Index. In Information&Management 47., 246-254.
- 6. Hanafizadeh M. R. et al, 2009. An index for cross-country analysis of ICT infrastructure and access. *In Telecommunication Policy 33.*, 385-405.
- Herdon M. and Houseman J., 2007. ICT and Innovation in Rural Areas. In Nábrádi A, Lazányi J, Herdon M (ed.) Agriculture Economics, Rural Development, Informatics. Proceedings. Debrecen, Hungary, pp. 1-11.(ISBN:978-963-87118-7-8)
- 8. Horváth L. 2009, Situation of broadband internet access in Hungary from 2004Q2 to 2009Q2. [Online] <URL: http://www.nhh.hu/dokumentum.php?cid=22050> [2010.05.10]
- 9. Höffler F., 2007. Cost and benefits from infrastructure competition. Estimating welfare effects from broadband access competition. *In Telecommunications Policy 31*, 401-418.

- 10. Hungarian Central Statistical Office. www.ksh.hu
- Hungarian News Agency, 2008. A hazai GDP felét a KKV-k adják. [Online] <URL: http://www.vallalkozoinegyed.hu/20080212/a\_hazai\_gdp\_felet\_a\_kkv-k\_adjak> [2011.01.15]
- 12. Koutroumpis P., 2009. The economic impact of broadband on growth: A simultaneous approach. *In Telecommunication Policy 33*. pp. 471-485.
- 13. LaRose R et al, 2011. The impact of rural broadband development: Lessons from a natural field experiment. *In Government Information Quarterly* 28., 91-100.
- 14. Moutafides G. M. and Economides A. A., 2011. Demand for broadband access in Greece. *In Telematics and Informatics* 28., 125-141.
- 15. Picot A. and Wernick C., 2007. The role of government in broadband access. *In Telecommunication Policy 31.*, 660-674.
- 16. Preston P. et al, 2007. Broadband and rural areas in the EU: From technology to applications and use. *In Telecommunications Policy 31.*, 389-400.
- 17. Struzak R., 2010. Broadband Internet in EU countries Limits to growth. In IEEE Communication Magazine, pp 52-57.
- 18. Vicente M. R. and Gil-de-Bernabé F., 2010. Assessing the broadband gap: From the penetration divide to the quality divide. *In Technological Forecasting & Social Change* 77. pp 816-822.
- 19. Wood L. E., 2008. Rural broadband: The provider matters. In: Telecommunications Policy 32., 326-339.
- Zagar D. and Krizanovic V., 2009. Analyses and Comparisons of Technologies for Rural Broadband Implementation. 2009 International Conference on Software, Telecommunications & Computer Networks – (SoftCOM 2009). Croatia, Hvar, 292-296.

# DATA MINING IN MEDICAL RECORDS FOR THE ENHANCEMENT OF STRATEGIC DECISIONS: A CASE STUDY

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**Abstract:** The impact and popularity of competition concept has been increasing in the last decades and this concept has escalated the importance of giving right decision for organizations. Decision makers have encountered the fact of using proper scientific methods instead of using intuitive and emotional choices in decision making process. In this context, many decision support models and relevant systems are still being developed in order to assist the strategic management mechanisms. There is also a critical need for automated approaches for effective and efficient utilization of massive amount of data to support corporate and individuals in strategic planning and decision-making. Data mining techniques have been used to uncover hidden patterns and relations, to summarize the data in novel ways that are both understandable and useful to the executives and also to predict future trends and behaviors in business. There has been a large body of research and practice focusing on different data mining techniques and methodologies. In this study, a large volume of record set extracted from an outpatient clinic's medical database is used to apply data mining techniques. In the first phase of the study, the raw data in the record set are collected, preprocessed, cleaned up and eventually transformed into a suitable format for data mining. In the second phase, some of the association rule algorithms are applied to the data set in order to uncover rules for quantifying the relationship between some of the attributes in the medical records. The results are observed and comparative analysis of the observed results among different association algorithms is made. The results showed us that some critical and reasonable relations exist in the outpatient clinic operations of the hospital which could aid the hospital management to change and improve their managerial strategies regarding the quality of services given to outpatients.

*Keywords:* Decision Making, Medical Records, Data Mining, Association Rules, Outpatient Clinic.

JEL Classification Codes : C80, I11, D83

# **1. INTRODUCTION**

In today's competitive world, information and knowledge has become the absolute power for both establishing and managing organizations in a successful and resilient manner. The key players in global economy, managers and strategic decision makers namely, strive for better and more reliable decision making/decision support systems and mechanisms with the aid of continually improving information technologies and automated business intelligence models. Since the 1990s, the socio-economic concept has generally been referred to as the "information and knowledge society". The profound changes that have occurred in methods of production and in economic relations are accepted to increase the importance of the exchange of intangible goods, consisting for the most part of transfers of information. The acceleration in the pace of current transformation processes is shown to be due to two factors where the first one is globalization and the second one is the impact of new information technologies regarding the massive spread of the Internet and mobile devices. The spreading use of low-cost massive data storage technologies and the wide availability of Internet connections have made very large amounts of data available to organizations, governments and people. The enterprises that are capable of transforming data into information and knowledge can use them to make quicker and more effective decisions and thus to achieve a competitive advantage (Vercellis, 2009).

Consequently, the rapid growth and integration of information technologies, digital networks, software and database systems and the availability of massive amount of electronic data provide people with a vast new resource that can be analyzed to optimize industrial systems, uncover financially valuable patterns, minimize investment risks, make successful strategic decisions, and so on (Costea & Eklund, 2009; Changchien, et al., 2004). Even, some interesting studies have been applied in fraud detection in several business area including medical records and systems (Ortega, et al., 2006). To undertake these large data analysis projects, researchers and practitioners have adopted established algorithms from statistics, machine learning, neural networks, and databases and have also developed new methods targeted at large data mining problems (Hand, et al., 2001; Zhang & Zhou, 2004). Data mining can be defined as the extraction of useful information from large data sets or databases. It is globally accepted as a new discipline, lying at the intersection of statistics, machine learning, data management and databases, pattern recognition, artificial intelligence, and other areas. All of these are shown to be related with certain aspects of data analysis, so they have much in common-but each also has its own distinct flavor, emphasizing particular problems and types of solution (Hand, et al., 2001; Rokach & Maimon, 2008).

With the advent of computers and the information age, statistical problems have exploded both in size and complexity. Challenges in the areas of data storage, organization and searching have led to the new field of "data mining"; statistical and computational problems in biology and medicine have created "bioinformatics." Vast amounts of data are being generated in many fields, and the statistician's job is to make sense of it all: to extract important patterns and trends, and understand "what the data says." This is generally described as "learning from data". In other words, data mining refers to the search of large, high-dimensional, multi-type data sets, especially those with elaborate dependence structures or patterns where the search for valuable structure or patterns is based on statistical methodologies (Hastie, et al., 2009).

Data mining is also accepted as a stage of a larger process known as "Knowledge Discovery in Databases" (KDD). Knowledge discovery is defined as a process, in several stages, not trivial, interactive and iterative, for identification of new valid understandable and potentially useful patterns from large data sets. Thus, the use of data mining is intended to support the discovery of patterns in databases in order to transform information in knowledge, to assist the decision making process or to explain and justify it. Data mining can be defined as an automatic or semiautomatic patterns discovery in great amounts of data, where these patterns can be perceived as useful (Nedjah, et al., 2009).

There are several different data mining models, methodologies, tools, algorithms and implementations, however, in most cases, the stages or phases of a data mining process is

defined and grouped generally based on CRISP–DM standard (Larose, 2005). These phases are described as follows (Larose, 2005):

- 1. Business understanding phase
- 2. Data understanding phase
- 3. Data preparation phase
- 4. Modeling phase
- 5. Evaluation phase
- 6. Deployment phase

It is usually noted that the most crucial phases is the first three stages where a good understanding of the business, data structure, the scope and objectives of the study and purifying or cleaning the data (preparation phase) is the key factors for a successful data mining implementation (Dasu & Johnson, 2003). In today's data mining models and relevant technologies, most of them are aimed at one or more of the following common objectives or tasks, which also gives us the summary of primary goals and alternative approaches of data mining concept (Witten, et al., 2011; Larose, 2005):

- Description
- Estimation
- Prediction
- Classification
- Clustering
- Association

Since in this study, association is aimed and implemented, it will be shortly described in this paper. The association task for data mining is the job of finding which attributes "go together." Most prevalent in the business world, where it is known as affinity analysis or market basket analysis, the task of association seeks to uncover rules for quantifying the relationship between two or more attributes. Association rules are of the form "If antecedent, then consequent," together with a measure of the support and confidence associated with the rule. Examples of association tasks in business and research include examining the proportion of children whose parents read to them who are themselves good readers, or predicting degradation in telecommunications networks, finding out which items in a supermarket are purchased together and which items are never purchased together, and so on (Larose, 2005; Hastie, et al., 2009). Association rules can "predict" any of the attributes, not just a specified class, and can even predict more than one thing (Witten, et al., 2011).

In this study, a data mining model and a proper data mining implementation was achieved in a outpatient clinic database system. The executive board of the hospital was especially concerned about improving the quality of the service given to patients in the outpatient clinic, as well as improving the work conditions for the medical staff and increasing the efficiency and throughput of the business processes. They had a large database that stores the incoming patients' records to the outpatient clinic, however the previous reports generated from the database system hadn't provided them with the type of information or hints / clues that can increase their knowledge in their case. Since, their primary concern and requirement was to extract or find out some hidden valuable relations in the data that can guide them in making decisions for change management in their daily operations; the association task was chosen within the data mining implementation. It is aimed to find some accurate and meaningful specific conditions and criteria that can predict certain situations, conditions or results that can be set as rules for hospital's strategic decisions by using the record sets and fields (attributes) in the database. It should also be mentioned that some

previous studies about data mining applications amongst medical and healthcare records have been developed successfully by other researchers (Riha, et al., 2002; Silver, et al., 2001; Morik, et al., 1999). The implementation of our study, all necessary phases of data mining process including data collection, preparation, modeling, execution of algorithms and test, observations of the results and discussions are given in the following sections of this paper.

# 2. CASE STUDY

The implementation of this research was carried out in one of the medium-sized public hospitals in Izmir, where Izmir is known to be the third biggest (population size and socioeconomic parameters) city in Turkey. Due to the privacy and legal concerns of hospital managers, the name of the hospital is not explicitly given in this study. The total number of medical staff working in the hospital is around 580, the inpatient bed capacity is given as 300 and it has three different outpatient clinic buildings and two main buildings. During the interviews conducted with the hospital's executive members in the business analysis of this study, it was observed that senior management is becoming more involved in developing quality assurance standards, improving their IT infrastructure and adapting their major business process to technological advances.

# 2.1 Data Collection and Preparation

The data were collected from the hospital's outpatient clinic Oracle 9i v.9.2.0.1 database system. It was made up of a four-month period of data that were recorded to the system whenever the patients arrived at the clinic. In the original data, there were 21 different attributes (fields) for each record and a total of 257668 records. However, before the data analysis and mining process, some of these fields were eliminated and were not used in the study due to the irrelevance of these fields for the aim of this study. Also, some of the records had null data (wrong entries by data operators in the hospital) and these records were also discarded from the data set. By this way, the data cleaning and preparation process, which is an important step in data mining was carried out. As a result, a total of 256816 records and 9 different fields were collected and they were used for data mining analysis in the study. The descriptive statistics of the whole data set denoted in Figure 1 and the name and properties of the fields are given in Table 1.

It should be noted that since this data is collected from a Turkish hospital system, some of the records in the original data set are written and stored in Turkish language but some of them are translated into English in this study, whenever necessary. A sample screen shot of the record set is also given Figure 2.

In the data set, 146801 were the records of female patients (coded as "K" in the database records) which is 57.16% and the remaining 110015 records were belonging to male patients (coded as "E" in the database records), which is 42.84%. The day of the week field stores nominal values representing any day of the week days (Sunday, Monday, etc.) where it corresponds to the "Date" field in the same record. Since, the data was collected in a period of four months, a total of 120 distinct field values were collected in the "Date" field. The "Time" field denotes the hour and minute value of the time (24-hour format) which the patient's record is entered into the hospital system. The "2-hour Period" field is a nominal label which denotes the time period that corresponds to its time value. For instance, if a record has a "Time" value between 00:00 and 02:00, then its "2-hour Period" will be labeled as "0". In the same manner, if the time of the record is between 06:00 and 08:00, then its "2-hour Period"

will be set as "3". Hence, this "2-hour Period" has distinct 12 alternative values ranging from 0 to 11.

FIELD NAME	SAMPLE VALUES
Patient Gender	Male, Female
Day of Week	Sunday, Monday, etc.
Date	mm/dd/yyyy
Time	hh:mm
2-Hour Period	0, 1, 2,11, 12
Department Code	100110, 200211, etc.
Patient Type Index	1, 2, 3,56, 57
Diagnosis Code	N21.1, S65.3, G46.8-J20.9, etc.
Case Explanation	(Summary Of Each Record Explaining The Patient And The Incident, Written In Turkish)

Table 6. The name of the fields in the whole data set



Figure 1. The descriptive statistics of the whole data set in the study

PATIENT	DAY OF WEEK	DATE	TIME	2-HOUR	DEPARTMENT	PATIENT	DIAGNOSIS CODE	CASE EXPLANATION
GENDER				PERIOD	CODE	TYPE INDEX		
E	Thursday	2/18/2010	18:21	9	400610	9	T14.8-T14.9	'PANSUMAN BİRİMİ VAKA DIŞIDIR'
к	Tuesday	4/27/2010	09:53	4	400412	7	F32.9	'VAKA BAŞI HASTASIDIR'
К	Thursday	2/18/2010	20:44	10	400710	5	R51	YEŞİLKART HASTA TÜRÜ VAKA BASI UYGULAMASINA DAHİL DEĞİLDİR'
E	Wednesday	3/31/2010	07:59	3	200311	9	T15.1	'GÜNÜBİRLİK HASTASI((PAKET KARŞILIĞI TETKİĞİ YOK))'
К	Wednesday	3/17/2010	07:49	3	100610	9	R42	'AYNI GÜN BAŞKA VAKA BAŞI GELİŞİ VAR'
к	Saturday	3/13/2010	09:44	4	101410	22	Y60.3	'GÜNÜBİRLİK HASTASI((PAKET KARŞILIĞI TETKİĞİ YOK))'
К	Monday	3/22/2010	12:46	6	100626	13	E11.9	'VAKA BAŞI HASTASIDIR'
К	Wednesday	1/27/2010	07:23	3	200620	23	N83.2	'ON GÜN HASTASI EK/10C+GENETİK TETKİKİ YOK (01.04.2009 sonrası)'
E	Wednesday	4/28/2010	07:59	3	200401	9	L05.9	'ON GÜN HASTASI EK/10C+GENETİK TETKİKİ YOK (01.04.2009 sonrası)'
E	Tuesday	4/27/2010	12:50	6	100316	13	J45.8	'VAKA BAŞI HASTASIDIR'
E	Wednesday	4/14/2010	21:00	10	400710	9	M79.1-M79.1/MIYALJI	' ACİL POLK. BİRİMİ VAKA DIŞIDIR'
E	Monday	3/15/2010	14:12	7	100627	22	K29.7	'VAKA BAŞI HASTASIDIR'
К	Saturday	4/24/2010	20:45	10	400710	22	N30.9	' ACİL POLK. BİRİMİ VAKA DIŞIDIR'
К	Monday	3/15/2010	07:33	3	200310	5	H25.1	'YEŞİLKART HASTA TÜRÜ VAKA BASI UYGULAMASINA DAHİL DEĞİLDİR'
К	Monday	1/25/2010	11:03	5	100317	13	K52.8	VAKA BAŞI HASTASIDIR'
К	Thursday	1/14/2010	10:50	5	101110	22	M67.4	'VAKA BAŞI HASTASIDIR'
E	Monday	4/19/2010	10:06	5	200312	8	H10.8	'ÜCRETLİ HASTA'
К	Tuesday	4/13/2010	07:50	3	200710	13	'125.9 -125.9'	'VAKA BAŞI HASTASIDIR'
К	Monday	2/22/2010	14:09	7	201010	4	'R07.3 -R07.3'	'VAKA BAŞI HASTASIDIR'
К	Monday	3/22/2010	12:40	6	101410	22	Y60.3	'ENJEKSIYON POLK. BİRİMİ VAKA DIŞIDIR'
E	Thursday	4/29/2010	01:38	0	400710	20	Z02.9	'CUMHURİYET BAŞ SAV. HASTA TÜRÜ VAKA BASI UYGULAMASINA DAHİL DEĞİLDİR'
E	Monday	3/15/2010	07:41	3	100610	9	E78.4-E11.5	'VAKA BAŞI HASTASIDIR'
к	Monday	4/19/2010	07:36	3	101111	13	M79.8	'VAKA BAŞI HASTASIDIR'
E	Thursday	1/21/2010	10:55	5	400710	9	M79.1-M79.1/MIYALJI	' ACİL POLK. BİRİMİ VAKA DIŞIDIR'
E	Friday	4/30/2010	07:34	3	100610	23	E11.9	'VAKA BAŞI HASTASIDIR'
к	Tuesday	3/30/2010	09:24	4	200210	5	J44.9	YEŞİLKART HASTA TÜRÜ VAKA BASI UYGULAMASINA DAHİL DEĞİLDİR'
к	Tuesday	4/27/2010	07:22	3	200210	13	'125.9 -R07.3'	VAKA BAŞI HASTASIDIR'
к	Thursday	2/25/2010	06:59	3	100616	13	110	VAKA BAŞI HASTASIDIR'
E	Friday	2/26/2010	08:01	4	200311	23	H11.0-H11.0/PTERJIYUM	'GÜNÜBİRLİK HASTASI(PAKET KARŞILIĞI TETKİĞİ VAR)'
К	Sunday	3/28/2010	11:35	5	400610	5	T14.8-T14.9	YEŞİLKART HASTA TÜRÜ VAKA BASI UYGULAMASINA DAHİL DEĞİLDİR'
к	Monday	1/25/2010	15:38	7	100713	7	F32.9-M17.9	'AYNI GÜN BAŞKA VAKA BAŞI GELİŞİ VAR'

Figure 2. An excerpt from the data set in the study

The "Department Code" field stores the data that shows where the patient is medically operated in the outpatient clinic. These codes are specifically defined in the hospital and their corresponding department names are known. In the data set, there were 80 distinct department codes. "Patient Type Index" is also another unique specification code in the hospital system which corresponds to the patient's socio-economic feature. In other words, each code describes some additional property about the patient; whether he / she is retired and retired from which organization, or actively working, or jobless, whether he / she has an active social security number or not, etc. There are a total of 30 distinct label values in the data set ranging between 1 and 58.

"Diagnosis Code" field holds the specific medical codes that summarize the diagnosis assigned to the patient within each incident. "Case Explanation" field is a nominal data field that the data operators or medical staff enters as short summary notes in a standard and specific format which explains the case for each record of that patient regarding the diagnosis given and other observations. In the data set, there were 43 distinct values among the 257668 records.

## 2.2 Methodology and Implementation

Since the initial data set size was large for the data mining process, before analyzing the data, a statistical sampling methodology was used to derive a smaller sample data set (Witten, et al., 2011; Dasu & Johnson, 2003). The sampling size was chosen according to the following criteria:

Original data set size: 257668 Confidence interval (accepted margin of error): ± 2% Confidence level: 99% Within these statistical sampling parameters, the minimum recommended sample size could be calculated as 4081 using the statistical sampling size derivation methods (Witten, et al., 2011; Dasu & Johnson, 2003). Thus, a total of 4100 out of 257668 records was selected as the sample data set size in our study. It should also be noted that, the available data set from the outpatient clinic database in the hospital was limited to the first four month period due to the changes in the technological infrastructure of the relevant database systems. However, this sample size and the sample data set can also be considered as a feasible representative sampling amount for a one year period regarding the same statistical confidence level and confidence interval values.

Weka version 3.6.0 was used as the software for the data mining analysis phase in the study. The whole data set was first converted into proper Weka data format and then it was imported into the application. After this step, all of the numerical fields (attributes) were transformed into their nominal values. This was also a crucial step in the analysis since most of the associative data mining algorithms that are supplied within Weka software only works for nominal data (Witten, et al., 2011). Before the initiation of data mining analysis, the final step was the random sample data set selection of 4100 records out of the generic data set. This was established by the preprocessing and filtering tools that were provided within Weka software.

After these steps, different associative data mining algorithms were executed among the data set and their results were observed and comparatively analyzed. Each of these associative algorithms use different data mining techniques to extract association rules (Witten, et al., 2011; Cho, et al., 2002; Khattak, et al., 2010) and they are summarized in Table 2.

ALGORITHM NAME	EXPLANATION
Apriori	Generates association rules by finding frequent item sets, generating successively longer candidate item sets from shorter ones that are known to be frequent. It iteratively reduces the minimum support until it finds the required number of rules with the given minimum confidence.
Filtered Associator	It allows data to be passed through a filter before it reaches an associator. Both the filter and the base associator are options that the user can configure.
PredictiveApriori	It combines confidence and support into a single measure of predictive accuracy and finds the best n association rules in order.
Tertius	It finds rules according to a confirmation measure, seeking rules with multiple conditions like Apriori, but differing in that these conditions are applied OR operation together, instead of AND operation.

Table 2.	Associative	data m	nining	algorithms	used in	the study

Among these four algorithms, the only remarkable and accurate results were observed from the PredictiveApriori associator. The other three data mining algorithms either provided no results or some non-relevant / incorrect association rules. Some of the default parameters were also changed in these three algorithms and additional observations were made in order to achieve some accurate and meaningful results but no further accurate results could be obtained. In the following section, the association rules observed by the PredictiveApriori mining algorithm are given and the interpretation and analysis of these rules are discussed.
#### 2.3 Results

PredictiveApriori associator algorithm derived 100 different association rules that were ranked and ordered with several accuracy level values. The rule with the highest accuracy had a value of 0.99498 and the one with lowest accuracy was observed as 0.9733. This accuracy term denotes metrics for ranking the association rules by means of confidence, which is the proportion of the examples covered by the premise that are also covered by the consequent ones (Witten, et al., 2011). Among these rules, some of them had one condition or attribute with a resultant condition where some others had two or more combined condition that corresponds to a specific condition. Some of these association rules derived from Weka software's output panel are shown in Figure 3 with the rule conditions and the accuracy values abbreviated as "acc:";

PATIENT TYPE INDEX=22 CASE EXPLANATION= ACIL POLK. BIRIMI VAKA DISIDIR ==> DEPARTMENT CODE=400710 acc:(0.99489) DAY OF WEEK=Sunday CASE EXPLANATION= ACIL POLK. BIRIMI VAKA DISIDIR ==> DEPARTMENT CODE=400710 acc:(0.99471) 2-HOUR PERIOD=10 CASE EXPLANATION= ACIL POLK. BIRIMI VAKA DISIDIR ==> DEPARTMENT CODE=400710 acc:(0.99463) PATIENT GENDER=K DEPARTMENT CODE=400710 PATIENT TYPE INDEX=22 ==> CASE EXPLANATION= ACIL POLK. BIRIMI VAKA DISIDIR acc:(0.99471) DAY OF WEEK=Sunday DIAGNOSIS CODE=Y60.3 ==> DEPARTMENT CODE=101410 acc:(0.99163)

#### Figure 3. Some of the association rules derived by PredictiveApriori

As it can be seen from the sample subset of results in Figure 3, the first rule suggests that if "Patient Type Index" is 22 and "Case Explanation" is a non-standard emergency outpatient clinic, then it should be operated in the department with code 400710 (which is recorded in the hospital's system as emergency service department) with a confidence value of 0.99489. Similarly, the last rule in Figure 3 suggests that if any patient comes on Sunday and its diagnosis code is Y60.3 (unexpected incident due to a surgical operation / wrong medical treatment), then its department code is 101410 (injection service department) with a confidence value of 0.99163.

However, all of these 100 rules had to be analyzed in detail by the authors of this study and the hospital senior management since most of these rules, even providing very high confidence values, in fact were not accurate or meaningful. This was also an expected outcome in this study. This is due to the fact that in all types of data mining models and methodologies; it requires significant human interactivity at each stage (Larose, 2005). Continuous quality monitoring, validation and other evaluative measures must be assessed by human analysts (Larose, 2005). Recent researches are focusing in to find improved mining methodologies that can enable change semi-automated techniques to automated techniques (Asghar & Iqbal, 2009).

After carrying out the analysis of the derived rules, some few but strategic and meaningful conclusions were achieved which were confirmed by the senior management in the hospital.

These deductions are given as follows;

- On any day of the week, if the patient arrival time period is 22:00-00:00 at night and the patient is recorded as a non-standard emergency outpatient clinic and if the patient is also retired, then it could be a female patient.
- If the patient's arrival time is 00:00-02:00 at night and the day is Saturday or Sunday and the department is emergency service and if it needs an immediate operation for surgery, it is probably a male patient.
- On Sundays, if the patient has an unexpected incident due to a surgical operation / wrong medical treatment, then emergency service within injection operation is required.
- On any day of the week (except weekends), if the patient arrival time period is 10:00-12:00 in the morning and if the patient is male and if it is a retired patient from government, then he is probably to be served in urology department.

#### **3. CONCLUSION**

The results from the data mining process of the outpatient clinic records showed us that some necessary precautions and some necessary changes in the daily operations might be achieved by the hospital management that could improve the efficiency and quality of services given to outpatients. For instance, in any work day of the week in the morning period, it is better to have sufficient number of doctors and medical staff in the urology department. At the weekends during the midnight hours, it is crucial to have sufficient number of male nurses available in the emergency service. On Sundays, it is necessary to keep some doctors in the clinic that are experienced in specific surgical operations.

On the other hand, in this study it is shown that only a few relations and knowledgebased conclusions could be made to support and enhance the decisions and managerial strategies of the hospital management. This could be due to two reasons. The first reason is the lack of data in the database system in order to extract valuable associations and relations (in this study only nine fields, in other words, nine criteria in the record set could be used for data mining). The second reason is that the association algorithms used for data mining in this study might not be perfectly fit for this case. To overcome such problems and drawbacks in further studies, more fields or attributes could be included in the data sets and some other association algorithms might be tested as well. Also, it should be noted that sometimes data set itself might not be suitable for association tasks in data mining.

It should also be noted that even if the data mining tools, models and algorithms used in similar studies provide results with high levels of accuracy and confidence, those results and derived rules shall require human intervention. In other words, no data mining algorithm or model can assure 100% correctness and accuracy by itself for a pure and robust automated system, hence, every result must also be checked by experts or managers.

#### REFERENCES

- 1. Asghar, S. and Iqbal, K., 2009. Automated Data Mining Techniques: A Critical Literature Review. *Proceedings of 2009 International Conference on Information Management and Engineering*. Kuala Lumpur, Malaysia, pp. 75-79.
- 2. Changchien, S., W., et al., 2004. On-line personalized sales promotion in electronic commerce. *In Expert Systems with Applications*, Vol. 27, pp. 35-52.

- 3. Cho, Y., H., et al., 2002. Personalized recommender system based on web usage mining and decision tree induction. *In Expert Systems with Applications*, Vol. 23, pp. 329-342.
- 4. Costea, A. and Eklund, T., 2009. Financial Performance Analysis of Scandinavian Telecommunications Companies Using Statistical and Neural Networks Techniques. *In Economic Computation and Economic Cybernetics Studies and Research*, Vol. 43, No. 4, pp. 87-104.
- 5. Dasu, T. and Johnson, T., 2003. *Exploratory Data Mining and Data Cleaning*. John Wiley & Sons Inc., New Jersey, USA.
- 6. Hand, C., et al., 2001. Principles of Data Mining. The MIT Press, London, UK.
- 7. Hastie, T., et al., 2009. *The Elements of Statistical Learning, Data Mining, Inference and Prediction, 2<sup>nd</sup> edition.* Springer, New York, USA.
- 8. Khattak, A. M., et al., 2010. Analyzing Association Rule Mining and Clustering on Sales Day Data with XLMiner and Weka. *In International Journal of Database Theory and Application*, Vol. 3, No. 1, pp. 13-22.
- 9. Larose, D., T., 2005. *Discovering Knowledge in Data An Introduction to Data Mining*. John Wiley & Sons Inc., New Jersey, USA.
- 10. Morik, K., et al., 1999. Combining Statistical Learning with a Knowledge-Based Approach -A Case Study in Intensive Care Monitoring. *ICML '99 Proceedings of the Sixteenth International Conference on Machine Learning*. Bled, Slovenia.
- 11. Nedjah, N., et al., 2009. Innovative Applications in Data Mining. Springer-Verlag, Berlin, Germany.
- Ortega, P. A., et al., 2006. A Medical Claim Fraud/Abuse Detection System based on Data Mining: A Case Study in Chile. *Proceedings of Conference on Data Mining DMIN06*. Las Vegas, USA, pp. 224-231.
- 13. Riha, A., et al., 2002. Medical guideline as prior knowledge in electronic healthcare record mining. *3rd International Conference on Data Mining Methods and Databases for Engineering, Finance and Other Fields.* Bologna, Italy.
- 14. Rokach, L. and Maimon, O., 2008. *Data Mining with Decision Trees Theory and Applications*. World Scientific Publishing Co. Pte. Ltd., Singapore.
- 15. Silver, M, et al., 2001. Case Study: How to Apply Data Mining Techniques in a Healthcare Data Warehouse. *In Journal of Healthcare Information Management*, Vol. 15, No. 2, pp. 155-164.
- 16. Vercellis, C., 2009. Business Intelligence; Data Mining and Optimization for Decision Making. John Wiley & Sons, Ltd., UK.
- 17. Witten, I., H., et al., 2011. Data Mining Practical Machine Learning Tools and Techniques, 3rd Edition. Elsevier Inc., USA.
- 18. Zhang, D. and Zhou, L., 2004. Discovering golden nuggets: data mining in financial application. In IEEE Transactions on Systems, Man, and Cybernetics, Part C: Applications and Reviews, Vol. 4, No. 4, pp. 513-522.

## THE FINANCIAL INSTRUMENTS USED BY INTERNATIONAL FINANCIAL INSTITUTIONS (IFIs) REGARDING THE SOUTHEAST EUROPEAN COUNTRIES: A CRITICAL ASSESSMENT OF THEIR UNDERLYING PHILOSOPHY AND ORIENTATION

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Abstract: After the fall of the communist regimes in the Southeast European countries, what was attempted was a systemic transformation which was called transition. The economic transition aimed at transforming the nature of economic relations, since their coordination would be passed from the state to market mechanisms. In order to enable this transformation, what was necessary was to finance the attempted changes. However, since the countries in the region lacked sufficient equity capital, they resorted to foreign borrowing and, thus, international finance has to date been the main source of capital. The involvement of International Financial Institutions (IFIs) in the transition process was almost direct but after the cessation of hostilities in Kosovo in 1999 there has been a dramatic increase in financing throughout the area. The level of financing in conjunction with the immediate and increasing needs of countries was the main factors that configured the balance of powers among recipient countries by Institutions is being conducted by means of specific financial instruments.

The present article aims at examining and evaluating the instruments used by institutions to finance the transition of Southeast European countries, as their suitability, orientation and philosophy have been repeatedly questioned. In order to make this assessment feasible, an examination will take place with regard to the financial instruments of the major creditors of the region, namely the IMF (International Monetary Fund) the World Bank Group and the European Union, who are also managers of the vast majority of financings.

Keywords: transition, international financial institutions (IFIs), Southeast Europe, financial instruments

JEL Classification Codes: F33, N24, P21

#### **1. INTRODUCTION**

The financing of the transition process regarding Southeast European countries was principally based on international finance. The financial policies of the International Financial Institutions are initiated and implemented through the financial instruments introduced by the relevant body within the region of southeast Europe.<sup>2</sup>

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<sup>&</sup>lt;sup>2</sup> Following the demarcation of the International Financial Institutions (IFIs) for Southeast Europe, the States will be studied are Albania, the former Federal Republic of Serbia - Montenegro (including Kosovo) (S-M), the Former Yugoslav Republic of Macedonia (FYROM), Bulgaria, Romania, Croatia and the Bosnia – Herzegovina (B-H).

The present paper, through studying the financial instruments of International Financial Institutions for Southeastern Europe as well as the financing provided by the countries of the region, will attempt to examine their structure and to determine the suitability and the degree of their effectiveness. For this purpose, the finance and the financial instruments of the main creditors of the region will be examined, namely the International Monetary Fund (IMF), the World Bank Group (WBG) and the European Union (EU).

The above institutions manage the vast majority of finance in the area and the use of financial instruments is directly related to the associated conditionalities of their financial policies. Their almost direct involvement in the transition process determined the key aspects of the attempted transformation so that the financing towards the Southeast European states exhibits specific common characteristics<sup>3</sup>

The methodology chosen for the analysis that follows is descriptive research with qualitative analysis and critical review of content sources. The collection of data and data on financial flows in the study area was based primarily on reports and publicly evidence of international funding institutions and secondarily in the international literature.

At first, studied the financial tools used by each institution in the region of Southeast Europe and also plotted, with the greatest accuracy, the financial flows for each country in Southeast Europe separately. The next chapter is devoted to the description of the effort for the systematic organization of international finance with the creation of joint actions to form a more integrated approach. Finally attempts a brief recording the options of institutions in relation to the direction of funding, the philosophy governing the implementation of programs and the final use of funding by the recipient countries.

## 2. THE FINANCIAL INSTRUMENTS OF THE INTERNATIONAL FINANCIAL INSTITUTIONS

#### 2.1 THE INTERNATIONAL MONETARY FUND

It was in 1999 that the IMF established its new financial program "Poverty Reduction and Growth Facility" (PRGF) for its poorest member-states, which replaced the previous financial instrument called "Enhanced Structural Adjustment Facility" (ESAF), (IMF 2002a). The credit support of the policies arising from this program does not come from the General Resources Account (GRA) but by the PRGF-ESF Fund, which is financed by 93 members of the Organization and the IMF is its Commissioner.

Within the scope of its implementation, more favorable financial conditionalities are being adopted, emphasis is placed on economic aspects of governance and the possibility of incurring adverse effects by the implementation of various reforms is being recognized. In an effort to promote support measures that will mitigate the social impact, the countries are enabled to fail to meet certain conditionalities or to implement a more flexible policy within their compliance. Although this approach constitutes an implicit acceptance, on the part of the Fund, of the social impacts caused by its implemented policy, this program concerns a very special group of countries, which consists of only two Balkan countries, Albania and FYROM (Tables 1&2).

<sup>&</sup>lt;sup>3</sup> For a detailed description of the theoretical framework and the characteristics of funding from IFIs to the chantries of South East Europe see Voutsa, M.-E., 2010, *Assessment and Evaluation of the Results Obtained by Finance Policies of International Financial Institutions (IFIs) in the Transition Process of the Southeast European Countries* in The Economies of the Balkan and Eastern Europe Countries in the Changed World edited by Karasavvoglou, A., pp. 251-271, Cambridge Scholars Publishing.

The loans given to the SE European states mostly come from the financial policies of 'Stand-By Arrangement' and the 'Extended Fund Facility'. Within the 'Stand-By Arrangement', the interested state contracts agreements with the IMF, which enable it to draw a certain amount from the General Resources Account for an agreed period, usually up to 2 years, if it meets the conditionalities determined by the supporting arrangement accompanying the 'Stand-By Arrangement', (Xatzimixail and Voutsa 2009).

The 'Extended Fund Facility' finances three-year programs to support countries so as to confront the difficulties arising in the balance of payments as a result of the macroeconomic and structural problems that a country has been facing. In this case, the country is obligated to state the overall objectives of the three-year period and the policy applied during the first year, while the policies for the following years are specified in the program reviews. Loan crediting, in this case as well, is drawn by the General Resources Account, (Xatzimihail and Voutsa 2009).

Tuble 1. Four Hill Imances to Albama (1772-2000)									
PROGRAM	DATE	DATE OF	AMOUNT	AMOUNT					
AGKEED	Or	EAFIKATION	AGKEED	DKAWN					
	AGREEMENT	OR							
		CANCELLATION							
Extended Fund	1/2/2006	31/1/2009	8.523.000	4.870.000					
Facility									
PRGF Commitments	1/2/2006	31/1/2009	8.523.000	4.870.000					
PRGF Commitments	21/6/2002	20/11/2005	28.000.000	28.000.000					
PRGF Commitments	13/5/1998	31/7/2001	45.040.000	45.040.000					
PRGF Commitments	14/7/1993	13/7/1996	42.360.000	31.060.000					
Stand-By Agreement	26/8/1992	14/7/1993	20.000.000	13.125.000					
	TOTAL SDRs		152.445.000	126.965.000					
ΤΟ	TAL US DOLLAR	S	240.864.000	200.605.000					
DISI	BURSEMENT RAT	re	849	70					

Table 1: Total IMF finances to Albania (1992-2008)

Source: IMF, Albania and the IMF, History of Lending Arrangements, processing & calculation Voutsa (2008).

#### Table 2: Total IMF finances to FYROM (1995-2008)

PROGRAM AGREED	DATE OF AGREEMENT	DATE OF EXPIRATION OR CANCELLATIO N	AMOUNT AGREED	AMOUNT DRAWN
Stand-By Agreement	31/8/2005	30/8/2008	51.675.000	10.500.000
Stand-By Agreement	30/4/2003	15/8/2004 20.000.000		20.000.000
Stand-By Agreement	29/11/2000	22/11/2001	24.115.000	1.148.000
Extended Fund Facility	18/12/2000	22/11/2001	10.335.000	1.723.000
Extended Credit Facility	11/4/1997	10/4/2000	54.560.000	27.281.000
Stand-By Agreement	5/5/1995	4/6/1996	22.300.000	22.300.000
	TOTAL SDRs		182.985.000	82.952.000
T	OTAL US DOLLARS	S	289.116.300	131.064.160
DI	SBURSEMENT RAT	<b>E</b>	46	%

Source: IMF, former Yugoslav Republic of Macedonia and the IMF, *History of Lending Arrangements*, processing & calculation Voutsa (2008).

The states of the region exhibit significant differentiations with regard to the agreed amounts of their loans. Bulgaria and Romania have contracted agreements with the largest amounts of financing compared to other countries in the region (Tables 4 &7). However, on the basis of the duration of the loan agreement, Serbia-Montenegro holds first position since in less than a year (2001-2002) it borrowed an amount exceeding 1.3 billion \$ (Table 5). The disbursement rates also seem diversified since Croatia disburses only 5% of its total loans (Table 6), while Bosnia-Herzegovina and Serbia-Montenegro have both disbursed 100% of their total financing (Tables 3&5). There are usually two principal causes for the nondisbursement of money. Either the IMF stops its lending program due to failure to comply with the conditionalities on the part of the receiving country or the country chooses not to proceed with the disbursement of the money. In such a case and if the disbursed amount is very small, as in the case of Croatia, this happens because the country usually contracts agreements with the IMF with the aim of increasing its credibility within the international financial and investment environment and not because they aim at using the entire loan

PROGRAM	ROGRAM DATE DATE OF AMOUNT					
AGREED	OF	EXPIRATION	DRAWN			
	AGREEMENT	OR				
		CANCELLATION				
Stand-By Agreement	2/8/2002	29/2/2004	29/2/2004 67.600.000			
Stand-By Agreement	29/5/1998	29/5/2001	94.420.000	94.420.000		
	TOTAL SDRs		162.020.000	162.020.000		
]	TOTAL US DOLLARS			255.991.600 255.991.600		
DISBURSEMENT RATE			10	00%		

#### Table 3: Total IMF finances to Bosnia - Herzegovina (1998-2008)

**Source:** IMF, Bosnia and Herzegovina and the IMF, *History of Lending Arrangements*, processing & calculation Voutsa (2008).

Table 4. Total INIT Infances to Dulgaria (1991-2000)	Table 4: Total IMF	finances to Bulgaria (	1991-2008)
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PROGRAM AGREED	DATE OF AGREEMENT	DATE OF EXPIRATION OR CANCELLATION	AMOUNT AGREED	AMOUNT DRAWN	
Stand-By Agreement	6/8/2004	31/3/2007	100.000.000	0	
Stand-By Agreement	27/2/2002	15/3/2004	240.000.000	240.000.000	
Extended Fund Facility	25/9/1998	24/9/2001	627.620.000	627.620.000	
Stand-By Agreement	11/4/1997	11/4/1997 10/6/1998		371.900.000	
Stand-By Agreement	19/6/1996	11/4/1997	400.000.000	80.000.000	
Stand-By Agreement	11/4/1994	31/3/1995	139.480.000	116.240.000	
Stand-By Agreement	Agreement 17/4/1992 16/4/1993		155.000.000	124.000.000	
Stand-By Agreement	15/3/1991	14/3/1992	279.000.000	279.000.000	
	TOTAL SDRs		2.313.000.000	1.838.760.000	
ſ	TOTAL US DOLLARS	5	3.654.540.000	2.905.240.800	
D	ISBURSEMENT RAT	Έ	80	)%	

Source: IMF, Bulgaria and the IMF, History of Lending Arrangements, processing & calculation Voutsa (2008).

PROGRAM AGREED	DATE DATE OF OF EXPIRATION AGREEMENT OR CANCELLATION		AMOUNT AGREED	AMOUNT DRAWN
Extended Fund Facility	14/5/2002	28/2/2006	650.000.000	650.000.000
Stand-By Agreement	11/6/2001	31/5/2002	200.000.000	200.000.000
TOTAL SDRs			850.000.000	850.000.000
TOTAL US DOLLARS			1.343.000.000	1.343.000.000
DIS	BURSEMENT RA	ТЕ	10	0%

#### Table 5: Total IMF finances to Serbia - Montenegro (2001-2008)

**Source:** IMF, Republic of Serbia and the IMF, *History of Lending Arrangements*, processing & calculation Voutsa (2008).

PROGRAM AGREED	DATE OF AGREEMENT	DATE OF EXPIRATION AMOUNT OR AGREED		AMOUNT DRAWN					
		CANCELLATION							
Stand-By Agreement	4/8/2004	15/11/2006	99.000.000	0					
Stand-By Agreement	3/2/2003	2/4/2004	105.880.000	0					
Stand-By Agreement	19/3/2001	18/5/2002	200.000.000	0					
Extended Fund Facility	12/3/1997	11/3/2000	353.160.000	28.780.000					
Stand-By Agreement	14/10/1994	13/4/1996	65.400.000	13.080.000					
	TOTAL SDRs		823.440.000	41.860.000					
ТС	<b>DTAL US DOLLAR</b>	S.	1.301.035.200	66.138.800					
DIS	BURSEMENT RA	ГЕ	5	%					

#### Table 6: Total IMF finances to Croatia (1994-2008)

**Source:** IMF, Republic of Croatia and the IMF, *History of Lending Arrangements* processing & calculation Voutsa (2008).

PROGRAM	DATE	DATE OF		AMOUNT
AGREED	OF	EXPIRATION	AMOUNT	DRAWN
	AGREEMENT	OR	AGREED	
		CANCELLATION		
Stand-By Agreement	7/7/2004	6/7/2006	250.000.000	0
Stand-By Agreement	31/10/2001	15/10/2003	300.000.000	300.000.000
Stand-By Agreement	05/8/1999	28/2/2001	400.000.000	139.750.000
Stand-By Agreement	22/4/1997	21/5/1998	301.500.000	120.600.000
Stand-By Agreement	11/5/1994	22/4/1997	320.495.000	94.265.000
Stand-By Agreement	29/5/1992	28/3/1993	314.040.000	261.700.000
Stand-By Agreement	11/4/1991	10/4/1992	380.500.000	318.100.000
	TOTAL SDRs		2.266.535.000	1.234.415.000
T	OTAL US DOLLA	RS	3.581.125.300	1.950.375.700
DISBURSEMENT RATE			55	%

### Table 7: Total IMF finances to Romania (1991-2008)

Source: IMF, Romania and the IMF, *History of Lending Arrangements*, processing & calculation Voutsa (2008).

#### 2.2 THE WORLD BANK GROUP

Between 1995 and 2005 the World Bank Group has been financing countries throughout the region with approximately 10 billion \$ through its various programs (Table 8). In 2000, the Bank defined the areas and objectives of its action regarding South East Europe by means of the Regional Strategy Paper; In order to support the implementation of reform programs in each country it created the 'Country Assistance Strategy' (CAS). Based on the assessment of each country's priorities, its past performance and its creditworthiness, the 'Country Assistance Strategy' sets out strategic priorities and determines the level and composition of financial and technical assistance to be offered by the Bank in each case. What constitutes a key pillar supporting the 'Country Assistance Strategy' is Poverty Reduction Strategy Papers (PRSPs). Their primary purpose is to improve the living standards of the weaker social layers through the active participation of the private sector and civil society.

In order to achieve the objectives of the Regional Strategy Paper in 2002, the World Bank and the European Commission decided to coordinate and inform each other in the preparation and evaluation of the 'Poverty Reduction Strategy Papers' on the part of the Bank and 'Country Strategy Papers' on the part of the European Commission (Voutsa, 2011). The 'Poverty Reduction Strategy Papers' are being compiled by the governments in cooperation with the WBG and the IMF (Joint Office Reports 2008). As a consequence of the direct involvement of the IMF in this process, conditionalities are imposed on the financing arising from this program. In the joint review of the IMF and the WBG (2001-02) the question raised was that of the alignment of all financial benefits and financial strategies, from whatever institution they may come from with certain conditionalities which are included in the 'Poverty Reduction Strategy Papers'. Some examples of the programs and financial instruments that should be aligned with specific conditionalities are the following:

- > the IMF program 'Poverty Reduction and Economic Growth',
- the WBG programs 'Country Support Strategy' and (Poverty Reduction Support Credits (PRSCs)), and
- the United Nations Development Assistance Framework (UNDAF), (IMF 2002b, Voutsa 2011)

	(1 <b>v1111011 \$</b> )									
(Million ¢)										
Table 6: Total III	ancing communents of the world bank for Southeast Europe 1	995-2005								
Table 9. Total fin	anaing commitments of the Warld Denk for Southeast Furane 1	005 2005								

COUNTRY				YE	AR				TOTAL
	1995- 1998*	1999	2000	2001	2002	2003	2004	2005	
ALBANIA (IDA)	66	125	60	28	88	43	58	62	728
B-E (IDA& IBRD)	206	163	38	124	102	23	98	57	1429
BULGARIA (IBRD)	104	161	221	102	-	268	150	150	1468
CROATIA (IBRD)	125	108	29	19	202	53	209	86	1206
FYROM (IDA &IBRD)	82	122	-	67	35	-	55	25	632
ROMANIA (IBRD)	332	340	113	130	60	486	230	709	3396
S-M (IDA)	-	-	41	24	178	234	125	129	731
TOTAL	783	1019	502	494	665	1107	925	1218	9590

**Source:** Economic Reconstruction and Development in South East Europe, *What is the Role of the World Bank ?* <u>http://www.seerecon.org/gen/wbrole</u> & World Bank –IMF Paper,

Building Peace in South East Europe Macroeconomic Policies and Structural Reforms Since the Kosovo Conflict, 2001, processing & calculation Voutsa (2008).

\* Annual Average

#### **2.3 THE EUROPEAN UNION**

The EU is the largest financier of the Western Balkans and one of the biggest for the total countries throughout the region with total financing approaching 10 billion \$ between 1991-2005 (Tables 9& 10). The EU action in the former socialist countries was inaugurated through the PHARE program, which was created in 1989 and designed to support the transition of Poland and Hungary. After the Essen European Council in December 1994, PHARE was turned into a financial instrument of the pre-accession strategy aiming at the ultimate accession of the ten associated countries of Central and Eastern Europe (CEEC) in the Union. Subsequently, the program was extended to the Western Balkan countries while, in accordance with the provisions of Agenda 2000, it was gradually transformed into a fund of a structural kind, aiming at boosting economic growth. As a result, a large proportion of investments were being financed by the World Bank for Reconstruction and Development and the European Investment Bank. Among the beneficiaries of the program are Bulgaria, Romania and Croatia. Over the years, it was realized that the PHARE did not cover the specific needs of countries in the region as it was designed for Eastern Europe.

COUNTRY		TOTAL						
	2000	2001	2002	2003	2004	2005	2006	
ALBANIA	33.4	37.5	44.9	46.5	63.5	44.2	45.5	315.5
B-E	90.3	105.2	71.9	63.0	72.0	49.4	51.0	502.8
CROATIA	16.8	60.0	59.0	62.0	81.0	-	-	278.8
FYROM	13.0	56.2	41.5	43.5	59.0	45.0	40.0	298.2
S-M	650.3	385.5	351.6	324.3	307.9	282.5	257.5	2559.8

Table 9: The distribution of the CARDS program 2000-2006 (in million €)

**Source:** Economic Reconstruction and Development in South East Europe, *Status of SEE countries' relations with the EU*, <u>www.seerecon.org/gen/eu-see.htm</u>.

Country	YEAR									
	1991- 1994	1995	1996	1997	1998	1999	2000	2001		
ALBANIA	368,13	70,15	75,25	97,90	54,30	205,24	41,29	44,50	956,76	
B-E	495,47	216,38	442,42	360,86	295,25	233,95	115,83	131,78	2.291,93	
CROATIA	204,86	38,74	33,56	26,96	24,14	18,63	19,62	61,48	427,99	
FYROM	101,52	34,43	25,00	58,71	40,48	108,61	47,07	85,75	501,57	
S-M	170,62	39,95	24,47	18,13	37,24	384,01	798,71	899,27	2.372,39	

Table 10: Total commitments of EU funding for the Western Balkans 1991-2001 (in million €)

**Source:** EE, Cards Regional Annual Action Programme /Financing Proposal, 2002, processing & calculation Voutsa (2008).

After the Zagreb summit, the Stabilization and Association Process (SAP) has constituted a key policy lever for SE Europe, introducing a new regulatory framework for financing through the CARDS program, which replaced all previous financing programs. The Stabilization and Association Process is the cornerstone of the EU policy in the region. It aims at promoting stability by facilitating the establishment of closer relations with the Union.

The countries making satisfactory economic and political progress contract a formal relationship with the EU in the form of a Stabilization and Association Agreement (SAA).

The Union and the World Bank actions have to date been established by the Stabilization and Association Process and the conclusions of the Thessaloniki European Council (2003) (EC 2008). In 2005 the European Commission presented the revised enlargement package, through which it adopted a new approach to the EU enlargement policy, based on three principles:

- 1. consolidation,
- 2. communication and
- 3. conditionality (Xenakis and Tsinisizelis 2006).

The Instrument for Pre-Accession Assistance (IPA) which was adopted for the period 2007-2013 constitutes a new program of financial support for the enlargement and is estimated to keep the Union among the top financiers to the Western Balkan area. It provides for the stricter application of conditionality through the suspension of financing in case there is no satisfactory progress in meeting the accession criteria or if the beneficiary country does not proceed to the commitments it has undertaken within the framework of its partnership with the EU (Xatzimihail and Voutsa 2009).

#### 3. THE SYSTEMATIC ORGANISATION OF INTERNATIONAL FINANCING

In 1995, after the Dayton Agreement, and particularly after the cessation of hostilities in Kosovo in 1999 there has been a dramatic increase of financing in the region of southeast Europe. The international community, recognizing the risk of conflicts being extended to sensitive areas of Europe, seeking to halt a potential mass immigration wave and recognizing the escalating negative impacts of war on the economy of all countries in the region, decided to intensify efforts so as to curb the downside.

In order for the action of institutions to be effective, the creation of a structured approach was supported. In 1999, after an EU initiative, the Stability Pact for the countries of Southeastern Europe was created, which provides a framework for cooperation aiming at consolidating regional stability and the smooth integration of countries into the EU. It was created through collaboration among states, international organizations and development institutions (Council of Europe, EU, OSCE, EBRD, IMF, WBG) and its main task is to provide assistance to SE European countries (including Moldova) on promoting structural changes and adjustments in the institutional, political, social and economic sector.

At a structural level, the Pact is divided into three Working Tables (Table 11). Most actions of the first and third bank are mostly financed by the EU and secondarily by bilateral financiers and the WBG. The bulk of the financing is directed toward purely economic aspects of transformation by putting on the back burner the socio-political sectors of transition.

The systematic organization of international action, which the pact attempts, includes the field of finance as well by promoting a delineation of the appropriate context within which it is proposed that financiers and recipient countries move. The World Bank and the European Commission, under Article 41 of the Stability Pact, are authorized to act as coordinators of the entire assistance to SE Europe (Joint Office Report 2001). This authorization was based on the already very close cooperation developed between the two institutions so as to implement their policies in the region. In 1999 they founded the Joint Office for South-East Europe with the main aim of organizing their coordinating role, facilitating their cooperation, promoting international assistance and monitoring finances. In 2002 the Office decided to direct all International Financial Institutions towards implementing various aspects and parameters of the Stabilization and Association Process (World Bank, IMF 2001). The Pact does not explore in detail neither the financial policies which will be followed, nor the conditions which will accompany them. A clear description of the objectives which the finance should meet is being presented into the Regional Strategy Paper<sup>4</sup>, which was compiled jointly by the WBG and the European Commission in 2000 (Xatzimihail and Voutsa 2009). The paper presents a detailed description of the formed situation for each country and proposes a series of solutions to the problems they are facing. These solutions are possessed by a spirit of generalization in relation to the proposed policies and measures that the countries are required to take. In particular, as far as the socio-political issues of development and transition are concerned, the description of the current situation is not accompanied neither by proposals for measures addressing these issues, nor by the proportional amounts of assisting reforms, except for the EU (Table 12).

The data available on financing South Eastern Europe until 1999 and after 2006 are fragmentary, so it is not possible to achieve a comprehensive and clear picture of financial flows and programs throughout the transitional period for all countries. The establishment of the Joint Office in 1999 and the publicization through a series of data allows for a more complete recording of financial flows at least for the period 1999-2005 during which an increasing capital inflow is exhibited in the region, which in 1999 exceeded 5,5 billion  $\in$  and in 2005 it is estimated to have reached 7.3 billion  $\in$  (Joint Office Report 2007), (Table 13).

According to the data available, the countries that have benefited most from financing, in absolute terms, are Romania and Bulgaria (Tables 21-25). But if the assistance provided is examined as a GDP rate, it arises that the Western Balkans, with the exception of Croatia, are ranked first (Diagrams 1-7). Over the period 2001-2005, these states have on average been financed with amounts which every year amount to 4.5% of their GDP, while for the same period the total annual average for the region does not exceed 3,5%.

1st WORKING	2nd WORKING	3rd WORKING TABLE		
TABLE	TABLE	Sid WORKING IMDEL		
Decromitisation	Economic Reconstruction,	Security issues		
&	Growth			
Human Rights	&			
	Cooperation			
PR	INCIPAL ISSUES			
<ul> <li>Public institutions, administration &amp; governance</li> <li>Civil society</li> <li>State of justice</li> <li>Minority rights</li> <li>Mass Media freedom</li> <li>refugees</li> </ul>	<ul> <li>pro motion of free transaction areas</li> <li>international transportations</li> <li>energy supply</li> <li>infrastructures</li> <li>promotion of private businesses</li> <li>deregulation and integrity</li> <li>reintegration of refugees</li> <li>environmental issues</li> </ul>	<ul> <li>justice, internal affairs &amp; immigration</li> <li>organised crime, bribery &amp; terrorism</li> <li>defensive &amp; military cooperation</li> <li>cross-border environmental risks</li> </ul>		
Source: Stability Pact	or South Eastern Europe,	About the Stability I		

Table	11.	The	thematic	organization	of the	Stability	Pact
IaDIC	11.	Inc	unematic	of gamzation	or the	Stability	I act

**Source:** Stability Pact for South Eastern Europe, *About the Stability* <u>http://www.stabilitypact.org/about/default.asp</u>.

<sup>4</sup> Full name of the paper "The Road to Stability and Prosperity in South Eastern Europe: A Regional Strategy Paper".

The financial instruments used by international financial institutions (IFIs) regarding the Southeast European countries: a critical assessment of their underlying philosophy and orientation

ASSISTANCE OBJECTIVES	DESCRIPTION OF CURRENT SITUATION	PROPOSALS FOR THE CONFRONTATIO N OF PROBLEMS	FINANCING	FINANCIAL INSTITUTION
Private Sector Support	Х	Х	X	IMF, WBG, EU, EBRD
Trade Liberization	Х	Х	Х	WBG, EU
Improvement of Economic System	Х	Х	Х	IMF, WBG, EU
Agricultural Sector	Х		Х	EU, WBG
Poverty Reduction & Social Development	X		X	EU
Institutional Development/ Government/ Public Sector/ Corruption	X		X	EU
Redefinition of State Operations so that they respond to market needs	Х	X	X	IMF, WBG, EU, EBRD
Reinforcement to the State towards Long-term Growth	X		X	EU
Empowerment of the Judicial System	X		X	EU
Reduction of Corruption	X	Х	Х	EU
Infrastructures	Х	Х	Х	EU, EBRD
Environment	Х	Х	Х	EU

Table 12: Overall review of the assistance and finance objectives in SE Europe

**Source:** Europe and Central Asia Region, The World Bank, The Road to Stability and Prosperity in South Eastern Europe: A Regional Strategy Paper, 2000, categorization: Voutsa 2010.

Table 13: International financing for South East Europe (Billion €)

Donors		South East Europe*						
	1999	2000	2001	2002	2003	2004	2005***	
Bilateral & European Committee	3,5 (64%)	2,2 (38%)	3,9 (60%)	3,7 (55%)	3,3 (50%)	3,3 (55%)	3,0 (41%)	
IFI**	2 (36%)	3,6 (62%)	2,6 (40%)	3,0 (45%)	3,3 (50%)	2,7 (45%)	4,3 (59%)	
Total	5,6 (100%)	5,9 (100%)	6,5 (100%)	6,7 (100%)	6,6 (100%)	6,0 (100%)	7,3 (100%)	

\* Including Moldavia

\*\* Not including the IMF

\*\*\* Estimations

Source: Voutsa, M.-E., 2010, Assessment and Evaluation of the Results Obtained by Finance Policies of International Financial Institutions (IFIs) in the Transition Process of the Southeast European Countries in The Economies of the Balkan and Eastern Europe Countries in the Changed World edited by Karasavvoglou, A., pp.251-271, Cambridge Scholars Publishing.



Diagram 2: Financing of Bosnia – Herzegovina as a percent of GDP



**Source:** Economic Reconstruction and Development in South East Europe, processing & calculation Voutsa (2011).

The financial instruments used by international financial institutions (IFIs) regarding the Southeast European countries: a critical assessment of their underlying philosophy and orientation











# 4. THE UNDERLYING PHILOSOPHY THE ORIENTATION AND THE UTILIZATION OF THE FINANCING

The underlying philosophy and the orientation of funding to the countries of Southeast Europe have been influenced by the shape of the theoretical model of transition. The primary principles which guided the transition are summarized under the umbrella term 'Washington consensus' and a key role in the 'Washington consensus' is played by the New Political Economy, which constitutes the dominant ideology within the financing processes. According to this, market mechanisms can function as regulators of the economic system as long as they remain unaffected by political interference.

The result is that institutions face the state as the problem of development and display the free market as the solution. The 'structural adjustment loans' of the WBG marked the beginning of the practical implementation of the above philosophy, followed later by the IMF with the 'structural adjustment policy', which has been established as the primary method of its financing.

The adequacy of this approach began to be reviewed since the mid 90s (Makris and Voutsa 2006). Main reason was apparently operating inhibitors in development but could be explained by the New Political Economy. The countries of the area failed to reach the promised levels of prosperity so that the institutions can adopt, at a theoretical level at least, a diversified approach to development by putting more emphasis on social factors affecting it (World Bank 2001).

The "post-Washington Consensus", which was proposed as a term descriptive of the new development policy, not contributed towards substantial change. In fact, the theoretical framework was not different but it was merely updated and completed by modernising the neoclassical model, continuing, however, to treat development and the transition as a technical problem (Voutsa 2011). The free market mechanisms and the private sector keep having a leading role. The new components concern the implementation of more and more stringent conditionalities as well as the increase in the influence of institutions on domestic policy making (Table 14).

	WASHINGTON C	ONSENSUS	POST-WASHINGTON CONSENSUS		
FIELDS	PROPOSED POLICIES	CONDITIONA LITIES IMPOSED	PROPOSED POLICIES	CONDITIONA LITIES IMPOSED	
Fiscal Policy	Fiscal discipline aiming at GDP growth	Х	Maintaining fiscal discipline aiming at GDP growth & the reduction in the current account deficit	X	
Public Expenditure	Tax increase	Х	Tax increase with a gradual reduction of income tax, increased indirect taxation and tax collection mechanisms	Х	
Public Expenditure	Downscaling of public expenditure, reduction of salaries, pensions and social benefits	Х	Downscaling of public expenditure, reduction of salaries, pensions and social benefits	Х	
Monetary Policy	Exertion of restrictive policy aiming primarily at controlling inflation	Х	Continuation of the restrictive policy and inflation control. Free setting of interest rates and in some cases preservation of a fixed exchange rate	Х	
Banking System	Reconstruction of the Banking Sector	Х	Strengthening the competitiveness of banks	Х	
Trade Policy	Liberalisation of Trade	Х	Full trade liberalisation and harmonisation with the WTO and EU policies	Х	
Business Policy	Privatisation of state enterprises	Х	Completion of the privatisation process of state enterprises, even by selling them	Х	
Investment Policy	Cuts in social expenditure and privatisation of enterprises in order to strengthen public investment with a view to attracting FDIs.	Х	Abrogation of the remaining restrictive policies concerning FDIs and reform of the legislative framework conditioning them	Х	

 Table 14: Key fields of action, proposed policies and conditionalities through the implementation of the "Washington consensus" and the "post-Washington consensus"

The financial instruments used by international financial institutions (IFIs) regarding the Southeast European countries: a critical assessment of their underlying philosophy and orientation

Poverty	There are no correlations between reform programs and the impacts that these will have on poverty	 The potential impacts of reform programs on poverty increase are acknowledged but no comprehensive proposals or policies are put forward in order to confront it	
Institutional Environment	Coverage of the institutional and administrative gap by providing technical assistance for the implementation of programs and hardly any support for bridging the gap (there are remarks which only regard the legislative framework for the protection of property rights)	 It is acknowledged that the lack of an appropriate institutional environment may affect the course of transition and development, but no policies are recommended so as to bridge the gap and in some cases where piecemeal measures are proposed, no funds are credited.	
Social Goods (education, health, etc.)	Their importance is recognised, but they are neither financially supported nor is it discussed to what extent they will be influenced by the transition process	 Their importance as well as the adverse effects they may incur by the reform programs are recognised but no care is actually taken in order to protect them.	

Source: Voutsa, M.-E., 2010, Assessment and Evaluation of the Results Obtained by Finance Policies of International Financial Institutions (IFIs) in the Transition Process of the Southeast European Countries in The Economies of the Balkan and Eastern Europe Countries in the Changed World edited by Karasavvoglou, A., pp.251-271, Cambridge Scholars Publishing.

With this theoretical framework and despite the increased requirements posed by International Financial Institutions for the release of funds and continuation of funding, there is inefficiency in the recipient countries to absorb and manage funds.

The incomplete and problematic legislation in conjunction with the "bureaucratic rigidity" of the public sector, in many cases rendered financing and, by extension, the absorptive capacity of the countries ineffective, (UNECE, 1999). Poor design and planning have contributed to squandering the assistance on projects of dubious quality and utility. The EU Court of Auditors in a relevant report characterised half of the pre-accession assistance to Romania and Bulgaria (1.9 billion  $\in$ ) as problematic (Voutsa 2011).

Market failures and phenomena of corruption and shadow economy act as catalysts in the effective utilisation of funds the International Financial Institutions argue that the design and implementation of financial plans can be made more effective without the participation of local actors. This perception has been described as the "nirvana fallacy" (Coyne, 2006). In ignorance of the characteristics that should be taken into account, the institutions formulate policies and tools that are not designed to function properly and implemented in the environment of each country. This practice hinders the implementation of financial policies since a country's commitment is not enough for their successful implementation but what is needed is a wider framework of cooperation, which cannot be achieved without constructive dialogue. Furthermore, the absence of a strong social contract, which would act as a breakwater against the turbulences of transformation by facilitating the smooth operation of the countries, caused irreparable damage to the social capital of the countries (Xatzimixail and Voutsa 2009).

The International Financial Institutions treated countries in the region as a tabula rasa, ignoring completely the 'initial conditions' and placing unilateral emphasis on the economic aspects of transition. This treatment essentially led to a double distortion in the transition process. On the one hand, they completely ignored the structural transformation that was necessary in order to support the operation of market economy and, on the other hand, the serious structural weaknesses along with the considerable institutional insufficiencies impeded the transition process (Voutsa 2011).

The fundamental principle which the promoted model was based on entailed that every economic action can be explained by the rational, individualist and materialistic behaviour of persons. But this approach ignores the fact that individuals and, by extension, societies do not act as perfect maxi misers as they do not aim at maximising but at satisfying instead, (Zoumboulakis and Kyriazis 2009).

#### **5. CONCLUSION**

The total financing to Southeastern European states in the form of loans and grants and independently of its kind (technical, humanitarian, investment, budget support, macro-economic support) has placed SE Europe on top of areas with the highest per capita financing since the total amounts correspond to more than  $100 \notin$  per capita a year on average (Tables 15-19).

However, the amount of financing cannot by itself guarantee the success of implemented policies. By the end of the 1990s, the financial instruments used to provide assistance were not specialized, and properly adapted to the specificities of countries. The modification of some of them and the effort to coordinate the provided assistance did not make, at least to a high extent, financing better since the philosophy underlying its provision has remained the same and cooperation focused mainly on the conditionalities of financing and the technical parameters of the programs (Makris and Voutsa 2006).

While from 2006 and on a comparative laxity has been marked in joint efforts to finance the region more effectively, the interweaving of financing coupled with its amount deprived the area from alternative approaches and led to the adoption of a similar transitional model. This model was drastically influenced by non-economic factors not included in the original design and, as a result, the approach chosen was proved to be ineffective (Voutsa 2011).

The speed of reforms had a catalytic impact in leading the transition issues and is directly related to the amount of funding. The choice of shock therapy maximized the social, political and economic costs and not allowed to take account of criteria relating to the "initial conditions", the particularities of each country and the logical sequence of proposed programs. What was ignored was the fact that countries are directly dependent on the path-dependence. Once a set of rules, institutions and customs of a society have been established, it is difficult and it requires great effort to change it.

The conditionalities eventually undermined the effectiveness of the financing itself, which initially functioned as a formative mechanism of the transitional framework and

subsequently was used to cover the cost of the reforms introduced by the financial institutions (Xatzimixail and Voutsa 2009).

The neoliberal model which was implemented created a teleological conception of transition. Through shock therapy, all states in the region were forced to implement a specific procedure, as a sine qua non Treaty, which in theory would lead to the establishment of democracies and to the smooth operation of market economy.

However, the main question is not whether the specific development model was appropriate for managing the transition process, but why they chose a development model in order to implement the project of transition. The international financial institutions, having established a series of development principles, rushed to apply them as a transitional model. That is, in fact they did not study the creation of a policy framework that would correspond to the transition process but instead they used a development model in order to manage transition (Voutsa 2011).

It is worth noting that the EU policy is the only one which reflected a basic effort to approach the socio-political parameters of the transition. At a theoretical level, it was through the Maastricht Treaty which in Article 49 states that "any European State which respects the principles of liberty, democracy, human rights and fundamental freedoms as well as the rule of law may apply to become a member of the Union" (European Union, 2008). Nevertheless, in practical terms it is the only institution which finances, mostly through grants and not loans, socio-political fields, associating them with the tightening of its relations to countries in the region (Tables 12). It connects them with conditionalities and checks the expected results.

In practice the implementation of the attempted changes and the effectiveness of the funding affected by the non-economic factors are associated with a number of issues which are not taken into account in the selection of financial instruments, which cannot be assessed in isolation, without considering the overall approach of the transition process adopted, as they reflect the overall philosophy of the International Financial Institutions.

	Tuble let Total manenig communents 2001							
Country	Grants (million €)	Grants as a percent- tage of the total Financing	Per Capita Grants (€)	Loans (million €)	Loans as a percent- tage of the total Financing	Per capita Loans (€)	Total Financing (million €)	Per Capita Total Financing (€)
Albania	160,45	64,79%	47,19	87,21	35,21%	25,65	247,65	72,84
B-E	313,76	56,63%	78,44	240,32	43,37%	60,08	554,07	138,52
Bulgaria	384,26	55,75%	48,03	305,02	44,25%	38,13	689,28	86,16
Croatia	119,67	20,70%	29,92	458,59	79,30%	114,65	578,26	144,57
FYROM	217,08	53,27%	108,54	190,43	46,73%	95,21	407,50	203,75
Romania	699,57	41,99%	31,80	966,46	58,01%	43,93	1.666,03	75,73
S-M	715,44	53,54%	79,49	620,79	46,46%	68,98	1.336,23	148,47
Kosovo	495,91	99,82%	247,95	0,90	0,18%	0,45	496,81	248,40

Table 15:	Total	financing	commitments	2001

**Source:** Economic Reconstruction and Development in South East Europe, processing & calculation by Voutsa (2008).

Country	Grants (million €)	Grants as a percentage of the total Financing	Per Capita Grants (€)	Loans (million €)	Loans as a percentage of the total Financing	Per capita Loans (€)	Total Financing (million €)	Per Capita Total Financing (€)
Albania	207,39	49,43%	61,00	212,16	50,57%	62,40	419,55	123,40
B-E	303,04	60,55%	75,76	197,41	39,45%	49,35	500,44	125,11
Bulgaria	368,91	47,29%	46,11	411,18	52,71%	51,40	780,08	97,51
Croatia	130,80	15,89%	32,70	692,46	84,11%	173,11	823,26	205,81
FYROM	330,31	82,19%	165,16	71,55	17,81%	35,78	401,87	200,93
Romania	764,81	43,42%	34,76	996,80	56,58%	45,31	1761,61	80,07
S-M	691,46	50,85%	76,83	668,40	49,15%	74,27	1359,86	151,10
Kosovo	362,49	99,72%	181,25	1,00	0,28%	0,50	363,49	181,75

Table 16: Total financing commitments 2002

Source: Economic Reconstruction and Development in South East Europe, processing & calculation by Voutsa (2008).

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Country	Grants (million €)	Grants as a percentag e of the total Financing	Per Capita Grants (€)	Loans (million €)	Loans as a percentage of the total Financing	Per capita Loans (€)	Total Financing (million €)	Per Capita Total Financing (€)
Albania	140,95	47,65%	41,46	154,84	52,35%	45,54	295,79	87,00
B-E	241,12	77,15%	60,28	71,41	22,85%	17,85	312,53	78,13
Bulgaria	420,14	43,13%	52,52	553,94	56,87%	69,24	974,07	121,76
Croatia	110,29	22,24%	27,57	385,53	77,76%	96,38	495,82	123,95
FYROM	188,65	45,68%	94,33	224,34	54,32%	112,17	412,99	206,50
Romania	784,81	33,04%	35,67	1590,20	66,96%	72,28	2.375,01	107,96
S-M	567,01	49,08%	63,00	588,35	50,92%	65,37	1.155,36	128,37
Kosovo	275,77	100,00%	137,88	0,00	0,00%	0,00	275,77	137,88

Source: Economic Reconstruction and Development in South East Europe, processing & calculation by Voutsa (2008).

Table 18: Total financing commitments 2004

Country	Grants (million €)	Grants as a percentage of the total Financing	Per Capita Grants (€)	Loans (million €)	Loans as a percentage of the total Financing	Per capita Loans (€)	Total Financing (million €)	Per Capita Total Financing (€)
Albania	163,72	40,34%	48,15	242,14	59,66%	71,22	405,86	119,37
B-E	195,86	48,18%	48,97	210,66	51,82%	52,67	406,52	101,63
Bulgaria	567,37	56,22%	70,92	441,81	43,78%	55,23	1.009,18	126,15
Croatia	122,65	18,34%	30,66	546,29	81,66%	136,57	668,95	167,24
FYROM	155,03	56,49%	77,52	119,39	43,51%	59,70	274,42	137,21
Romania	1.023,09	59,23%	46,50	704,29	40,77%	32,01	1.727,39	78,52
S-M	587,61	54,81%	65,29	484,42	45,19%	53,82	1.072,03	119,11
Kosovo	172,48	97,18%	86,24	5,00	2,82%	2,50	177,48	88,74

Source: Economic Reconstruction and Development in South East Europe, processing & calculation by Voutsa (2008).

Country	Grants (million €)	Grants as a percentage of the total Financing	Per Capita Grants (€)	Loans (million €)	Loans as a percentage of the total Financing	Per capita Loans (€)	Total Financing (million €)	Per Capita Total Financing (€)
Albania	115,20	41,33%	33,88	163,54	58,67%	48,10	278,74	81,98
B-E	154,55	37,84%	38,64	253,90	62,16%	63,47	408,44	102,11
Bulgaria	645,24	58,38%	80,65	459,95	41,62%	57,49	1105,18	138,15
Croatia	136,82	20,71%	34,21	523,69	79,29%	130,92	660,52	165,13
FYROM	131,19	48,17%	65,60	141,17	51,83%	70,58	272,36	136,18
Romania	1116,59	37,87%	50,75	1831,60	62,13%	83,25	2948,19	134,01
S-M	371,14	35,38%	41,24	677,74	64,62%	75,30	1048,88	116,54
Kosovo	140,58	96,57%	70,29	5,00	3,43%	2,50	145,58	72,79

 Table 19: Total financing commitments 2005\*

\* Estimations

**Source:** Economic Reconstruction and Development in South East Europe, processing & calculation by Voutsa (2008).

#### REFERENCES

- 1. Andreff, W., 2003, La Mutation des Economies Postsocialistes Une analyse economique alternative, Paris: L'Harmattan.
- 2. Blue, B., 2003, *In Search of Responsive Government. State Building and Economic Growth in the Balkans.* Budapest, Center for Policy Studies Central European University.
- 3. Bonker, F., Muller, K., Pickel, A., 2002, Post communist Transformation and the Social Science Cross-Disciplinary, Lanham, Rowman & Littlefield.
- 4. Coyne, C. J., 2006, Reconstructing Weak and Failed States: Foreign Intervention and the Nirvana Fallacy, *Foreign Policy Analysis*, 2, pp. 343–360, accessed February 18, 2010 http://www.ccoyne.com/FPA\_-\_Final.PDF\_
- Dragutinovic, D., 2004, The IMF Supported Program in Serbia & Montenegro, *Economic Annals*, 161, accessed April 12, 2010, <u>http://www.doiserbia.nb.rs/img/doi/0013-3264/2004/0013-32640461007D.pdf</u>
- 6. Economics Centre for Liberal Strategies Institute for Market, 2003, *The Inflexibility Trap Frustrated Societies, Weak States and Democracy the State of Democracy in the Balkans*, Sofia, Centre for Liberal Strategies Institute for Market Economics.
- 7. European-Commission, 2008, International Assistance to South East Europe, sccessed April 20 2008, http://ec.europa.eu/enlargement/archives/seerecon/gen/whoisinvolved.htm.
- 8. ----, Enlargement, *The Western Balkan countries on the road to the European Union*, accessed April 20 2010,<u>http://ec.europa.eu/enlargement/enlargement process/accession process/how does a country jo in the eu/sap/ history en.htm#sap agreement.</u>
- 9. Geormas, K., 2006, *Globalization and Poverty*. *The Ideological Frameworks and the Politics of International Organizations to Fight Poverty*, Athens, Metexmio (in Greek).
- 10. Gros, D., Steinherr, A., 2004, *Economic Transition in Central and Easter Europe Planting the Seeds*, Cambridge, Cambridge University Press.
- 11. Hertz, N., 2004, *The Debt Threat. How Debt is Destroying the Developing World*, Translated by Saltapidas G., 2006, Kritiki (in Greek).
- 12. IMF, 2002a, Public Information Notice (PIN) No. 02/30 March 15, IMF Executive Board Reviews the
- 13. Poverty Reduction and Growth Facility (PRGF), accessed February 03 2011, www.imf.org/external/np/sec/pn/2002/pn0230.htm.
- 14. ---, 2002b, About the IMF, *IMF/World Bank Comprehensive Review of the Poverty Reduction Strategy Papers* (*PRSP*) *Approach*, accessed April 24 2011, www.imf.org/external/np/prspgen/review/2001/index.htm.

- 15. ---, 2010, What the IMF Does, *The Poverty Reduction and Growth Facility (PRGF)*, accessed February 23 2011, <u>www.imf.org/external/np/exr/facts/prgf.htm</u>.
- 16. Joint Office Reports, 2008, Economic Reconstruction and Development in South East Europe, *What is the Role of the World Bank?*, accessed November 14 2010, <u>http://ec.europa.eu/enlargement/archives/seerecon/gen/wbrole.htm</u>.
- 17. ---, 2001, Economic Reconstruction and Development in South East Europe, , Second Regional
- 18. Conference Bucharest, October 25-26, 2001, *A Note on Global Donor Support for the South East Europe* Region, accessed November 20 2008, www.seerecon.org/region/documents/overall\_assistance.pdf.
- **19.** Kapur, D., Webb, R., 2000, *Governance-related Conditionalities of the International Financial Institutions*, Research papers for the Intergovernmental Group of Twenty-Four on International Monetary Affairs, In United Nations Conference on Trade and Development, United Nations Publication.
- 20. Kjaer, A. M., 2004, Governance. UK USA, Polity Press.
- 21. Lavigne, M., 1999, *The Economics of Transition from Socialist Economy to Market Economy*, Second ed., Great Britain, Palgrave.
- 22. Makris, G., Voutsa M.E., 2006, The Theoretical Position of the International Financial Institutions in Relation to the Transition: The Case of the Balkan Countries, presented at *The Dimensions of Transition and European perspective of the Balkans Countries*, Greece, Florina, 10-12 November, Conference Proceeding, pp. 349-371, Thessaloniki, *Publication Mechanism University of Macedonia* (in Greek).
- 23. Samson, I., 1994, *La stabilisation de la transition dans les sociétés post-socialistes*, accessed February 20 2011, <u>http://web.upmf-grenoble.fr/pepse/IMG/pdf/La stabilisation.pdf</u>.
- 24. Stiglitz, J., 2003, *Globalization and its Discontents*, Translated by Theodoropoulos G., Athens, Livani (in Greek).
- 25. Strange, S., 2004, *The Retreat of the State. The Diffusion of the Power in the World Economy.* Translated by Kapernakou K. and Papadopoulos, I., Athens, Papazisi (in Greek).
- 26. UNECE, 1999, *Economic Survey of Europe, Post-war Reconstruction and Development in South-East Europe*, UNECE, accessed January 17 2010, <u>http://www.unece.org/ead/pub/992/992\_1.pdf</u>.
- 27. Van-Brabant, J., 1998, *The Political Economy of Transition Coming to Grips with History and Methodology*, London New York, Routledge.
- 28. Voutsa, M.-E., 2010, Assessment and Evaluation of the Results Obtained by Finance Policies of International Financial Institutions (IFIs) in the Transition Process of the Southeast European Countries in The Economies of the Balkan and Eastern Europe Countries in the Changed World edited by Karasavvoglou, A., pp.251-271, Cambridge Scholars Publishing.
- 29. World Bank Group, 2001, *Report of the Task Force on the World Bank Group and the Middle-Income Countries*, World Bank.
- 30. World Bank, IMF Paper, 2001, A joint International Monetary Fund-World Bank paper for the Second
- 31. Regional Conference for South East Europe, Bucharest, 25-26 October, Building Peace in South
- 32. East Europe Macroeconomic Policies and Structural Reforms Since the Kosovo Conflict, accessed April 20 2010, http://www.imf.org/external/pubs/ft/kosovo/102501.htm.
- 33. Xatzimihail, D., Voutsa, M.E., 2009, Contribution of Policy of the International Financial Institutions (IFIs) and the European Union in the process of Transition of the Central and Southeastern Europe: Expectations and Reality in The Political Economy of Transition From Central Planning to Market Economy, edited by Pelagidis, T., Xazakis, K., pp. 311-341, Athens, Papazisi (in Greek).
- 34. Xenakis, D., Tsinisizelis, M., (editors), 2006 Hellenic University Association For European Studies, *World Europe; The International Dimension of the European Union*, I.Sideris (in Greek).
- 35. Yuhiro, H., 2003, From the Washington Consensus to the Post-Washington Consensus, Retrospect and Prospect. Asian Development Review, 20, 3, accessed February 18, 2010,
- 36. http://www.adb.org/documents/periodicals/adr/adr\_vol20\_2.pdf.
- 37. Zoumpoulakis, M., Kyriazis, N., 2009, *Inertia and Institutional Change in Transition Economies*. In The Political Economy of Transition From Central Planning to Market Economy, edited by Pelagidis, T., Xazakis, K., Athens, Papazisi (in Greek).

## PROPOSALS FOR ADAPTATION TO NEW ECONOMIC CHANGE THROUGH THE PROMOTION AND SELECTION OF HOLIDAY VILLAGES IN ROMANIA

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Abstract: Any settlement that is chosen to promote rural tourism is based on the following fundamental components: the centre of the village where most households are concentrated and which expresses the economic functions of the village; its outskirts (work area) is the land beyond the center of the village that supports all agricultural occupations, craft, trade, tourism; the population is represented by demographic indicators: birth rate, mortality, natural growth, morbidity, density. Identification and selection criteria for tourist villages are the potential of rhe natural environment composed of natural elements with great appeal, variety of landscapes (mountain, Alpine hills, lakes, delta), ambient aesthetic beauty (slopes, canyons, gorges, caves), wildlife hunting, forests; accessibility is dependent on geographical location in the territory and the main communication routes that connect with the nearest urban centers.

Also, the presence of cultural and ethnographic elements are the most attractive ones for tourists; demographic and economic potential have an important role in the development of rural tourism in a village through: supporting agricultural and nonagricultural occupations, transmission of traditions and customs from generation to generation; preserving environmental quality has become an important milestone for the selection and preservation of rural tourist elements.

*Keywords*: fruit-growing and vine-growing villages, curative value, itinerant rural tourism, gastronomic festivals, touristic product.

JEL Classification Codes: Q13, O18, L83

#### **INTRODUCTION**

In the past 20 years in Romania were selected and classified the following tourist villages such as: fruit-growing and vine-growing villages located in hilly and sub-Carpathian areas, where alongside fruit and vine plantations, people are also involved in growing livestock and various folk crafts : Agapia, Nucşoara, Lereşti; ethnographic and folk villages have become famous for the architecture of houses, interior furniture, folk seams, handicrafts, wood and stone sculptures, ceramics, of which we mention: Sibiel, Bogdan Vodă, Vicovu de Sus, Marginea, Săpânța; pastoral villages are located in high mountain area, where people are growing livestock, such as Maramureş, Argeş, Vâlcea, Sibiu, Vrancea, hunting and fishing villages are scattered in many picturesque regions n the Maramureş Depression, Depression

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Braşov, the Danube Valley and Delta, Siret Meadow, Apuseni Mountains; villages where sports activities can be organized are found in mountainous and high hills areas, deltas, along rivers, around lakes where you can practice winter sports, water sports or some adventure sports (rock climbing, gliding), such as: Fundata, Văliug, Budeasa, Mila 23, Murighiol<sup>2</sup>.

For rural tourism in some villages a few attractive features are highlighted: the recreational, aesthetic and landscape value, in many occasions due to the choice of destination (mountains, hills, plains, seaside or delta); curative value (spa) of the bioclimate or natural factors in the area; mountains, caves, streams, wildlife resources, the snow layer and cognitive value for components designated as parks, botanical gardens and zoos, scientific reserves and natural monuments.

#### **1. THEMATIC AREAS OF THE RURAL PRODUCT**

Thematic areas of the touristic product can take different aspects, tour organizers being able to develop specialized versions of programs around rural vacations. The social contacts specific to this environment have increased, as well as various options which include a weekend spent at a farm or thematic programs related to the characteristics of the area: hunting, fishing, taking up and practicing riding.

Turismul rural permite desfășurarea unor activități specifici, ce pot fi încadrate în două forme distincte de turism și anume: turismul de sejur și cel itinerant. Rural tourism allows carrying out specific activities that can be classified into two distinct forms of tourism, namely: stay-in and traveling tourism.

Stay-in tourism can offer:

- close study of nature: observing plants and animals, birds, photographing, filming
- hunting, fishing, riding;
- knowing the ancestral values;
- participating in festivals, traditions, rural traditions;
- practicing sports that require knowledge of the environment: touristic orientation, automobilism, motorcycling or bike riding on a varied terrain
- organizing conventions, symposia, conferences or seminars at various levels;
- visit handicraft workshops.

*Traveing rural tourism* can also be organized and spontaneous. In order to develop this form of tourism, an important role will be played by the existence of an organization or a specialized organizational framework to facilitate the booking system, confirm bookings and ensure service delivery in accordance with the order received.

Tourism products that can be offered to tourists in this form of tourism can have the following themes:

- gems of Romanian song and dance and the participation in celebrations, social evenings, competitions and folk festivals
- meeting folk craftsmen: potters, furriers, wood carving etc.
- On the trail of outlaws (woven with outlaw landmarks, inns, popular theater, museum points);
- Fish trail in fisheries with basic services and fishing trips;
- Wine Road visiting vineyards and wine tasting
- Gastronomic festivals:

<sup>&</sup>lt;sup>2</sup> Adapted after :Cândea Melinda, Erdeli G., Simon Tamara, Peptenatu D., 2003, *Romania's touristic potential and touristic space planning*, University Publishing House, Bucharest, p. 15-25.

- In the Footsteps of Dracula: visiting the artefacts that remind us of Vlad Tepes and staying overnight in rural areas, with evening campfires and songs, stories around the fire
- Visiting: Brătianu, George Enescu, Ciprian Porumbescu, Panait Istrati or other personalities and artistic symbols.<sup>3</sup>

Equally attractive are the circuits and routes that will include parks and nature reserves in mountain areas, caving trails, travel by boat and why not with rafts.

To support and encourage itinerary tourism, the organizers will take into account the need for materials that will be a support and means of presentation, such as: calendar of rural events, guides, maps, monographs, brochures, catalogs.

To determine the type of touristic village, it is necessary, along with the desire and intention of the organizers, the respective tourist village meet an amount of natural and historical conditions, social and economic objectives that define and are characteristic to each type of village.

These minimum conditions that a village must meet to become a touristic village refer to: the existence of households to provide accommodation and meals (half board or full board), according to certain standards developed by the Ministry of Regional and Rural Development, location in a naturally attractive area, without sources of pollution, accessibility, availability of rich tourist resources that can be valued by carrying out varied holiday activities, rich folk and ethnographic traditions, traditional occupations

In relation to the variety and value of touristic resources, the activity that takes place in a touristic village is characterized by a greater or lesser complexity, but generally includes the following components: accommodation, general trade, catering, treatment, entertainment, promotion and publicity, organization, development and planning.<sup>4</sup>

Any rural settlement is based on the following fundamental components:

- **center of the village** where most households are concentrated and which expresses the economic functions of the village;
- **the outskirts (work area)** is the land beyond the center of the village that supports all agricultural occupations, craft, trade, tourism, etc.;
- 1. **the population** is represented by demographic indicators: birth rate, mortality, natural growth, morbidity, density,etc.

Each village can have different meanings depending tourist natural resources and man, the hospitality mentality. Currently there are several criteria for identifying and selecting the tourist villages, which are:

• **Potential of the natural environment**, composed of natural elements with great appeal, variety of landscapes (mountain, Alpine hills, lakes, delta), ambient aesthetic beauty (slopes, canyons, gorges, caves), wildlife hunting, forestry

 $\circ$  **The degree of accessibility** is based on the geographical location in the territory and the main communication routes that connect with the nearest urban centers. Accessibility plays an important role in reducing time spent traveling and to reduce fatigue while going the distances;

<sup>&</sup>lt;sup>3</sup> Miu Florentina, 2011, "Ecotourism and rural tourism ", University of Pitești Publishing House, p. 263,

<sup>&</sup>lt;sup>4</sup> Adaptation after :Glăvan V., 2003, *Rural Tourism, Agricultural tourism, Sustainable Tourism, Ecotourism,* Economic Publishing House, Bucharest, p. 78

• The presence of cultural and ethnographic elements represents the most attractive element for tourists. Their value is expressed by the characteristics of traditional architecture, secular or religious, the interior of dwellings, types of exterior stylings, stone and wood sculpture, folk costume, stitches and fabric art, local folklore, handicrafts and household utensils;

 $\circ$  **The demographic and economic potential** has an important role in the development of rural tourism services in a village through: supporting agricultural and non-agricultural occupations, transmiting traditions and customs from generation to generation

• Maintaining a quality environment has become an important milestone for the selection and conservation of touristic elements in rural areas.

For the development and organization of Romanian villages and tourist regions as a whole, certain prerequisites are necessary, which are at the same time at the basis of a multicriteria analysis of Romanian villages with tourist valences:<sup>5</sup>

- a) a strong correlation between the size and dynamics of touristic services and overall economic and social development of the country, of each county and rural locality in part;
- b) Increase of services and of the population employed in areas other than services of the total of employed population in the context of the national economy, increasing the capacity represents a solution for touristic services, for the workforce cut off from other sectors;
- c) changes in the basic travel services, accommodation and catering in the total revenue per day in accordance with international standards
- d) development, modernization and strengthening of the touristic heritage, concern for achieving an important investment volume prioritarily directed to strengthening and modernizing as a first step, an existing touristic structure, building small and medium capacity objectives in the areas and localities with touristic potential previously not exploited according to touristic demand, amplification of equipment for leisure, tourism infrastructure development, without which Romanian tourism can not compete internationally.

# 2. PROPOSALS FOR PROMOTING THE CONCEPT, "HOLIDAY VILLAGE IN ROMANIA"

Romania has great potential to develop agro-tourism, its practice being not only possible but also very necessary at this stage.

Specialists consider that the whole policy of rural tourism development in Romania should be in a close collaboration with EUROGÎTES and by working on a partnership basis with regional or national associations. In this respect, the National Association for Rural, Ecological and Cultural Tourism in Romania has affiliated to EUROGÎTES and have resolved on concluding association or partnership agreements with associations for rural tourism in some European countries or regions<sup>6</sup>.

<sup>&</sup>lt;sup>5</sup> Glăvan V., 2003, Rural Tourism, Agricultural tourism, Sustainable Tourism, Ecotourism, Economic Publishing House, Bucharest, p. 102

<sup>&</sup>lt;sup>6</sup> Nistoreanu P., Tigu G., Popescu D., Pădurean M., Talpeș A., Tala M., Condulescu C., 2003, *Ecotourism and rural tourism*, ASE Publishing House, Bucharest, p. 68.

It is also necessary to form a group of experts capable to provide technical assistance and hold courses with the heads of local power structures and owners of rural tourism structures on marketing issues, planning and interior partition of accommodation spaces, and training and food services, classification and quality standards, catering and dining rules, rules of hygiene and ecology, behavior in dealing with tourists, information system (stock records, reservation system), etc.., the selection being made by experts of the National Association, and for their training EUROGÎTES support should be sought.

In these circumstances, the attributions of the National Association for Rural Ecological and Cultural Tourism refers to:

- promoting and defending member interests
- cooperation with counterparts in other countries, with EUROGÎTES and other European bodies
- coordination and collaboration with regional subsidiaries
- participation in exchanges between regional centers
- the regular holding of seminars on environmental issues, including support from some students and university professors
- organizing participation in fairs and promotional and marketing activities, including organizing the participation in national and international tourism fairs
- liaising with the media and travel media Association
- selection, preparation and coordination of the activity of the body of experts
- prepare a group of interpreter guides, attendants or specialized on the main rural tourism activities
- organization of courses aimed at improving professional training for local center leaders and members of the association

Currently, about 40% of rural tourism is takes place in unapproved guesthouses, many of which do not meet quality standards. ANTREC includes over 2,000 guesthouses ranging from 1 to 5 rosettes.

### CONCLUSIONS

Following the original study "Selecting and organizing holiday villages in Romania" on management principles, elements of tourism infrastructure in rural areas, resource valuation practices available to touristic units, as well as management levels of rural tourism activities in the area, the following conclusions can be drawn:

- 1. South-Muntenia has a varied natural and cultural potential, and rural tourism is able to make them functional on the market
- 2. Natural heritage, valuable at European level, is in conservation process and is introduced in touristic trails, but not enough as to effectively supplement the scarce budgetary financial resources necessary for nature protection and research;
- 3. Each area of touristic interest in the South-Muntenia Region, regardless of specialization, requires a plan of strategic management and use in negotiations to attract and exploit local and foreign investment
- 4. Tourism development in rural areas is a good alternative to rural households, which along with farming practices can serve a large number of tourists in agricultural guesthouses or representative farms

5. The concept of *"Holiday village"* is one of the most profitable forms of tourism for the touristic potential situated at the outskirts of rural communities and is currently gaining more popularity.

Based on the ennumerated conclusions I make the following recommendations:

- 1. Including tourist resources of the South-Muntenia Region in the economic cycle by developing a network of tourist areas
- 2. Application of various forms of institutionalization of tourism resources for their proper management for nonpolluting economic purposes
- 3. Location in tourist areas of a large variety of activities serving guests to create a consistent and constant flow of tourists, including out of season
- 4. Encouraging rural tourism investors as an alternative to agricultural activities by delimiting local territories for touristic specialization, realization of strategic plans and management of touristic areas, improvement of business management tools with functionality close to tourist resources areas
- 5. Developing strategic partnerships public private and local foreign for the development of rural tourism in areas with significant touristic resources

#### REFERENCES

- 1. Cândea Melinda, Erdeli G., Simon Tamara, Peptenatu D., 2003, *Romania's tourist potential and tourist space planning*, University Publishing House, Bucharest
- 2. Dinu Mihaela, 2002, *Tourism Geography*, Didactic and Pedagogical Publishing House, Bucharest.
- 3. Erdeli G., Gheorghilaş A., 2006, Tourist facilities, University Publishing House, Bucharest.
- 4. Glăvan V., 2003, *Rural Tourism, Agricultural tourism, Sustainable Tourism, Ecotourism,* Economic Publishing House, Bucharest
- 5. Glăvan V., 2002, *Tourism Geography*, Publishing House of the "România de Mâine" Foundation, București.
- 6. Miu Florentina, 2011, *Ecotourism and rural tourism*, University of Piteşti Publishing House
- 7. Nistoreanu P., Țigu G., Popescu D., Pădurean M., Talpeș A., Tala M., Condulescu C., 2003, *Ecotourism and rural tourism*, ASE Publishing House, Bucharest.
- 8. Pompei C., Vlăsceanu Gh., Negoescu B., 2002, *General Tourism Geography*, Meteor Press Publishing House, Bucharest.