

Ideal-Functional

“The crisis of solutions is the perverted expression of the intention for conservation and, after the recession, of the performance in redistributing the added value, the appropriation ideal being already now half and half between speculation and rationality.”

The conceptual fixation of Economics in the theory of equilibrium (as an equally ideal and functional state) does not differ from the manner in which Physics and Cosmology had remained, until a few centuries ago, captive to Aristotelian materialism and Ptolemaic sphericity, respectively. Mankind has covered its ignorance with the sufficiency of the ideal, building structures and relations in which the functional principle was only accepted if the path of sui-generis balancing between the demands of authority (including the scientific one) and their tacit acceptance by the remaining majority was made possible.

Equating perfection with the attainment of the ideal form, and performance with the achieving of equilibrium, has pushed Economics into the obsession for growth. Its sense was understood as a progressive compensation – over large segments of time – between gains and losses. Somewhat scholastically, starting from its very birth, the theory of economicity has conformed with the precepts of the universe moved by the mechanics of infallible cyclicity. The control of surpluses was, obviously, the attribute of the authority (in its various expressions) and it eventually finished by indentifying itself with the money-managing power.

The rule of the mechanical equilibrium, generator of trends towards the ideal, configured Economics as a science by way of transferring methodological perspectives, especially from Physics. It is known that the rationality of the physicalist universe is partial, the idea of the primary impulse with regard to the movement of bodies being accepted as coming from outside the system. Economics founded its dynamic universe in the same manner – finality being the trend-setting expression for the ideal equilibrium and with the prime cause coming from a nebulous nature, destined to self-generate and to induce self-regulation in the functioning of the wealth-producing mechanism.

The metaphor of the invisible hand inculcates this vision. It means that Economics has constructed a mechanism by which it – invariably – gives solutions which cumulate the surpluses of wealth in favor of the part which holds the right (as being born from the ideal) to pretend for the equilibrium to be favorable to it.

The fixation of Economics in the ideal is completely transparent in this crisis when it manifests itself as a crisis of solutions. In fact, the perception of Economics as an explicative formula for the (short-term) fluctuations in the contribution of factors to the infallible (long-term) growth does not differ from Newton's perspective when he had to explain why the universal clock does not stop. Cognitive tolerance allows for the existence in the same place of the rational and the irrational, while Economics manifests excessive tolerance in its explicative model whose result is the equivalence between the desirable ideal and the functional possible.

The crisis of solutions originates in this very tolerant composition of desirable things and functional things, which confers Economics with the quality of self-sufficient dogma. By a somewhat medieval formula, its axioms related to functionality gain the value hypotheses, allowed to explain alternative patterns to the ideal state. This vision, which in cosmology has denied the sun the central position for about a millennium, refuses in Economics the structuring function of man and the determinism of anthropical essence of the functional in favor of the ideal – Olympus-like – consistency of the market. Ideality as a self-sufficiency of the mechanism of economicity turns derisory any solution to the concrete situation, to that which truly functions in an anthropic context. At most, the solution could be accepted as a working hypothesis, in order to imagine intervention as possible when covering losses, because it cannot be accepted for the ideal stance, which pretends to self-replicate its performance.

This celestial vision on Economics tolerates the earthly race for solutions only because it accepts it as an oblation of the anthropic ignorance on the inexpugnable altar of economic ideality. The final form of unassailable ideality was taken in Economics by the natural right, of master of economicity, held by the financial market together with its first born (from its alliance with speculation), the banking system.

The crisis of solutions is the perverted expression of the intention for conservation and, after the recession, of the performance in redistributing the added value, the appropriation ideal being already now half and half between speculation and rationality. Any solution which would remove the absurdity of this partisan ideality is categorically rejected. This proves that reality is being disregarded, ideality being defined as opposed to functionality no matter the costs, especially the social ones. For no other reasons are the solutions for socializing losses accepted tacitly and the solutions for offloading the own excesses vehemently rejected.

The ideality of economicity is saved by sacrificing that which functions with a rational impulse: the real economy.

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Note: The authors are responsible for the content of their articles and for obtaining necessary permissions.

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Gabriela Ochiană

Computerized drawing up:

Nicoleta Bobocea

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Alexandru Ion

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Multidisciplinarity, Interdisciplinarity and Transdisciplinarity: Theoretical Approaches and Implications for the Strategy of Post-Crisis Sustainable Development*

Gheorghe ZAMAN

Institute of National Economy

zamangh_42@yahoo.com

Zizi GOSCHIN

Bucharest Academy of Economic Studies

zizigoschin@yahoo.com

Abstract. *The science of sustainability connects with many different disciplines and research areas in specific ways that implies the pursue of multi-, inter- and transdisciplinary researches. The paper proposes an insight into the key complex problems of sustainable economic development, by addressing this issue in relation to the concepts of multi-, inter- and transdisciplinarity, as well as exploring their implications and possible long-term effects on the post-crisis economic development.*

Keywords: multidisciplinarity; interdisciplinarity; transdisciplinarity; sustainability; crisis; complexity theory.

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1. Introduction

Sustainability has nowadays become a wide-ranging concept, which can be linked to every aspect of human life. It emerges at the meeting point of the three so-called “pillars” of sustainable development: social, environmental and economic sustainability (Figure 1). The pillars of sustainable development have in common the sustainability vector and other distinct features, according to the following scheme.

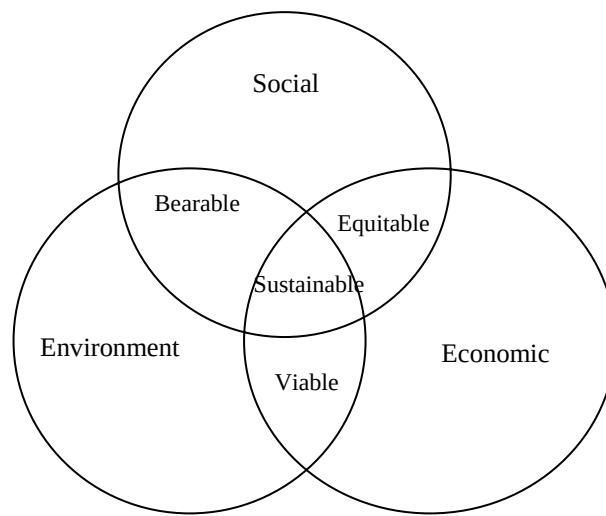


Figure 1. Scheme of sustainable development at the confluence of the constituent parts

Source: UCN 2006, *The Future of Sustainability. Rethinking Environment and Development in the Twenty-First Century*, Report of the IUCN Renowned Thinkers Meeting, 29-31 January 2006, http://cmsdata.iucn.org/downloads/iucn_future_of_sustainability.pdf

Since the 1987 Brundtland Commission report *Our Common Future* launched the idea that sustainability was the condition for satisfying human needs while avoiding environmental problems, a move toward more sustainable economic development emerged and many new techniques have arisen to help measure and implement sustainability.

Sustainability can be approached from different levels of reference, in time, space and from environmental, social and economic perspectives. The science of sustainability connects with many different disciplines and research areas and, being too complex to be fully understood using a single research method, specific ways of combining different disciplines have been envisaged. They are highlighted by the concepts of multi-, inter- and transdisciplinarity.

Multidisciplinarity results as a simple aggregation of different disciplines that preserve unchanged their specific perspectives. They share a relationship that is not interactive but rather cumulative and may work together to collaboratively create a more complex image of the reality. The subject of research can better reveal its various features when examined by different perspectives, using the methods and insights offered by several established disciplines.

Interdisciplinarity emerges from the process of combining and integrating various disciplines, along with their methodologies and assumptions. It involves crossing the traditional boundaries between sciences and mixing their techniques in the pursuit of a common goal. Methodologies and assumptions belonging to different disciplines are connected and modified in order to adapt to the needs of the research, creating new tools which allow for the investigation of difficult subjects that surpass the possibilities of a single discipline. In the field of economy, for instance, complex topics such as inflation, labour market, credit, stocks or exchange market imply various approaches that combine economics, mathematics, geography, politics, sociology, biology, physics and others.

Transdisciplinarity defines a research focused on problems that cross the boundaries of two or more disciplines, aiming at a holistic approach. It also implies concepts or methods that were originally developed by one discipline, but are now widely used by others.

The concepts of multi-, inter- and transdisciplinarity research are not antagonistic, but complementary, because they share the common goal of the understanding the reality. The main distinction between multidisciplinarity and interdisciplinarity lies in the relationship that the disciplines share: multidisciplinarity simply reunites a range of disciplines independently contributing to the investigation, while interdisciplinarity blends their methods generating new and improved tools, better adapted to the research topic. Transdisciplinarity goes beyond that, aiming at a unity of knowledge beyond disciplines, while the pursue of multidisciplinarity and interdisciplinarity always remains within the framework of disciplinary research.

Starting from these considerations, the paper proposes an insight into the problems of economic viability of sustainable development by addressing this issue in relation to concepts of multi-, inter- and transdisciplinarity and explores their implications on the post-crisis economic development.

General theoretical and methodological highlights of sustainability science

Sustainability science as a new area of scientific research was officially launched in 2001 in Amsterdam, at the World Congress “Challenges for the Changing Earth 2001” and is based on the concepts of sustainability and sustainable development (Komiyama, Takeuchi, 2006). Sustainability science is studying the development, integration and application of scientific knowledge about Earth systems, acquired in particular through holistic approach of geology, ecology, climatology, earth physics, oceanography, etc., in close coordination and interdependence with knowledge of Humanities field. The overall aim of sustainability science aimed at assessing, reducing and minimizing the consequences of human impact on planetary systems, in present and in the future, so that man can become a friendly manager (user) and a protector of Earth.

The concept of sustainability and its derivatives belong to a group of complex key concepts as equality, freedom, democracy, etc. and are the subject of ongoing scientific debate regarding the definition, scope and the possibility to be achieved in economic and social practice. Not surprisingly, there are about 300 definitions of sustainability (Ehrenfeld 2008). What is important though concerns its relationship, implicit or explicit, with the sustainable development and the environment, in a more or less interchangeable manner.

The fact that sustainability has been given so many definitions proves the following aspects at least:

- Real phenomena and processes subsumed under the category of sustainability are not only numerous but also complex and constantly moving, evolving or multiplication, differentiation;
- There is some doubt and confusion in the theoretical and methodological, because sustainability is a relatively new concept, specific emergent properties of complex systems (such as economic, social, environmental, technological, etc.). The subjective perceptions are various researchers/observers to examine the system of one or more ways, without fail settling holistic quality to meet the requirement of integrative unit;
- Sustainability is more quantifiable than measurable, which means that the metric system of quantitative indicators should be supplemented with qualitative assessments;
- Between the perception of “subjective” sustainability and show how its objectives are always the aspect of “failure” theories, working hypotheses (e.g. “caeteris paribus”), values and rules, in other words,

dichotomies objective/subjective involves Cartesian world observed by separating subjects observed objects (investigating, acting).

Sustainability is best defined as the possibility of certain natural and/or human systems to exist and work efficiently, now and in an undefined future.

Although associated with sustainable development, as opposed to it, sustainability is a category with a much broader scope. Sustainable development requires the ability to manage the economic and social development processes so that the land (environment) can support future generations in the same manner as the present ones (Brundtland Report, 1987) As a process, sustainable development is carried out continuously and “can not be achieved” a time limit.

What has been achieved so far for the cause and objectives of sustainability are but modest achievements on prevention/counter of “non-sustainability” which is emerging more strongly as a threat to the “economic, social and environmental pillars” on medium term development long, given the unanimous opinion that the current state of the Earth is unsustainable and unsatisfactory in terms of sustainability criteria. For now, non-sustainability measured in terms of quantity and of appropriate standards has constituted a factor of more dynamic emergence and awareness of the need to foster the transition to sustainability.

The measurement, quantification and reduction of non-sustainability based on complex calculations and evaluations, as well as application of specific combined methods of various sciences, has become a *sine qua non* condition of the underlying and implementation with better success chances some programs and strategies for the of sustainability economic and social development.

According to recent theoretical insights on sustainable development, the Brundtland Report definition was supplemented by the requirement to reduce adverse environmental impacts, in order to obtain more goods and services with less consumption of natural capital. This implies an increase of eco-efficiency which means reducing consumption of natural capital (or environmental impact) at a unit value or production of goods and services. Eco-efficiency increase is still a controversial issue in the literature. Since the nineteenth century, William Stanley Jevons's (1865) thesis known as “rebound effect” or Jevons's paradox that technological improvements that increase the efficiency of a resource use tends to increase rather than reduce the rate of consumption of this resource. This paradox, based more on intuitive reasoning and theoretical deductions in terms of modern economic theories, was nuanced and customed in the sense that, besides reducing the amount needed for a given volume of production, improved efficiency reduces the relative cost of resource

use, thus increasing the demand. The use of total resources will increase or decrease, depending on which effect predominates. Increased demand may or may not be large enough to offset the initial reduction in demand due to increasing eco-efficiency. Jevons Paradox occurs when the rebound effect is greater than 100%, exceeding initial efficiency gains. According to studies, the rebound effect in developed countries is generally low, so that eco-efficiency improvements, typically reduces total resource use.

In the case of a perfectly competitive market, in which the fuel is the only one input factor used and the only determining factor of labor cost, if fuel price remains steady, and the efficiency of its conversion to work is doubled, the actual price of labor will improve and, thus, one can buy twice as much work the same amount of money. If the work volume purchased increases over two times, therefore labor demand is elastic (price elasticity is greater than unity), then the amount of fuel used will not fall but actually increase. If the demand for labor is inelastic, the quantity of work purchased will be less than double and, in this case, the amount of fuel used will decrease.

A more comprehensive analysis should also take into account that there are several types of production inputs (fuel, machinery, labor) and that other factors besides inputs cost (e.g. a non-competitive market structure) can also affect the price of labor. All these factors tend to reduce the effect of fuel efficiency on the price of labor, thus reducing the rebound effect, making Jervons paradox to occur with a lower probability. In addition, any change in fuel demand will affect fuel prices and labor prices.

The Jevons paradox has been revised in the 80s (Khazoom and Brookes, 1987) in the direction of adding some arguments that the reduced energy consumption by increasing economic efficiency will simply lead to an increased demand for energy, for the entire national economy. In 1992 Saunders has hypothesized that improving energy efficiency, increase rather than reduce energy consumption in accordance with the Khazoom – Brookes postulate, in two ways: increased energy efficiency makes energy cheaper, which encourages an increased consumption (rebound effect); a higher energy consumption at the macroeconomic level will lead to a higher rate of economic growth, which in turn will increase again the volume of energy use, in the whole economy.

At the microeconomic level of an individual market segment, even if the rebound effect acts, the increased energy efficiency typically reduces energy consumption (rebound effect is usually less than 100%). At the macroeconomic level, a more efficient and therefore cheaper energy use may face the problem of market price increases due to more powerful manifestation of restrictions

caused by depletion of fuel deposits and the inability of other competitive unconventional energy sources.

The rebound effect was also analyzed by Nicholas Georgescu-Roegen (1971, 1975, 1975a, 1975b, 1981) which supported the idea of economic “decrease” (*décroissance économique*) for the purpose of carrying out a production model and consensus to reduce waste and avoid unnecessary consumption of natural capital based on a mix of policies that promote the transition from “high” to “low” entropy so as to slow the process of gradual dissipation of matter beyond the possibilities of “reassembly” (*reuse*) of it. Georgescu-Roegen advocates decreasing the negative phenomena of production and consumption patterns that were exhausting the natural capital.

Sustainability science is faced with three ways of thinking in terms of economic growth in an environment with finite resources, namely:

- positive growth supported by the World Commission for Environment and Development, OECD, World Bank;
- zero growth;
- negative growth (Nicholas Georgescu-Roegen).

The thinking of Harlem Brundtland (*Our Common Future*, 1980) is more attractive because he supports continued economic growth combined with improving efficiency in energy and materials use. Underlying this thinking lies the idea that energy efficiency improvements make possible a positive rate of upward economic growth without increasing demand for energy carriers such as gas and oil. However, the problem with this approach to energy efficiency that would solve all energy problems, however, is that there is no certainty that the more efficient use of energy will automatically proportionately reduce the request for it. The rebound effect is a way to answer this question, being defined as that part of the originally expected energy savings resulting from improved energy efficiency that is lost due to environment-efficiency-economy interaction.

In a very consistent study, A.P.A. Musters (1995), analyzing the effects of complex issues of “rebound” effects for energy and other production factors, reached the following conclusions:

- following the rebound effect, some of the expected savings resulting from improved energy efficiency is lost due to the interaction energy-economy-environment;
- consumers conduct themselves so that they do not seek to minimize energy costs but rather want to maximize utility;
- the rebound effect is more than the optimistic assessments made by supporters of efficiency and lower than energy pessimists fear;

- reducing the rebound effect can be achieved through energy efficiency measures;
- policies that restrict consumption of various natural resources;
- because of the rebound effect, improving energy efficiency can not be regarded as a new source of energy supply.

As recommendations, the author suggests the research of the rebound effect in terms of its size and concept and the need to reduce the entropy by reducing and preventing pollution, as well as by eco-innovation.

Sustainability science also deals with success/failure mechanisms of capitalist market competition in terms of the capacity to ensure long term sustainability.

Thus James Gustave Speth (2008) points out that the American form of capitalism, with its imperative of continuing growth and dominated by profits, competition, outsourcing costs, short term and future discounts is causing deep environmental non-sustainability. Moreover, current ambientalism is deeply inefficient in terms of stopping and reversing the current trends. Environmental strategies underway in the last two decades, based on a narrow pragmatism and a limited focusing are unable to cope with the scale and complexity of current and future challenges of transition to sustainability.

Such strategies do not act on the root causes of the system that should be changed from within, through a major transformation. They should aim, first, human welfare, avoid low-control consumerism and the accumulation of personal wealth and promote simple, sober and austere lifestyles, less hurried, more spiritual and more restful. According to Speth's, the modern capitalist system must be radically transformed, and post-growth society must forget the growing production and consumption.

The distinction that is being made between strong and weak sustainability comes just in support of substantive reforms towards public-private partnership, social values, given that the environment is the most comprehensive “public good” and that rivalry and competition – specific to the private sphere – should not affect (undermine) its capacity to support the sustainability for “everyone” on the short, medium and long term.

Multidisciplinarity, interdisciplinarity and transdisciplinarity – the requirements of sustainability research

R & D and innovation in sustainable development area implies to a greater extent outstanding efforts of professionals from various fields and scientific disciplines due to the growing complexity of economic and social processes and phenomena and the need to respond to the challenges of

increasing environmental risk as well. Therefore, we will refer further to many important aspects of multi-, inter- and transdisciplinarity in RDI, as prerequisites for adequate results in theoretical, methodological and practical approaches.

Multidisciplinarity is a non integrative combination of scientific disciplines, in which each discipline retains its own working methodologies and assumptions without changes or development work in other subjects within multidisciplinarity.

Multidisciplinarity differs to interdisciplinarity in how the relationship between scientific disciplines manifests itself through acquisitions or mutual borrowing of theories, methods or assumptions. Thus, within the multidisciplinary relationships, cooperation between scientific disciplines may be “mutual and cumulative, but not interactive” (Augsburg, 2005, p. 56).

Interdisciplinarity involves settling of new working practices and assumptions of each discipline involved. In this respect, we may give the example of sustainability science that has customizations in virtually all scientific disciplines (ecology, economics, sociology, medicine, chemistry, earth sciences, etc.), which are combined into new methods of integrative research. Typically, the emergence of new paradigms is due to transition from one phase to another in the progress of science and technology, such as the shift from mechanics (mechanization) to electricity and superconductivity (electronics, informatics, etc.), which allowed more intensive acceleration of the sequence of processes, up to their quasi-simultaneity.

An interesting type of interdisciplinarity is the relationship between physical sciences and economics which have generated the so-called new scientific disciplines. Econophysics, as a research area that applies theories and methods originally generated by Physics, addresses economic problems especially in the areas of uncertainty, stochastic processes, nonlinear dynamics and financial markets. The term was first used by Eugene Stanley (2006), in the mid 90s to denote a series of researches conducted by physicians for problems related to market and prices. As a result, journals specifically devoted to econophysics studies emerged and the contributions published came from several renowned physicists.

Interference between physics and economy is rooted much more distant, starting from elasticity theory, multiplier, accelerator (JM Keynes) and oscillator, if not the optimum of Vilfredo Pareto (1897), who first observed differences in income distribution between socio-professional categories, currently analysed by econophysics with the power law model (power law distributions) applied to forecast the price of capital and other processes in financial markets.

The main tools of econophysics are the probabilistic and statistical methods, chaos models, self-organizational models, models for forecasting earthquakes (Ball, 2006) etc.

Since economic phenomena are the result of the interaction of a multitude of complex and heterogeneous factors such research is carried out using the methods of statistical mechanics and taken to the specific economic behavior of individuals starting from the laws governing the interaction of physics particles. Other areas of physics that have found application in economics: fluid dynamics, classical and quantum mechanics (including so-called classical and quantum savings), the diffusion laws, gravity models, chaos theory (Mantegna et al. 1999; Bouchaud, 2006, Chakrabarti et al, 2006, McCauley, 2004, Chatterjee, 2005, Mirowski, 1983, Sornette, 2004).

Interdisciplinarity involves researchers and professors from many fields of science, in order to achieve common goals or solve complex problems that can not be satisfactorily studied by only one field of science. In the economy, for example, complex phenomena such as inflation, foreign exchange and credit, labor, etc. imply multidisciplinary approaches involving the fields of economy, geography, politics, sociology, biology, physics, chemistry, etc.

In other words, interdisciplinarity involves studying a phenomenon (domain) from several combined points of view, based on complementary methods and usually results in the generation of new tools for analysis and forecasting to better understand the phenomenon. Therefore, the common goal of understanding, analysis and forecast a particular topic, requires, from the perspective of interdisciplinarity, the combination of different research methods, specific to certain disciplines. Precisely for this reason, interdisciplinary research programs are based on the widely accepted view that the traditional scientific disciplines are unable to resolve a major problem now facing science in general, and economy, society and environment, in particular.

A number of disciplines of Economics (macro and microeconomics, finance, international and domestic trade, labor, etc..) gave insufficient attention to analyzing the impact of technological progress since the twentieth century, particularly that of ICT, nanotechnology, bioinformatics, molecular biology. Currently, interdisciplinary research teams are trying to eliminate this shortcoming by complementary efforts.

Interdisciplinarity is also considered as a solution to the adverse effects that excessive specialization may generate. Encyclopedists time has passed and now, given the great volume of accumulated knowledge in all fields of science, news and career recognition is based on professional expertise of researchers, which becomes more narrow, but gains depth. Interdisciplinarity

comes to fill any gaps of specialization in science, enabling cooperation, consultation and mutual support from specialists in various fields, having common goals, objectives and common problems that transcend scientific disciplines through a series of general challenges. The result from interdisciplinary collaboration is to identify new solutions, methods, mechanisms and research tools for one or more of the sciences, as a result of induced complementarity between them.

Challenges of multi-, inter- and transdisciplinary research

In a multidisciplinary research program, as opposed to interdisciplinary, two or more scientific disciplines cooperate and associate without integration. Each discipline develops its own objectives, its results and builds new paradigms and methods, and integration, where appropriate, can be made successively or by a third party. Multidisciplinary teams are made up of people from different areas (disciplines), different scientific professions, working together as stakeholders to cope with common challenges. If multidisciplinary, difficulties can occur in connection with the decomposition or separation in aspects of the common problems and their resolution based on the knowledge of each field within a single project. Multidisciplinary teams may be faced with communication problems, compatibility, common language and terminology, terms and permanence of cooperation etc.

Addressing these challenges running on repeated experiences of work in multidisciplinary projects will lead to effective and creative results. Sometimes, multi scientific staff can have dual qualification, creating the possibility that as a single person replaces two professions in a multidisciplinary team. However, multidisciplinary does not result in an increase or decrease the number of scientific disciplines as for interdisciplinarity.

Interdisciplinary research projects rely on researchers from different disciplines and professional staff to create and apply new knowledge, working together as equal stakeholders to solve a common problem or to achieve a complex goal, common to all participants. Interdisciplinary teams' main problem consists in identifying, shaping new knowledge or scientific sub discipline, which exclude the existing perimeter. Such a challenge, as complex as difficult, requires very close interaction and effective cooperation of specialists from several fields of science to identify and enhance new knowledge/subfields of science. Interdisciplinary research teams members have professional qualifications in one or more fields of science, and skill and experience of interaction, cooperation in a multidisciplinary area, the prerequisites for identifying new sub domain problems, aspects of science. The

requirement of qualification and professionalism of the members of interdisciplinary research teams is one of the conditions that lead to increased research and reduce the number of academic disciplines. Another category of scientific cooperation which envisages sustainability refers to transdisciplinarity which usually involves the abolition of borders, barriers between scientific disciplines.

In most cases of transdisciplinarity, there is a strong transgressive overlapping of the legalities of different scientific disciplines, in order to find new areas of knowledge and expand its development resources. Transdisciplinarity involves complex processes of integration and correlation of knowledge belonging/not belonging to scientific disciplines and their application in order to research complex phenomena and processes, poorly understood or new, emerging in the economic and social life or in the environment.

Transdisciplinarity is based on the use of independent methods and theories from several disciplines and their application to shape, structure and understand various phenomena and processes of society and nature. The basic idea of transdisciplinarity relates to the argument by which scientific knowledge can not be regarded as belonging to or coming from only a single field or subfield of science. Transdisciplinarity occurs when a philosophy, a philosophical movement or a general hypothesis applies to other fields of science and forms new complex systems, legitimates relationships and structures.

Transdisciplinary research projects involve the participation of professionals from various fields to form research teams in joint scientific conditions of each of the participants and shared knowledge of staff are similar in order to elucidate a common problem. The concepts of “postmodern” transdisciplinarity considers scientific knowledge generation not as an attribute impacting in a horizontal plane, but the outcome of a multitude of research teams, in a vertical plane, outside academia.

Transdisciplinary scientific production can be generated from organized structures in the less complex communities, including those randomly produced scientific results of the individuals or collective research groups, leaders or members of those groups.

Interdisciplinary projects are characterized by an intensive cooperation between the participating researchers that must develop a proactive and responsive attitude to other disciplines which interface with its own discipline, abandoning the tendency to consider the precepts and immutable in the scientific field that the researcher is specialized in. They must overcome barriers to perceive science as a new “soft” interdisciplinary field, without the rigor and

vigor of mature disciplines with practical experience and theoretical and methodological lengthy. Therefore, by novelty, fragility and vulnerability specific to the begun of any scientific field, interdisciplinary face serious obstacles in terms of career prestige and strength, obtaining funds, promoting and supporting the needed policy mixes. The high risk and vulnerability of an interdisciplinary research project is what make evaluators be reluctant to award high scores to interdisciplinary projects. On the other hand, evaluators may be insufficiently skilled to understand the value and methodology of an interdisciplinary project.

Interdisciplinary research requires a certain degree of autonomy in their conduct. Any “imperative coordination” or “narrow dominance” of one of the traditional scientific disciplines, participating in an interdisciplinary project, may inhibit or damage the new scientific contribution of interdisciplinary research. In an interdisciplinary scientific team, a scientific discipline should not be considered “superior” to the others or opposed to them. Applying the principle of “*par in parem non habet imperii*” (the peers have no empires) premise seems to be adequate for ensuring the effectiveness of transdisciplinary work. This interdisciplinary project prerequisite for efficiency should not deny the need to establish priorities and, where necessary, the hierarchy imposed by clear and objective reality.

Multi- and interdisciplinary research are facing difficult problems regarding the supply of the necessary funds for projects. Both the academic research, institutes and industry prefer projects with a lower risk from traditional fields of science, the receptivity to new being poor. Funding restrictions are most strongly felt in situations of recession and economic and financial crisis, as is the case of subprime crisis in the US in September 2008, which spread in the whole economy.

Given the opposition that multi- and interdisciplinary research faces, it is necessary that it becomes, through the results, methodology and application status, a well defined quasi-autonomous scientific discipline, with its own resources to finance programs. This will allow easier entry to specific R & D and innovation market. Nanotechnology, biotechnology, biomedical engineering, biochemistry, etc. are many and interdisciplinary scientific fields that have managed to overcome major obstacles to ensure the financing.

Interdisciplinary research, field of synthesis of scientific knowledge, of interdependence of scientific and epistemological disciplines, facilitates the study of phenomena and processes with high complexity and importance that can not be understood through isolated mono-disciplinary approaches. Sustainability science is interdisciplinary by its very content because it analyses the possibilities of further complex economic and social progress of mankind,

on an indefinite time horizon, taking into account the need to maintain ecological balance and good functionality of natural and human capital, in terms of intra- and intergenerational cooperation, welfare and growth, through a new vision.

Interdisciplinarity is based on a new flexibility and institutional configuration of research, reducing its fragmentation and isolation on traditional disciplines. Whilst acknowledging the still relatively low degree of synthesis and accuracy of research methodology, the supporters of interdisciplinarity consider of paramount importance to educate the younger generation, to inform and involve managers, leaders and citizens with new knowledge that provide opportunities for implementing, information and analysis, evaluation and synthesis of multiple sources, in order to better underline the decisions at different levels of economic and social aggregation.

Opponents consider that interdisciplinary research in this area is unfounded, unrealistic and that many of the questions raised can be resolved with existing tools of traditional scientific disciplines. Such a concept began to take an increasingly small number of supporters.

It is promising that the universities in Romania note a focus on interdisciplinary curricula for a wider training of graduates that may find a job easier. Romanian research programs, National Strategy for Research, Development and Innovation are linked to interdisciplinary guidelines of the EU FP7, 2007-2013 and the European Research Area policy regarding sustainability science. Issues of sustainable development in Romania and internationally are virtually included in research programs of most universities in our country, where research centers in this area were created and operate and cooperate with similar institutions on a national or international level (UN, EU, EEC, etc.).

Academic and research institutions of sustainability in most countries have increased and have acquired scientific consistency precisely because the “sustainable attribute” is associated with various areas of economic and social activities.

In England and the Netherlands operate various programs such as Bachelor, Masters and PhD, as well as interdisciplinary research centers with a broad spectrum, devoted to sustainability science, including social sciences, economics, environment, technology, mathematics, systems theory etc. Sciences Po University in Paris (France) was interdisciplinary since its establishment in 1873, including economics, law, political science, business and sociology. In the US, there are several universities of interdisciplinary orientation: The Center for Studies of Interdisciplinarity (<http://csid.unt.edu>); The Faculty of Graduate Studies, University of British Columbia; Fairhaven

College in Bellingham, Washington; Stanford University (Bio-X program - biology, computer science, medicine, engineering); University of Pennsylvania, etc.

Sustainability science has become one of the most requested and fertile fields of international scientific cooperation within which function multi- and interdisciplinary networks of researchers from different countries, which directly or indirectly involve international organizations and research centers with public and/or private participation.

References

- Augsburg, T., *Becoming Interdisciplinary: An Introduction to Interdisciplinary Studies*, 2005, <http://en.wikipedia.org/wiki/Multidisciplinarity>
- Ball, Ph., „Econophysics: Culture Crash Nature”, 441, 2006, pp. 686-688
- Beinhocker, E.D. (2006). *The Origin of Wealth, Evolution, Complexity and the Radical Remaking of Economics*, Boston Massachusetts: Harvard Business School Press
- Bouchaud, J.-Ph, Potters, M. (2003). *Theory of Financial Risk and Derivative Pricing*, Cambridge University Press
- Boulanger, P.M., „Sustainable development indicators: a scientific challenge, a democratic issue”, S.A.P.I.E.N.S 1(1), Online since 23 Dec. 2008
- Brookes, L.G., „Energy Efficiency and Economic Fallacies. A Reply, Energy Policy”, vol. 20, No. 5, 1992
- Brookes, L.G., „Energy Efficiency and Economic Fallacies: The Debate Concluded”, Energy Policy, April 1993, pp. 346-347
- Brundtland G.H. (1987). *Our Common Future: The World Commission on Environment and Development*, Oxford University Press, Oxford
- Chakrabarti, B.K., Chakraborti, A., Chatterjee, A. (2006). *Econophysics and Sociophysics: Trends and Perspectives*, Wiley-VCH, Berlin
- Chatterjee, A., Yarlagadda, S., Chakrabarti, B.K. (2005). *Econophysics of Wealth Distributions*, Springer-Verlag Italia, Milan
- Clark, W.C., „Sustainability Science: A room of its own”, *Proceedings of the National Academy of Science*, 104, 2007, pp. 1737-1738, published online on February 6, 2007
- Cohen, B., Winn, M.I., „Market Imperfections, Opportunity and Sustainable Entrepreneurship”, *Journal of Business Venturing*, 22(1), 2007, pp. 29-49
- Colander, D. (2000). *The Complexity Vision and the Teaching of Economics*, E. Elgar, Northampton, MA
- De Simone, L., Popoff, F. (1997). *Eco-efficiency. The business link to sustainable development*, Cambridge MIT Press
- Didier, Sornette (2004). *Why Stock Markets Crash: Critical Events in Complex Financial Systems*, Princeton University Press
- Dyllick, T., Hockerts, K., „Beyond the Business Case for Corporate Sustainability”, *Business Strategy and The Environment*, 11(2), 2002, pp. 130-141
- Ehrenfeld, R.J., *Sustainability needs to be attained, not managed: Science, Practice & Policy*, Fall Winter, 2008, Volume 4, Issue 2

- Georgescu Roegen, N. (1971). *The Entropy Law and the Economic Process*, Harvard University Press, Cambridge
- Georgescu Roegen, N. (1973). *The Entropy Law and the Economic Problem*, in H.E. Daly (Ed.), *Toward a Steady-State Economy*, Freeman San Francisco, pp. 37-49
- Georgescu Roegen, N., „Energy and Economic Myths”, *Southern Economic Journal*, 3, 1975a, pp. 347-381
- Georgescu Roegen, N., „Dynamic Models and Economic Growth”, *World Development*, 11, 1975b, pp. 765-783
- Georgescu Roegen, N. (1979). *Comments on the Papers by Daly and Stiglitz*, in V.K. Smith (Ed.), *Scarcity and Growth Reconsidered*, The Johns Hopkins Press, Baltimore, pp. 95-105
- Georgescu Roegen, N. (1980). *Matter: A Resource Ignored by Thermodynamics*, in L.E. St. Pierre, G.R. Brown (Eds.), *Future Sources of Organic Raw Materials*: Chemrawn I., Pergamon, New York, pp. 79-87
- Georgescu Roegen, N. (1981). *Energy, Matter and Economic Valuation: Where Do We Stand?*, in H.E. Daly, A.F. Umana (Eds.), *Energy, Economics and Environment*, Westview Press, Boulding, pp. 43-79
- Hayek, F.A., „Prize Lecture”, 1974, http://nobelprize.org/nobel_prizes/economics/laureates/1974/hayek-lecture.html
- Hayles, N.K. (1991). *Chaos Bound: Orderly Disorder in Contemporary Literature and Science*, Cornell University Press, Ithaca, NY
- Jevons, W.S. (1865). *The Coal Question*, Macmillan, London
- Jevons, W.S. (1879). *The Theory of Political Economy*, Macmillan, London
- McCauley, J. (2004). *Dynamics of Markets, Econophysics and Finance*, Cambridge University Press, Cambridge
- Khazoom, J.D. (1980). „Economic Implications of Mandated Efficiency Standards for Household Appliances”, *Energy Journal*, vol. 1, No. 6, pp. 21-39
- Komiyama, H., Takeuchi, K., „Sustainability Science: building a new discipline”, *Sustainability science*, 1, 2006, pp. 1-6
- Amaral, L.A.N., Ottino, J.M. (2004). *Complex networks — augmenting the framework for the study of complex system*
- Musters, A.P.A., „The Energy-Economy-Environment Interaction and the Rebound Effect”, ECN, *BIDOC Postbus* 1, 1995, 1755 Z G Petten
- Per, B (1996). *How Nature Works: The Science of Self-Organized Criticality*, Copernicus New York, USA
- Mirowski, Ph. (1989). *More Heat than Light - Economics as Social Physics, Physics as Nature's Economics*, Cambridge University Press
- Prigogine, I. (1997). *The End of Certainty*, The Free Press, New York
- Reitan, P., „Sustainability science – and what’s needed beyond science”, *Sustainability: Science, Practice, & Policy*, 1(1), 2005, pp. 77-80, /vol1iss1/communityessay.reitan.html
- Rhinesmith, J., „Finance Vets Physical”, *Yale Economic Review*, Spring 2006, http://www.yaleeconomicreview.com/issue/2006_spring/financephysical.html
- Rosario, N., Mantegna, H., Stanley, E. (1999). *An Introduction to Econophysics: Correlations and Complexity in Finance*, Cambridge University Press
- Schaltegger S., Sturm A. (1998). *Eco-Efficiency by Eco-Controlling*, Zürich:rdp.
- Solomon, S. Shir, E. (2003). *Complexity; a science at 30*
- Vergragt, Ph., Brown, H.S., „Sustainability: Science, Practice & Policy”, Fall winter 2008, vol. 4, Issue 2

Experiences of the Large Fiscal Adjustments in EU. Romania's Case*

Cristian SOCOL

Bucharest Academy of Economic Studies
socol.cristian@gmail.com

Radu SOVIANI

Bucharest Academy of Economic Studies
radu.soviani@tmctv.ro

Abstract. *This paper presents the contagion mechanisms of the world financial crisis upon the Romanian economy, the analysis of the way in which the Romanian authorities have reacted during the crisis and the lessons to be learnt subsequently to the encounter with this crisis. Moreover, this work outlines, in a comparative manner, the main macroeconomic effects of the large fiscal adjustments recorded during the last 30 years in EU, as well as viewpoints referring to the fiscal correction in Romania.*

Keywords: fiscal adjustment; austerity; recession; crisis.

JEL Codes: E02, E62, E65.

REL Codes: 8K, 8M.

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1. Introduction

At present, we are probably in the middle of the toughest economic and social crisis which has ever been experienced by mankind. The loss of 30 million jobs in the entire world, the deep recessions, the increase of poverty and of the social polarization represent processes which are deeply deteriorating the bases of the European model and the operation of the global economy. The crisis regarding the choice of the concrete solutions for stimulating the economy indicate a much deeper crisis – the crisis of the economic science.

Romania encounters a series of overlaid crises – the external crisis over the domestic economic crisis, the political crisis and the social crisis, as well as the confidence crisis.

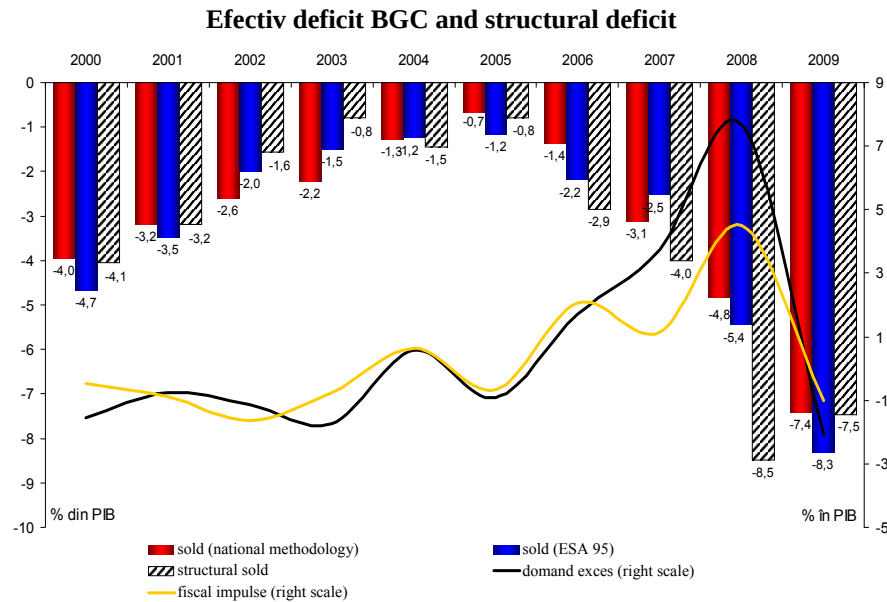
Our paper is structured in three parts: how we entered the crisis, how we reacted under crisis conditions and, perhaps the most important, what we have to learn from this crisis.

How we entered the crisis

The globalization of the world economy has made that financial imbalance produced in one of the major economic powers to transmit quickly in most countries. Especially emerging economies have felt the effect of cumulative causation – the external imbalance overlay over some domestic economic and social vulnerabilities, already manifest. The effect of herd has grown, capital flight from developing countries to developed countries back was done with alarming rapidity.

When entering the crisis, Romania has had an unfavourable macroeconomic situation. Besides Latvia, Romania has been strongly dependant on the foreign capital inflows, both in the public sector and also in the private sector. The issue of the high twin deficits (real budget deficit of 5.4% of the GDP and current account deficit of 13% of the GDP in 2008) resulted in a margin of maneuver which is too low to financially support the proper fiscal stimuli.

Romania has had an improper management of the macroeconomic policies. The pro-cyclic fiscal policies resulted in creating a fiscal space during the recession gap periods and in its running short during the expansion gap periods. Romania has made large fiscal adjustments when the economy used to function below its potential, opposite to the postulates of the macroeconomic theory, which recommends fiscal consolidation processes during the expansion periods.



Source: NBR data, Eurostat, 2010.

Figure 1. The evolution of current budgetary deficit and structural budgetary deficit in Romania (2000-2009)

Table 1

The evolution of the output-gap and of the structural budget balance

Year	Output-gap	Years	Structural budget balance
2000	-2.22	2000	-2.64
2001	-0.60	2001	-2.55
2002	-0.48	2002	-1.76
2003	-0.97	2003	-1.15
2004	1.04	2004	-0.43
2005	-1.09	2005	0.62
2006	0.81	2006	-2.11
2007	2.17	2007	-3.73
2008	6.20	2008	-7.71
2009	-2.95	2009	-6.84
2010	-3.46	2010	-4.40
2011	-3.92	2011	-1.90
2012	-2.13	2012	-1.30
2013	-0.10	2013	-1.40
2014	2.35	2014	-1.80

Source: Ministry of Public Finance, International Monetary Fund, 2010.

The dependence of the Romanian economy - and generally emerging countries – of foreign capital inflows that are common in the period before the 2008 financial crisis has created serious liquidity problems. There were outflows of capital to developing countries, safer, and especially amid the existence of a managed floating exchange rate with this process led to a depreciation of the national currency against major currencies. However, it is interesting that our country has not necessarily had to find a flight of capital from a high amplitude but rather a lack of capital inflows to the pre-crisis situation.

There were immediate signs of a recession: economic collapse, unemployment increasingly higher due to lower number of jobs, less revenue to the budget, increasing the risk of default by increasing CDS and increased social problems.

How we reacted under crisis conditions. The experience of the large fiscal adjustments

The freedom degrees provided to the macroeconomic policy decision makers from Romania have been low. The monetary policy has not a too large margin of maneuver under the terms of the existing inflationary shocks, such as the currency depreciation or the increase of the VAT. Also, no fiscal policy instruments were used to their full potential because of lack of financial buffers of Treasury strictly necessary to meet liquidity gaps caused by the reduction of external capital flows. On the other hand, low power automatic stabilization mechanisms – especially the lack of progressivity of taxation - led to exacerbation of budgetary problems, along with high tax evasion related imbalances, low collection of revenues from the state budget and so on. "Solving" structural problems by delaying to the future means what is called "Ricardian equivalence" that reduced confidence in the sustainability of the positive effects of stimulating the economy through measures of fiscal relaxation.

This problems called for fiscal adjustment. To solve liquidity problems, Romania has signed a multilateral financing agreement with the IMF, EC and WB option that led rapidly to reduce by half the risk of default on foreign markets and restored confidence in the positive development of Romanian economy. The main target of the adjustment program provided effectively achieving a budget deficit of 6.8% of GDP in 2010, 4.4% of GDP in 2011 and 3% of GDP in 2012, consistent compliance nominal convergence criteria set for joining the EuroZone.

However, Romania finds itself into vicious circles out of which it is difficult to get. The low budget revenues give the impression of enormous expenses for normal rights: entire wages, entire pensions, entire scholarships, family allowances, etc. We do not have too high budget revenues because those who should pay fees and taxes – the private companies – record a free falling. We do not have high budget revenues because the reforms in the pension system, in health, education, infrastructure, etc. are slow. We do not have budget revenues because there are not strong programs which help in creating jobs. Programs which help in attracting the 1.5 million illegal labourers and the two million labourers in agriculture caught in statistics as active population, who does not pay for social contributions. And the most important thing, we do not have budget revenues because the tax evasion is endemic.

Facing the dilemma related to deficits-economic re-launching, Romania proposed itself to implement an austerity budget program in order to provide the sustainability of the public finances.

Romania has the most ambitious program for the fiscal correction in EU, as it makes a comparative analysis between the experiences of the EU countries acquired during the last 30 years regarding the large fiscal adjustments (corrections).

Table 2

Large fiscal adjustments in EU – past experiences

Countries	Adjustment (fiscal correction) period	Years	Cyclically adjusted primary budget balance, per year (in % of the GDP)
Denmark	82-86	4	2.5
Greece	89-94	5	2.2
Sweden	93-98	5	1.8
Ireland	85-89	4	1.5
Portugal	86-92	6	1.4
Italy	89-97	8	1.3
Great Britain	93-99	6	1.2
Finland	92-2000	8	1.0
France	93-97	4	0.9
Belgium	81-90	9	0.9
Austria	95-2001	6	0.8
The Netherlands	90-2000	10	0.4

Source: European Commission (AMECO), 2010.

The analysis made for the above table outlines a series of important things. The first one refers to the fact that the fiscal adjustments last for an average period of six years. The second one refers to the fact that the average adjustment speed (taking into account the decrease of the cyclically adjusted primary budget deficit) is 1.3-1.4% of the GDP, which is an annual average.

The third important thing – the successful fiscal adjustments should be made during a period when there are not deep financial crises in the world, in order to be able to use the export engines and the increase of the direct foreign investments in trying to re-launch economy.

Table 3

Large fiscal adjustments in EU – future experiences

Countries	Cyclically adjusted primary budget balance for 2008 (% of the GDP)	Cyclically adjusted budget balance for 2011 (% of the GDP)	Cyclically adjusted primary budget balance, per year (% of the GDP)
Estonia	-3.9	-0.5	1.1
Greece	-5.0	-2.4	0.9
Hungary	-0.9	+1.1	0.7
The Czech Republic	-3.4	-2.6	0.3
Latvia	-5.8	-5.4	0.1
Romania	-7.71 IMF (-7.5 EC)	-1.9 IMF (-4.4 EC)	1.9 IMF forecast (1 EC forecast)

Source: The European Commission, Spring Economic Forecast, 2010. For Romania, the FMI forecast (September 2010) and the EC forecast (April 2010).

The forecasts for the cyclically adjusted primary budget balance for the next years confirm the toughness of Romania's austerity program. From the European Commission's spring economic forecast, we have selected the countries which have a low sustainability of the public finances (a high structural deficit) and which have the experience of the austerity packs. As they do not have sufficient fiscal space, the measures for the economic re-launching are rather pale.

However, it is obvious that two scenarios may happen:

1. The austerity program will be successful. We will have a better position on a medium term from a macroeconomic point of view, only if the program is accompanied by strong measures for increasing the budget revenues and by well elaborated structural reforms.
2. The program will not be successful. The speed of the fiscal correction is too high. The measures are too tough for the Romanian business environment and for the Romanian citizens. The social risk gets deeply increased and we pass from a shock therapy to a gradual one. We extend the fiscal adjustment (consolidation) on a medium term, as we can see from the experience of the last 30 years in EU.

Moreover, the program can provide errors due to the uncertainty existing in the entire world.

What we have to learn from this crisis

There are many lessons that we can be aware of this crisis.

The first is that to have macroeconomic stability must macroeconomic policies – monetary and fiscal – are characterized by prudence, consistency and credibility. Macroeconomic volatility reduction can only be achieved by setting up financial reserves in Treasury and adequacy of international reserves of the central bank at a level above defined thresholds of sustainability .

The second lesson is related to the definition and implementation of monetary policy effective macro-prudential policy.

The third lesson is related to immunization economy so that the negative effects of future crises to be marginal. In addition, we believe in the necessity of applying equitable adjustment program.

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References

- Alesina, A., Carloni, D., Lecce, G., „The electoral consequences of large fiscal adjustments”, www.voxeu.org, 29 May 2010
- Alcidi, Cinzia, Gros, D. (2010). „The European experience with large fiscal adjustments”, VoxEU.org, 28 April
- Alesina, A., Ardagna, S. „Large Changes in Fiscal Policy: Taxes Versus Spending”, forthcoming in *Tax Policy and The Economy*, 2010
- Alesina, A., Carloni, D., Lecce, G. (2010). “The electoral consequences of large fiscal adjustments”, work in progress
- Alesina, A., Perotti, R., Tavares, J., „The Political Economy of Fiscal Adjustments”, *Brookings Papers on Economic Activity*, Spring, 1998
- Blanchard, O., Cottarelli, C., „Ten commandments for fiscal adjustment in advanced economies”, 24 iunie 2010, IMF Direct, www.imf.org

- Blanchard, O., Dell'Ariccia, G., Mauro, P., „Rethinking macroeconomic policy”, *IMF Staff Position Note*, www.imf.org, March 2010
- Fatas, O., „The economics of achieving fiscal sustainability”, April 2010, www.insead.org
- Giavazzi, F., Pagano, M., „Can Severe Fiscal Contractions Be Expansionary? Tales of Two Small European Countries”, *NBER Macroeconomics Annual*, 1990, MIT Press: 95-122.
- Marinaș, M., „Eficiența politicii fiscale în combaterea efectelor crizei economice. O analiză bazată pe literatura economică”, *Economie teoretică și aplicată*, nr. 11/2010 (552), ISSN 1841-8678
- Marinaș, M., „Natura politicii fiscale în zona euro”, *Economie teoretică și aplicată*, nr. 2 / 2008 (519), ISSN 1841-8678

Redefining Economic Policy and Institutional Reform – Support for Economic Growth*

Coralia ANGELESCU

Bucharest Academy of Economic Studies

Coralia.angelescu@economie.ase.ro

Laurențiu DINU

Accreo Romania

laurentiu.dinu@accreo.ro

Abstract. *The paper addresses the effects of economic crisis from the perspective of theoretical developments and how they were reflected in the economy, both nationally and among the actors of the international system. Basic economic paradigms such as the role of price as a mechanism regulating the operation of free markets and the ability to determine prices to reflect economic developments have been tested in various markets. In the context of limited resources available, due to economic contraction it is necessary to redefine accepted social balances.*

The example analyzed in the paper is that of social policies. In times of economic expansion, modification of such arrangements, even if suboptimal, proves to be difficult because it involves implicit costs, less visible. Economic crisis brings out such costs. Changing these social arrangements requires first the solution and coherent regulatory mechanisms and implementation. They depend on the quality of institutions and social coordination system as a whole. If these mechanisms are complex national, at supranational level we can add additional layers of decision, which explains the difficulty of

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coordination. The degree of consistency in decision-making mechanisms and their quality determine the cost of adapting to new conditions imposed by the balance.

Coordination mechanisms, either national or supranational context, are relevant for redefining of a new balance to streamline existing policies (eg social) that reflects the crisis and the creation of new arrangements to accommodate new engines economic growth.

Keywords: sustainable growth; common economic policies; institutional reform; European model of economic growth; economic and financial crisis.

JEL Codes: E61, E65.

REL Codes: 8E, 8I, 8M, 8N, 20F.

Although one of the most studied concepts and mechanisms, the process of economic growth, researchers continue to offer new perspectives and approaches, not just a theoretical approach and practical solutions in the register. Latest economic crisis seems to call into question the fundamental paradigms of economics and the role of price as a mechanism regulating the operation of free market competition and the ability to determine prices to reflect economic developments, and models that seem to reach their limits, too.

An example of this is to support economic growth through domestic consumption, fueled by loans that are used as collateral and the price of certain goods whose price is determined by the development of bubbles (speculative). The debate on the role in the economy, balance between interventionism and liberalization and financial discipline have again become subjects of bargaining at both national and intergovernmental organizations such as the European Union or multilateral agreements such as the G20.

Growth process is relevant not only for governments or the public as a consumer, but also for the way our societies are structured. The results of this process are assumptions for economic policies aimed at defining acceptable equilibria companies. An example of this are fiscal and social policies. The question of redefining these mechanisms in times of economic contraction or even crisis is one of the elements that cannot be addressed by the immediate or rapid recalibration of economic policies. In this context, the economic growth process, the overall performance of economies, is not anymore a component related to the use of different factors of production but is rather influenced by institutions and their functioning.

Administrative mechanisms, social and societal decision-making or social dialogue become factors that influence economic growth not only by their ability to provide new arrangements and to define a new balance but rather by its ability to provide quality solutions on time. In such a context the competitiveness of economies is largely influenced by capacity, quality and functioning of institutions supporting the economy.

One of the fundamental problems with the operation and reform of the institutions is the kind of costs that their sub-optimal operation require. Mainly, these costs are opportunity or implicit costs and not explicit. Therefore it is more difficult to support the need to reform them on one hand and second to give such a topic priority on the public agenda. In addition, the reform involves institutions and mechanisms to ensure all interest groups a transparent access, including those affected by reforms, in various levels of decision-making mechanism.

Relevant examples in this perspective are social security systems reform or the option that the EU preferred to respond to the financial crisis and its

impact on Member States. This issue will be addressed from multiple perspectives throughout the paper. Although the influence of factors such as leadership, structure of the public policy agenda or doctrinal guidelines on the ability of an economy to perform in a crisis situation is not the primary focus of political economy, still this approach may offer clues about the ability institutional mechanisms to perform and influence economic growth.

Similarly, government responses to the common problem of the economic crisis, how to succeed in dealing with public policy recalibration contraction in economic activity and then to the crisis offer clues about the ability of public institutions to address and manage long-term flattening of the economic cycle and the move to an upward trend.

At this moment the most used examples in the debate on crisis management models are: Germany vs. France or Poland as an example of a successful New Member State; the United States of America where the management of structural imbalances offers a unique approach, as well as China as a potential model for emerging economies in the catching-up process. Europe is a unique landscape in the relationship between institutions and economic environment. The uniqueness of the model derives mainly from the complexity and dynamics of different tiers of decision analysis.

In the context of a national state, depending on the model of governance central tiers of the decision must be considered, with specific structural components (sectoral, horizontal and vertical), regional and local implementation decisions having significant impact on economic policy. Therefore, if the first two levels have significant relevance to the analysis and solution formulation then, the regional and local layers influence economic policy implementation.

Depending on government structure, the state organization, the degree of influence of central, regional and local layers differ. The role, effectiveness and influence of the state organization needs careful consideration. In addition to these elements of national states, the complexity of EU decision is supported by the introduction of an extra layer – the supranational level. Coordination at this level, the balance between Community and national level differ significantly from one sector to another.

Thus, in the case of social affairs or taxation or social policy decision-making power of the community level is relatively low, employing soft means of coordination such as the Open Method of Coordination; however in case of competition policy the supranational level has exclusive rights. From a decision-making perspective, the European Union needs supplementary time to react compared to a national actor (be it even federal), due mainly to the higher degrees of freedom provided to national actors. Therefore for Member States of

the European Union, faced with the current economic crisis, the optimal course of action continues to be action at national level.

Though such an option presents optimality characteristics only if the preferences and actions of the member states are either highly correlated or they incorporate a significant degree of coordination. The issue at EU level in structuring its response to the crisis is that, on one hand, it has never managed to coordinate the options and solutions of its actors and, on the other hand the different impact of solutions and the different characteristics of the Member State economies determined different performance at national level. Recent debate insists on a well-known comparison between Germany and the French economy. While Germany has made significant strides not only in terms of capital injection into the economy, having the support of a better position in terms of fiscal space, France preferred not significantly reform the social security system and, therefore, faces, apparently, with an prolonged recession.

In this context, the most important economies in terms of share in the EU GDP are already at different stages of the economic cycle. Therefore, economic policy makers from both countries are faced with different assumptions regarding economic policy formulation. If Germany can now take steps to withdraw fiscal stimulus in the economy, to shift towards limiting fiscal deficits and move towards anti-inflationary policies, France is still in a period in which they should be concerned about the stimulating the economy and the alarming increase of fiscal deficits.

Considering separately these two examples, analyzing them also in the context of the Euro Area, the complexity of the European level decision-making process emerges clearer. This complexity being spurred not only by the different decision-making layers but also the eterogeniety of economic evolution. However, why the focus on the correlation of economic cycles especially in a period of crisis like the present one?!

Motivations, especially the implications of such an approach are of course many, but a good starting point would be very theoretical model that has supported the creation and existence of the euro area – Optimal Currency Area Model⁽¹⁾. Among the key requirements proposed by the author the perfect synchronization of business cycles in the economies of Member States' tax policies and ability to cope with asymmetric shocks⁽²⁾. Two of these conditions are in danger of no longer being observed in the two most important economies in the Eurozone. If we take into account the competitive gap between the economies of Member States within the euro area, one may come to the conclusion that on the medium term and the very existence of the fundamental mechanisms such as the Euro Zone may be under question. From an economic

perspective, the mechanisms of coordination within the EU structure are similar in terms of impact with the functioning of institutions in a Member State.

However, the fundamental problem on reforming these mechanism, on the one hand, is the very decision-making system that requires relatively long periods of negotiation between Member States and secondly that these costs are not explicit, as in the case of national institutions. Crises have the specificity of revealing the costs of sub-optimal operation of such mechanisms precisely because the margin for manoeuvre, including fiscal space is limited, consequently shocks are directly sent to the market. Greece and Romania are eloquent examples in this respect, where the need for last resort intervention mechanisms was felt acutely.

Operation of a supranational framework of heterogeneous economies, with different adjustment speeds, showed the need for adjustment mechanisms, which operate automatically and that respond quickly and coherently. An example is the need for access to emergency funds. In practice, the role they play is that of an insurance policy against the risk of policy skidding.

At this point, the only penalty mechanism against states that do not apply appropriate policies, apart from the pressure of other Member States (*peer mats*), is the cost of access to resources in the financial market. The *European Union has not yet explicitly discussed a mechanism that would pass such costs to the states that consistently run the risk of implementation of sub-optimal economic policies.*

Of course such a reform would be difficult to imagine, especially when the majority of Member States are in breach of the rules of the Stability and Growth Pact. Option to reform the policy framework at the European level may come either from states that are more advanced in reforms implementation (an interesting example being the evolution in the relations between Germany and France) or asymmetric shocks to produce significant impact and thus disturb the normal political cycles. The current economic crisis played the role of an accurate X-ray on the weakness of macroeconomic policy coordination at the global level. Romania is an example that the EU's response was a consistent one, characterized by coordination of international institutions that offered an integrated package of support together with the IMF, World Bank, EBRD and EIB⁽³⁾. The package involves not only financial support but also technical from the World Bank, a functional review exercise, which aims to strengthen institutions in the key areas for economic growth.

Such an approach proves the integrated approach taken by the European Commission to economic growth model analysis, focusing on institutional development, administrative capacity building and economic policy coherence while the IMF offers a financial safety net.

In the specific case of Romania, this approach has worked for several reasons: the structure and scale of the problem played in this case a significant role. Total aid package, although the highest ever accessed by Romania, Euro 22 billion, may be accessed in 2009-2011 period. The situation is quite different when the risk turns systemic and neither national governments nor supranational EU institutions have sufficient means of control to influence the behavior of governments. In the case of Greece and other Member States such as Ireland or Portugal, that is exactly the fundamental problem. In addition, for some economies like Iceland for example, which has showed the potential of systemic contamination, the problem is even more complicated when the EU policy framework does not even play a role in effectively constraining the behavior of these Member States. In fact, just this part of the problem determines the reluctance of private financial institutions to intervene in the case of a Member State in such a situation - the lack of mechanisms to influence national economic policy.

Analyzing the Treaty codified balance for fiscal policy, Member States retain attributes of sovereignty intact, including in the context of the Lisbon Treaty. The solution adopted by Heads of State and Government is an agreement on mechanisms such as the recently adopted European Semester in the new financial supervisory framework⁽⁴⁾, which offers a coordination mechanism in a matter in which EU does not have powers to intervene. However the need for both supervision and coordination is becoming obvious since Member States do not seem to have national mechanism to deal with this issues.

This format aims to implement by using the pressure of both Member States and the Community level the implementation of fiscal-budgetary frameworks that focus on consistent quality of public expenditure and allocation of budgetary resources, respecting the strategic priorities of EU policy. In this sense, the economic policy objectives are set by Europe 2020. Therefore, the view expressed in this area by the Commission and the other Member States remains purely consultative, bearing probably political weight.

This solution, however, present the advantages of maintaining the sovereignty attributes of Member States intact, while giving the Commission the mandate to strengthen fiscal discipline by proposing concrete penalty in areas where there is such jurisdiction – such as the Cohesion Policy. Although not optimal, this solution has the advantage of transforming implicit costs, such as the lack of structural reforms, into explicit ones – the penalty of restriction of access to resources managed by the Cohesion Policy.

The need for coordination of economic policies is not necessarily supported only by the argument of the functioning of the optimal currency area.

Economies of scale are another significant factor that determines the choice of Member States to coordinate economic policy options. From this perspective, coherent functioning of the EU Single Market is essential to support an return to scale. Analyzing the responses of Member States, particularly in the context of economic crisis, it appears that protective reflexes have not yet disappeared from Europe.

Even if one takes of the analysis the question of EU internal market scale and focuses solely on developments in Member States, it becomes obvious that economic recovery and positive signs of growth are more likely to appear in large economies, characterized by fiscal space to stimulate domestic demand through fiscal incentive mechanisms. Examples like Germany and Poland, that have managed better than average economic performance in the process of recovery from economic crisis in the former case, and positive growth in the last two years for Poland.

Policies and institutions are the framework conditions to support economic growth. The challenges currently facing by the global economy are far more complex and consists of a system getting closer to reaching its limits. In this respect the earlier conceptual design becomes even more valid, as it puts at the center of the economic performance the ability of an economy to adopt and implement decisions consistently and in a relevant time frame. One of the fundamental problems of the current growth model is that, from certain perspectives, it is soon to reach its limits, not necessarily potential. Thus the current approach of economists, of optimizing the output within the current technological paradigm, seems to be no longer relevant. The current context puts the world economy in a situation significantly different from previous episodes of economic growth or technological progress that has imposed a paradigm shift in technology, or the discovery of new types of resources significantly increased. This episode is determined in particular by limited hydrocarbon resources, on the one hand, and reaching the limits of ecological sustainability, on the other.

The necessary technological leap requires economic policy measures and a policy framework that provides actors with sufficient assurances on the sustainability of the economic development model proposed so the private environment would contribute to the development and implementation of the new technologies required. In this context, the relevant actors of the international system and the European Union, United States, emerging economies such as BRIC group (Brazil, Russia, India and China) are part of international negotiations in various formats for regulating and determining the level of ambition of global action in climate change. Through Europe 2020, a continuation and development of the Lisbon Strategy, the European Union aims

to define new growth engines. They focus on human capital (knowledge economy), innovation, green economy and information technologies for a sustainable resolution of the economic growth process.

The remarkable trade of this approach is that, on the one hand, the system used instruments and international economic policies to stimulate economic behavior, and, on the other hand, ecological sustainability or quality of life, in various forms, become factors of the economic growth model. Each of the new directions that will define the pillars of economic growth in the next period depends primarily on the quality of support policies for their development.

In this regard the European model of economic development policies that are used legal and economic mechanisms to manage economic motivation seems to be already taken up by other actors in the international system. An example of this is encouraging the development of green technology where the EU is already significant efforts to provide explicit financial support (funds available through European instruments such as FP7) and the default by using the EU's Internal Market.

Such mechanisms, managed transparently, provide socially acceptable chance of achieving a balance between government intervention and distortion of competition within the market. Yet how this balance is defined and how acceptable is the level of Member States or the relationship between the actors of the global system are matters requiring further consideration.

Use of public resources and tools to define new growth engines requires a significant responsibility in terms of opportunity costs and social income maximization. In this time perspective may be a significant factor in the analysis.

Whatever the short and medium term results, it is very difficult to argue, in terms of rationality, against the need to change current production model mainly due to environmental impact. However as the structure evolves from economies characterized by low value added sectors to produce value-added sectors, there seems to be a positive correlation between their flexibility and ability to withstand business cycle fluctuations. An example are the IT services in Romania but also in new Member States which showed positive growth rates during periods of economic contraction.

Conclusions

The current economic crisis played a very precise X-ray role in highlighting the weakness of the global economic system. The kind of considered in this paper are structural and economic policies. From the structural mechanisms perspective, market imbalances artificially maintained,

either through lack of regulation or suboptimal regulatory systems, and competitive imbalances reflected at macro level become elements that require immediate attention in crisis situations.

The economic crisis has demonstrated the need for societal mechanisms to provide coherent solutions to coordinate resource allocation mechanisms to allow recalibration of the economy and adapt to new conditions. One of the essential ingredients of this mechanism is functional independent institutions. Periods of economic growth may hide such imbalances and can perpetuate suboptimal economic policies just because of the resources needed to maintain these arrangements. Examples are social policies which does not reflect the labor market functioning and competitiveness of economic or financial perspective are not sustainable (contributiveness principle).

The quality and capacity of institutions, their social usefulness can be judged by the quality of proposed solutions, tailored to the internal environment. Although there is an option at this point represented by a safety net of international institutions, their role is not to replace national institutions. A significant argument supporting institutional capacity is the speed of recovery from economies that have benefited from strong national institutions, in the context of the economic crisis. This is strongly correlated with the time needed to validate the decision out steps and solutions to codify these rules and ensure the consistent implementation. The last segment of this process is the implementation of new mechanisms that involve institutional reform and adaptation policies.

All these elements are essential parts of the coordination structure of an economy. They are tested in different national perspectives of the international system and various types of actors at national states to supranational structures like the European Union. But we believe that these segments of analysis retains whatever type of player analysis and are useful in defining the performance of any economy.

Notes

- (1) The Economic and Monetary Union is based on the macroeconomic models that got their authors a Nobel Prize. Due to its relevance to the actual design of the European EMU, the theory of Optimal Monetary Zones lead to the 1999 awarding of the Nobel Prize to Robert Mundell.
- (2) According to Mundell, the four conditions that have to be met so that the Optimal Monetary Zones work are: the business cycles are perfectly synchronised, in order for a centralised monetary policy to be managed optimally; Fiscal policies have to handle the

- asymmetric shocks that might occur; Prices and wages are perfectly flexible in OMZ; both labour and goods markets are integrated.
- (3) According to the Government normative act that ratified the Stand-by Agreement between Romania and the IMF, stated in the letter of intention issued by the Romanian authorities and signed on the 24th of April 2009 in Bucharest.
 - (4) At the Autumn Council, in September 2010 in Brussels, the Heads of State and Government of the Member States concluded that a new frame for fiscal supervision at the Union level is necessary. Among the agreed measures there are presenting the annual budget document and multi-annual budgetary frame for analysis to the European institutions. Although the recommendation is only consultative, it can be accompanied by punitive measures through accessing the structural funds in case the financial programming does not comply with the stability and growth pact and/or the qualitative criteria regarding public allowances are not met.

References

- Baldwin, R., Venables, T. (1995). *Regional Economic Integration*, in Handbook of International Economics, edited by Grossman and Rogoff, Vol. 3, New York
- Baldwin, R., Martin, P., „Two Waves of Globalisation: Superficial Similarities, Fundamental Differences”, *NBER Working Paper*, No. 6904, 1999, Cambridge (Mass.)
- Baldwin, R., Francois, J., Portes, R. (1997). *The costs and benefits of eastern enlargement: the impact on the EU and central Europe*, Centre for Economic Policy Research
- Baldwin, R., „Openness and Growth: What’s the Empirical Relationship?”, *NBER Working Paper*, No. 9578, 2003, Cambridge
- Barry, F. (2004). *Economic Policy, Income Convergence and Structural Change in the EU Periphery*, in Kierzkowski, H. (2004). *Europe and Globalization*
- Becker, G. (1975). *Human Capital: A Theoretical and Empirical Analysis*, 2nd ed., NBER, New York
- Bhagwati, J.N. (2004). *In Defense of Globalization. Its Evolution and Contemporary Consequences*, New York
- Bhagwati, J.N., Panagariya, A., Srinivasan, T.N., „The Muddles over Outsourcing”, *Journal of Economic Perspectives*, Vol. 18, No. 4, Fall 2004
- Bhorat, H., Lundall, P., „Employment and labor market effects of globalization: Selected issues for policy management”, *ILO Employment Strategy Papers*, 2004, ILO, Geneva
- Blanchard, O., „The Economic Future of Europe”, *NBER Working Paper*, 2004
- Dăianu, D., Vrânceanu, R. (2002). *România și Uniunea Europeană*, Polirom
- Dicken, P. (2003). *Global Shift, Reshaping the Global Economic Map in the 21st Century*, London
- George, S., Bache, I. (2001). *Politics in the European Union*, Oxford University Press
- Held, D., McGrew, A.G., Goldblatt, D., Perraton, J. (1999). *Global Transformations: Politics, Economics and Culture*, Stanford
- Hutton, W., Giddens, A. eds. (2000). *On the Edge: Living with Global Capitalism*, London
- James, H. (1996). *International Monetary Cooperation since Bretton Woods*, Oxford

- Krueger, A., Lindahl, M. (2000). *Education for Growth: Why and for Whom?*, NBER, Cambridge (Mass.)
- Krugman, P., Obstfeld, M. (2003). *International Economics: Theory and Policy*, New York
- Lynch, Black, „Human Capital Investment and Productivity”, *American Economic Review*, 86.2, 1996
- Maddison, A. (1982). *Phases of Capitalist Development*, Oxford
- Maddison, A (2001). *The World Economy: a Millennial Perspective*, OECD, Paris
- Dinu, M., Socol, C., Marinaș, M. (2007). *Modelul european de integrare*, Editura Economică, București
- Dinu, M., Socol, C., Niculescu, Aura (2006). *Economia României. O viziune asupra tranziției postcomuniste*, Editura Economică, București
- Dinu, M., Socol, C., Niculescu, Aura (2006). *Fundamentarea și coordonarea politicilor economice în Uniunea Europeană*, Editura Economică, București
- Dinu, M., Socol, C., Marinaș, M. (2005). *Mecanismele de convergență și coeziune*, Editura Economică, București
- Messerlin, P.A. (2001). *The real cost of European protectionism*, Institut d’Etudes Politiques de Paris and Group d’Economie Mondiale de Sciences Politique
- Messerlin, P.A. (2001). *Measuring the Costs of Protection in Europe: European Commercial Policy in the 2000s*, Institute of International Economics, Washington. D.C.
- O’Mahony, M., van Ark, B. (2003). *EU Productivity and Competitiveness: An Industry Perspective – Can Europe resume the catching up process*, European Commission
- Pușcaș, V. (2003). *Negociind cu UE*, Volumele 1-4, Editura Eikon, Cluj-Napoca
- Sapir, A. et al. (2003). *An Agenda for a Growing Europe: The Sapir Report*, Oxford,
- Stiglitz, J. (2002). *Globalisation and its Discontents*, London, 2002

Reputation and Market Wage as Contract Enforcement Device: An Experimental Evidence

Kean Siang, CH'NG
University Sains, Malaysia
cks@usm.my

Abstract. *Shirking opportunity has always been present in an incomplete economic exchange in a labor-employer relation. Due to unverifiability of a contract, economic agents resort to reciprocal norm to enhance the co-operation and efficiency of the relation. We experimentally show the reciprocal incentives can improve the relation by increasing the number of co-operations. In total we conducted four experimental treatments, each treatment being distinguished by its type of information available to the workers and the type of interaction. We observe repetitive interaction and information about market wage enhance the reciprocal inclinations and co-operative behaviors of the workers. In our opinion repetitive interaction effect play a “punishment” role on the non-reciprocal workers and therefore force them to conform to the norm, and workers form the perception of fairness better when the information about market wage is available. We find that degree of conformation is higher when the information is available than the treatment when the information is not available. We conclude that the effectiveness of reciprocity as contract enforcement device can be improved if the workers can form perception of fairness based on relative wage.*

Keywords: incomplete contract; reciprocal behavior; repeated game effect; wage differential; co-operation.

JEL Codes: D03, C91, D81.

REL Codes: 7F, 12F.

1 Introduction

Economic exchange is often marred by incompleteness especially when a decision made by one part is unverifiable by a third part. The problem may be caused by asymmetric information, indescribability and cost of description, bounded rationality or other causes, which renders an outcome unobservable to a third part. The discretion over the decision on effort level rests on worker in a typical worker-employer relationship. Effort will not exceed enforceable effort level if extra effort entails cost. Therefore, if co-operation can help to increase the joint profit of employer and worker, then the existing relation is not efficient. This paper intends to analyze how effect of repetition and relative wage can encourage reciprocal norms to overcome this inefficiency.

Evidence for the existence of reciprocal norm in the relation can be traced to behavioral pattern of workers who reciprocate with lower productivity and morale after wage reduction (Blinder and Choi, 1990), workers also reciprocate high wage with high effort level (Gächter, Falk, 2002, Fehr, Schmidt, 1999, Fehr et al., 1997) and in consumer market where the intention and willingness of buyers to offer higher price is reciprocated with higher quality of a good from the sellers (Fehr et al., 1993, Simon, Fehr, 2000). Other controlled experimental studies have also shown the evidence of reciprocal behaviors as the source of co-operation. In an experimental public good market study by Sonnemans, Schram and Offerman (1999), players reciprocate other's contribution i.e., the contribution is conditional on others' contribution to a similar good.

In these analysis, reciprocal norm is derived from the reactions of agent to the offer made by the principal. If the offer is perceived as fair, the agent will reciprocate positively. In this relation, workers do not have information about the earnings of other co-workers. Therefore, the behavioral pattern is caused by vertical fairness. But in reality, agents are always exposed to information about earnings of other workers and this provides opportunity for them to compare with their own wage. Admittedly, although the market wage is not the perfect barometer to gauge fairness, it provides a guide or benchmark to workers to compare their own wage.

Past literature on the role of relative wage on effort has been inconclusive and mixed. Clark, Masclet and Villeval (2007) found that the ranking of wage rather than market wage is strong determinant of effort level. Charness and Peter (2007) found the effect to be mixed. A more comprehensive research on the role of relative wage is done by Gächter et al. (2002), in which the analysis of the effect of relative wage on effort level is aided by the assumption that market effort is observable. If effort exerted is higher than market effort, worker perceives negative wage differential as unfair. However, in reality, workers

seldom observe the ranking and market effort, the perception of fairness depending on the benchmark wage derived either from previous wage offered or wages offered to co-workers.

In this paper, we study the role of repetitive interaction effect on effort level. We replicate the experimental design from Gächter and Falk (2002) to investigate the effect. The interaction of worker and employer is framed as “gift exchange”. The first treatment is a one shot game in which players interact with another players only once. The second treatment is repetitive game in which the interaction is repetitive throughout the experiment. Therefore the comparison of results between these two treatments highlight the repetition effect.

In both one shot and repeated games, players do not know the wages given to their co-workers. The effect of relative wage on effort level is investigated in the third treatment in which workers are exposed to information about wages to co-workers. There are two types of information available to the workers; when the information is limited only to the difference of own wage to market wage (EAWRG) and when the exact amount of the market wage is known by the workers (AWRG). In the former case, the workers have no idea of exactly how much difference of own wage and market wage as the exact amount is not given; in the latter case the information of the exact amount of market wage is given and the workers have to calculate the difference based on the information. This enables us to distinguish the role of information. The role of wage differential is then compared with the result in repeated game treatment above.

The results reveal reciprocal norm incentives encouraging co-operation in both one shot and repeated games. At the aggregate level, we observe positive and significant relationship between wage and effort in both treatments. However, the relationship is stronger in repeated game treatment. This explains the significance of the role of previous wage on the perception of fairness and the formation of reciprocal behavior. At the individual level, this behavior is proven by the presence of high wage/high effort strategy. Although the number of genuine reciprocator remains intact from one shot to repeated game treatment, number of imitative reciprocator increases when they play high wage/high effort strategy. This suggests that the repetition encourages more reciprocation.

When we control the repetition effect and allow players to have information about wage differential, the reciprocal behavioral pattern becomes more enhanced. The wage differential and effort relation is steeper when players know the wage differential. When we compare the results of the two types of information, i.e., EAWRG and AWRG, players who do not know the exact amount of market wage reciprocate more than when workers know the exact amount of market wage. In fact, the effect of wage differential is steeper in EAWRG than in AWRG treatment. This may be due to the nature of the

information provided to the players; workers in EAWRG are informed explicitly of the wage differential, whereas players in AWRG have to calculate to find out how much the difference of own and market wage.

2. Experimental design and procedures

In the first session with OS and RG treatments, the design of the game is “gift exchange game” duplicated from Gächter and Falk (2002). It is a typical sequential game with employer moving first to offer a wage level to a worker. In second stage, the worker can decide when to accept or reject the offer. If it is rejected, both players earn zero profit for the round. In total there were 10 rounds of interaction. If the worker accepts the offer, he has to decide on how much to work for the employer.

In the experiment, both players know the profit function of other player. The profit function of the employer is determined by,

$$\pi = (v - w)e \quad (1)$$

where v refers to some exogenously given value, w is wage offered to a worker and e is effort level exerted by the worker.

A worker's payoff is the difference between the wage (w) and the incurred effort costs $C(e)$, minus the fixed travel cost of 20 experimental money:

$$U = w - C(e) - 20 \quad (2)$$

In the experiment, we set $v = 120$, and wage offer has to be integer number from 20 to 120 experimental money. The effort level and the associated costs are exhibited as in table 1.

Table 1

Effort levels and the associated effort costs										
Effort	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
$C(e)$	0	1	2	4	6	8	10	12	15	18

The subjects were randomly assigned to the role of “firm” and “worker”. After the role was determined, they were separated into two different rooms. The “workers” and the “firms” were then given about seven minutes to read the instructions, which included a set of questions to calculate the payoff of both worker and firm. The experiment would not start until all the questions were answered correctly and all the concerns were attended to. The experimenter then presented the slides in “Power-Point” to explain to the subjects about the

experiment. Payoff functions of “firm” and “worker” were public knowledge and similar to all the subjects. These were explained and emphasized to the subjects. The experiment was conducted in an economic experimental lab in School of Social Sciences, University Sains Malaysia. The experiment was programmed and conducted with the software z-Tree (Fischbacher, 2007).

Follow the *standard prediction* of selfishness and rationality, firm will offer wage level at $w = 21$ and effort level $e = 0.1$. Since worker is the second mover and higher effort level involves cost, the worker will exert the effort level not more than 0.1. Therefore, the best response of a firm is to offer a wage at the minimum level. Thus, $w = 21$ and $e = 0.1$ (i.e. w^* and e^*) are strict subgame equilibrium and they are our reference outcomes.

In the treatments EAWRG and AWRG games, players were informed of the information about market wage. In the EAWRG treatment, players are told of the information about the difference of own wage from market wage but not the exact amount. During the experiment, the players are given three types of information related to own wage compared to market wage; 1) The wage offered is equal or close to the average wage accepted by all the workers, 2) The wage offered is above the average wage and 3) The wage offered is below the average wage. The average wage is defined as total wages *accepted* by the workers divided by number of workers who have accepted the offer in the immediate previous period. Type 1 information is relayed when the wage offered is within 5% difference from the market wage. Information type 2 is relayed when own wage is 5% above and type 3 is when own wage is 5% below the average wage. On the contrary, in AWRG treatment players know the exact amount of the market wage but to know the difference, workers have to calculate the difference of own wage and market wage themselves.

In total there were 144 undergraduates participated in the experiment. Gift Exchange One Shot (OS), Repeated Game treatment (RG) with 42 and 48 subjects respectively, the second session with Extended Average wage Repeated Game (EAWRG) with limited information about each period's market average wage with 32 subjects and Average Wage Repeated Game (AWRG) with perfect market wage information with 22 subjects. The subjects were students recruited from different faculties from University Sains Malaysia (USM). The students never participated in a similar experiment before.

3. Results

We will start the analysis with gift exchange game, both OS and RG treatments. The findings will be compared to the results in Gächter and Falk (2002). The analysis focuses on the effect of repetition on reciprocal behavior

among workers. We then proceed to the analysis on the role of market wage, we make the comparison when the information is not available in RG, when the information is limited in EAWRG and when the information is perfect in AWRG.

One Shot (OS) and Repeated Game (RG) treatment

Aggregate -level Observations

OS treatment. Figure 1 shows the evolution of average wages and effort levels from period 1 to period 10 in the OS treatment. From the figure, both the average wage and effort are above the Subgame Perfect Equilibrium level, which are $e^* = 0.1$ and $w^* = 21$. The deviation of both wage and effort are persistent across all periods. The result is consistent with the result in Gächter and Falk (2002). Reciprocation by the workers on higher wage enables higher profit level than that at subgame level. At the subgame level, the profit for a firm is $(120 - 21) \times 0.1 = 9.9$, but the actual profit is $(120 - 62) \times 0.3 = 17.4$ (where 62 is the average wage offered and 0.3 average effort exerted by worker). Whereas at the subgame level, profit for a worker is $21 - 20 = 1$, but the actual profit is $62 - 2 - 20 = 40$. On average, workers earn more than firms.

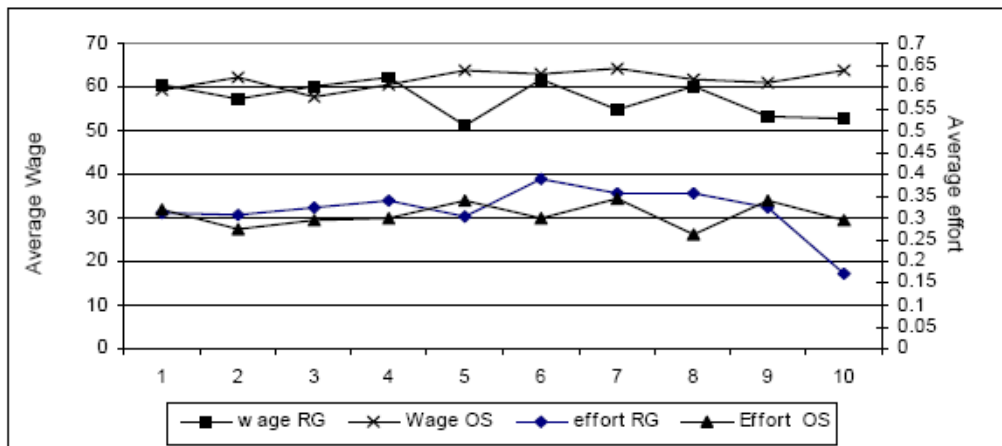


Figure 1. The evolution of average wage and effort in OS and RG treatments

On average, workers reciprocate higher wage level with higher effort. Table 2 shows the result of OLS regression with effort as dependent and wage as independent variable. In the regression, we control for the individual workers' fixed effects⁽¹⁾. The wage coefficient in the OS treatment is 0.0060 and statistically significance below 1% level. The positive relation between wage and effort shows workers play reciprocal norm to return high wage with

high effort level. The F-statistics indicates that the fixed effects are significantly more than zero. The period dummies are not jointly statistically significant since it is a one-shot treatment.

Table 2

The wage-effort relation (OLS regression with workers' fixed effect)		
Dependent Variable: Effort		
Independent variables	OS Treatment	RG Treatment
Constant	-0.2442(0.0742)	0.0876(0.0422)
Wage	0.0048*** (0.0005)	0.0060*** (0.0008)
Period Dummies	Jointly insignificant	Jointly significant
Worker fixed effects	Jointly significant	Jointly significant
	$N = 210; F\text{-Test} = 11.15$ $p = 0.0000$	$N = 240; F\text{-test} = 11.45$ $p = 0.0000$

Note: Number in the parentheses are standard errors.

*** indicates significance at 1% level.

RG treatment. From Figure 1, efforts and wages in the RG treatment are also higher than that at the subgame level. Wages offered in the two treatments are rather similar, with average wage 57.42 units in RG treatment and 61.79 units in OS treatment. The common history of a firm-worker relationship plays a role as “punishment” if a player did not play reciprocal norm. Therefore, effort level is enhanced in the RG treatment compared to OS treatment, average effort in RG is 0.32 and OS is 0.3. There is a sharp drop of effort in the last period in RG treatment, average effort level in period 10 is lower than in period 9 ($p=0.0003$) but the wage level in period 10 is not statistically different from the previous period ($p=0.8517$). The drop of effort level at period 10 in RG treatment does not result in effort level equals to e^* ($p=0.0189$). The effort level in RG treatment in period 10 is lower than the effort level in OS treatment in the same period ($p=0.0784$).

Overall, the results supports the hypothesis that repeated interaction strengthens reciprocal co-operation. Table 2 reports comparison of the wage-effort relationship of 0.0060, which is clearly higher than the same coefficient in the OS treatment which reports the value of 0.0048⁽²⁾.

Analysis of individual behavior

OS treatment. Reciprocal behavior analysis on an individual behavior corresponds to the hypothesis⁽³⁾:

Reciprocity criterion 1 (“Reciprocity (OS)”). A person is classified as reciprocal type if the Spearman Rank Correlation Co-efficient between wage

and effort is positive and significant at 1% level. The correlation coefficient is written as $\text{Corr}(w,e)$ throughout the paper.

Selfish criterion 1 ("Egoism (OS)"). A selfish type worker plays e^* more than 5 times irrespective of the wage offered to him.

Table 3 reports the results of individual workers' behaviors in the OS treatment. According to the reciprocity criterion 1, about 19% of the workers behave reciprocally, whereas 26% of the workers behave egoistically according to the selfish criterion 1. One subject plays e^* 10 times.

Table 3

Summary of worker behavior in the One shot treatment

Worker no	No of $e=0.1$	$\text{Corr}(w,e)$	Worker no	No of $e=0.1$	$\text{Corr}(w,e)$
1 (e)	7	0.3043(0.3926)	12	0	0.6387(0.0469)
2 (e)	7	0.6162(0.0578)	13	4	0.3839(0.2734)
3 (e)	6	-0.5718(0.0871)	14	2	0.5130(0.1294)
4 (r)	1	0.7167*** (0.0197)	15	4	0.2825(0.4291)
5 (r)	0	0.9475*** (0.0000)	16	3	(0.1022)(0.7787)
6 (e)	7	0.4999(0.1412)	17	3	0.6031(0.0649)
7 (e)	10	0	18(e)	6	0.4021(0.2490)
8	0	0.6616(0.0372)	19	3	0.5375(0.1091)
9 (r)	0	0.9784*** (0.0000)	20	5	0.1566(0.6656)
10(r)	2	0.9781*** (0.0000)	21	2	0.4685(0.1720)
11	1	0.7060(0.0225)			

Notes:

-(r) indicates reciprocal type according to the "Reciprocity OS", (e) indicates egoistical type according to "egoism OS".

-No of $e=0.1$ includes all effort levels of 0.1 and the number of rejection decision if the wage offered was 20.

- $\text{Corr}(w,e)$ indicates Spearman rank correlation coefficients between wage and effort. *** indicates 1 percent s.l level. Rejection is included in the calculation as $e=0$. *p-value* are in the parentheses.

RG treatment. In the OS treatment, the worker met the same employer only once. If extra effort exerted by a worker incurs cost, there is no strategic reason for the worker to reciprocate high wage with high effort level. The reciprocal behaviors observed among the workers in the OS treatment, therefore are genuine reciprocators. However, in the RG treatment, workers can behave reciprocally due to strategic reason and will shirk when the opportunity to shirk arises as in the last period of the interaction, or they simply reciprocate high wage with high effort genuinely. The former category is not the genuine type reciprocator.

The criteria to distinguish between genuine and imitative reciprocator in the RG treatment are:

Reciprocity Criteria 2 ("Reciprocity (RG)"). A worker is considered to be reciprocal type if the Spearman rank correlation between wage and effort is positive and statistically significant at 1% level and if the effort level is not e^* at period 10.

Selfish Criteria 2 (“Imitation”). A worker is considered to be imitator if the Spearman rank correlation between wage and effort is positive and statistically significant at 1% level and the effort level is e^* at period 10.

Note that reciprocity criteria 2 and selfish criteria 2 enable to distinguish the genuine reciprocator from the imitative reciprocator.

Selfish Criteria 3 (“Egoism (RG)”). The criteria includes players who do not play reciprocal norm and do not imitate reciprocity. The Spearman rank correlation between wage and effort is insignificant at 1% level and effort is e^* at period 10.

We document the behavioral types in Table 4. From the table, there are 17% reciprocal type based on reciprocity RG and 19% imitator type according to imitation. Table 5 summarizes the total change in the number of types of players from OS to RG treatment.

Table 4

Summary of worker behavior in the Repeated game treatment

Worker no	No of $e=0.1$	e in $t=10$	Corr(w,e)	No of m	Worker no	No of $e=0.1$	e in $t=10$	Corr(w,e)	No of m
1(e)	4	0.1	0.5032	4	(13)	3	rej(25)	0.8667***	2
2(e)	2	0.1	0.4710	5	14(e,k)	1	0.1	0.7145**	8
3(m)	0	0.4	0.6618**	7	(15)	0	rej(80)	(0.0728)	4
4(m)	1	0.4	0.7015**	6	16(i,k)	2	0.1	0.8361***	7
5(r,m)	3	0.2	0.9846***	8	17(e,k)	1	0.1	0.6977**	5
6(m)	0	0.4	0.6775**	5	18(e)	10	0.1	0	0
7(e)	9	0.1	0.5254	2	19(e,k)	5	0.1	0.5545	5
8(r,m)	0	0.4	0.7702***	5	20(i,k)	4	0.1	0.9343***	7
9(r)	0	0.6	0.8742***	4	21(i)	6	0.1	0.7817***	1
10(k)	4	0.1	0.9155***	7	22(i,k)	1	0.1	0.9162***	5
11(e,k)	2	0.1	0.6025	6	(23)	7	rej(25)	0.6892**	4
12(r,m)	0	0.3	0.9847***	8	24(e)	8	0.1	0.6757**	3

Notes:

-(r) indicates reciprocal type according to the “Reciprocity RG”, (e) indicates egoistical type according to “egoism RG”, (i) indicates an egoistical type according to “Imitation”, (m) indicates criteria “measure for measure”, (k) indicates “imitate measure for measure” type.

-No of $e=0.1$ includes all effort levels of 0.1 and the number of rejection decision if the wage offered was 20.

-Corr(w,e) indicates Spearman rank correlation coefficients between wage and effort. *** indicates 1 percent s.l level, ** indicates 5 percent s.l level.

-If the wage was rejected in the final period, it is indicated as “rej” in the “ e in $t=10$ ” column, and the wage rejected are in the parentheses. Workers 13, 15 and 23 are excluded from the analysis.

Table 5

Share of reciprocal and selfish type from OS to RG treatment

Share of reciprocal type in percent		Share of selfish type in percent		
Reciprocity (OS)	Reciprocity (RG)	Egoism (OS)	Egoism (RG)	Imitation
19	17	26	38	19

Note:

-According to the criteria, the average income earned by: Reciprocity OS is 17.3, Reciprocity RG (29.12), Egoism OS (37.61), Egoism RG (34.68) and Imitation (33.63).

-The calculation of average income excludes rejection.

Robustness

To check the consistency of reciprocal norm, we perform robustness test on the relation between change of effort in response to the change in wage. Two equations are used to perform the task; $\Delta e = e_t - e_{t-1}$ and $\Delta w = w_t - w_{t-1}$. Reciprocal norm is established if the two signs, Δe and Δw are same. Thus the criteria:

Reciprocity Criteria 3 ("Measure for measure"). A player is qualified to be a reciprocator based on "Measure for measure" when the signs of Δw and Δe are same more than 5 times (i.e. no of $m \geq 5$) and effort level is strictly larger than e^* at period 10.

Selfish Criteria 4 ("Imitate Measure for measure"). An imitator of measure for measure when a subject plays $m \geq 5$ times and effort level is equal to e^* at period 10.

Table 4 reports the number of players who played measure for measure according to the reciprocity criteria 3 under the column "number of m". There are 28.5% of the subjects who played according to the criteria, and the criteria explains 83% of the reciprocity RG. Therefore, the determination according to reciprocity RG is robust.

The repeated game with market average wage: Repeated Game (RG), Extended Average Wage (EAWRG) and Average Wage (AWRG)

Aggregate level analysis.

Figure 2 shows the change of average wage and average effort for the three treatments throughout the interactions. Overall, the wages and effort levels exerted by the players exceed Subgame perfect level. Average wage (effort) in RG is 57.42 (0.32) units, EAWRG is 64 (0.51) units and in AWRG is 66 (0.48) units. The joint profit (worker profit + firm profit) in RG is $35.41 + 18.774 = 54.184$, EAWRG is $37.6 + 28.2 = 65.8$ and AWRG is $40.3 + 26.85 = 67.15$. Efficiency is increased when the players are revealed to the information about market wage.

To distinguish the cause of reciprocity and to ensure comparability with the analysis above, we run the OLS regression including both own wage and market wage. Table 6 reports the results of the regression.

From the table, wage plays a significant role in determining the effort level when the market wage information is not available to the workers in RG treatment. However, on average, workers reciprocate more to wage differential when the information starts to be available than to wage alone. The coefficient of rent is 0.0071 and is highly statistically significant ($p < 0.0001$) in

comparison with the coefficient of wage in EAWRG. But when the workers need to calculate the wage differential themselves, the effect of wage becomes more important than the information about wage differential. The role of information can be seen from the coefficients of rent in EAWRG, which is 0.0071 but drops to -0.0006 in AWRG treatment when the wage coefficient increases from 0.0014 (EAWRG) to 0.0106 (AWRG).

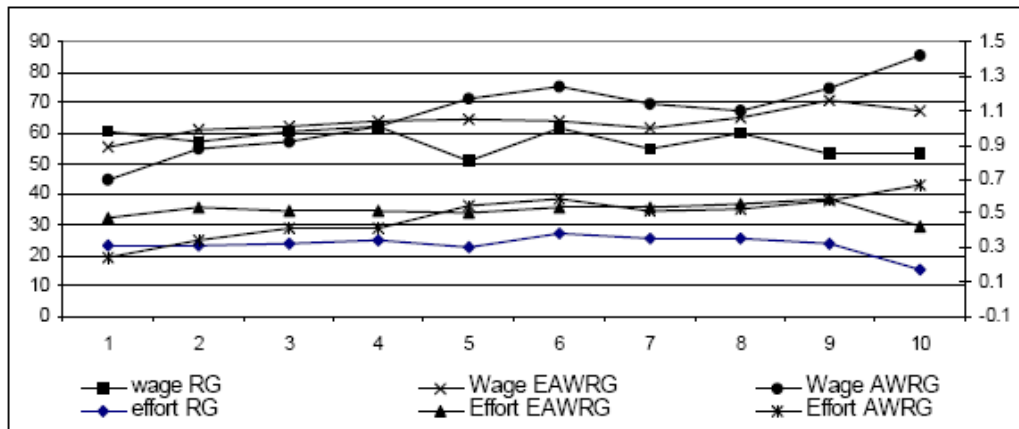


Figure 2. The Evolution of Average wage and Average Effort in the three treatments, RG, EAWRG and AWRG.

Table 6

The relative wage-effort relation (OLS regression with workers' fixed effect)

Independent variables	Dependent Variable: Effort		
	RG Treatment	EAWRG Treatment	AWRG Treatment
Constant	0.0876(0.0422)	0.2928(0.1291)	-0.2170(0.1158)
Wage	0.0060*** (0.0008)	0.0014(0.0017)	0.0106*** (0.0017)
rent	-	0.0071*** (0.0017)	-0.0006(0.0020)
Period Dummies	Jointly significant	Jointly significant	Jointly significant
Worker fixed effects	Jointly significant	Jointly significant	Jointly significant
	$N = 240; F\text{-Test} = 11.45$ $p = 0.0000$	$N = 144; F\text{-test} = 8.81$ $p = 0.0000$	$N = 99; F\text{-test} = 13.91$ $p = 0.0000$

Note:

-Number in the parentheses are standard errors.

-*** indicates significance at 1% level.

-During the experiment, subjects compare own wage (w_t) with the market wage (average wage accepted by the workers) which is given only one period later. Therefore, rent is defined as $wage_t - AverageWage_{t-1}$

Analysis of individual behavior

We need to determine whether the findings in the aggregate level corresponds to the results at individual level. If workers reciprocate to the rents, the relation between rent and effort should be positive and significant. Thus, the similar criteria used to classify the reciprocal types in the preceding section can be used to classify the reciprocators but with some added conditions.

Since we are interested in the role of the information on effort, we hypothesize that a reciprocator responds to positive rent with high effort and negative rent with low effort. Thus criteria 2 (Reciprocity (RG)) becomes:

Reciprocity criteria 4 ("Reciprocity (RG market wage)"). This criteria includes reciprocators who play high effort when rent is positive and low effort when rent is negative. Spearman correlation between rent and effort is positive and statistically significant at 1 percent level and effort level is more than e^* at period 10.

Similar to the analysis in the preceding section, there are players who reciprocate initially for positive rent but shirk when opportunity for positive rent diminishes in the last period of the interaction. We classify these players as imitators.

Selfish criteria 5 ("Imitation"). This criteria includes players whose positive Spearman rank correlation coefficient between rent and effort is statistically significant at 1% level but shirk in the last period with effort equals to e^* .

Lastly, we are left with players who never reciprocate to rent offered by firms. Instead, this group of players choose e^* in the last period and the relation between rent and effort is not significant.

Selfish criteria 6 ("Egoism market wage"). A player is included in this category if Spearman rank correlation between rent and effort is not significant at 1% level and shirks by playing e^* in period 10.

Reciprocity criteria 5 ("Measure for Measure" based on average wage). This criteria classifies players who play measure for measure with indicator $r \geq 5$ times and effort at period 10 is larger than e^* .

Table 7 documents all the types of players. Treatment RG follows the classification defined in the preceding section, treatment EAWRG and AWRG follow the definition in reciprocity criteria 4 and 5, and selfish criteria 5 and 6. Table 8 summarizes the change of workers' behavior from RG treatment to EAWRG and AWRG treatments when the information about average wage is introduced.

The results show that reciprocity is the dominant behavioral strategy in the experiment. Particularly, the behavioral pattern is enhanced from RG to EAWRG and AWRG treatments when the players know and can compare own wage to market wage. Secondly, when workers can form perception of fairness

more objectively based on market wage, they are more co-operative. From Table 7, both reciprocal type and “measure for measure” type share 67% of the same trait. Thirdly, market wage may serve as a signal of firms’ intention to the workers. If the offered wage is positively differed from previous market wage ($w_t - \text{averagewage}_{t-1} > 0$), it can be interpreted as generosity of firm or its intention to co-operate with the workers. The presence of this information to both worker and firm provides mechanism to judge fairness and adjust offer accordingly.

4. Conclusion

The presence of positive relation between effort and wage in our experimental study highlights the importance of reputation (repeated game effect) and reciprocal behavior in increasing the degree of co-operation between worker and employer. The effect of wage is relatively stronger in RG treatment than in the OS treatment, and the effort in the RG treatment is also higher than in OS treatment. The degree of co-operation, high wage is reciprocated with high effort, is more pervasive among players in RG treatment than workers in OS treatment. Our results correspond very much to the findings in Gächter and Falk (2002) but with weaker co-operation among players. Although Malaysian subjects play reciprocity as we observe many genuine reciprocators in both OS and RG treatment, the number of co-operation is lesser in our analysis than in the paper.

We also find players become more co-operative when they can evaluate fairness by comparing own wage with market wage. The inclination to cooperate increases significantly when players know how much their co-workers earn and the difference of own wage and market wage. However, workers are more co-operative when they are told *explicitly* about the wage differential than when they have to calculate the wage differential themselves. In the two treatments with relative wage effect, workers in EAWRG treatment is more responsive to wage differential when they are told of the wage differential. But workers in AWRG are less responsive and many turn to own wage as guide to decide on effort level.

Our results are very much relevant to the view that the combination of own pecuniary payoff and the relative payoff motivate people (Bolton, Ockenfels, 2000). In the paper, the authors argue that “... along with pecuniary payoff, the relative payoff - a measure of how a person’s pecuniary payoff compares to that of others - motivates people”. The presence of reciprocal behaviors due to reputation and wage differential in our paper supports this argument.

Summary of worker behaviors in the repeated game treatments

Repeated Game (RG)				EAWRG				AWRG						
Worker no	No of e=0.1	e in t=10	Corr(w,e)	No of m	Worker no	No of e=0.1	e in t=10	Corr(r,e)	No of r	Worker no	No of e=0.1	e in t=10	Corr(r,e)	No of r
1(e)	4	0.1	0.5032	4	1(r,h)	0	0.2	0.7818*** (0.0128)	5	1(r,h)	1	0.8	0.8152*** (0.0074)	6
2(e)	2	0.1	0.4710	5	2	0	0.6	0.4658 (0.2063)	2	2	2	0.2	0.3782 (0.3156)	4
3(m)	0	0.4	0.6618**	7	3(r,h)	0	0.9	0.8335*** (0.0050)	6	3	3	0.3	0.6325 (0.0675)	3
4(m)	1	0.4	0.7015**	6	4(h)	0	0.7	0.6836** (0.0423)	6	4(r,h)	0	0.7	0.7591*** (0.0177)	6
5(r,m)	3	0.2	0.9846***	8	5(r)	0	0.5	0.8416*** (0.0044)	1	5(h)	0	1	-0.5791 (0.1023)	5
6(m)	0	0.4	0.6775**	5	6	0	0.7	0.0275 (0.9440)	2	6(r,h)	1	1	0.8536*** (0.0034)	7
7(e)	9	0.1	0.5254	2	7(e)	1	0.1	0.5130 (0.1579)	5	7	0	0.8	0.3286 (0.3879)	2
8(r,m)	0	0.4	0.7702***	5	8(e)	1	0.1	0.7120** (0.0314)	6	8	0	0.5	0.2291 (0.5532)	3
9(r)	0	0.6	0.8742***	4	9(e)	1	0.1	0.7143** (0.0306)	6	9	0	0.4	0.6295 (0.0693)	4
10(k)	4	0.1	0.9155***	7	10(r)	0	0.9	0.9048*** (0.0008)	3	10(r,h)	0	0.7	0.8645*** (0.0026)	7
11(e,k)	2	0.1	0.6025	6	11(e)	1	0.1	0.7432*** (0.0217)	6	11(h)	2	0.9	0.5255 (0.1462)	7
12(r,m)	0	0.3	0.9847***	8	12(r,h)	0	1	0.8598*** (0.0030)	6					
13	3	rej(25)	0.8667***	2	13	1	0.1	0.3760 (0.3186)	5					
14(e,k)	1	0.1	0.7145**	8	14(r)	1	0.5	0.7985*** (0.0099)	2					
15	0	rej(80)	(0.0728)	4	15(e)	5	0.1	0	0					
16(i,k)	2	0.1	0.8361***	7	16(e)	1	0.1	0.5321 (0.1408)	3					
17(e,k)	1	0.1	0.6977**	5										
18(e)	10	0.1	0	0										
19(e,k)	5	0.1	0.5545	5										
20(i,k)	4	0.1	0.9343***	7										
21(i)	6	0.1	0.7817***	1										
22(i,k)	1	0.1	0.9162***	5										
23	7	rej(25)	0.6892**	4										
24(e)	8	0.1	0.6757**	3										

Notes:

-(r) indicates reciprocal type according to the "Reciprocity criteria 2(RG)", (e) indicates egoistical type according to "selfish criteria 3(RG), (i) indicates an egoistical type according to "Imitation" or selfish criteria 4, (m) indicates "measure for measure" reciprocity criteria 3, (k) corresponds to selfish criteria 4.

-In treatments EAWRG and AWRG, (r) indicates reciprocity criteria 4, (e) indicates selfish criteria 6, and (h) measures the number of "measure for measure" according to reciprocity criteria 5. -No of e=0.1 includes all effort levels of 0.1 and the number of rejection decision if the wage offered was 20.

-Corr(r,e) indicates Spearman rank correlation coefficients between rent and effort. *** indicates 1 percent s.l level, ** indicates 5 percent s.l level.

-If the wage was rejected in the final period, it is indicated as "rej" in the "e in t=10" column, and the wage rejected are in the parentheses. Players 13, 15 and 23 are excluded from the analysis.

-The market wage includes only wages *accepted* by the workers.

-No of r indicates the "measure for measure" strategy with Δr and Δe from equations $\Delta r = wage_t - averagewage_{t-1}$ and $\Delta e = e_t - e_{t-1}$ having the same sign. It includes no of $r \geq 5$ times.

Table 8

Share of reciprocal and selfish type from RG to EAWRG and AWRG treatments

Share of reciprocal type in percent			Share of selfish type in percent	
Reciprocity (RG)	Reciprocity (EAWRG)	RG market wage (AWRG)	Egoism (RG)	Egoism Market wage (EAWRG)
17	37.5	36.4	38	37.5

Note:

-According to the criteria, the average joint income earned by: Reciprocity RG is 29.12, Reciprocity EAWRG (64.73) and AWRG(63.09), Egoism RG (34.68) and Egoism EAWRG(64.52).

-The calculation of market wage excludes rejection.

Notes

- (1) In the paper by Gächter and Falk (2002), Tobit regression was used to investigate the effect of wage on effort with worker fixed effect.
- (2) The results found in the paper by Gächter and Falk (2002) report the co-efficient of OS is 0.0069 and RG is 0.0111. The overall effect of repeated game on wage-effort relationship in our paper corresponds to the result but the effect is weaker and the overall values are different.
- (3) We use the criteria established by Gächter and Falk (2002).

References

- Bolton, G.E., Axel Ockenfels, „Erc: A theory of equity, reciprocity and competition”, *American Economic Review*, 90(1), 2000, pp. 166-193
- Charness, G., Kuhn, P., „Does pay inequity affect worker effort? experimental evidence”, *Journal of Labor Economics*, 25(4), 2007, pp. 693-723
- Clark, A., Masclet, D., Villeval, M.C., „Effort and comparison income experimental and survey evidence”, 2007, Working paper available at <http://www.pse.ens.fr/clark/ClarkMascletVilleval.pdf>
- Fehr, E., Schmidt, K., „A theory of fairness, competition and cooperation”, *Quarterly Journal of Economics*, 114, 1999, pp. 817-868
- Fehr, E., Gächter, S., „Cooperation and punishment in public goods experiments”, *American Economic Review*, 90, 2000, pp. 980-994
- Fehr, E., Gächter, S., Kirchsteiger, G., „Reciprocity as a contract enforcement device: Experimental evidence”, *Econometrica*, 65(4), 1997, pp. 833-860

- Fehr, E., Kirchsteiger, G., Riedl, A., „Does fairness prevent market clearing? an experimental investigation”, *Quarterly Journal of Economics*, 108, 1993, pp. 437-460
- Fischbacher, U., „z-tree: Zurich toolbox for ready-made economic experiments”, *Experimental Economics*, 10(2), 2007, pp. 171-178
- Gächter, S., Nosenzo, Daniele, Sefton, M., The impact of social comparisons on reciprocity, 2008, Working paper available at <http://ideas.repec.org/p/iza/izadps/dp3639.html>.
- Gächter, S., Falk, A., „Reputation and reciprocity: Consequences for the labor relation”, *Scandinavian Journal of Economics*, 104(1), 2002, pp. 1-26
- Gächter, S., Fehr, E., „Reciprocity and economics: The economic implications of homo reciprocans”, *European Economic Review*, 42, 2000, pp. 845-859
- Sonnemans, J., Schram, A., Offerman, T., „Strategic behavior in public good games: when partners drift apart”, *Economics Letters* 62, 1999, pp. 35-41

Analysis of the Connections between EU Economic Growth and the Lisbon Strategy*

Marius-Corneliu MARINAŞ

Bucharest Academy of Economic Studies
marinasmarius@yahoo.fr

Abstract. *This research tries to offer an explanation for the motivation to implement the Lisbon Strategy, its main failures and its impact upon EU economic growth process. The Lisbon Strategy, which was adopted in 2000, should have resulted in the structural change of the European Union's economy until 2010, if taking into consideration the promotion of a sustainable economic growth, which could encourage the increase of employment and the provision of economic and social cohesion. Thus, the European economy should have get its dynamism back which it had before the oil shocks (when it had the "Thirty glorious years"), under the terms of the increase in competitiveness within a global economy and of the direction towards knowledge based economy.*

Keywords: economic growth; European social model; the Lisbon Strategy; the Northern sub-model.

JEL Codes: 011, P52.

REL Codes: 20B, 20F.

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The period 2000-2010 was characterized by the reversal of the trends recorded during the previous decade (especially at the end of the '90s), so that some objectives appeared after 10 years as extremely difficult to achieve by the European Union. The failure in achieving the settled targets through the Lisbon Strategy result from the heterogeneousness which exists among the economic and social structures of the economies which is currently composing the European Union, and this is the characteristic of an Europe with several changing speeds (according to Figure 1). The Northern sub-model is the one which adjusted to the new type of economic development even before adopting the Lisbon Strategy, so that these economies already fulfill a part of the objectives which have been settled for 2020. Among the other sub-models, the Anglo-Saxon one has the ingredients of a dynamic economy, in which the entrepreneurial initiative will be able to generate the faster economic change. However, the Great Britain's and Ireland's competitiveness can be negatively affected by the bursting increase of the public debt during the last 3-4 years, as a result of the significant increase of the public expenses both before 2008, and also as a reply to the economic crisis. The continental sub-model contributes by more than 50% to the GDP of the entire European Union, so that it decisively influences the evolution of the European model. The quite lower progresses recorded by this sub-model are caused by the weak harmonization of the economic objectives (employment, economic growth) and of the social ones (the rate of poverty, social inequities), especially in the case of France and Belgium. The other two sub-models – the Southern one and that of the new member countries (ECE) are recording close performances, as they are characterized by a lower (or unsustainable) economic dynamism and by higher social inequities. Even though at the moment when the Lisbon Strategy was adopted they were not part of EU, the new member countries had to adjust to the same standards of the new developing model. For this purpose, the object of the ECE sub-model is double: the structural change and the real convergence with the European model, under the terms in which it experiences a modernizing process itself.

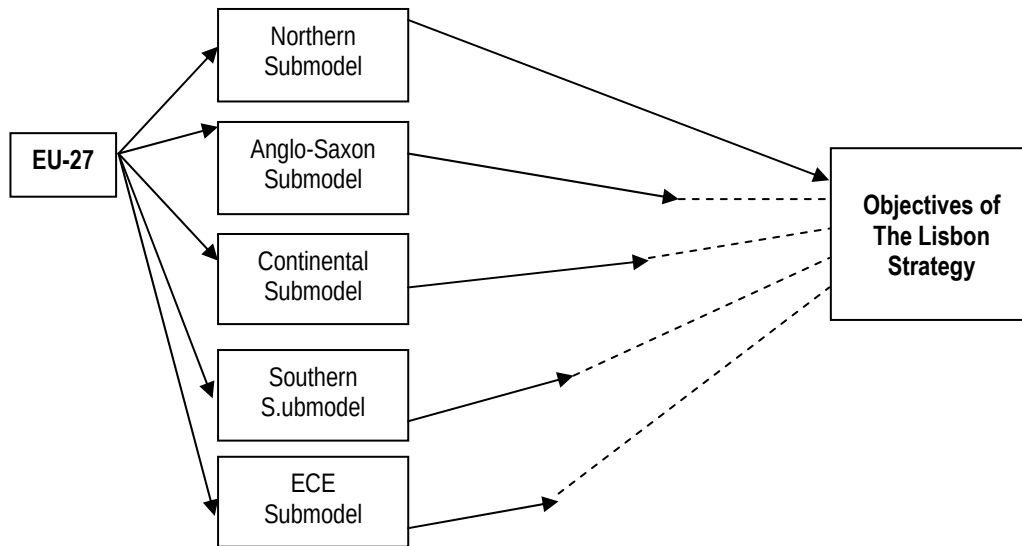


Figure 1. *A EU with several (changing) speeds – the explanation for the low performances of the Lisbon Strategy*

1. Modernising the welfare state in the European Union – argument to Lisbon Strategy adoption

Until the occurrence of the oil shocks (1973-1975), Europe was characterized by a synergic “magical triangle” between the economic growth, the macroeconomic stability and the welfare state. The high growth rates provided the stability of the economic system and of the social protection system, thus contributing to reducing the neo-liberal trade-off between the economic efficiency and the social equity, which is explained in Table 1. The “Magical triangle” began its decay starting with the mid ’70s, as a result of the global technological and demographical changes. Their effects mirrored in slowing down the growth rate, in the increase of the macro-economical stability and in the raise of the operational costs of the welfare state. The table below presents a comparison between the main economic and social evolutions recorded during the *thirty glorious years* of EU and during the 25 years which preceded the elaboration of the Lisbon Strategy:

Table 1

Sustainability of welfare state in EU

Components of the “magical triangle” in EU	Evolution of the European social model	
	1945-1975	1976-2000
Economic growth	- the average rate of economic growth for the EU-15 countries was 4.6%, and that of the GDP per capita was 3.8%	- the average rates of economic growth were 2% between 1975 and 1985 and 2.5% between 1986 and 2000
Macro-economical stability	- the average inflation rate decreased up to the level of 4%, and this constituted a proof for the improvement of the macro-economical stability; - the employment rate increased and the unemployment rate decreased up to a level of 2%	- the average inflation rate came back to the previous level of the oil shocks beginning with 1987, and after 1994 it has never exceeded 3%; - the average unemployment rate recorded during the period 1975-2000 was approximately 10%
Welfare state	- the percentage of the public expenses in the GDP in countries such as Germany and France was approximately 32% in 1970; - the public debt was 17% of the GDP, almost four times lower than that recorded during the current period; - the percentage of the expenses with the social protection out of the GDP was approximately 14%, a level which is twice lower than the current level.	- the lowering of the economic growth rhythm and the increase of unemployment generated the degradation of the situation existing in the public finances; - the percentage of the public expenses increased up to 49% in 1985 and to a maximum of 51% in 1993, when the average budget deficit was 6% of the GDP; - the expenses for the social protection increased by seven percents during the period 1975-1985, reaching 21% of the GDP
The trade-off between equity and efficiency	<i>It decreased</i> The increase of the employment degree and the high economic growth resulted in the increase of the budget returns and in the decrease of the stress upon the welfare state.	<i>It occurred</i> In order to increase the budget revenues which are necessary for the functioning of the welfare state, the social contributions and the direct taxes increased, and this fact negatively affected the incentives for investments and for the increase of the employment degree.

Source: European Commission, Sapir Report (2004).

Based on the comparison made in the above table, we can assert that the European social model was sustainable until the oil shocks. After their occurrence, the social expenses increased, not as a result of the economy's favorable functioning, but of the increase in taxation and in the public debt. The objective of increasing the redistributed amounts was to reduce the social inequities, under the terms of the decrease in economic growth and of the increase in the unemployment rate. However, the favorable results appeared only in the ninth decade, when the inequities were lower than those recorded within the decade which preceded the oil shocks.

After 1975, the main challenge of the European model has been to get the social equity in line with the slowing down of the economic growth rhythm and with the constancy of a high employment rate. The European states have

promoted the increase of the public expenses and this fact has had a double effect: on the one hand, the social security has been provided, and on the other hand a series of macro-economical imbalances have been recorded (the increase of the budget deficit and of the public debt). As the continuation of this evolution would have negatively affected the sustainability of the welfare state and even the functioning of the Euro zone, in 2000 the Community officials established the modernization of the European social system by adopting the Lisbon Strategy; EU was not giving up providing the social component for its citizens, but it suggested to obtain superior macro-economical efficiency.

The finality of this new economic and social model has been anticipated by the evolutions of the Northern states, which, although they are among the most competitive in the world, are super-developed providential states (if we consider the public budget as a share in the GDP, the amounts granted for social protection, etc.).

The figure below explains the motivation for reforming the European model, under the terms of the occurrence of the equity-efficiency trade-off before 2000. The EU countries which eliminated the vicious relations within the national economic system (those which are presented in Figure 2) have been the Northern and the Anglo-Saxon ones. Those two resemble especially in the reforms implemented on the labour market, but the difference between them is represented by the role of the state within the economy. The Anglo-Saxon countries promoted a residual role of the state, while the Northern economies maintained a universal social security, the latter ones having a decisive influence on the structure of the new European social model.

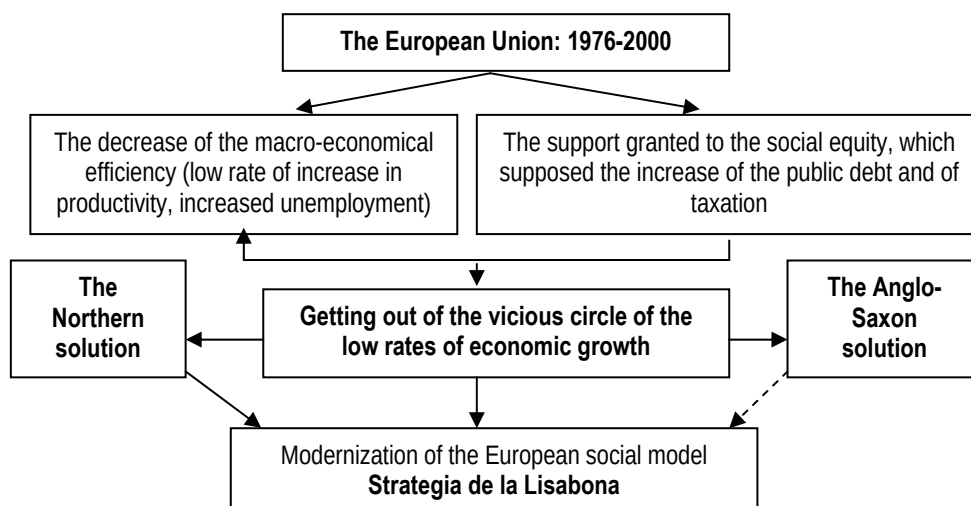


Figure 2. *The finality of the Lisbon Strategy*

2. The modernization of the welfare state in EU

The slowing down of the global economy starting from 1975, as well as the intensification of the European process of economic integration has emphasized the social inequities within the EU. That is the reason why the project of a “social Europe” occurred, this process being related to Jacques Delors’s presidency (1985-1995), which established the provision of the social cohesion as the finality of the markets’ integration. Thus, the European Union established limits for the American economic model as it proposed the completion of the aspects which are related to the efficiency with those which aim to reduce the inequities.

Since the Treaty of Maastricht (1992) and the Treaty of Amsterdam (1997), the European social model integrated certain neo-classical perspectives, of the workfare type, such as the promotion, to a greater extent, of the policies for stimulating the aggregate offer, the flexibility of the labour market, the decrease of the costs with labour and the acceptance of the insecurity related to jobs in order to increase the employment degree. Thus, the objectives of improving the living standard and of improving the working conditions gradually depended on promoting active policies on the labour market, which allow the increase of the employment rate in the European Union.

According to the Lisbon Strategy (2000), the European social model assumed the transition to another development model, namely from a national Keynesian welfare state towards a national Schumpeterian state of increasing the welfare by means of providing access to the labour market (workfare state). This new economic system is characterized by the stimulation of innovations, by the flexibility of the labour market and by the economic competitiveness; within this one, the promotion of certain measures of social policy which do not generate macro-economical imbalances.

The distinction between the two categories of economy can also be apprehended through the state’s attitude towards the persons’ problems/risks. Thus, in a national *welfare* state, the state provides the resources which guarantee financial security and stability to persons, while in a national “workfare” state, the state provides the persons with the necessary instruments so that they could face the risk. The term which represents the best definition of this new development model is *flexicurity*, which results from the combination between the concepts of flexibility of the labour market and of social security.

Encountering a series of risks to attenuate its specificity, EU may achieve both the increase of productivity and also the increase of employment rate, without compromising its social dimension. The existing trade-off between the macro-economical efficiency and the long-term sustainability of the national welfare systems can be avoided by the European modernized social model.

Aiginger (2008) considered that this is not a barrier against the increase of competitiveness if it is reformed towards the economic growth, towards the improvement of the incentives and towards the training of the labour force. The Scandinavian countries, which are lately characterized by economic growth, by full employment, by a universal system of social protection and by the decrease of revenues' inequities, proved that all these objectives do not exclude each other as it happens in the Anglo-Saxon approach of the economy's functioning. Under the terms of establishing targets which are similar to those which have already been a reality in the Northern economies by EU, according to the Lisbon Strategy, their characteristics should constitute the elements of the European modernized social model (Aiginger, 2006):

- *the social system remains inclusive*, but some of the expenses for the social protection will be conditioned (for example, by the active search for a job);
- *the taxation is maintained relatively high*, but it has to be correlated with the level of the budget expenses, in order to achieve budget surpluses on a medium term; moreover, certain tax facilities will be granted to those which have lower incomes;
- *the job's security is replaced by the employment security*, and this measure will be implemented by means of active policies on the labour market; the public services and the private agencies will get involved in the workers' training/re-qualification;
- the flexibility of the labour will be encouraged, and the social benefits will also be conditioned by the nature of the labour contract;
- the implementation of new technologies constitutes a pre-condition for the functioning of the welfare state;
- the Government and the public authorities play a pro-active role in promoting innovation, efficiency, structural changes, improvement of qualifications and permanent training; moreover, the state provides an important part of the resources necessary for the functioning of the education and health systems.

The European modernized social model will be more flexible in relation to the global economic changes and it will provide both competitiveness and

also social justice, as the Northern countries did. Under these terms, the trade-off between efficiency and social equity which characterized the old social model will be replaced by a set of synergic relations between the two concepts. On the one hand, certain social protection plans (which do not induce the improvement of the economic incentives) would help in giving an impulse to the economic growth process. On the other hand, the implementation of new technologies and getting the relationship education – research – entrepreneurship – innovation in line will generate the dependence of the public social system and the focus of some superior budget resources for those who are extremely socially vulnerable. The virtuous interdependencies between the macro-economical efficiency and the social equity are observed in Figure 3.

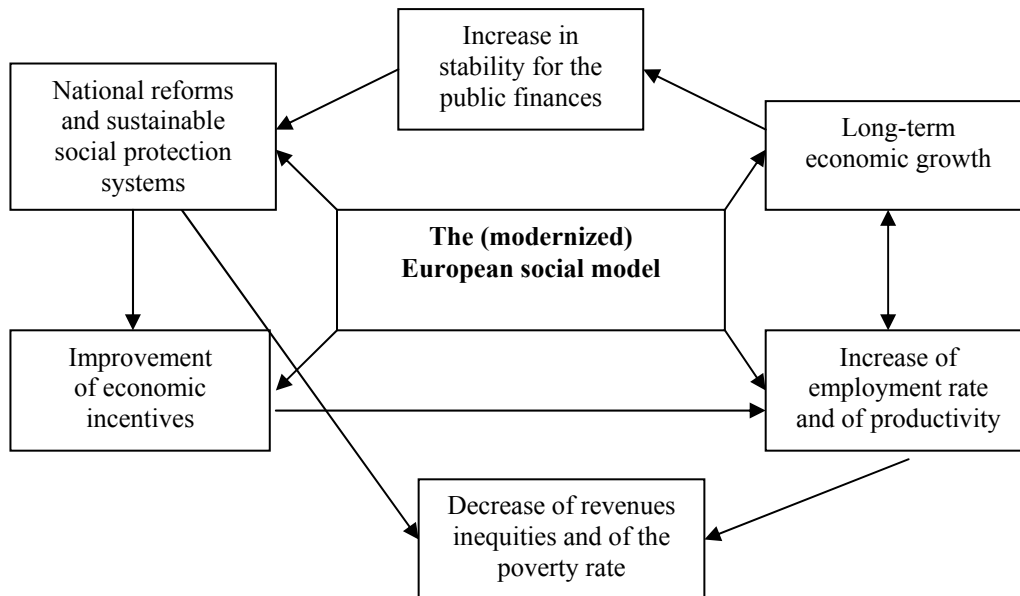


Figure 3. *Objectives of the (modernized) European social model*

3. Which were the failures of the Lisbon Strategy?

From a structural point of view, the Lisbon Strategy was not wrong, as it included the mechanism which allowed the structural change and the modernization of the European economy. However, this strategy has a few shortcomings, slips, quite opposite objectives, a weak national implementation and results which have been much under the initial expectations, which we will introduce within the following ten arguments:

1. The Lisbon Strategy was not realistic with reference to the rhythm of the economic growth in the European Union. Moreover, it did not take into consideration the duration of a business cycle, but only of the economic expansion stage.

The strategy settled the target of a 3% medium rhythm of economic growth in EU, although the average rate of the real GDP increase was only 2.11%. The 3% level was recorded during the period 1997-1999 only, when an economic expansion (economic growth over its potential) was recorded in most of the EU-15 countries. The European Community officials supposed that the economic growth process from the period 2000-2010 will follow the increasing trend recorded during the previous 3-4 years, although such analyses take into consideration the trend during the period of a business cycle at least (approximately 7-8 years). The rate of the potential economic growth (namely the trend of the real GDP) was 2.4% between 1997-1999 years (according to the Hodrick-Prescott filter), versus to 2.1% during the period 1993-1999.

2. The Lisbon Strategy tried to copy a part of the American model's values (Kok, 2004), wishing to recover the output gap between them.

Values such as the labour flexibility, workfare, entrepreneurial initiative, liberalization, deregulation, etc. represent defining characteristics of the American economy, and their application in some European welfare states did not have the anticipated results. There has been noticed that the economies belonging to the Northern and Anglo-Saxon sub-models have adjusted faster to a model of economy and of society which includes the previously mentioned values.

3. The reforms of the Lisbon Strategy aimed to a too great number of fields to be rapidly and coherently implemented by the member states. That is the reason why the progresses in adopting the strategy's coordinates have been extremely low in the countries belonging to the Southern and in the new member countries (ECE) sub-models.

The strategy's objective, among others, was to reform the social security system, namely to provide sustainability and increase of employment, and also to increase the expenses for education-research-development, in order to create a knowledge-based economy. Moreover, it provides the liberalization of the industrial market in the network, of the service market, to promote social inclusion and the decrease of the gaps between incomes.

4. The Lisbon Strategy seemed rather an elitist process, the European citizens support being absent in the promoted reforms.

The reforms taken on the labour market (e.g. flexicurity, extending the active life), in the social security (e.g. conditioning the unemployment assistance, increasing the retiring age, increasing the contributing period), in opening the utilities markets (power supply, gas, telecommunications, transports) are accompanied by social costs, at least on a short time, so that a hostility of the European unions occurred in some cases when applying these reforms.

5. A domestic/communitarian financing has not been sufficiently provided for the adoption of certain reforms aimed to by the Lisbon Strategy. Moreover, its coordination with the fiscal policies' coordination instrument lacked – The Stability and Growth Pact (SGP).

The relations between the Lisbon Strategy and other EU instruments and/or strategies, such as The Stability and Growth Pact, the Sustainable Development Strategy or the Social Agenda have not been sufficiently strong, so that, rather than mutually consolidating, some of the strategies operated in an isolate manner. SGP and The Lisbon Strategy represent two separate pylons of the European model, which though should be integrated, for at least two reasons; the proposed reforms could be accelerated (if the available budget resources existed), and, by their means, the public finances' sustainability and quality would get increased. The countries which are characterized by a less fiscal margin of maneuver (excessive budget deficit, economic recession, high balance of the public debt) granted less budget resources for economy's adjustment to a knowledge-based one (expenses for education, research, public investments, etc.). According to the Lisbon Strategy's assessment made by the European Commission in 2010, *the macroeconomic unbalances and the competitiveness problems represented the origin of the economic crisis and they have not been properly approached within the process of surveying the member states' economies, which have been performed through the Stability and Growth Pact and through the Lisbon Strategy, as the two mechanisms tend to operate in parallel, rather than to mutually complete each other*. As for the communitarian contribution, there has been an adjustment to the cohesion policy towards the Lisbon Strategy's objectives, but less than 5% of the funds have been granted for financing the research-development activity when referring to the European companies.

6. Some of the Lisbon Strategy's objectives are opposite, at least for a period of 1-2 years, and the strategy settled too many targets.

Firstly, the strategy aims to a higher integration of the markets, by means of liberalizing the services, the knowledge, and this will also result in intensifying the community competition, and also in stimulating the innovation activity. However, Schumpeter demonstrated that there is not a linear relation between competition and innovation, but a concave one, in other words, the innovation capacity of the companies is lower for a low/high degree of economic integration and it is higher for a medium integration of the markets. Secondly, the strategy aims both to the increase of the employment degree, and also to the increase of labour productivity, which is considered to be the main resource of welfare increase. However, on a short term, the increase of the workers' number, which is not accompanied by a capital accumulation process, will determine the decrease of labour productivity. There have been short-term estimations that a 1% increase of the employment rate determines the 0.1-0.4% decrease of labour productivity. Thirdly, the strategy aims both to intensify the liberalization of the markets, and also the increase of the employment rate. According to OECD (2000), the reforms made on the goods markets generate a decrease of the workers' number for a period of 1-2 years. Fourthly, the strategy's purpose is both to make structural reforms, and also a higher rhythm for the economic growth. However, the strategy mostly influences the potential GDP, and the positive effects upon the economic growth will not immediately appear. For example, there will not be an immediate impact of the budget purchases for education, for research-development upon the economic growth. For this purpose, the Lisbon Strategy does not represent a solution for minimizing the effects induced by the economic crisis for at least two reasons: the reforms will be applied on a longer term, and their positive effects have not been felt in many of the EU member countries yet (except the Northern ones).

7. The strategy was elaborated when the heterogeneousness among the EU member countries was quite lower than that recorded after the 2004, respectively 2007 expansions. Even though, it was considered to be a remedy for all economies, irrespective of their structural characteristics or of their development level.

For example, there was a question about the opportunity of some criteria which are related to the adjustment towards a knowledge-based economy for the economies which are far from the current technological border line, such as

those belonging to the ECE countries sub-model. Thus, the 3% of the GDP criteria has been settled for the research-development expenses both for the Northern countries (which, prior to the strategy, adjusted to an innovative economy), and also for Romania and Bulgaria, these economies hardly making the transition to an investment-based economy and which can develop not by means of innovations related to new technologies, but by means of imitating the existing ones. Moreover, an economy which is characterized by a quite higher share of the industrial sector will spend more for research-development than an economy which is highly specialized in the sector of services. Moreover, the level recorded by the member states has not taken into consideration indicators such as employment, research, social inequities, etc. when elaborating the strategy in 2000. The settlement of certain target is not relevant, as long as there are several economic and social sub-models; each of them will try to adjust and not to imitate the main reform directions which have been settled.

8. There was not a clear separating line of the domestic/communitarian responsibilities when speaking about the implementation of the guiding lines of the Strategy, which is both a political project and also a project which involves the European society. Moreover, the open coordination method was considered to be a “too weak” instrument for the achievement of the national reforms program.

Theoretically, the reforms regarded by the Lisbon Strategy in the field of the labour market, of the social security, of the markets integration generate externalities especially for the countries included in the Euro Zone. The greater extent to which they will be achieved by the member states, the more increased the flexibility of the Euro Zone will be, and this will improve its capacity to diminish some structural shocks. As a consequence, the presence of externalities should suppose the coordination of the community policies included in the strategy, and also the involvement of each member state, under the terms in which they play the main act in the settlement of the social measures and of the functionality of the labour market. The strategy is based on the assumption that the member states will voluntarily wish to promote the same structural reforms and that each of them is willing to learn from the experience of other countries.

At the moment when the strategy was elaborated, there was not a clear distribution of responsibilities between the community and the national levels, so that the reform directions could not be acquired by the member states. Only after the first assessment of the Lisbon Strategy from 2005, the elaboration of

the National Reform Plans (NRP) has been settled, and this involved a higher responsibility of the national economies. However, there is a quite low pressure for reforms from EU, and it is practiced through the Open coordination method, its role being rather to make an exchange of the good practices among the member states. According to the European Commission (2010), *the NPR approach is considerably different among the member states, with ambitious and coherent reform programs for some of the countries, versus ambiguous and predominantly descriptive reform programs in other states which have not had the support of the national (and regional) governments and parliaments.*

9. The reason for the elaboration of this strategy was to support the European economy in order to eliminate the economic gaps between Europe and USA. However, the most important challenges are coming from the economies with the highest rhythm of economic growth (China and India).

Their competitiveness is not only the result of practicing lower costs for labour, but also to increase the research-development capacities, and this may determine the loss of certain markets for the European products. The strategy gave a very low importance to the role of commerce and of direct foreign investments in a globalized economy.

10. The review/re-launches of the Lisbon Strategy have been rather superficial, being limited only to the decrease in number of the structural indicators which have been used for benchmarking. Even though it was obvious that EU would not fulfill the proposed objectives since the half of the decade, the initial strategy has only superficially changed (restating the objectives), and this affected its credibility.

4. What was the evolution of the economic growth rate during the period 2000-2010?

The appreciation of the results obtained after implementing the strategy is a paradox: on the one hand, the economists consider that it constitutes a great failure of the European model, under the terms of EU being far from the objectives settled for ten years, and on the other hand, the sociologists and specialist in political sciences consider it to be successful, as it established the

transformation of the European society, a process which is not limited to the decade started in 2000. The economists are focused on the strategy's inputs and results. They can notice that the European economy has been a disappointment with reference to the rhythm of economic growth, to the capacity to recover the gaps between Europe and USA, to the ability to change into an innovative and flexible economy or to the capacity to reform the social security systems in order to increase the sustainability of the welfare state. Moreover, there is a divergence in respect with the national mechanism for implementing the Lisbon Strategy. A decade is considered to represent a long period of time for economists, while for the researchers of the technological and institutional changes it represents the beginning of a process with trials and errors. According to the European Commission (2010), the Lisbon Strategy has *opened new horizons by promoting common actions in order to approach EU's long-term key-challenges.*

Naturally, the gaps between the Lisbon Strategy's objectives and the achievements will be easily interpreted as representing a consequence of the fact that the targets have been wrong/improper or that they were not properly followed by the member states. As a consequence, all the economic and social evolutions recorded within EU will be considered to be the result of the strategy's (non)-implementation, although, in most of the fields, the changes suppose a much longer period of time. Thus, for the sub-models in which the reforms for the labour market, for the social security and for the adjustment to a knowledge-based economy have not been significant, the strategy will be considered not to have had the anticipated effects.

However, not all the evolutions recorded in the EU member countries during the period 2000-2009 should be interpreted in relation to the Lisbon Strategy. For example, the new member countries, Ireland and Greece, achieved an average rate of economic growth which exceeds 3% (the target level settled in 2000), under the terms in which it was not due to the economy's modernization according to that reforms agenda. As a consequence, obtaining a higher rate of economic growth during the period 2000-2009 does not constitute the effect of the strategy's implementation. It is possible for the sources of the economic growth to be those existing in the field of the aggregate demand and not those in the field of the aggregate offer, as the Lisbon Strategy has a direct influence upon them, and not immediate if speaking about time.

The European Union's economic growth during the period 2000-2009 was 18 percents lower than the target settled by the Lisbon Strategy.

The economic crisis lowered the potential of the European economy and it increased the gap between it and the objective settled in 2000.

The Lisbon Strategy settled the objective of achieving an average growth rhythm of 3% during the decade started in 2000, and this should have generated a real GDP which was 34.4% higher in 2009, if compared to 1999. However, during the analyzed period, EU-27 recorded a total increase of the real GDP of 16.4%, and the real GDP of the EU-15 countries increased by 15% only. Prior to the economic crisis, the gap from the settled target was of 6 percents in the case of the EU-27 and approximately 7 percents for EU-15, as it can be noticed in Figure 4, on the coordinate of which the real GDP index is represented (the base being 1999). If EU-27 had registered the same 2.3% average growth rhythm as during the period 2000-2007 (the broken line from the above chart), then the gap from the Lisbon target would have been 8 percents “only”. The economic crisis generated a decrease of the average growth rhythm from 2.3% until 2007 to 1.9% for the entire period 2000-2009.

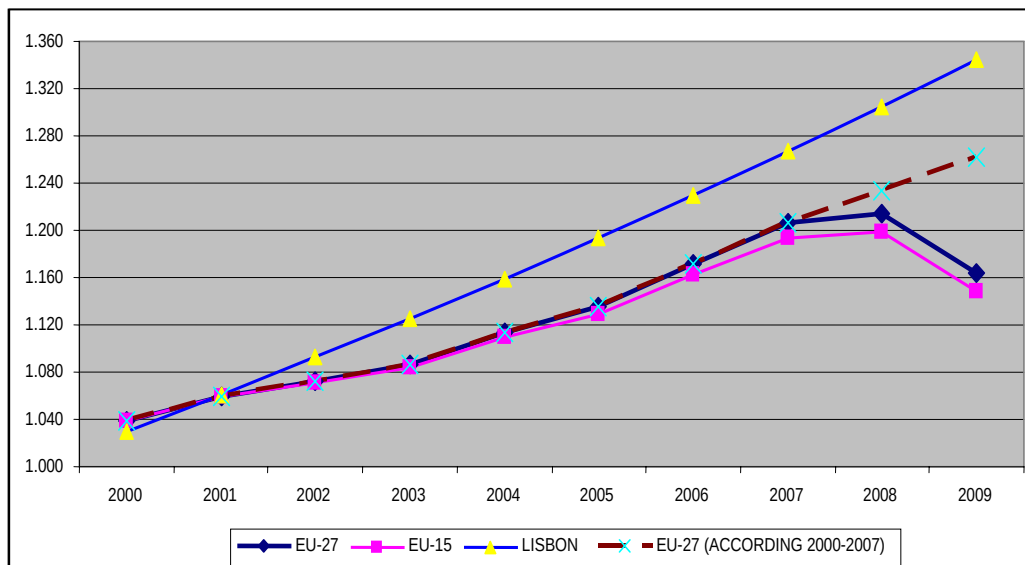


Figure 4. *The gap between objectives and achievements with reference to the EU economic growth*

The most part of the recorded gap is explained by the evolutions registered by Germany, France and Italy, which contributes with approximately a half to the EU-27 GDP. Under the terms of 0.8%, 1.5%, and respectively 0.5% average growth rates, the real GDP of the three economies increased less than the EU-27 average during the period 2000-2009. Among the EU-15 countries, only Finland, Sweden, Ireland, Spain and Greece recorded an average annual growth rhythm of at least 2%, while the sub-model consisting of the ECE countries recorded an accumulate increase of the real GDP by three times higher than in the case of the EU-15 member economies. However, their impact upon the European average is very low, under the terms of an 8% contribution of the ECE countries to the EU-27 total GDP. In Figure 5, we can notice that the sub-models which are characterized by higher progresses with reference to the adoption of the Lisbon Strategy's reforms – research-development, information society, network industries, and services liberalization – recorded similar or inferior rhythms as those of the sub-models in which the reforms are only at the beginning. According to the World Economic Forum (2009), the Northern sub-model (with all its four countries), the Continental sub-model (especially Austria and Germany) and the Anglo-Saxon sub-model, in this very order, changed the most, both from a structural and from a social point of view with reference to the objectives settled in the strategy. Instead, the economies belonging to the Southern sub-model (especially Greece and Italy) and to the ECE sub-model (especially Bulgaria, Romania and Poland) are characterized by a low transition towards the new developing model.

To conclude, The Lisbon Strategy can be considered relevant for the economic growth of the already developed sub-models, while for the others the growth has been the result of other factors (the foreign capital inflow, the increase of the financial intermediation degree, the lower cost of the domestic factors of production). However, the occurrence of the economic crisis can increase the importance of assuming the strategy, under the terms in which it constitutes a way in which the economy can be structurally reformed, a way in which the sustainability of the public finances can be increased on a long term and a way in which the shocks can be diminished faster on a long term.

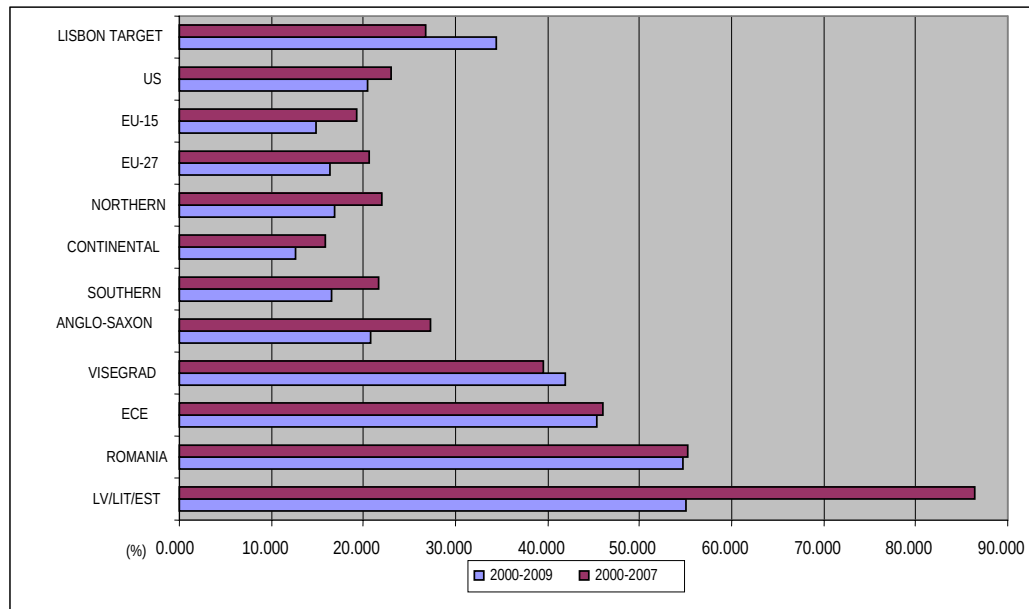


Figure 5. *The accumulated increase of the real GDP compared to 1999*

If we make a comparison between the accumulated increases of the GDP for the period prior to the crisis with the entire decade started in 2000, the result is that all the European sub-models (except the one which consists of the ECE countries) recorded at least 3 percents decreases, so that the real GDP recorded in 2009 reached the level from 2006 and from 2007 in most of the cases. The sub-model which adjusted the least after the crisis was the one of the new member countries, its average decrease being 0.61 percents. However, in its case, we may distinguish two groups of countries, with totally divergent evolutions with reference to their amplitude; on the one hand, the Visegrad group recorded a 2.48 percents increase in 2009, if compared to 2007, while the group of the Baltic States adjusted by 31.5 percents, after which it had recorded a 8.1% average growth rhythm during the period 2000-2007, i.e. the highest rhythm in the entire EU-27.

The decade 2000-2009 was an entire failure for Italy, of which real GDP from 2009 was equal to the one recorded at the end of 2001, and a success for Poland, the only European economy which avoided the economic recession. The economic crisis had an important negative impact upon the European economy, under the terms in which the real GDP from 2009 was equal to the

one recorded in 2006. As a consequence, this decade was partially lost for most of the EU-27 economies, as it can be noticed in Figure 6.

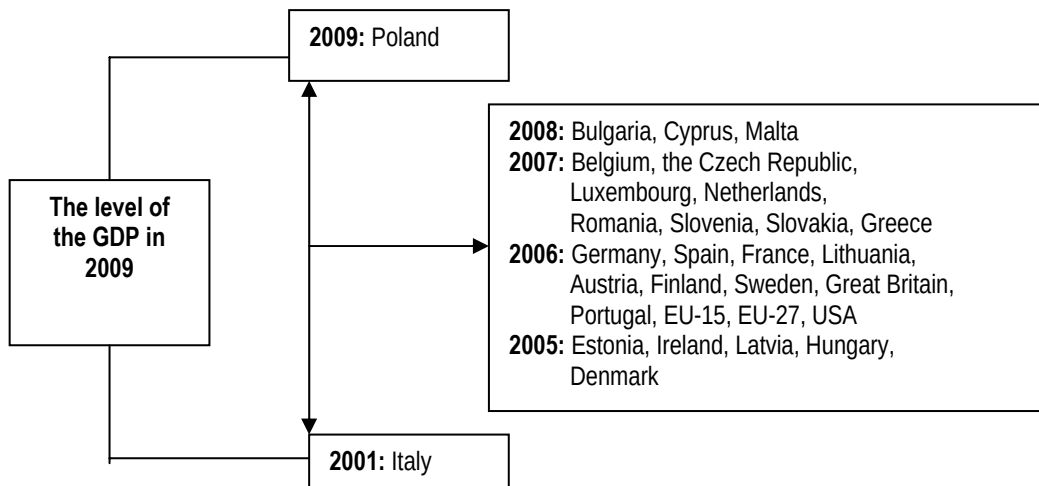


Figure 6. *A (partially) lost decade for the EU-27 countries*

The European economic down fall during the period 2008-2009 can be explained both depending on the stages of the business cycle and also depending on the trend's evolution (the potential GDP), based on de-seasoned quarterly and annually expressed data. Thus, the 3.6% decrease of the annual real GDP from the 4th quarter of 2009, if compared to the GDP related to the same quarter of 2007 was determined by the following:

- the decrease of the demand excess from the European economy, which existed at the end of 2007 (approximately 1.7%), under the terms in which it passed through an economic expansion period beginning with the 3rd quarter of 2005;
- the decrease of the potential GDP increase rhythm from an average level of 2.22%, recorded during the period 2000-2007, to an average value of 1.43% between 2000 and 2009 (as it can be noticed in Figure 7);
- the entrance in a recessionistic gap period, beginning with the 4th quarter of 2009, its value being –1.11% of the GDP only during the 4th quarter of 2008 and –2.26% during the 3rd quarter of 2009.

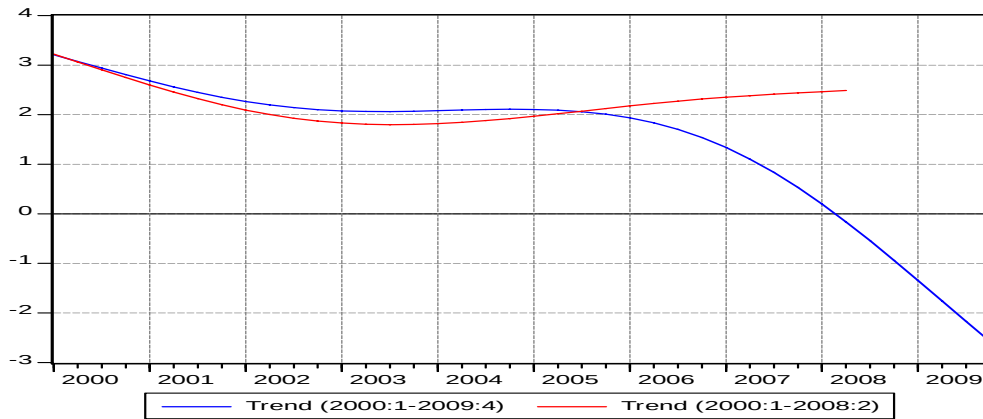


Figure 7. *The evolution of the real GDP trend of EU-27*

The trend's evolution during the period 2008-2009 confirms the fact that EU faces a structural and not temporary crisis, induced by the global financial and economic crisis, which determined an over 3% decrease of the GDP increase rhythm in two years only.

5. Conclusions

After the decade when the Lisbon Strategy has been implemented, we can assert that it has not generated the anticipated results with reference to employment, to structural reforms and to the economic growth rate. The economic crisis from the years 2008-2009 diminished the positive evolutions of the European economy recorded during the period 2005-2007 and it has generated the getting away from the target assumed for 2010. Generally, the economies which have mostly adjusted to the new economic development model (expected by the Lisbon Strategy) have not recorded the highest rates of economic growth, but they have been able to faster eliminate the effects of the economic crisis. Moreover, even though certain economies recorded high rates of economic growth before 2008, without any progresses in adopting the Lisbon targets, their absence blocks their sustainable economic re-launching.

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References

- Aiginger, K. (2006a). *The European Socio-Economic Model*, in Giddens, A., Liddle, R., Diamond, P. (eds.), *Global Europe, Social Europe*, Polity Press, Cambridge
- Aiginger, K., Guger, A., „The Ability to Adapt: Why it differs between the Scandinavian and Continental European model”, *Intereconomics*, Vol. 41, nr. 1, 2006b
- Aiginger, K. (2008). *Typologies of Social Models in Europe*, WIFO
- Blanchard, O., „Is There a Viable European Social and Economic Model?”, Massachusetts Institute of Technology, Department of Economics, *Working Paper* 06-21, 2006
- Comisia Europeană (2007), *Towards Common Principles of Flexicurity: More and Better Jobs Through Flexibility and Security*, COM (2007) 359 final, Bruxelles
- Giddens, A., „The World Does not Owe us a Living. The Future of the European Social Model”, *Policy network paper*, 2005
- Mathieu, C., Sterdyniak, H., Seguin, Th., „What future for social Europe?”, Annex 6 – *EUROFRAME-EFN*, Autumn 2007 Report, OFCE
- Sapir, A. (2004). *An agenda for a growing Europe. Making the EU economic system deliver*, Report of an independent high-level study group established on the initiative of the President of the European Commission, Bruxelles
- Stein, K., „The Nordic welfare state in a European context: dealing with new economic and ideological challenges in the 1990s”, *European Review*, Vol. 8, nr. 3, 2000
- World Economic Forum (2009), *The Lisbon Review 2008. Measuring Europe's Progress in Reform*, Geneva, www.weforum.org
- *** Baza de date Eurostat, 2010

The Spread of Economic Ideas among Romanian People. Case Study: Dionisie Pop Marțian*

Angela ROGOJANU

Bucharest Academy of Economic Studies
angelarogojanu@yahoo.com

Liana BADEA

Bucharest Academy of Economic Studies
badea.liana@gmail.com

Abstract. *In the nineteenth century, the accelerating globalization started to show demands that the majority of the Romanians could not understand. The delay in the economic development, the political-state establishment, the scarcity of instruction and education, the historical and geographical context marked by hostility, all these formed the gap between the "West" and "East". The renewing economic ideas penetrated hard, often deformed ... The relentless intelligence of some young people educated outside the Romanian land, as Dionisie Pop Marțian (1829-1865), has started the struggle for "the economic emancipation of the nation" by promoting the ideas, the principles and the institutions on which was build the prosperity of the West. Seen as a "reactionary" or as a "man of progress", Marțian has delivered a heterogeneous economic outlook, a mixture of liberal principles and protectionist principles. The most significant "protection" supported by Marțian was the one against ignorance. The compilation made by Marțian using the works of various authors sustaining the "social economy" shows the dimensions of economic backwardness - the absence of current economic terms from the lexicon. Marțian invents some economic terms, which are understandable, such as: „comerțiu”(trade), „manufaptură” (manufacture), „product”, „const”, „fair price”, „banc-rupt” etc. Marțian's mission was clear: "the spreading of economics through speaking and writing."*

Keywords: economic education; industry; institutions; protectionism; economic emancipation.

JEL Codes: B00, B31, I20.

REL Codes: 1L, 3B.

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Introduction

Dionisie Pop Marțian, one of the first Romanian economists, was educated at the University of Vienna, where he had been sent by the Greek-Catholic Archdiocese of Blaj, providing him a scholarship. The historiography lacks clarity in explaining the nature and duration of studies of Marțian (Marțian, 1961, p.6). Clearly, Dionisie Pop Marțian “breathed the air of the economic ideas of the List’s protectionism”, which were the dominant ideas in the first half of the nineteenth century. Even today, in many places around the world, no one could say that protectionist ideas are not as strong as they were in the past. The analysts of Marțian's writings assume that the economic militancy of his work releases the influence of the works of Friedrich List. During his studies, Marțian was a passionate scientist, who apparently, under the guidance of his professor of economics, Lorenz von Stein, had become not only his disciple, but also his opponent in discussing economic ideas. After his studies in Vienna (1854-1857), from personal reasons, Dionisie Pop Marțian decided to live in Bucharest, where were living the other members of his family, refugees from Ardeal. Devoted to his scientific belief in the same way other young people concerned to spread the economic ideas in Romania were (Rogojanu et al., 2010, pp. 143-147, Rogojanu et al., 2009, pp. 191-201, Rogojanu et al., 2008, pp. 371-376): “Dionisie Pop Marțian was a leading economist, actually the editor of the first university course on political economy, publishing also the Economic Annals, a source of invaluable information at that time” (Stahl, 2002).

From a doctrinal perspective, indeed, “Marțian meant a special moment in the Romanian history of economic thought. Creator of a school and of an economic way of thinking in our country, Marțian has made public his beliefs and fought for their achievement in a period dominated by the liberal ideology and practice. His protectionist point of view came to confront and combat the liberal ideas, which due to some circumstances were raised to the rank of state policy” (Marțian, 1961, p. 60).

The life and works of Dionisie Pop Marțian drew attention to some important Romanian economists, who were concerned either to spreading the economic concepts, such as Victor Slăvescu, either to study his intellectual biography - Anghel Rugină, who in 1942, made public at the Academy of High Commercial and Industrial Studies in Bucharest his PhD thesis entitled “The Economic Life and Works of Dionisie Pop Marțian”, being scientifically supervised by Victor Slăvescu (see Anghel Rugină, http://ro.wikipedia.org/wiki/Anghel_Rugină).

In fact, Victor Slăvescu asserted that Dionisie Pop Marțian was “the strongest and the most representative personality, the most original and most

characteristic of all the Romanian economists of the nineteenth century” and emphasised that he was “very different of all his contemporaries in all respects” (Slăvescu, 1943, p. 6, cited by Murgescu, 1987, pp. 278-279). Meanwhile, Victor Slăvescu has “the great merit to bring back into the circulation of the Romanian economic thought the work of D.P. Marțian”, although “he exaggerated by using an accumulation of superlatives, and by belittling the fact that it was presented unfortunately a short period of only six years, injuring in this way other major socio-economic figures of our national history from that century”(Murgescu, 1987, p. 279).

Economic ideas

The economic interest in the theories regarding to define Romania for the developed countries of that time gives Marțian the opportunity to express his scientific belief. The pathetic tone used by Marțian, however, reveals an attitude full of fear and reserve towards the expansion of the Western capitalism; he puts himself in the same line with the advocates of nationalism, which was typical for the period in which he lived and wrote. Today, all the efforts made by the brilliant minds of the time for the political unity and economic development of all the Romanian lands having a common history and sharing a common cultural heritage are judged by people in function of the meaning of economic development and not in function of patriotism. This explains why all those attitudes resulting from chosen and precious feelings, who called to the conservation of traditions under the banner – “We are and we remain a state of peasants” – led, unfortunately, to economic backwardness and not to development. Clearly, chosen feelings are not for making fun of, but they cannot take the place of the economic and globalizing action that took place in the Western European countries. In that era, it was natural to align to a strong cultural trend, able to help your country to unravel the way to political freedom and, in the same time, to seek the causes of your country powerlessness in the economic success of others. Citing the changes in the geopolitics of the second half of the nineteenth century, Marțian emphasize the role of the economic development in obtaining the political independence. Correctly, Dionisie Pop Marțian reveals the logics of the interdependence existing between political and economic interests: “This is a key to the secrets that go with the interests to fight for us and against us. It cannot be other way, because today we can’t conquer other countries by using assault weapons, but we can see that developed countries use the trade and industry to prepare the way for

opportunities. So, if we get rid of the political dependence, we will find another – the economic one” (Marțianu, 1858, „Studii sistemice în Economia politică. Prima parte. Economia socială”, in Marțian, 1961, p.71).

The condition of the Romanian states in the mid-nineteenth century needed a rapid connection to the modern world trends. If from the legal and political perspectives the situation seemed clear and allowed the engagement of the Romanian society in the modernization process, from the economic point of view, the situation could be presented in a simplified manner: the sources needed by the industrial capitalist development were blocked in big properties; the aristocrats, even if accidentally used the capitalist exploitation, used to hold for themselves the production factors such as labour and capital; those who wanted to leave villages in order to work in industry needed money, which were not provided through the natural distribution; the empty place left by the Romanian people in the area of industrial and commercial occupations that were supposed to bring progress and civilization was available to foreigners. The secular domination of the natural economy deterred or eliminated any attempt to transform the old conceptions in order to accept the fact that the exchange may be the main tool of selecting the potential value of indigenous goods. The solutions of a potential historical emancipation were injured by the confusion of identifying and defining the political entity, able to ensure not only a new beginning, but a new ideal.

In his enthusiasm Dionisie Pop Marțian aimed to show to the people the way to welfare as he saw the fact that “the future is under the veil” (Marțianu, 1858, „Studii sistemice în Economia politică. Prima parte. Economia socială”, in Marțian, 1961, p. 73). In terms of the eclectic German historical school, Marțian asked his contemporaries to study the economic science in order to find the key of the emancipation: “sacrificing the present for the future”. The alternation of parables with economic principles, in a nationalist way, quite widespread in many European countries, Marțian emphasised the role of knowledge in economics in order to “train efficient people, able to meditate on natural laws, that man cannot rule, but can use” (Marțianu, 1858, „Studii sistemice în Economia politică. Prima parte. Economia socială”, in Marțian, 1961, p. 76).

Dionisie Pop Marțian strived for an intellectual emancipation of the Romanians and for the spread of economic ideas; he wrote a course on “Social Economy” (1858), articles and studies on economic issues, and offered support to the publication of “Economic Annals” and to the establishment of some institutions as Statistical Office of Romania.

The dispute over the unification of customs tariffs showed that Marțian was not a follower of List, or an opponent of the Union of principalities. The fact that the year 1859 brought Romania as a political entity on the world stage was for Marțian a good opportunity to put knowledge in the service of the national welfare. The author's comment in the Annual Economic Review, of Al. I. Cuza message sent on 6 December 1859 to the Chamber of Deputies shows some concern and support for good governance to strengthen the newly formed state: "A compass should lead both branches of the government in resolving the issue according to the true interests of this nation... But an opinion in that regard in our country does not exist. The government is obliged to present such an opinion by using discussions and instruction" (Marțian, 1961, p. 181).

In the first years after unification, the leading classes' attention and the „enlightened minds” attention turn to the facts that could lead to economic and social emancipation. Among the causes of economic backwardness were difficultly found solutions to harmonize the interests of heteroclitic classes of society, which were a mix between old and new, hard to change, and hard to manage. Dionisie Pop Marțian's bitter optimism attacks the lack of vision and thinking of many politicians of the day, which taking advantage of the ignorance of Romanians postponed the real decisions: "What patient is more resigned than the nation?" (Marțian, 1961, p. 190).

As a supporter of the protectionist capitalism, Marțian seeks in the state of society the minimum arguments regarding a social indigenous class that is similar to the western "knight of industry" that set the tone for economic development. Unfortunately, Marțian saw that "the richest class in our country is a conglomeration of people of all origins" and that "the capitalist knew that, whatever foreign government is going to come certainly is going to ask him to participate in the national business. If the government would not be "a good politician" and would not ask the national capitalists to participate in the national business, then the national capitalists are going to withdraw their money to private life, where they can live free from the deprivation and political concerns of public affairs, comforted by the fact that at least if he's far from power, nor his rivals are not in the front of the nation" (Marțian, 1961, p. 197).

Very able, Marțian passes the arbitrage between xenophobia and nationalism, being preoccupied by a social equilibrium, cancelling the social polarization with a substantial numerically and economically middle class. However, Dionisie Pop Marțian, being influenced by the way of thinking of the

followers of “social economy”, said that: “The power of a civilizing action of the people is even higher, as it has a larger middle class. In our country this class barely sprout. The elements that constitute this class are foreign or indigenous, but they don’t have the skills, the intelligence and dexterities needed in arts and crafts, areas that are necessary in order to participate in the economic development of our country (Marțian, 1961, p. 217).

In fulfilling the goal of “economic emancipation of the nation”, Dionisie Pop Marțian launches in 1861 the targets of a well defined program: “Any nation that is in our state have to pass through three stages of development: the process of an adequate consolidation or unification of all the elements into one single nation; then the process of emancipation of the nation under wills of foreign and hostile interests (freedom), and finally the process of defining the nation from a cultural perspective. The first of these processes is the most important one” (Marțian, 1961, p. 204). All this means an evolution from the primitive state of economic development, dominated by agriculture, to the industrial status and then to the trade stage. As Dionisie Pop Marțian affirmed the industrial progress must be protected of the free trade and of the competition made by foreign industrial products. Marțian uses the education received at Austro-German School against his masters, especially against Lorez von Stein.

In the context of the liberal enthusiasm of many contemporary authors, “Marțian’s protectionist approach, however, seemed so unusual that it was seen by some commentators as an expression of a visionary way of thinking” (Murgescu, 1987, p. 289). Despite the reaction in that time, the protectionism “would become the official orientation of Romania’s industrial policy”. (Murgescu, 1987, p. 289) The main argument to support Marțian’s point of view was related to “the requirement to defend the interests of the Romanian nation against the pan-Germanic current”. (Murgescu, 1987, p. 290). Analysts of history of economic thought seem to agree that the imminent danger of “Austro-German economic invasion and the need to fight back become the driver of the whole activity of Marțian” (Murgescu, 1987, p. 290).

Moreover, from the beginning of the course of “Social Economy”, Dionisie Pop Marțian emphasizes the potential danger hovering over Romania: “All Europe, and especially the most populous part of it, is interested in Romania; all the communications related to social life in our country are looked for. Travellers from all nations have come to study the sources of our wealth and their greed is causing various kinds of problems” (Marțian, 1961, p. 71). When he explains the Western capital’s offensive on the Romanian economy, Marțian identifies the one coming from France, Belgium, “Germany seeing us

as a fruit garden expecting its exploiter” and continues with “Austria, which have monopolized a long time ago our trade” (Marțian, 1961, p. 71).

On the occasion of the establishment of “Annals of Statistics and Economic Research”, Dionisie Pop Marțian drew attention to the need of spreading the ideas coming from a history of national economy in order to decide politically correct: “A request to write the history of political economy and to discuss the main economic issues of a country; without achieving the political issues, it is absurd to ask” (Marțian, 1961, p. 205). The vocation of institutional promoter places Marțian alongside other iconic figures of the nineteenth century: “In 1859, Dionisie Pop Marțian, a young Transylvanian educated at Vienna, is assigned as chief of the Central Office of Statistics of the Romanian country”; that year, Ion Ionescu de la Brad is assigned as chief of the “Department of Statistics of Moldova”; these two conducted, each in its area, a census in 1859-1860 with the results published in “Annals of statistics in the Wallachian land of Romania”(1860-1864) and in “Moldova's statistical work”. In 1852 as the principalities were now united, the two statistical offices merged under the direction of Pop Marțian in a “Central Office of Administrative Statistics”. It is remarkable that these beginners and those who followed were great scientists” (Stahl, 2002, <http://ebooks.unibuc.ro/Sociologie/henri/>). As a founder of the statistics in Wallachia, Dionisie Pop Marțian was engaged in a “cruel activity, which he conducted with a great energy, strongly criticizing the errors of the inexperienced elements of the system and defending his work of those who did not understand its importance and that were neither few nor without political prestige at the time” (Murgescu, 1987, p. 286).

In 1859, in a memorandum addressed to the Minister of Interior, Dionisie Pop Marțian outlined the importance of his program in defining and using official statistics in Wallachia, a program which included inter alia: drawing country's general statistics, and of the main branches of the state administration; training those who were to prepare and develop some industry statistics and to complete some forms; statistical reflection of the progress in agriculture, manufacturing, commerce, arts, sciences, etc.; drawing up tables on price evolution; publishing a magazine “for the national economy and its statistics”; publishing a statistical yearbook; elaborating civil status registers; using of common statistical records in the cities, courts, customs, etc. so that the government to always have authentic information on all the activities; setting up of departments of basics in statistics in secondary schools and departments of general and administrative statistics in law faculties (Murgescu, 1987, p. 285).

Although he has encountered numerous obstacles in the organization of the Statistical Office, Dionisie Pop Marțian continued his courageous work of recruiting and training the rapporteurs in statistics of each county, preparing and carrying out the first census in 1860 and in 1863 the first statistical survey of the industrial establishments in Romania (Marcu, N. and Ornea, Z. , „Studiu introductiv”, in Marțian, 1961, p. 59).

The belief that the new state will need a solid institutional foundation helped him in overcoming obstacles of any kind: “The administration of a country, meaning to take care of the material and moral condition of its inhabitants, without knowing what and where are its resources, is similar to curing a patient without seeing him or asking him what are his symptoms” (Murgescu, 1987, p. 286). Indeed, the desire of scientific knowledge of the economic and social realities dominates the whole activity and way of thinking of the creator of modern Romanian statistics (Murgescu, 1987, p. 287). In “Annals of Economics and Statistics” the language “could not be other than scientific, which does not ask what parties like or dislike”, but it says in the language of figures: this is what we are, this is the stage of our development” (Marțian, 1961, p. 206). Consequently, in the political arrangements resulting from the early exercise of democracy, “a government should be between the parties as a sober man between drunken men” (Marțian, 1961, p. 213).

The causes of economic backwardness should be sought in the complexity of the Romanian society because “the economic life of nations, as well as the individual's life is related to the political status of the country, to its legislation, administration, culture and its relations with other countries and peoples” (Marțian, 1961, p. 207). Compared to the many facets of the economic precariousness of the development, Dionisie Pop Marțian supports and promotes the development of the industrial capitalism by an overall protectionist economic policy. Unlike the protectionist system of List, which denied the proportionality of economic sectors, Marțian, “faithful to the protectionist ideals will push for a balanced and normal development of the Romanian economy, where the industry, the agriculture and the trade to be taken into account” (Marcu, N. and Ornea, Z. , „Studiu introductiv”, in Marțian, 1961, p. 34).

Thus, for Marțian, as for other industrialist authors of the time, the development of the private and state industry was necessary and possible: “in those countries where the private industry has not yet reached the level to set up business models, the Government believes that it is a duty to uphold the honour of the nation, by setting the need establishments” (Marțian, 1961, p. 301).

As analysts of the history of the national economy observed, in Marțian's work: "state enterprises had only an educational function, because the foundation of the industrial area was related to the private initiative" (Marcu, N. and Ornea, Z., "Studiu introductiv", in Marțian, 1961, p. 36).

Overall, the industrial design of Dionisie Pop Marțian is comprehensive; Marțian places the agricultural processing industries along with crafts and home industries. Unlike other industrialists, such as Ghica or Șuțu, whose doubts concerning the light industry were known, Marțian encourages this type of industry, able to enhance the available raw materials in sufficient quantities. Under these arguments, Marțian promote the establishment of typographies, because "the state of printing houses in the country certifies the degree of culture of a nation" (Marțian, 1961, p. 301).

It is defining for the industrial design of Dionisie Pop Marțian the underpinning of the gradual and progressive development of some manufacturing industries, such as metallurgical ones, for which there were enough material resources. Marțian publicly urges the owners of capital to invest in these industries. He also asks the government to exempt of duties the import of iron and other raw materials. Moreover, Marțian stated: "In no European country is accepted the principle: that the customs are set up with the clear purpose of taxation, but to protect the indigenous industry, although customs practice brings high benefits. Those states that impose taxes on consumption goods, justify customs revenues with the law, and those without such taxes, use customs revenues to encourage the industry" (Marțian, 1961, p. 435) Also, Marțian advocate for the export of salt mining and coal because "their production is the easiest and it is the most visible result of the will of the holder" (Marțian, 1961, p. 296). The establishment and growth of industries implied a custom policy which should follow a series of actions such as:

- "a) to charge luxury products and those goods similar to the national ones;
 - b) to diminish the taxes in case of the necessary objects to produce in the national industries;
 - c) to charge the exports by using a sliding scale, but only to charge the goods of those who cannot compete with us and the taxes to be small."
- (Marțian, 1961, p. 435).

Incidentally: one of the great ideas that deserve a moment of reflection is related to Marțian's revolt against a situation occurring in the export of salt: Romanian exported salt was recognized as a good and cheap product; however Serbia, Romania's traditional partner, imported salt from France, obviously

more expensive! Marțian solves the mystery: Romania does not have good roads! Of course, things are questionable, but the problem remains!

In conclusion, industry protection measures should be supplemented with measures of custom protection and with an educational policy that requires those professions needed by the industry: "The whole civilized world has respected the requirements of the time; people create institutes of polytechnics in order to spread real knowledge that help them to dominate the matter (nature) and to transform it in wealth and power, from which springs the welfare and the culture" (Marțian, 1961, p. 219).

Quoting the French minister of Public Instruction, "let's educate people and not absolve" (Marțian, 1961, p. 303), Marțian advocates for an appropriate and modern educational system. For this purpose it was necessary to qualify the labour force in order to respect the requirements of the industry; in those times in Romania was a shortage of workers, technicians and engineers. Marțian proposes to increase the share of technical and vocational education and to diminish considerably the humanistic education share: "to transform the raw material of this country and to give an industrial aspect, we need economists and industry workers, we must create mechanical workers and trained economists" (Marcu, N. și Ornea, Z., „Studiu introductiv”, în Marțian, 1961, p. 39).

According to Dionisie Pop Marțian, the school must not prepare public servants, but economists and workers: "We have to encourage the creation of professional schools organized and distributed according to the necessity of local industries and in the Romanian capital, beside universities we need a polytechnic institute" (Marțian, 1961, p. 303). Marțian is launching a campaign to support applicative education: "There will come a day when a one-hour speech will seem too long, when a journal article, longer than one hundred lines will not be read, when every sentence that will not be the expression of the human intelligence is going to be thought as ridiculous. The best way to hasten the arrival of such days is to multiply technical schools where they learn first of all what is useful for practical life, where they teach geography before mythology, arithmetic before poetry, natural sciences before, Latin verses and Modern languages before the Greek language. We would be sorry if you understood that we disregard the letters. On the contrary, we owe them everything and we love them. But as I said before: Bread above all!" (Marțian, 1961, p. 305).

On the other hand, the strong development of education would have an important socio-cultural significance, facilitating the consolidation of an

educated middle class, ensuring social stability that is necessary in any society. We only have to agree with the conclusion of Costin Murgescu: “Indeed, as the young Romanian state was consolidated, the reasons for free trade, undeniably respected in the era of Cuza Voda, began to weaken; at the forefront of national interests began to count the defense sector and the industry threatened by foreign competition, coming primarily from Austria-Hungary. Thus, as the years gathered on Dionisie Pop Marțian’s unknown tomb – pure figure in our history and unrepeatable cultural destiny – his way of thinking, unique in his lifetime, became the source of a refreshing current of economic thought” (Murgescu, 1987, p. 300).

The author, focusing more on industry, did not mean any disregard or denial of agriculture. Marțian acknowledged the difficulties of the agriculture sector: “The rural issue is an old one, protracted and often confused by the persecutors. This damages the public safety. Trying to solve did not emerged because other than injustice can be expected as long as the defendant to pay is himself the judge?” (Marțian, 1961, p. 210).

In fact, in case of the Romanian society, “the question of distributing the land to the peasants is a fundamental one” (Marțian, 1961, p. 211) At the same time as the property reform, Marțian requires the progressive transformation of agriculture by the introduction of farming mechanization: agriculture “have to renew his working tools, who are most backward in Europe; to be provided with roads, cars and others; and in order to do that it must earn equity and in this respect it need credits and to take credit, it should be free and safe and the welfare to be more generally widespread. It need, especially the freedom of jokes and a good regime. The best means, in fact, the unique ones are: the spread of economics by speaking and writing” (Marțian, 1961, p. 242).

Indeed, under such realities, the economic concept of Dionisie Pop Marțian is the voice of conscience and vocation. The protection against ignorance – the thread of his short life – became his profession of faith: “Economic and political education of the people proceeded very slowly, because mass remains a long time steeped in ignorance. During centuries, mass ignorance is not so harmful, but when debated issues that are related to it, ignorance is the most dangerous as it is the instrument used by the revolutionaries, as many times history have shown us” (Marțian, 1961, p. 242).

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References

- Marțianu, D.P. (1858). *Studii sistemice în Economia politică. Prima parte. Economia socială*, în Dionisie Pop Marțian (1961). *Opere economice*, Editura Științifică, București
- Marțian, D.P. (1961). *Opere economice*, Ediție îngrijită, adnotată, cu indice de nume și materii, bibliografie și studiu introductiv de N. Marcu și Z. Ornea, Editura Științifică, București
- Murgescu, C. (1987). *Mersul ideilor economice la români*, Editura Științifică și Enciclopedică, București
- Rogojanu, A., Șerban-Oprescu, G.-L., Piroșcă, G.I., „The Spread of Ideas Regarding Industry among Romanian People: The Case of Petre S. Aurelian”, în *Metalurgia International*, vol. XV, Special Issue no. 6 (ISSN 1582-2214 III), 2010, pp. 143-147, 2010, <http://apps.isiknowledge.com/>
- Rogojanu, A., Șerban-Oprescu, G.-L., Piroșcă, G.I., „The Spread of Economic Ideas among Romanian People. Case Study: Ion Ghica”, în *Storia del Pensiero Economico*, Fascicolo: 2/ 2009, Empoli, Italia, ISSN 1828-1990
- Rogojanu, A., Șerban-Oprescu, G.-L., Piroșcă, G.I., „The Spread of Economic Ideas among Romanian People. Case Study: Bogdan Petriceicu Hasdeu”, *Analele Universității din Oradea, Seria: Științe Economice*, TOM XVII, volumul II, *Economy and Business Administration*, 2008, ISSN-1582-5450 sau Ediția pe suport CD-ROM, <http://anale.steonomice.evonet.ro/pdf/2008/>
- Stahl, H.H., „Gânditori și curente de istorie socială românească”, Capitolul V. „Organizarea cunoașterii științifice a țării”, 2002, <http://ebooks.unibuc.ro/Sociologie/henri>

Monetary Policy Approaches Taking into Consideration the Current Economic Context*

Anca Maria GHERMAN

Bucharest Academy of Economic Studies
anca.maria.gherman@gmail.com

Alexandra ADAM

Bucharest Academy of Economic Studies
alexandra.adam@economie.ase.ro

Abstract. *Questions of interest among monetary policy makers involves the identification and analysis of various relationships between macroeconomic variables. To analyze these variables and their interrelations it is necessary to build a macroeconomic model which is based on a vector autoregressive, and in which exogenous shocks have impact on the study variables. How exogenous variables affect the variables of interest represent the transmission mechanisms. Estimates of the transmission mechanism has been considered traditionally, one of the major objectives of many macroeconomic studies. Such empirical researchers have obtained two major conclusions: first, that the transmission mechanism varies over time and the second is that the exogenous shocks change over time. Modeling these variables can intercept all these variations? The conclusions of these models are sufficient for monetary policy makers?*

Keywords: monetary policy; transmission mechanism; algorithmic elements.

JEL Codes: E52, E58.

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In a dynamic macroeconomic framework, which resonates with alternating periods of economic growth and crisis followed by recession, it is interesting to research the effectiveness of macroeconomic stabilization and structural policies. What is the impact of these economic policies in the context of a global economic crisis? Operation of monetary policy transmission mechanisms remains valid? Are there the same channels of monetary transmission or are permanently diversifying depending on the economy's needs? These are some questions that we want to find reasoned replies.

Worldwide, economic fluctuations over the past three years have been a challenge in terms of monetary policy effectiveness in order to achieve the objectives and also to identify how the decision is transferred to the real economy. Hence, there appeared the need to develop judges and complex models that capture more accurately the changes of exogenous shocks and of the time variable parameters.

Regarding the objectives, the monetary policy aims both ensuring a bigger occupation and price stability. This dual purpose, known and studied in the literature as "dual mandate" of monetary policy ("Why a Dual Mandate is Right for Monetary Policy?", Benjanim M Friedman, William Joseph Maier - Harvard University), can be seen in contrast with the stated purpose of many central banks that is primarily concerned and sometimes exclusively of price stability.

There are two circumstances in which a central bank should focus on this single goal. The first situation is the one in which there are other public policy instruments to ensure desirable levels of some real variables such as GDP and employment. The second circumstance is the assumption that output and employment stability cannot be achieved more easily and directly by monetary policy than in terms of price developments. During the current macroeconomic context, the fact that price stability is a necessary but not sufficient condition made the idea of the monetary policy dual mandate to become apparent.

Today few economists and a few businessmen, investors in the market or even ordinary people concerned about economic developments and thus about the evolution of business believe that the central bank's actions have no impact on the evolution of GDP and employment, or more generally, on the real variables which over time have been in the public attention. The fact that monetary policy can not increase the natural rate of employment or cannot achieve the GDP corresponding to full employment it cannot be an excuse for the lack of efforts to bring these real variables as close to optimal levels in the condition of business cycles disturbances.

It would be equally wrong to believe that monetary policy actions, on short and medium run, which are optimal for obtaining price stability, are always the best to achieve maximum of sustainability in terms of GDP and

employment. Olivier Blanchard and Jordi Gali call this possibility “divine coincidence” (Blanchard, Gali, 2007).

It is not legitimate to replace the question “Can and how can monetary policy affect real economic outcomes?” with the question “Can monetary policy do that?”. Both theory and empirical part show that monetary policy can influence a significant period of time, not only prices but also GDP, employment and other important aspects of non-financial economic activities. Thus the relevant question is: “In what sense should it do this thing?”. The answer can be determined from a relevant analysis of the central bank activity.

In order to formulate policies we must know how the macroeconomics operates. Not knowing how it works is the key obstacle in formulating policies (McCallum, 1997). In the last five decades monetary theory and the practice of monetary policy have informed each other on this issue. The knowledge such gained has provided new insights those who take decisions on monetary policy.

In principle, the process is as follows: both in theory and from observation data, the economists derivate in time basic scientific principles. These principles are used to construct quantitative methods, algorithms, such as econometric models needed for quantitative assessment of the economy’s (true but unknown) structure. Using these constructions systematically in order to evaluate different policies and to develop monetary policy decisions make monetary policy more and more of an applied science.

Applied monetary policy can be divided into two categories: first category involves systematic reasoning, algorithms – such as econometric models – and the second category concerns the economic reasoning itself and can be considered an art to create economic policies.

Monetary policy makers have acknowledged that their work involves not only current policies but also how they perceive different future policies. Also the wish to optimize the behavior of economic agents has not stopped to future expectations but has incorporated macroeconomic fundamentals in various models. Specifically, these models were manifested in two recent theories: the real business cycle theory and the neoknesian theory. In contrast to the old Keynesian theory, the new theory is based on microeconomic foundations related to the Keynesian concepts: nominal rigidities, non-neutrality of money and business cycle fluctuations inefficiency arising from the optimizer behavior. Real business cycle approach involves using a stochastic general equilibrium model.

Monetary policy decisions are transmitted through different monetary channels in different proportions and with certain lags. The impact of decisions through monetary policy channels varies depending on the economy structure.

In order to assess the relationship between two phenomena or variables, two methods or approaches have been developed over time: structural models to

examine whether a variable affects another, building, on an existing data, a model which explains the transmission channel of these variations and models in a simplified form that analyze whether a variable affects another variable by assessing trends and relations between the two (variables).

For example, a monetary policy change and its potential effect on production is assessed in a structural model by describing the economic system and the relationship between different variables at a micro and macroeconomic level, by describing the related equations and then by evaluating the entire causal chain. A simplified model will analyze only if a change in monetary policy is accompanied by a change in production taking into account, also, if it is just a random or systematic connection, observable within a specified time period.

The main disadvantage of structural models consists of the right specification of the model, because if this is not correct all findings and demonstrations are obviously flawed, in other words the evidence of a structural model will be as plausible as the model built is plausible. Another disadvantage is ignoring some transmission mechanisms that may be important for the relationship between money and economic activity.

Questions about the occurrence of changes in transmission mechanisms are as equally frequent as those related to changes in real business cycles. Estimation of the transmission mechanism has been considered, traditionally, one of the major objectives of many macroeconomic studies. Such empirical researchers have made two major things: first, the fact that the transmission mechanism varies over time and the second consists of the change of exogenous shocks over time.

Economists as Primiceri, Cogley and Sargent have studied the problem of exogenous shocks volatility and how the transmission mechanisms of monetary policy change across different economic periods. Giorgio Primiceri developed a simple modeling strategy for the moving rule of fluctuations in the covariance matrix and proposed an efficient algorithm MCMC (Markov chain Monte Carlo) to estimate the probability of subsequent numerical evaluation of the model. This model was tested on data specific to the US economy, emphasizing the role of monetary policy in the dynamics of inflation and unemployment.

Researchers have identified two main causes of these variables volatility. As shown in the studies of economists such as Blanchard and Simon (2001), Stock and Watson (2002), Sims and Zha (2004), exogenous shocks heteroscedasticity is a first explanation. The second cause is represented by the changes of transmission mechanisms, that is the way macroeconomic variables respond to shocks. If monetary policy varies over time there will be a direct effect on the spread mechanism of innovation. Moreover, if economic agents are rational and forward-looking, monetary policy changes will be incorporated

in private sector expectations, inducing further changes in the transmission mechanisms.

G. Primiceri tried to structure an appropriate framework for estimating and interpreting changes in monetary policy (in terms of both structured and unstructured part) and to show how this change propagates in the economy. It is essential that both coefficients and the covariance matrix to be able to fluctuate over time in order to distinguish between the changes of exogenous innovations and those of the transmission mechanisms.

In recent literature, the models of time variation, in the form of linear structures with discrete breaks, aimed at capturing a finite number of alternative schemes – Hamilton (1989). Discrete breaks models can successfully represent some of the rapid changes in monetary policy, but they do not capture with the same accuracy changes in the private sector behavior, in which the process of aggregation is usually designed to flatten most of the variables.

Even in a structural VAR model, the equations representing the private sector can be regarded as reduced forms of a behavioral model in which the private sector policies and its way of action are not easily distinguishable. If policies are also influenced by forward-looking variables (instead of being influenced only by current and past variables) then the VAR corresponding equation will reflect a combination of policy and private sector behavior, with minor effects on the coefficients fluctuations. The existence of any type of dynamic learning of private agents or of monetary authorities clearly favors a model with minor and continuous changes of the coefficients, compared to a model incorporating discrete breaks.

As a conclusion, the monetary policy progress makes art, judge to remain crucial for monetary policy management. In other words, monetary policy cannot be conducted only on the results of models or rules. No matter how sophisticated are, the models are vulnerable to changes in the economy structure, which is usually discovered with lags (Blinder, 2006). In addition, models do not use only a small part of the available data and information. Many other information talk about the complexity of the economy structure and have relevance in order to elaborate monetary policy, but they are not the result of applying algorithmic methods (Croitoru, 2008).

Thus, a good monetary policy needs to assume, besides a quantitative assessment of the economy structure, a structure containing all the available ex ante information: anecdotal and unquantifiable information; qualitative assessments regarding the errors materialization, forecasts of exogenous variables. Best decisions are always the result of filtering the information obtained from the models and rules with unalgorithmic elements.

References

- Bernanke, B., Mihov, I., „Measuring monetary policy”, *Quarterly Journal of Economics*, 113, 1998, pp. 869-902
- Boivin, J., Giannoni, M., „Has monetary policy become more effective?”, *Review of Economics and Statistics*, 88, 2006, pp. 445-462
- Cogley, T., Sargent, T., „Evolving post-World War II inflation dynamics”, *NBER Macroeconomic Annual*, 16, 2001, pp. 331-373
- Cogley, T., Sargent, T., „Drifts and volatilities: monetary policies and outcomes in the post WWII US”, *Review of Economic Dynamics*, 8, 2005, pp. 262-302
- Croitoru, L. (2008), „Politica monetară: artă și reguli”, prezentare la BNR, 17 aprilie 2008 (în curs de apariție)
- Cozmâncă, B.O., „Mecanisme de transmisie a politicii monetare”, teza de doctorat, 2002
- Durbin, J., Koopman, S., „A simple and efficient simulation smoother for state space time series analysis”, *Biometrika*, 89, 2002, pp. 603-616
- Friedman, B.M., Maier, W., „Why a Dual Mandate is Right for Monetary Policy?” Discussion of Alan S. Blinder, „Talking About Monetary Policy: The Virtues and Vices (?) of Central Bank Communications”, *Bank for International Settlements*, conference, Lucerne, 26-27 June, 2010
- Giordani, P., Kohn, R., „Efficient Bayesian inference for multiple change-point and mixture innovation models”, *Journal of Business and Economic Statistics*, 26, 2008, pp. 66-77
- Kim, S., Shephard, N., Chib, S., „Stochastic volatility: likelihood inference and comparison with ARCH models”, *Review of Economic Studies*, 65, 1998, pp. 361-393
- Koop, G., „Parameter uncertainty and impulse response analysis”, *Journal of Econometrics*, 72, 1996, pp. 135-149
- Koop, G., Pesaran, M.H., Potter, S., „Impulse response analysis in nonlinear multivariate models”, *Journal of Econometrics*, 74, 1996, pp. 77-118
- Koop, G., Potter, S., „Estimation and forecasting in models with multiple breaks”, *Review of Economic Studies*, 74, 2007, pp. 763-789
- Mishkin, F., „Will Monetary Policy Become More of a Science?”, *National Bureau of Economic Research*, Working Paper 13566, 2007
- Maheu, J., Gordon, S., „Learning, forecasting and structural breaks”, *Journal of Applied Econometrics*, 23, 2008, pp. 553-583
- Pesaran, M.H., Pettenuzzo, D., Timmerman, A., „Forecasting time series subject to multiple structural breaks”, *Review of Economic Studies*, 73, 2006, pp. 1057-1084
- Primiceri, G., „Time varying structural vector auto regressions and monetary policy”, *Review of Economic Studies*, 72, 2005, pp. 821-852
- Sims, C., Zha, T., „Were there regime switches in macroeconomic policy?”, *American Economic Review*, 96, 2006, pp. 54-81
- Svensson, L.E.O., „Optimal Inflation Targeting: Further Developments of Inflation Targeting”, *Monetary Policy under Inflation Targeting*, 2007, edited by Frederic Mishkin and Klaus Schmidt-Hebbel, Santiago, Chile

Behavioral Motivations of Gender Discrimination on the Labor Market in Romania*

Mihaela Hrisanta DOBRE

Bucharest Academy of Economic Studies
mihaelah.dobre@gmail.com

Dorel AILENEI

Bucharest Academy of Economic Studies
dorulilenei@gmail.com

Abstract. *Gender discrimination can be explained at the level of segregation on the labor market by the employers' perceptions about male and female workforce, by the level of development of a country, employers and employees.*

In any society, people are categorized from the attributes (stereotypical or not) which are supposed to be shared with their own group. Usually these attributes are anticipated based on stereotypes conveyed on behalf of different groups (Goffman, 1974). Stereotypes are those beliefs and opinions about the characteristics of men and women. The features associated with the two groups generally show us not only how men and women are perceived, and also how it should be. Stereotyping can be the basis for the discriminatory treatment in most cases (Linville, Salovey, Fisher, 1986).

In this article we presented the main theories that can explain the wage discrimination and we analyzed the discriminatory attitudes of gender on the Romanian labor market using the Economic and social cohesion survey⁽¹⁾

Keywords: labor market; discrimination; wage.

JEL Codes: J01, J15, 16.

REL Codes: 12D, 12F, 12I.

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1. The study of specialty literature

By discrimination we understand any distinction, exclusion, restriction, preference or different treatment that disadvantages a person or group, as compared with others in similar situations. The reasons underlying the discrimination may be diverse, such as: race, nationality, ethnicity, religion, sex, sexual orientation, language, age, disability, etc., and in this case we speak of multiple discriminations (The ethnographic research on the multiple discriminations, ANES, 2007). Discrimination is a general feature of social life, based on the existence of certain prejudices. The prejudice phenomenon involves the rejection of the other person, regarded as a member of a group against who there are shown negative feelings.

The social identity theory (Tajfel, 1971) introduces the distinction between the in group and the out group, and between the group membership and the group represented by “the others”. This means that individuals tend to favor their own group against others. The empirical studies (Zamfir, 2007) showed that women in Romania are associated rather with the family sphere, the private space respectively, while men are associated with professional life and leadership.

The research conducted so far has identified the existence of several types of discrimination. Banton (1998) made a distinction between the direct and indirect discrimination. The direct discrimination occurs when two people with the same level of training and similar jobs are paid differently. The indirect discrimination is based on a previous decision that two people with the same level of training receive different wages because they were employed on different positions or at different time. Kirshna Mallick (1995) suggests two other types of discrimination at a group and individual level. Group discrimination is different from individual discrimination, which is independent of the group members. On the labor market group discrimination is evident when the average wage of the group is not proportional to the average productivity.

The discrimination on the labor market can also occur “before entering the labor market” in which case we speak of pre-discrimination. This means that the chances of an individual's personal development do not depend on his/her skills. We speak thus of inequality of opportunity, which is due to the social environment which each individual comes from.

Wage discrimination can be explained by gender segregation between activity sectors, professions, jobs and hierarchical positions. These differences can be explained: through compensatory differences which may vary from one sector to another, through the efficiency wage practiced by corporations to monitor the employees and to reduce the rate of rotation of workers etc. Discrimination can be explained based on two theories: the theory of preference and the statistical discrimination.

A. The theory of preference for discrimination

Becker (1957) believes that the utility of workers who are part of a group is influenced by the relationships they maintain with members of other social groups. On the labor market there are two types of agents that may exhibit a “taste” for discrimination; they are, on the one hand, the employers, and on the other hand the employees. Becker (1971) analyzed the discrimination determined by employers based on the following scenario: let us suppose we have two groups:

- group 1 consisting only of men;
- group 2 consisting only of women.

The two groups are perfectly substitutable in production, even if for the company, to hire a worker from the group 2, implies psychological costs that would not have had if the company had hired a worker from the group 1. Any non-pecuniary cost paid by the employer will lead to increased wage costs. For example, if the cost of salary for workers in group 1 is equal to w , for workers in group 2 it will be $(1+d_i)w$. The d_i value (called the Becker's discrimination coefficient) measures the “preference” of an employer for a certain worker. Coefficient d_i is very difficult to measure because it is different from one employer to another and may depend on the nature of the workplace, and in this case it is inserted d_{ij} coefficient (where j shows us the work place). This type of discrimination usually occurs in the decisions of employers regarding recruitment of workers belonging to different groups.

Suppose that the salary of members of the group 1 is equal to w_1 , and for the members in group 2 is equal to w_2 . For an employer “I” we had the following situation:

- $w_1 < w_2(1+d_i)$, if the members in group 1 will be recruited;
- $w_1 > w_2(1+d_i)$, if the members in group 2 will be recruited;
- $w_1 = w_2(1+d_i)$, if the employer does not have any preference which group to recruit from.

Where employees have a discriminatory attitude towards other workers (eg, to women) they will receive a salary w_1 (as in the previous case). They believe however that they will receive a salary equal to $w_1(1-d'_i)$, where d'_i shows us the psychological cost. Where the two groups of employees (group 1 and group 2) are complementary or imperfect substitutable setting a balance will generate an increase in wages in group 1 and a decrease in group 2. If the firm will hire workers from both groups to keep those who are part of the group 1, it will have to offer them a higher wage to motivate them. This “bonus” is financed by reducing the wage of the less skilled workers. *Discrimination by interest* can also be determined by consumers, when they prefer a certain product from certain companies.

B. Statistical discrimination

Employers can not directly observe the productivity level of candidates in a vacancy job, but they can see certain features, such as professional training (Spencer). In the model developed by Phelps (1972) firms employ workers based on a performance test y , which can provide information about the real productivity of workers, q . In this case we can write that:

$$y_i = q_i + \mu_i, \quad (1)$$

Where:

μ_i -error

If we estimate the above equation we get:

$$\hat{q}_i = (1 - b^*)\bar{q} + b^* y_i \quad (2)$$

In the above equation, b^* takes values between 0 and 1 and shows the correlation between y and q . If $b^* < 1$ it is possible that a minority group worker who is well prepared to win less than a worker in the majority group, which is less efficient. In reality, the statistical discrimination can occur in two situations:

- a) For recent emigrants who have very different linguistic and cultural profiles, and in this case may they get low scores in performance tests;
- b) For women, especially those leaving the labor market for a long time.

2. The empirical analysis

For the analysis of gender discriminatory attitudes on the labor market in Romania, we used the Economic and Social Cohesion survey. The survey results show that Romanians attaches great importance to the job that they rank the second place after the family (Figure 1).

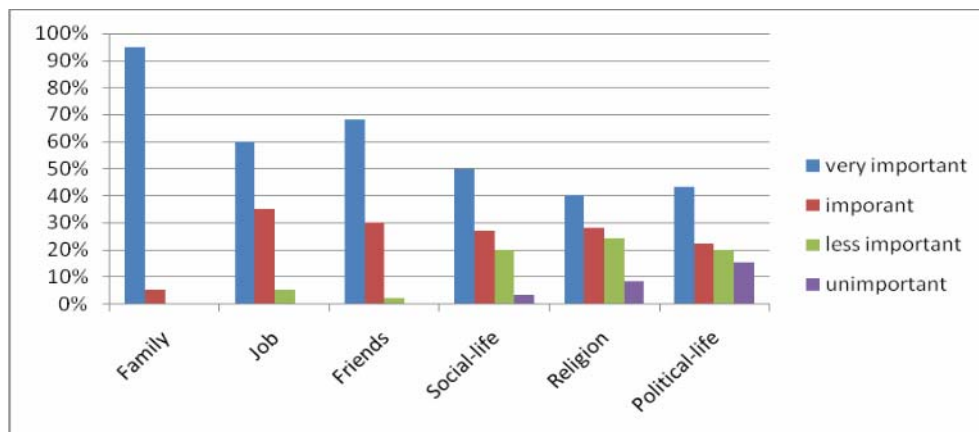


Figure 1. How important are these things for your life (%)

However, the differentiation between female and male responses to this question reveals important nuances in attitudes between them on the most important things in life (Figure 2). First there is a more serious attitude of women than men, because the family is the most important for women (60.9%) and the job is the second (57.4%). Men pay greater attention to the job than to the family (42.6% to 39.1%). We can therefore say that men are more entrenched in extra-familial activities, while women are more traditional and instead attached to the household.

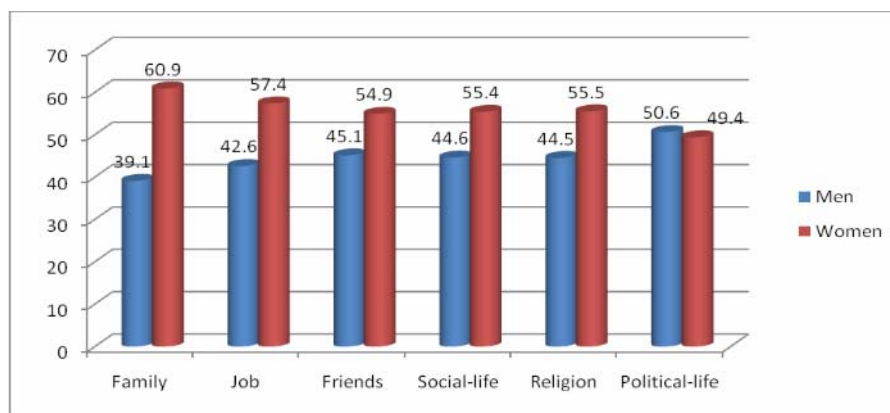


Figure 2. *The importance of things in life (%)*

In the choice between household and work the attitude difference is significant: the majority of men (54%) believe that women should sacrifice work for family care, while only 44% of women would accept this situation (Figure 3).

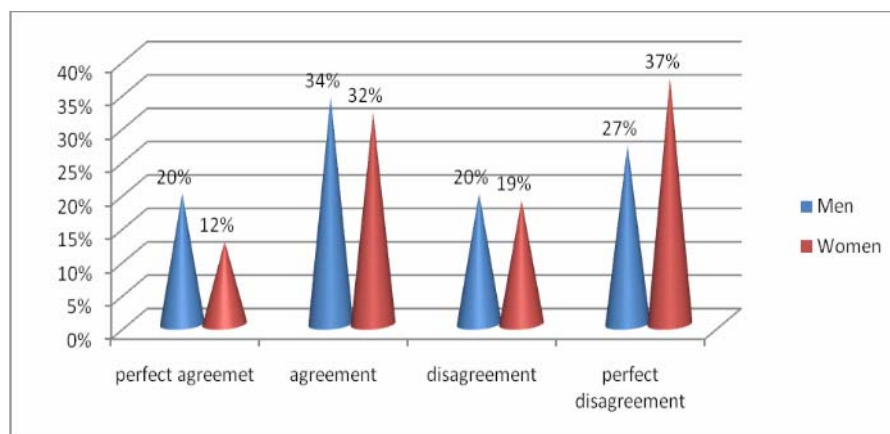


Figure 3. *A woman should be ready to give up work to take care of the family*

The difference in attitude is positive to men also regarding the priority of employment for a job in economic crisis (Figure 4). However, there is a noticeable split in the attitudes of women in two categories which are at the total opposite poles: those who agree that man should have priority in getting a job (29%) and those that are in total disagreement (26%).

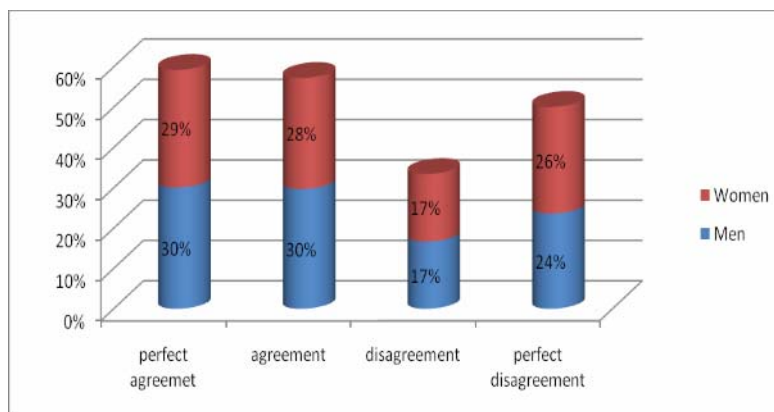


Figure 4. Agreement/Disagreement of women and men on the following question:
When there is a crisis of jobs, men should be given priority in getting a job

The figure below indicates the best our attitude substrate of gender discrimination in the labor market. The reported trend is observed better correlation with the question: "husband should be the main earner of income in the family» (Figure 5). The differences in responses are clearly favorable to men, 81% of them agreeing with this statement, and 56% of women (which shows a low level of their empowerment).

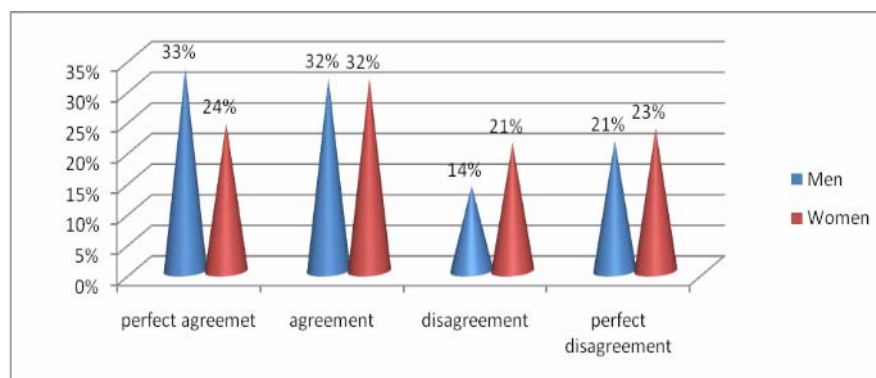


Figure 5. Agreement/Disagreement of women and men on the following question: husband should be the main earner of income in the family?

In terms of labor market participation of the two groups, the female respondents work mainly without legal forms (63.6%) or not working, while men work with legal forms or occasional. The preference for this type of employment among women may in time lead to discrimination against them on the labor market.

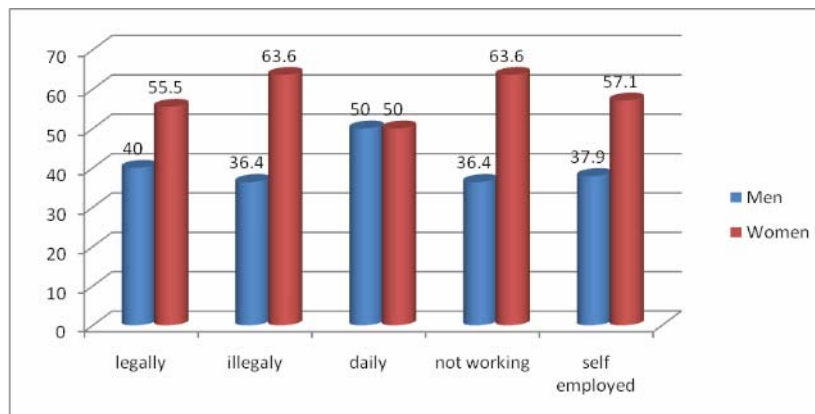


Figure 6. *The way of working on the labor market*

3. Conclusions

We can say that gender discrimination is highly dependent on the attitude of men and women towards the labor market, and this imbalance should be considered both in terms of the discriminated one, and of the one who discriminates. The analysis of these attitudes in Romania's case shows that there is a very consistent attitude basis that helps potential gender discrimination, even if the wage gap between women and men is not so large (with a downward dynamic in recent years). Men are more anchored in extra-familial activities and pay more attention to the job, however women are more traditional and attached to household.

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Note

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References

- Banton, M., (1998). *Racial Theories*, 2nd edition, Cambridge University Press
- Becker, G., (1967). *The Economics of Discrimination*, University of Chicago Press, 1957
- Goffman E., (1974). *Stigma*, Notes on the Management of Spoiled Identity, Middlesex: Penguin Books
- Linville, P.W., Salovey, P., Fischer, G.W. (1986). *Stereotyping and perceived distributions of social characteristics: An application to ingroup –outgroup perception*, in Dovidio, J., Gaertner, S.L. (Eds.), *Prejudice, discrimination, and racism*, San Diego, CA: Academic Press, pp. 165-208
- Mallick K. (1995). *Individual Discrimination în Magill Frank* (coord.) International Encyclopedia of Sociology, Fitzroy Dearborn Publishers
- Phelps, E., „The Statistical Theory of Racism and Sexism”, *The American Economic Review*, Vol. 62, No. 4, 1972, pp. 659-661
- Tajfel, H. (1981). *Human groups and social categories*, Cambridge University Press, Cambridge
- Spencer, M., „Job Market Signaling”, *Quarterly Journal of Economics*, Vol. 87, 1973, pp. 355-374
- Zamfir, A.M. (2007). *Discriminarea multiplă în România*, Editura MediaPrint
- „Cercetarea etnografică privind discriminarea multiplă”, www.anes.ro, 2007