

У випуску представлені дослідження актуальних проблем економічної теорії, страхування, управління ризиками, перестрахування, державного управління, міжнародної економіки, економіки підприємства, менеджменту, маркетингу, управління інвестиціями, теорії фінансів, банківської справи, статистики та шляхи й засоби вирішення цих проблем.

Для наукових працівників, практиків, викладачів, аспірантів, студентів.

В выпуске представлены исследования актуальных проблем экономической теории, страхования, управления рисками, перестрахования, государственного управления, международной экономики, экономики предприятия, менеджмента, маркетинга, управления инвестициями, теории финансов, банковского дела, статистики, а также пути и средства решения этих проблем.

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The research results on current problems of economic theory, insurance, risk management, reinsurance, public administration, international economics, business economics, management, marketing, investment management, theory of finance, banking, statistics, the ways and means of solving these problems are released in the issue.

For researchers, practitioners, teachers and students.

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## **INTELLECTUAL RENT AS AN ESSENTIAL FACTOR OF INNOVATIVE DEVELOPMENT OF ECONOMY**

*The article reveals the nature, structure, specific properties, conditions of formation and types of intellectual rent. The authors highlight the problems of estimation and distribution of intellectual rent between economic actors; analyze experience of developed countries in the field of regulation of intellectual rent; single out obstacles to its expanded reproduction and provide practical recommendations for the effective regulation of the rental income in the economy.*

**Keywords:** intellectual rent; types of intellectual rent; distribution of intellectual rent; regulation of intellectual rent.

**Problem setting.** Recent changes in the proportion of factors of production and transformation of intellectual capital into a strategic element of postindustrial development have enhanced scientific interest regarding the formation and distribution of the income from intellectual activity. Nowadays the production of intellectual products becomes one of the most promising and profitable sectors of the economy. Thus, the analysis of the issues of distribution and use of intellectual rent in the economy of Ukraine attains an important scientific and practical meaning.

It is widely recognized that the innovative way of development, aimed to increase the global competitiveness of the country, which has been chosen by Ukraine, is impossible without assembling of a new technological base. However, the proportion of total expenditure on conduction of scientific and technical research accounted for only 0.77% of the national GDP in 2013 (0.75% in 2012). At the same time for the countries of European Union this index equaled on average to 2.06% of the GDP in 2012 (e.g. Finland – 3.55%, Sweden – 3.41%, Denmark – 2.99%, Germany – 2.84%, Austria – 2.75%). High rates were also observed in Japan (3.25% in 2010) and the USA (2.73% in 2011). [1, p.76; 2, p.155].

Underfunding of scientific and technical research in Ukraine deepened the structural deformation of the national economy, caused by the dominance of export-oriented primary industries. The consequences of that were an unequal foreign trade exchange, an outflow of intellectual capital abroad and an increase in the technological backwardness of the country. In the global competitiveness ranking of the World Economic Forum in 2013-2014 Ukraine has lost 11 positions, moving from 73rd to 84th place among 148 countries [3]. Under these circumstances the efficient use of intellectual capital can significantly increase global competitiveness of the national economy.

### **Analysis of the previous research and publications.**

Rent is a fundamental economic concept, understanding of which deepened along with evolution and differentiation of economic activity and implementation of new factors of production into the economic turnover. Representatives of the Classical political economy (W.Petty, F.Quesnay, A.Smith, D.Ricardo, J.-B.Say, J.S.Mill) and Marxism (K.Marx, F.Engels) mainly analyzed land rent as a rent from the natural resources. At the same time neoclassical economists (W.S.Jevons, C.Menger, A.Marshall, J.B.Clark) substantiated the existence of rental income from each of the factors of production. They used a term "rent" to denote a steady income from "free gifts of nature" and a term "quasi-rent" to identify the income from the production factors that are not permanent. Institutionalists (T.Veblen, J.R.Commons, R.Coase, A.Krueger, D.North, A.Aslund, J.M.Buchanan, G.Tullock, R.Tollison) incorporated non-

economic factors into the analysis, enriched the list of the actors of rent relations and suggested new types of rent.

The modern researchers interpret the rent as an income received from any factor of production with non-elastic supply; economic form of the right of ownership for a limited resource; special kind of a stable fixed non-labor income obtained by the owners of limited resources or an income received from monopoly rights on the scarce resources. The scientists acknowledge existence of different types of untraditional rental income e.g. intellectual rent, information rent etc. Significant contribution to the coverage of a notion of the untraditional types of rent was made at the end of XX – beginning of XXI century by L.Edvinsson, T.A.Stewart, M.S.Malone, J.Daffi, L.Prusak, D.A.Klein, C.Fitzsimmons, T.Jones, C.DesForges and others [4,5,6,7,8]. These economists study nature and structure of intellectual capital and suggest innovative approaches to the analysis of extra profits and business leadership. The approaches are based on the idea of effective use of unique intellectual assets that can provide a competitive advantage and trigger a mechanism of innovative development.

Some aspects of the establishment and transformation of rent relations in the post-socialist economies was analyzed by Ukrainian researchers such as S.Arhiyereyev, B.Danylyshyn, A.Grytsenko, V.Dementyev, I.Malyi, O.Nosova, O.Pashaver, P.Sabluk and others. The problems of formation and development of intellectual capital, commercialization of intellectual property, increasing role of intellectual property in the intensification of innovation processes in Ukraine, maintenance of competitiveness of business entities and the state in a globalizing world economy were considered in the works of O. Belarus, A. Butnik-Seversky, V.Virchenko, V. Heyets, P. Krainev, N.Merkulov, V. Osetsky, A. Pidoprigror, A.Svyatotsky, V. Sidenko, P. Tsybulov, A.Chukhno and others.

However, it must be admitted that despite of the relentless attention of the domestic and foreign scholars to the analysis of relationships in a sphere of intellectual activity, there exist a number of issues available for the further consideration and analysis. These issues are related to the processes of formation, distribution and efficient use of intellectual rent as well as to the specific features of implementation and reformation of these processes in the Ukrainian economy.

**The purpose of the proposed research** is a theoretical substantiation of the main directions of improvement of state regulation of intellectual rent as a leading factor of the innovative development of the economy of Ukraine.

To implement this goal the authors first reveal the nature and structure of intellectual rent as well as prerequisites for its formation. In the further sections of the article they cover the specific properties, structuring criteria and

types of intellectual rent as well as its role and significance in the modern market economy. A considerable attention is paid to the analysis of the problems of evaluation of intellectual rent, its distribution between the main economic actors and improvement of state regulation of this sphere of social relations. The authors investigate experience of developed countries in this area and highlight the emerging trends of improvement of antitrust laws and legislation on the protection and enforcement of intellectual property rights.

Relying on the materials of Eurostat and the State Statistics Service of Ukraine the article analyzes the efficiency of the governmental regulation of the intellectual rent as a leading factor of innovative development of the economy of Ukraine. In the final sections of the paper basic limitations of expanded reproduction of intellectual rent in the national economy are considered and practical recommendations to improve state regulation of intellectual rent in Ukraine are provided.

The authors take into account the complexity and dynamic of the system of rent relations in the modern market economy. They acknowledge that despite the possibility of application of generally known theoretical and methodological approaches, positive analysis of intellectual rent and normative conclusions may depend on the specific type of a rental income and characteristics of the national economy.

**Research specification.** The intellectual property is used in a market economy through commercialization mechanism, which ensures the continuous movement of the intellectual capital [9 p.6-7]. This mechanism can be defined as a set of structural elements generated by human knowledge. These elements are the hidden sources of value, which bring the company the particularly high grade in the international rankings.

The modern economic scientists add to the structure of the intellectual capital those kinds of economic resources that can not be evaluated with traditional evaluation techniques. Thus, intellectual capital includes both human and structural (institutional) capital. The latter consists of customer and organizational capital, which in turn includes innovation and process capital [4].

Quasi-rent or intellectual rent is explained in the modern economic literature as an income that exceeds a compensation that is needed to attract intellectual capital to a certain sector of the economy (opportunity cost). Quasi-rent is basically a profit obtained by establishing a stable, limited-in-time monopoly on the use of intellectual resources. Such an extra profit is created by the labor of "intellectual workers" and obtained by the owners of intellectual property as a result of existence of monopolies on intellectual products, supported by the system of intellectual property protection [10].

The intellectual rent consists of the two financial flows, namely: (1) income earned from the production and sale of innovative products, which are created individually on the basis of intellectual property; (2) income from the transfer of intellectual property rights (royalties, lump-sum payments, blended payments, etc.) [11, p. 123].

Thus, intellectual rent is created as a result of use of a specific renewable resource (intellectual capital) and enforcement of property rights on innovative products, legalized by means of patents, licenses and other agreements.

The main prerequisites for the formation of intellectual rent are:

- establishment of information and knowledge as the dominant factors of production;
- scarcity and high profitability of intellectual capital;
- monopolistic ownership of intellectual resources and products;
- clear specification and protection of intellectual property rights;
- effective mechanism of commercialization of the products of intellectual activity.

It is important to note that intellectual rent is characterized by the properties that are typical for any rental income. However, as a notion of post-industrial economy, it has the following specific characteristics that distinguish it from other types of rent:

- economic prerequisite for its formation is a difference in the utility obtained from consumption of the products of intellectual property and traditional goods;
- it originates from motivation and ability of individuals for intellectual production, their ability to process information and produce new knowledge;
- economic entities that appropriate intellectual rent are the owners of intellectual capital that is both private and public good and which is characterized by identity of the processes of production and consumption as well as by continuity of infrastructure services;
- the main areas of its formation is the high-tech manufacturing and technological complex as the leading areas of the national innovative development;
- its distribution and use is determined by the nature of ownership on intellectual products and innovations;
- it has a provisional nature and disappears when innovation becomes widespread or when its protection document expires;
- desire to obtain intellectual rent stimulates innovative development of economy, because only leaders in the field of scientific and technological progress can receive such an extra profit.

Hence, the conclusion can be made that intellectual rent has a productive nature and plays an important role in a market economy in the following ways:

- interest of the owners of intellectual capital in the implementation of innovations, aimed to increase competitiveness of their business, stimulates self-reproduction of productive rent-seeking behaviour of economic agents;
- motive to receive intellectual rent stimulates creative self-development of labor force and accumulation of intellectual capital, which leads to improvement in the technological level of production and increases productivity of labor;
- additional income, received by the owners of intellectual capital and intellectual products, promotes the consumer welfare and increases consumer demand;
- competitive innovations stimulate investment costs and lead to an increase in aggregate demand;
- intellectual rent generates positive "spillover effects" that do not need any compensations and which favour the society in general.

The modern national and foreign economic literature distinguishes different approaches to the classification of intellectual rent (Figure 1).

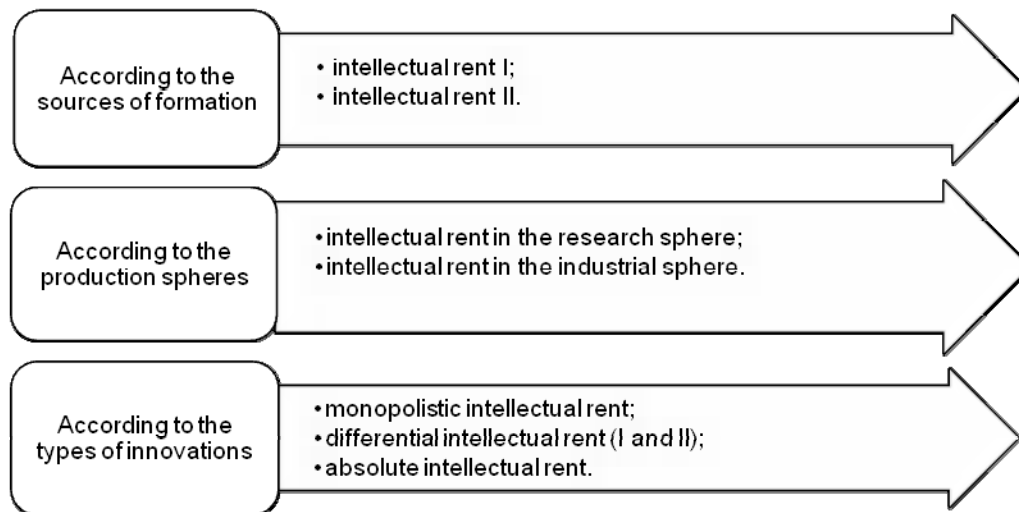


Fig.1. Classification of intellectual rent in the modern economic literature

Source: author's compilation

According to the sources of formation, two types of rent can be singled out: (1) *intellectual rent I*, that is created by the labor of highly qualified personnel, which possesses creativity and applies pioneer technologies in its economic activities; (2) *intellectual rent II* – extra profit, obtained as a result of a systematic use of continuous training of highly qualified personnel within the innovation cycle. According to the production spheres, the intellectual rent can be classified as following: (1) *intellectual rent in the research sphere*, which is based on scientific knowledge. It is created due to the public appreciation of scientific work and is expressed in a form of a premium for academic degrees, titles and an income from the products protected under the copyright law. The main prerequisite of its extraction is an institutionally fixed difference in qualification of scientists along with legal protection of their intellectual property. (2) *intellectual rent in the industrial sphere*, which is created by personal abilities and talent of employees under intellectualization of production. The main prerequisite of its formation is commercialization of the results of intellectual activity. It is expressed in a form of a price for the transfer of intellectual property rights on the results of intellectual activity as well as in the form of fines and penalties. Its extraction is conducted under a clear specification of intellectual property rights in the economy.

Taking into account the qualitative heterogeneity and quantitative limitations of innovations, the following types of intellectual rent can be distinguished: (1) *monopolistic intellectual rent*, which is generated by radical innovations (scientific discoveries). Such innovations are only possible in case of use of particularly valuable and unique features of intellectual property. This allows to set high monopoly prices in the market and get high monopoly profits; (2) *differential intellectual rent I*, that arises from the use of qualitatively best and average innovations (in terms of their functional suitability); (3) *differential intellectual rent II*, that is formed from the use of innovations, the quality of which has been improved as a result of additional investments in human capital; (4) *absolute intellectual rent* as an additional utility generated by innovations of any sort, which improves the quality of products and production technologies, reduces the cost of manufacturing and circulation of the products and brings additional income to its owner [12,13,14].

The modern economic literature has no generally accepted approaches to estimation of intellectual rent. Some researchers calculate the value of intellectual rent by subtracting the value of the product, manufactured without using the intellectual property, from the value of the product of the same type that was made while using the intellectual property [15]. The others define rent as a difference between individual value (utility) of intellectual resources and products, supply of which is inelastic, and their social (market) value (utility) or as a surplus of opportunity cost of limited intellectual resources and products. The value of intellectual rent can also be determined as a difference between an income of an owner of intellectual capital and an average income of an innovative company or as a difference between an income of an owner of intellectual capital, investor's income (that includes interest on invested capital and the risk premium) and an average income of an innovative firm.

Thus, at the microeconomic level assessment of intellectual rent ( $R_i$ ) is provided in a form of a multi-function:

$$R_i = f(x_1, x_2, x_3, x_4, x_5)$$

where  $x_1$  – value of objects of industrial property,  $x_2$  – number of objects of industrial property,  $x_3$  – value of the products, manufactured while using objects of industrial property,  $x_4$  – revenue from the sale of patents and transfer of rights under a license agreement,  $x_5$  – value of a goodwill as a difference between the market value of the company and its accounting value [16]. However, at the macroeconomic level intellectual rent is calculated as an amount of additional revenue, obtained from the sale of new products at higher prices; as a revenue from the sale of patents, licenses, know-how; as a benefit from improvement of capital assessment of innovative enterprises [14].

Another important theoretical and practical aspect of the analysis is the mechanism of distribution of intellectual rent between developers of innovative products, innovative enterprises and the state. Theoretically, the income, obtained from the use of intellectual capital, must be distributed between "intellectual" employees and innovative enterprises in proportion to the total separation of intellectual capital in two parts – human capital and structural capital. In practice, the firm preserves monopoly on intellectual capital and pays wages to the knowledge workers. As a result, part of the rental income is obtained by the owners of the firm. This type of relations is institutionally regulated by



an employment contract, which owners of human capital often seek to revise in order to obtain increase in wages [17, p.259]. The state, in turn, receives a part of the rent through its tax system. Participation of the state in the distribution of rent is theoretically reasoned by the necessity to finance development of science, technology, and education.

At the same time extraction and distribution of intellectual rent may be inappropriate due to the following reasons:

1) unlike the distribution of rent from natural resources, which must be assigned to the society as a whole, the distribution of intellectual rent is associated with clear specification of property rights on the results of intellectual activity;

2) extraction and accumulation of intellectual rent by the state does not guarantee the effective spending of funds on high-tech sector of the economy [11, p.124].

In this context, it is important to highlight the experience of intellectual rent distribution in developed countries, which indicates that the efficient patent system significantly increases the speed of implementation of innovations [18, p.19]. In a market environment the role of patents is reduced to the protection of the field of perspective fundamental developments from potential competitors. The research of Mansfield (1986) shows that in the most industries (e.g. textile industry, metal processing, manufacture of electrical equipment, instrumentation, manufacturing of office equipment, vehicles, rubber, etc.) patents do not play the role of a driving force of innovative development. However, in the pharmaceutical industry as well as in the production of chemicals, the impact of the patent system is much more significant [19]. Thus, in relation to these industries, many countries of the world nowadays place emphasis on harmonization of competition law along with improvement and enforcement of laws concerning protection of intellectual property rights. The governments of these countries add to the existing competition laws and legislations some normative exceptions that are aimed at regulation and support of innovative markets. Supporters of such measures believe that the patent monopoly along with rents are some kind of society payment for the development of science and technologies. Hence, they consider rent-seeking as an important tool to stimulate innovations [11, p.135]. On the other hand, the protection of intellectual property in knowledge-intensive industries, products of which have high social significance (e.g. pharmaceutical

industry) can lead to an increase in prices. Thus, the protection of intellectual property in these spheres may be weakened for the benefit of the society. For example, in Great Britain the issues of high prices on medicines are resolved within the complex government program *Pharmaceutical Price Regulation Scheme*, which fixes the planned rate of return on equity at 21% or 6% of sales. If a pharmaceutical company exceeds the rate of return by more than 40%, it must reimburse the excess revenue to the Department of Health [20, c.216-217].

It is important to mention that the regulation of rent relations in developed countries is based on the stable institutional framework, compatible with law and generally accepted standards of behavior. Whereas the transition economies are characterized by institutional instability and lack of clear specification of property rights. The continuous violation of the latter leads to the erosion of income flows from the products of intellectual activity and exhausts the intellectual potential of the society. As a consequence, the unproductive rent-seeking behaviour becomes dominating in the economy. It creates the artificial barriers to the movement of resources, establishes non-competitive methods of their detention and causes underfunding of innovation sector. The analysis of rent relations in the economy of Ukraine shows that the main part of excessive profits is formed in the extractive industries and in the sphere of money circulation. According to the State Statistics Service of Ukraine during the period of 2012-2013 the most profitable spheres of Ukrainian economy were limited to the metallurgy, banking and financial activities. Whereas, the knowledge-intensive sector, which includes production of electrical and optical equipment, machinery, vehicles etc., remained highly unprofitable (see Figure 2). The profitability level of large and medium-sized enterprises in the sphere of process manufacturing in Ukraine in 2012-2013 totaled to 2.1% and was significantly different from the rate that is considered normal for the world economy (7.8%), not to mention the fact that the yield of high-tech companies in the world can reach 35-40% [21]. The low rate of return on high-tech sector and migration of capital to the field of raw materials are two crucial factors that led to underinvestment of innovations and increased technological dependence of the national economy.

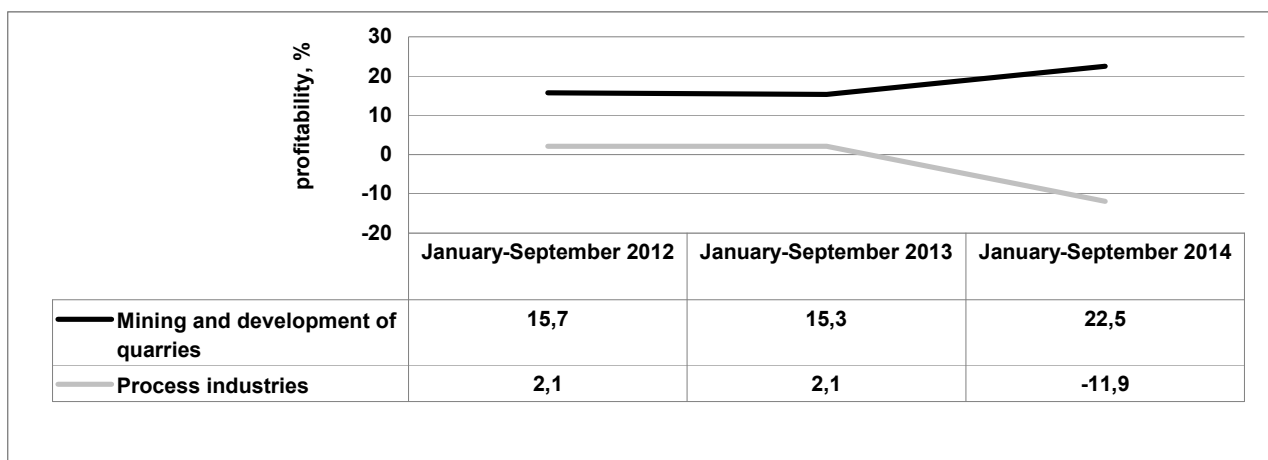


Fig. 2. Profitability of operative activity of big and medium enterprises in Ukraine according to the types of industrial activity, % [21]

The priority objective of the EU over the past decade was improvement of the competitiveness of European countries, partly through accumulation of intellectual capital. According to the Lisbon strategy, 3% of GDP of the European countries must be invested into conduction of research and development (R&D). Even though this goal was not reached by many members of the EU in 2010 (see Figure 3), it remains one of the five key objectives

identified within the Europe-2020 strategy. In 2012 the expenditure on R&D in the EU amounted to 898.3 million €, which was 2.9% higher than in 2011 and 42.9% higher than in 2002. In 2011 the investments in R&D in the EU amounted to 87.0% of the same investments in the US and were 2.7 times higher than in China. Meanwhile in Ukraine in 2012 the share of expenditure on R&D was only 0.75% of GDP [22, p.158].

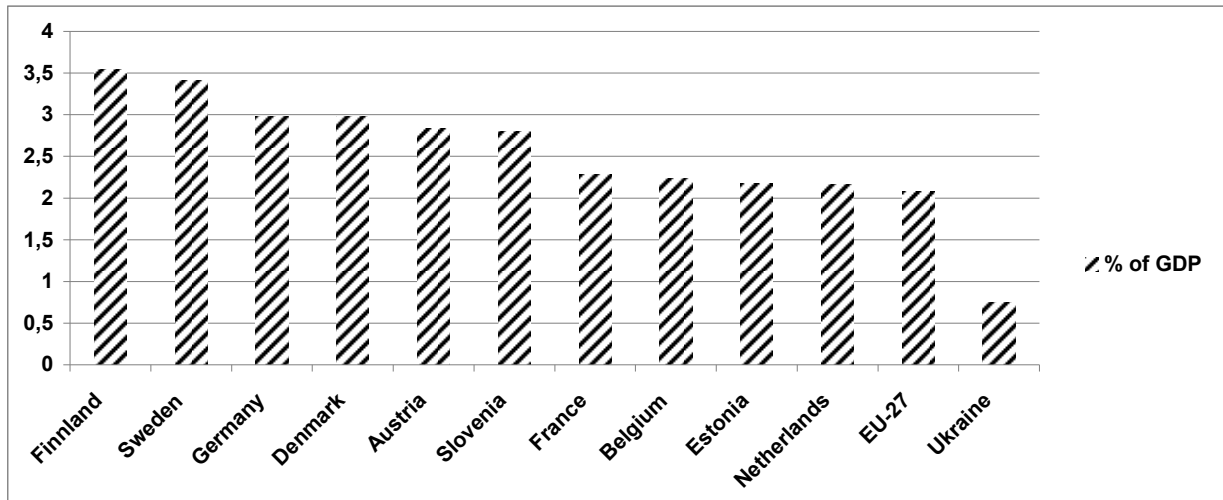


Fig.3. Share of expenditure on R&D as a part of GDP of some European countries and Ukraine in 2012, %

Source: [22].

In 2013 a number of the enterprises and organizations in Ukraine, which were engaged in the development and use of advanced technologies and objects of intellectual property rights, decreased by 2.6% in comparison to 2012 [23]. During the period of 2000-2013 the share of firms involved in innovative activities ranged from 11% to 18%,

and the proportion of companies that implemented innovations was not higher than 8-15%. The share of sales of innovative products as a percentage of sales of industrial products has decreased by more than half over the last ten years (see Table 1).

Table 1. Introduction of innovative technologies by industrial enterprises in Ukraine in 2001-2013 \*

Year	Share of firms that developed innovations, %	Share of firms that implemented innovations, %	Amount of the new technological processes that were implemented	Share of sales of innovative products as a percentage of sales of industrial products, %
2001	16,5	14,3	1421	6,8
2002	18	14,6	1142	7,0
2003	15,1	11,5	1482	5,6
2004	13,7	10,0	1727	5,8
2005	11,9	8,2	1808	6,5
2006	11,2	10,0	1145	6,7
2007	14,2	11,5	1419	6,7
2008	13	10,8	1647	5,9
2009	12,8	10,7	1893	4,8
2010	13,8	11,5	2043	3,8
2011	16,2	12,8	2510	3,8
2012	17,4	13,6	2188	3,3
2013	16,8	13,6	1576	3,3

\* Source: the table is based on the data of [22].

The share of innovative enterprises in the Ukrainian economy depends on the type of economic activity in which they are involved (see Figure 4). In the process industries, the share of such companies was 15,8% in 2012, in the pharmaceutical industry – 34,2%. In the metallurgy and metalworking this rate was the lowest and equaled 12,3% and 17,1% correspondingly. According to

the research conducted in 2014, the leading branch of the Ukrainian industry, where rent-seeking can be observed at the largest extent, is siderurgy. It is followed by the Ukrainian oil and coal sectors [24]. Not surprisingly, the rents, obtained by firms that belong to the aforementioned industries, are not spent for the purposes of innovative development and modernization.

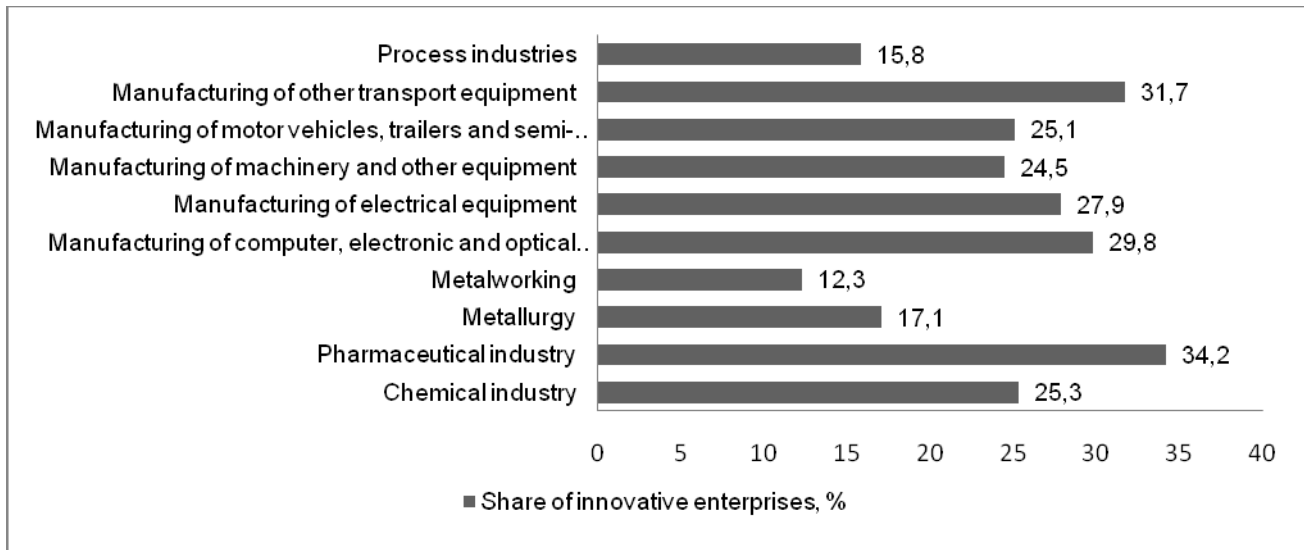


Fig.4. Share of innovative enterprises according to the different types of economic activity in Ukraine in 2012, % [25]

The analysis shows that the following restrictions exist on the way of expanded reproduction of intellectual rent and its redistribution for the purposes of innovative development of the Ukrainian economy:

- high transaction costs that arise under enforced property rights on intellectual resources and products of intellectual activity due to the lack of clear specifications of such resources and products;
- information asymmetry that exists between the contracting parties: owners of intellectual capital, innovative companies and public authorities that are entitled to partial or complete exclusion of intellectual rent;
- imperfect competition and weak legal protection of intellectual property of innovators;
- lack of efficient accounting instruments and methods of stimulation of productive use of intellectual rent under existing mechanism of innovative development.

Thus, it is important to emphasize that the unclear specification of intellectual property rights in the Ukrainian law is one of the most crucial problems that hampers circulation of products of intellectual property as well as their efficient use [26, p.30]. Demonstrative in this respect is the indicator of the World Economic Forum, which shows the protection of intellectual property and varies between 1 (very poor protection) to 7 (very strong protection). According to this indicator, Ukraine received 2,6 points and was ranked 117<sup>th</sup> out of 142 countries in 2012, which implies relatively poor protection of intellectual property by Ukrainian legislature [27].

Under these circumstances, the improvement in the state regulation of intellectual property and intellectual rent requires the following measures:

- 1) Increase in expenditures on R&D as a share of the country's GDP;
- 2) State support of inventions, innovations and creative intellectual work;
- 3) Establishment of a national system of training and retraining of specialists in the field of intellectual property;
- 4) Provision of clear specification of the intellectual property rights through improvement of the national legislation in congruence with international norms and standards;
- 5) Creation of institutional background that would facilitate efficient functioning of a market of intellectual products through establishment of formal rules and informal norms of civic responsibility;

6) Implementation of the effective mechanism of commercialization of intellectual property and introduction of an objective market evaluation of intellectual products;

7) Institutionalization of relations in the spheres of production, redistribution and use of intellectual rent as a factor income;

8) Provision of instructive information material for the owners and users of intellectual property in order to raise legal awareness and respect of the intellectual property rights in the society;

9) Improvement of infrastructure of innovative activity through provision of risk insurance to the owners of intellectual capital;

10) Further policy improvement in the areas of accumulation of intellectual rent and in the mechanism of its redistribution for the purposes of innovative development.

**Conclusion.** The transition to a post-industrial society and knowledge economy requires efficient elimination of the problems of accumulation and use of intellectual capital, which is one of the key elements of innovative development and strong competitiveness of the national economies. Under these conditions, the government must prioritize the efficient regulation of intellectual rent aimed at stimulation of innovations and acceleration of socio-economic dynamics.

The modern economic literature interprets intellectual rent as an additional income from intellectual activity. This income is generated by intellectual capital that is institutionalized into intellectual property. The main prerequisites of the formation of the intellectual rent are: 1) reinforcement of information and knowledge as the main factors of modern economic development; 2) limited supply of intellectual capital and high profitability of its use; 3) temporary monopolistic ownership of intellectual resources and products under clear specification and enforcement of intellectual property rights.

The complexity of rent relations that arise in the sphere of intellectual activity results into the complex nature of the intellectual rent. According to the sources of formation, two types of rent can be distinguished: intellectual rent I and intellectual rent II; according to the production spheres: intellectual rent in the research sphere and intellectual rent in the industrial sphere; according to the types of innovations: monopolistic intellectual rent, differential intellectual rent (I and II) and absolute intellectual rent.

In contrast to the political and bureaucratic rents, intellectual rent has productive nature and, hence, facilitates economic development. The pursuit of intellectual rent encourages creative self-development of the workforce and increases the interest of the owners of intellectual capital in improvement of the technological level of production and labour productivity. This leads not only to the rising welfare of the owners of the intellectual capital, but to the higher welfare of the society in general. Under these conditions reformation of the state regulation of the intellectual rent has a crucial meaning. It implies not only a complex revision of the system of principles, methods and tools, used by public authorities in the process of rational organization of intellectual property relations, but also clear specification, protection and enforcement of the intellectual property rights in order to create a monopolistic environment for the intellectual products and to secure an excess profit of the owners of intellectual capital.

As opposed to the developed countries, the biggest part of the extra profits in Ukraine is formed in the mining industry, even though the intellectual capital, accumulated in the national economy, can not only complement the efficient use of natural resources, but also compete with them in augmentation of national wealth. Unfortunately the efficient use of the intellectual capital for the purposes of innovative development of the Ukrainian economy is hampered due to the lack of necessary institutional and organizational background. Thus, the improvement in the state regulation of intellectual property and intellectual rent can be accomplished through: increase in expenditures on R&D as a share of country's GDP; state support of inventions, innovations and creative intellectual work; establishment of a national system of training and retraining of specialists in the field of intellectual property; provision of clear specification of intellectual property rights through improvement of the national legislation in congruence with international norms and standards; creation of institutional background that would facilitate efficient functioning of a market of intellectual products through establishment of formal rules and informal norms of civic responsibility; implementation of the effective mechanism of commercialization of intellectual property and introduction of an objective market evaluation of intellectual products etc.

In this context the further research, aimed at the analysis of the integration of Ukrainian economy into the global economy through the effective use of accumulated intellectual potential and intellectual rent is worth to be considered.

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### ЕФЕКТИВНЕ РЕГУЛЮВАННЯ ІНТЕЛЕКТУАЛЬНОЇ РЕНТИ ЯК ЧИННИК ІННОВАЦІЙНОГО РОЗВИТКУ ЕКОНОМІКИ

Розкрито сутність, структуру, передумови формування та види інтелектуальної ренти, охарактеризовано її специфічні властивості, проблеми оцінювання та розподілу між основними економічними суб'єктами. Проаналізовано досвід розвинених країн у сфері регулювання інтелектуальної ренти, виокремлено лімітуючі обмеження її розширеного відтворення в національній економіці та обґрунтовують практичні рекомендації щодо ефективного регулювання цього виду надприбутку.

Ключові слова: інтелектуальна рента; види інтелектуальної ренти; розподіл інтелектуальної ренти; державне регулювання інтелектуальної ренти.

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### ЭФФЕКТИВНОЕ РЕГУЛИРОВАНИЕ ИНТЕЛЛЕКТУАЛЬНОЙ РЕНТЫ КАК ФАКТОР ИННОВАЦИОННОГО РАЗВИТИЯ ЭКОНОМИКИ

*Раскрыта сущность, структура, предпосылки формирования и виды интеллектуальной ренты, охарактеризованы ее специфические свойства, проблемы оценки и распределения между основными экономическими субъектами. Проанализирован опыт развитых стран в сфере регулирования интеллектуальной ренты, выделены лимитирующие ограничения ее расширенного воспроизводства в национальной экономике и обоснованы практические рекомендации по эффективному регулированию этого вида сверхприбыли.*

*Ключевые слова: интеллектуальная рента; виды интеллектуальной ренты; распределение интеллектуальной ренты; государственное регулирование интеллектуальной ренты.*

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### ECONOMIC CRISIS AND FOREIGN DIRECT INVESTMENTS IN ROMANIA

*Foreign direct investments represent an essential factor of economic development and growth at all levels: national, regional and local (county). The authors analyse the evolution of foreign direct investments in Romania over the last decade, taking into consideration the influence of the economic and financial crisis, different territorial levels, types of foreign investments, the economic activities and also the main countries of origin. The aim of the paper is to explain some of the reasons for the illustrated evolution of FDI and to reveal some policy implications for the future period.*

*Keywords: foreign direct investments, FDI flows, economic and financial crisis, types of investments.*

**Introduction.** Romania as many other countries has a stringent necessity of foreign direct investments for these could have an essential contribution to maintaining macro-stability assuring the supplementary capital and technology needed for restructuring various sectors of the economy.

Foreign direct investments played an important role in the Romanian economy in the pre-accession period, representing the main means for covering the lack of own capital. FDI assured the necessary capital and technology for restructuring different sectors of the economy and the access to modern technologies, competitive management methods, qualification of the labour force and to new markets.

Over the past years, Romania benefited from increasing FDI flows due to the macroeconomic stabilization, strong GDP growth, large-scale privatizations, the simplified legislative framework in what it concerns the ease and costs to create a firm, the improvement of the business environment, the introduction of the flat tax and the promotion policies, and the increase in the investors' trust in Romania taking into consideration the progress made by the country for EU accession.

After the accession, the competition for the attraction of the foreign investors increased and the new member states, among which Romania, did not succeed to attract the same flows as in the period before accession. These flows slowed down after 2008 due to less capital inflows from privatizations and also due to the global economic crisis that brought changes in the level of FDI flows all over the world.

**Methodology.** The authors analyzed the evolution of FDI flows and stocks during the time period 2003-2013 for European Union and Romania using data provided by UNCTAD, the National Bank of Romania and the National Office of Trade Register Statistics. The analysis approaches different territorial levels (NUTS1, NUTS2 and NUTS3), different types of foreign investments (Greenfield and Mergers&Acquisitions), economic activities in which FDI have been done and also the main

countries of origin for Romanian FDI inflows. The maps have been generated using GIS.

**Results. 1. European context regarding FDI.** The decade 2003-2013 was characterized by important changes in the flows of FDI both at global and European level. The FDI flows knew high increases between 2004-2007, followed by an important decrease in 2008 and 2009, due to the economic and financial crisis, a slow reversal in the following two years and again a fall in the last two years.

The beginning of the 21<sup>st</sup> century triggered a period of great decrease in the FDI flows at global level, when the inflows and outflows of FDI halved, due to the low economic growth, followed by a decrease of the capital, a reduction in the number of M&As and a reduction in the TNCs activities and expansion. This reduction was also seen at European level, excepting the CEE countries, which registered record inflows in 2002, but 2003 brought important decreases in this region also, mainly due to the decrease in the FDI inflows in the future EU members.

Year 2004 brings a return in the FDI flows especially in the developing countries in which the production costs are lower due to the cheaper labour and raw materials. In the developed economies of the EU such as Denmark, Germany, Netherlands and Sweden, the inflows of FDI continued to decrease (except for Great Britain).

The increase in FDI inflows and outflows continued in 2005-2007 reaching, at EU level, 864 billions USD and attracting 43% of the world's inflows. In 2006 the FDI flows succeeded to outreach the level of 2000, the main recipients being UK and France. EU remains the leader in what it concerns the FDI outflows holding 50% of the global total. In 2007 a new record was registered which covered all categories of countries, more in developed than developing ones. In EU the main recipients remained UK and France.

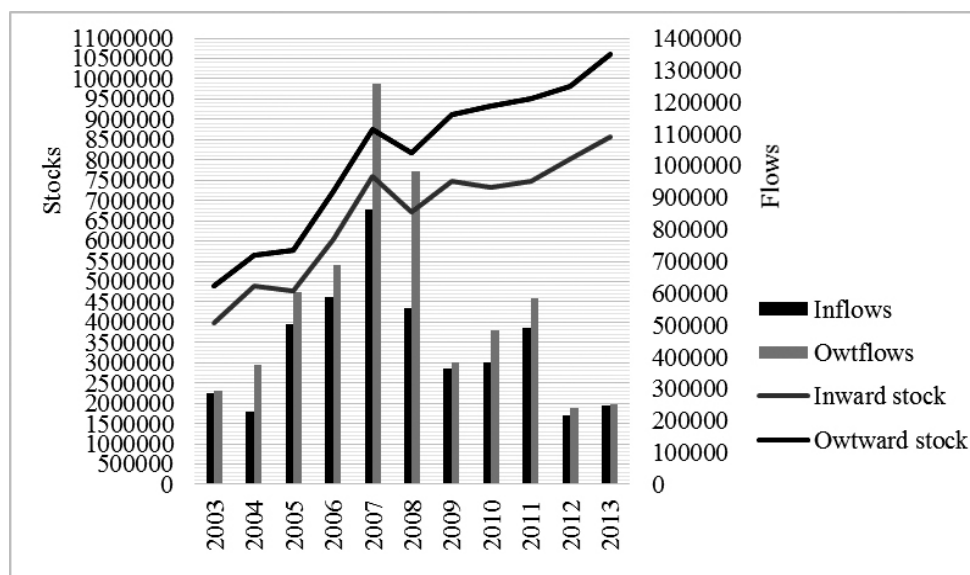


Fig. 1. FDI flows and stock of the European Union (million USD), 2003-2013

Source: UNCTAD, FDI/TNC database ([www.unctad.org/fdistatistics](http://www.unctad.org/fdistatistics))

The increase in the FDI flows during 2004-2007 was sustained by the economic growth, the important performances of the TNCs, the large number of mergers and acquisitions and also by the important greenfield investments implemented in developing and transition economies. Even though at the end of 2007 the effects of the economic and financial global crisis appeared, the level of FDI remained high due to the fact that there were still many investments projects contracted before and under implementation.

The effects of the crisis began to really be felt starting with 2008, when the global FDI flows knew a sharp decline. The decrease was experienced differently depending on the development level of the countries. While in the developed economies the reductions in FDI flows were high, in the developing countries they continued to grow, but to a slower pace than before and the decline started in 2009. According to UNCTAD [7], the decrease in FDI flows could be determined by the following factors: constraints in

the liquidity for transnational companies (TNCs) due to more difficult access to credits which led to weak capacity to invest; the slowdown of the economic growth strongly linked to the FDI flows and a more cautious attitude among managers. In 2009, at EU level, the FDI flows presented a decrease in almost all developed countries excepting Denmark, Germany and Luxembourg (as hosts) and Norway and Sweden (as sources).

The main reason for the decrease of the FDI flows in these two years were mainly due to the reduction in the number and value of the mergers and acquisitions (M&As) triggered by the decrease in investments' profitability which attracted a decline in equity capital, the reinvested earnings and intra-company credits. The most affected was Great Britain. The data for 2010 also show an important drop in EU FDI, confirming the continuous impact of the global economic and financial crisis, both on inward and outward flows. The value of greenfield investments also dropped since 2009, but is still higher than the value of M&As.

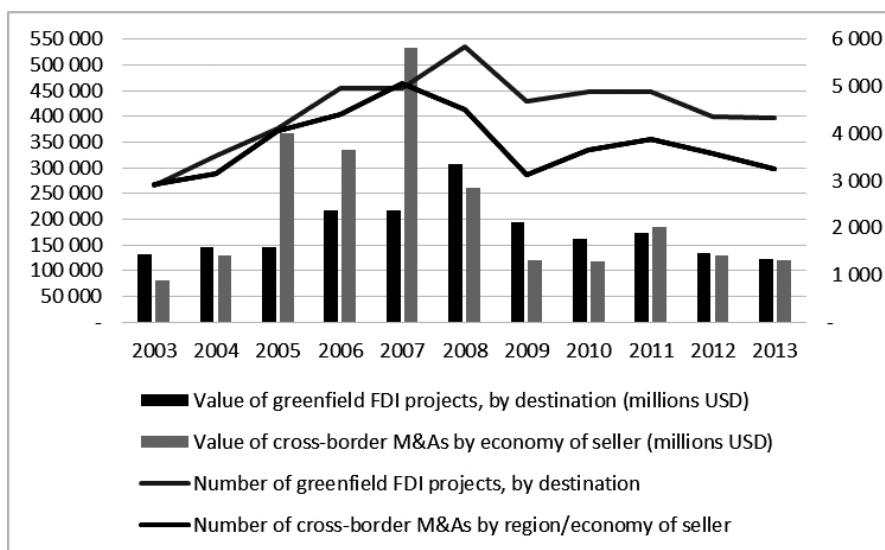


Fig. 2. Value and number of greenfield and M&A in the European Union, 2003-2013

Source: UNCTAD cross-border M&A database ([www.unctad.org/fdistatistics](http://www.unctad.org/fdistatistics)), information from the Financial Times Ltd, fDi Markets ([www.fDimarkets.com](http://www.fDimarkets.com))

In 2012 and 2013 as opposed to the increase in the share of the BRIC countries that reached almost 30% in 2013, the share of the EU countries in total global FDI has fallen below 20%, a very low level compared to half the global investment flows in early 2000s, when EU was by far

the most important economic area for FDI. Although the share of flows from and to non-EU countries was steadily rising, the majority of FDI in the EU originate from other EU countries. This shift in the detriment of EU was generated by the global financial and European debt crisis.

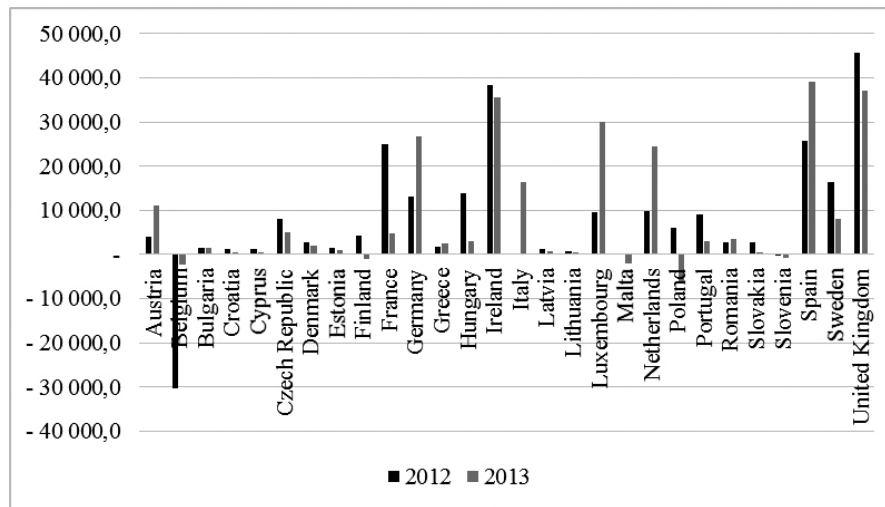


Fig. 3. FDI inflows in the EU member states, 2012-2013 (millions USD)

Source: UNCTAD, FDI/TNC database ([www.unctad.org/fdistatistics](http://www.unctad.org/fdistatistics))

The largest beneficiary of FDI in Europe was United Kingdom, but the inflows in this country followed the decline registered at EU level. Also, the discussions regarding UK's membership in the EU had a negative impact on its attractiveness for non-EU countries. Luxembourg and Ireland registered the highest share of accumulated FDI stocks in GDP. Spain, UK, Ireland and Luxembourg were the top FDI destinations in the EU in 2013 with inflows between 30 and 40 millions USD, receiving almost 60% of the total of 246 billions USD attracted in the EU and almost 10% of the total global FDI inflows. These levels of FDI represented important increases for Spain and Luxembourg and minor decreases for UK and Ireland. Other EU countries that registered important increases in the FDI inflows were Germany, Italy,

Netherlands and Austria. On the other hand countries like France, Hungary, Portugal and Sweden attracted significantly less FDI. Negative net inflows were registered in Poland, Belgium, Malta, Finland and Slovenia.

Foreign companies mostly invested in services (especially Finance, Business services and Information and communication) and manufacturing (especially in Food, beverages and tobacco and Chemicals and chemicals products) when taking into consideration the value of M&As. The highest values in greenfield investments were concentrated in the last two years in services (Business services, Electricity, gas and water and Transport, storage and communications) and in manufacturing (Motor vehicles and other transport equipment, Chemicals and chemical products and Electrical and electronic equipment).

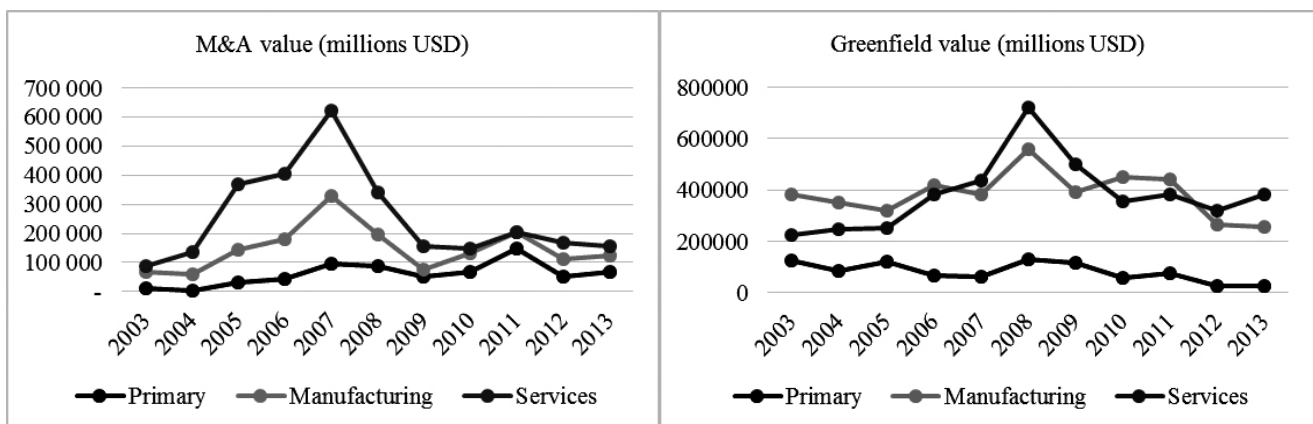


Fig. 4. M&A and greenfield investments' value and number by sector, 2003-2013

Source: UNCTAD cross-border M&A database ([www.unctad.org/fdistatistics](http://www.unctad.org/fdistatistics)), information from the Financial Times Ltd, fDi Markets ([www.fDimarkets.com](http://www.fDimarkets.com))

## 2. FDI in Romania and the influence of the crisis.

Analyzing the trend of FDI in Romania in the last decade (2003-2013) one could notice that in the first part of the

period the flows registered important increases and starting with 2009 the economic and financial crisis hit also this

country and the FDI inflows decreased, a slow recovery being noticed in 2011 and 2012.

After the decline of Romanian FDI inflows in the late 90' and early 2000', generated by the economic recession and the instability of the economic and legislative environment, improvements can be seen in 2003. An important growth of the FDI flows was registered in 2004 due to the increase of greenfield projects (especially in the automotive industry) and also an important privatization took place when the national oil company Petrom was sold to OMV for 1.5 billion Euro. The increase in FDI continued in 2005 when two more companies (Distrigaz Sud and Distrigaz Nord) were sold to Gaz de France and E.ON Ruhrgaz. In 2006 there was registered a high increase in the Romanian FDI inflows, that reached 11,367 mil. USD (almost double than the previous year), placing it on the second place among the new member states, after Poland. Around 2,2 billion USD of this sum was received from Erste Bank which bought the Romanian Commercial Bank, the highest value ever received in a privatization process. These increases registered by Romania in the years close to the accession to the EU were due to the simplified legislative framework in what it concerns the ease and costs to create a firm, the improvement of the business environment. Also, the fiscal policy was reformed and the flat tax was introduced. We could add to these a rise of the investors' trust in Romania taking into consideration the progress made by the country for EU accession. The year 2007, the first year as a mem-

ber of the European Union, brought an inflow of almost 10 billion USD, lower than the one registered in 2006 (but we have to take into consideration the fact that 2006 was a record year due to the biggest privatization in Romania). There were also some privatization contracts signed in 2007 by Ford for Automobile Craiova (car manufacture), by Saudi Arabia's Al Arrab Contracting Company Limited for Electroputere Craiova and by Enel for Electrica Sud Muntenia (public utility). In 2007 Romania was among the main beneficiaries of the dynamism registered in automotive sector, as seen in the above mentioned example with Ford, which pledged to invest almost 700 million EUR and create over 3.000 new jobs. According to EY's European attractiveness survey (2008) Romania showed a steady increase in the number of FDI projects reaching number 1 in CEE and remaining among the top 10 European countries. The 12.464 job created through these projects were mainly in industrial activities (60% in automotive sector). In 2008 a new record in the value of FDI inflows to Romania was registered (13,909 mil. USD), the highest so far, which placed it on the 2<sup>nd</sup> position among the new EU member states (after Poland) and on the 8<sup>th</sup> position at EU level, surpassing developed countries such as the Netherlands, Austria and Germany. Automotive and auto components industry, telecommunications and IT and energy were the main economic activities in which investments were made that year.

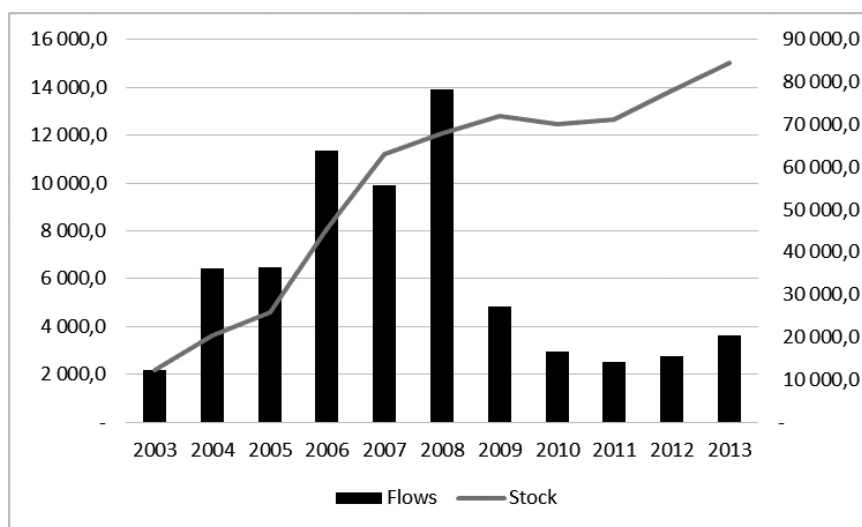


Fig. 5. FDI inflows and stock in Romania (million USD), 2003-2013

Source: UNCTAD, FDI/TNC database ([www.unctad.org/fdistatistics](http://www.unctad.org/fdistatistics))

In Romania the global economic crisis made its presence felt only at the end of 2008 as compared to the developed economies of the EU which already registered declines in the FDI flows starting with 2008. The crisis severely limited the access to external financing which led to a decline in the Romanian exports. Starting with 2009 Romania also registered a decline in the FDI flows, a trend that continued until 2011. The gravity of the crisis was amplified by the decline not only in FDI but also in the domestic net investments. In 2009 the FDI inflow to Romania severely decreased to a minimum of 4,844 mil. USD, and then halved in 2010, reaching the level of 2.5 billions USD in 2011, close to the 2.2 billion USD inflows in 2003. An effect of this decline in FDI and the decrease in the demand in the main export markets was the reduction or even interruption of the activity of many production units in the domestic manufacturing. FDI companies decreased their

equity investments reflecting a decline in long-term commitment to the country. In 2009 the value of FDI inflows in Romania was only surpassed by Poland and by 2011 there were four new EU member states that registered higher values than Romania (Poland, Hungary, Slovakia and Czech Republic). On the back of the economic downturn, the rankings provided by EY – European attractiveness survey (2010) show that Romania became vulnerable taking into consideration the number of FDI projects and jobs created in 2009, when it only attracted 75 projects, which created only 6.384 jobs a fall of 40% from previous year.

Years 2012-2013 brought a slow increase in the FDI flows in Romania, the values remaining still below the one registered in 2009. The value of FDI inflows in 2013 placed Romania on the second position among new EU member states, after Czech Republic.



From the total FDI stock, around 90% comes from the first 14 main investors that invested over 1 billion USD and they are mostly countries from the EU with two exceptions, namely USA and Switzerland. Over 45% of the FDI stock come from the three major investors: the Netherlands, Austria and Germany.

Top 10 investors in Romania during the analyzed decade were the ones that can be seen in Fig. 6 plus

USA, Hungary in the first half of the period and Luxembourg and Belgium in the second half. The highest number of companies with foreign capital come from Italy, Germany, Hungary and China (in 2014), but, for example, the Netherlands or Austria, even though they have a small number of companies, the value of the foreign capital is much higher than the one with capital coming from the previous countries mentioned.

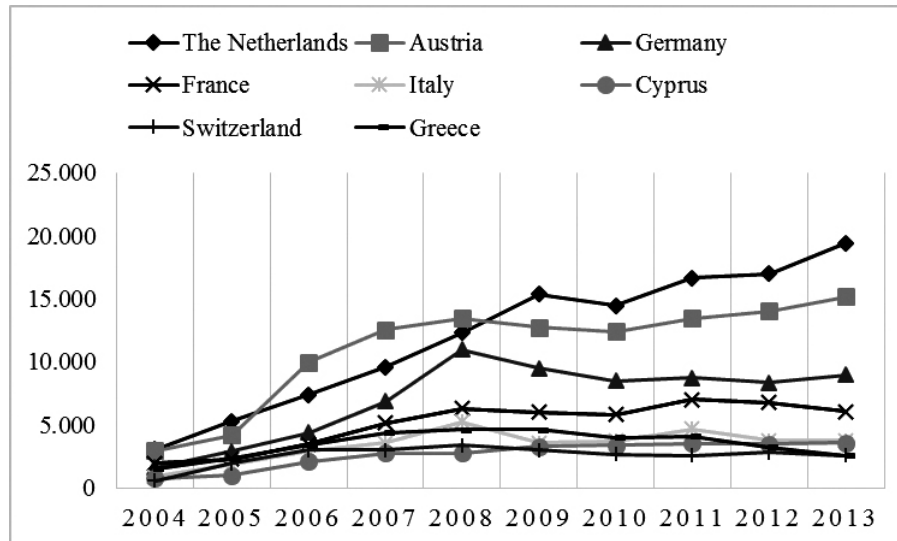


Fig. 6. FDI stock in Romania by country of origin (million USD), 2004-2013

Source: FDI in Romania, NBR, 2005-2014

According to the ONRC data [6], main foreign investors came from Europe and to a less extent from North America and Asia. The countries from EU had the highest contribution to the social capital of the foreign capital companies from Romania, followed by the OECD countries. The reason for this comes from the geographical proximity and from the close trade relations that Romania has especially with the European countries.

Over the last decade FDI flows as well as foreign trade showed a transition from exploiting low-cost advantages in unskilled labour-intensive activities towards services and higher value-added manufacturing sectors (capital intensive sectors). These flows played an important role in the Romanian economy, helping it in modernizing its economic activities. Starting 2005, services became the main sector contributing to the stock of foreign direct investments in Romania, but the crisis changed the structure of FDI stock in favour of industry, which rose its share from 41% to 48%. The starting point in the change of the structure of FDI stock was triggered by the different ways the economic and financial crisis affected the economic activities. In this context, in 2009 the FDI stocks of all sectors (agriculture, industry and services) were negatively influenced by the crisis, but the decrease in the stocks of services continued also in 2010 and 2012, while the stocks in industry continuously increased since 2010, mainly due to the favourable evolution in Electricity, natural gas and water. Metallurgy, Textiles, wearing apparel, leather goods, Food, beverages and tobacco and Cement, glassware, ceramics were the industries most affected by the economic crisis, while Oil processing, chemicals, rubber and plastic products and Transport means knew an important increase in 2009. In what concerns services, Professional, scientific, technical and administrative activities and support services, and Transportation were the ones which registered increases in the FDI stock, while the most affected by the

crisis were Financial intermediation and insurance and Information technology and communication (this activity also knew a decrease in 2010).

In 2007, Romanian automotive industry became a magnet for large-scale foreign investment projects such as those done by Ford or Renault or Draexlmaier, Continental AG in 2011. In spite of the important fall in the number of projects and jobs created, Romania remained, highly attractive for industrial services in 2009, investors continuing to choose Romania, especially for industrial projects. In 2010 Romania, together with Serbia, Slovakia and the Czech Republic attracted over half of the new jobs created in automotive sector. These countries have the advantage of cost-competitiveness and proximity to Germany, which represents the home to many key industrial customers. [4]. At the end of 2013, FDI were mainly located in Financial intermediation and insurance (14.2% in total FDI stock), Trade (11.2%), Electricity, natural gas and water (11.1%), Construction and real estate transactions (9.8%) and Manufacturing (31.1%), inside which the main contributors were in Oil processing, chemicals, rubber and plastic products and Transport means industries.

The contribution of the foreign investors to the total export and total import decreased after the crisis made its presence known in Romania, reaching 71%, respectively 64% in 2013.

When one analyzes the territorial distribution of the foreign investors taking into consideration the number of the commercial companies with foreign capital, one can notice that about half (45%) have been founded in Bucharest. On the subsequent places are: the West, North-West and Center regions (between 10.2% and 11.9%), respectively Timiș, Cluj, Bihor, Constanța, Brașov, Ilfov, Sibiu and Arad counties. The fewest commercial companies were founded in South-West Region (only 2.8%).

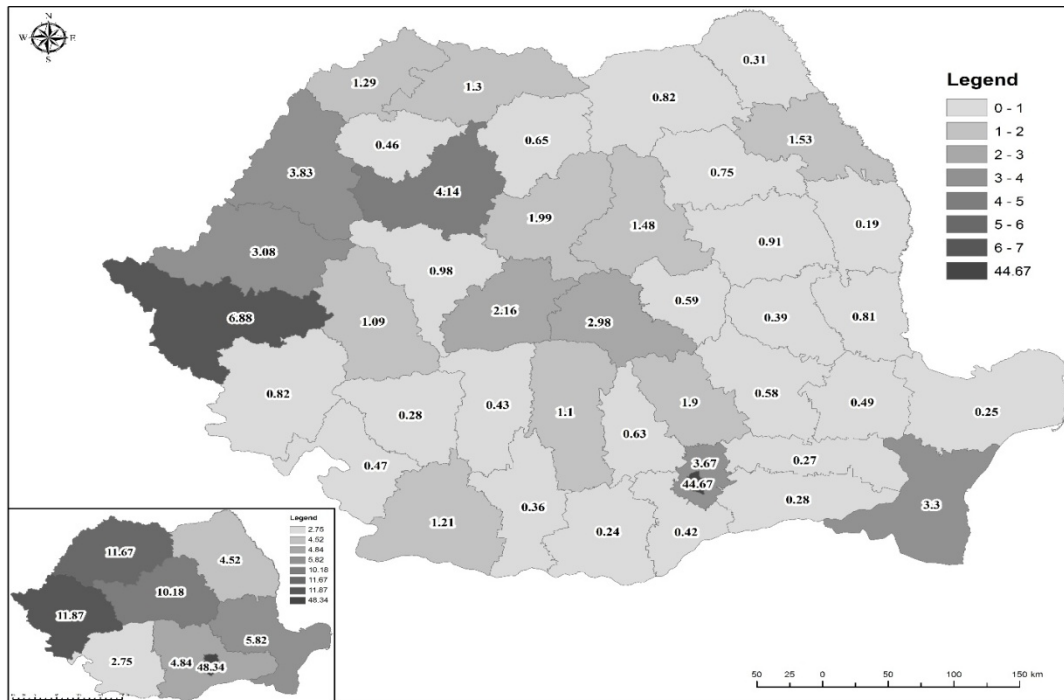


Fig. 7. Structure of the number of foreign companies by regions (1991-2014)

Source: own calculation on the basis of the data from <http://www.onrc.ro/statistici>

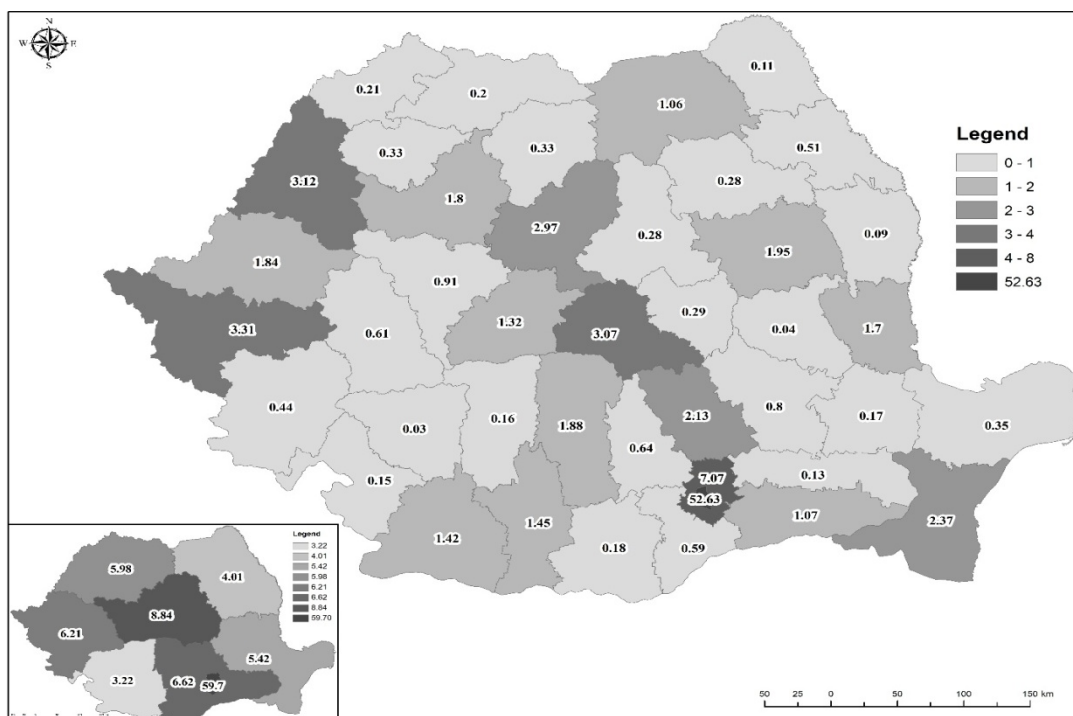


Fig. 8. Structure of the value of foreign capital by regions (1991-2014)

Source: own calculation on the basis of the data from <http://www.onrc.ro/statistici>

If we have in mind the value of the foreign investments, Bucharest-Ilfov region is followed by Center, West and South Muntenia regions, respectively Bucharest, which has the supremacy with almost 53% of the foreign capital, Ilfov, Timiș, Bihor, Brașov, Mureș, Constanța, Prahova, Bacău and Cluj counties. These four regions gather over 80% of the total FDI in Romania. On the last place is the South-West region. Generally, the foreign investors avoided the

poorest regions in Romania (South-West and North-East), the rural environment, preferring the towns or the adjacent areas. Important changes in the regional hierarchy appeared in 2011 when South-East region lost three places (from 3<sup>rd</sup> place to 6<sup>th</sup> place), while Centru region moved from the 6<sup>th</sup> place to 2<sup>nd</sup> place. The stock of the subscribed foreign capital in 2009 also influenced the hierarchy at county level. Positive trends were registered in Bacau,

Mureş and Sălaj counties and negative ones in Giurgiu (lost 10 places) and Cluj (not only in 2009 but also in the following years).

Year 2009 brought important declines in FDI stock especially in North-East, South-East, Center and North-West regions, but also an important increase in South-East Oltenia region.

The territorial repartition of the FDI show that there are emerging centers of concentration for the foreign investors in those geographical areas and historical provinces with a rich economic and infrastructure potential or with historical traditions in certain activity branches.

According to the reports from Romanian National Bank regarding FDI the flow of equity stakes into FDI enterprises was divided into corporate development, mergers and acquisition and greenfield investments. Corporate development holds the biggest part and it increased even more since 2009, reaching more than 97% till 2012. Greenfield investments decreased their share in the flow of equity stakes to around 1% after 2009 and the same trend could be seen in mergers and acquisitions which even new a decrease of more than 6 million USD in 2012. In 2013 corporate development reached 1.9 billion USD and corporate restructuring 1.5 billion USD.

The main recipients of greenfield investments in 2013 were manufacturing, accounting for 33.6% of the total FDI stock in greenfield enterprises, followed by trade (18.2%), construction and real estate transactions (12.9%), financial intermediation and insurance (11.2%). At territorial level the largest part went to Bucharest-Ifov region (56.5%), Center (11.3%), West (9.9%) and SM (8.3%). Taking into consideration the country of origin the highest share of FDI in

greenfield investments is held by the Netherlands (23.7%), Germany (18.2%), Austria (14.7%) and Italy (7.6%).

According to UNCTAD Report on FDI [7] the number of greenfield projects in Romania reached a peak in 2006 with 388 greenfield projects, being exceeded only by UK and France, slowly decreasing in 2007 and 2008. In 2009 due to the crisis the number of greenfield investments collapsed to 212, and even though there was a little recovery in 2010, 2011 and 2013 the level of greenfield FDI remained low. These values placed Romania on the 2<sup>th</sup> place among the new member states, after Poland. Taking into consideration the values of the greenfield investments, this doubled in 2006 (after UK and Spain) and continued its growth, reaching a maximum value of over 30 billion USD in 2008, placing it on the 4<sup>th</sup> place in EU after UK, Poland and Germany. The impact of the economic crisis was felt in 2009 when the value of greenfield investments almost halved and this trend continued in 2010, leading to a minimum of 7.8 billion USD.

The mergers and acquisitions market in Romania was stimulated by the privatization process which offered foreign investors a wide range of opportunities to invest by acquiring shares or assets, as well as set up joint ventures with state owned companies. Furthermore, strategic incentives were offered to foreign investors. The number of M&As reached a maximum of 76 in 2008 and the highest value of investments through M&As reached its peak in 2006 (5.3 billion USD) followed by a continuous decline until it reached a negative value in 2013. The economic and financial crisis also had a negative impact on M&As in Romania, the value reaching only a third in 2009 as compared to 2008 and the number of M&As decreased to 43, knowing fluctuations in the following years.

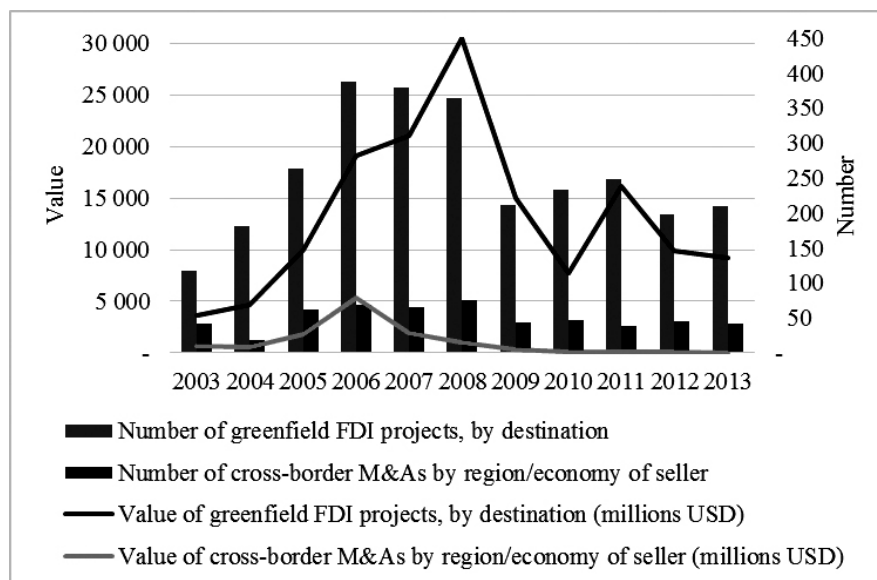


Fig. 9. M&A and greenfield investments' value and number in Romania, 2003-2013

Source: UNCTAD cross-border M&A database ([www.unctad.org/fdistatistics](http://www.unctad.org/fdistatistics)), information from the Financial Times Ltd, fDi Markets ([www.fDimarkets.com](http://www.fDimarkets.com))

In the analysed decade one can notice that in Romania, both the numbers and the values of greenfield investments were higher than the ones registered by M&As.

According to the European attractiveness survey elaborated by Ernst&Young in 2014 [4], Romania is on the 3<sup>rd</sup> place in the foreign investors' preference in the CEE area alongside Hungary and Turkey.

**Conclusion & Discussion.** As seen in the evolution of the Romanian economy, FDI played a major role in promoting development, by creating new production capacity, by contributing to the creation of new workplaces, stimulating domestic consumption and increasing competition as well.

Foreign investment also generated an increasing proportion of private-sector employment, foreign trade and GDP. Moreover, foreign capital has been involved in the

privatization of some strategic sectors over the years. Restructuring and competitiveness gains have taken place more rapidly in those sectors that benefited from foreign investments, such as, food-processing, automotive, banking and brewing sectors, due to the introduction of new technologies and know-how.

Attracting foreign investors remains difficult as long as production costs are uncompetitive due to infrastructure and labour market mismatch to the requirement of the companies.

Foreign companies have reconsidered Romanian market due to difficulties on the markets of origin that imposed cost cuts, spending cuts, and, therefore, delaying of default investment programmes, but also due to the perpetuation of the problems faced by the Romanian market in the last years, mainly lack of infrastructure and instability in the legislative system.

Another explanation related to the decrease of FDI stock in Romania is related to the theory exposed by Brada and Tomsik [2] about the FDI financial life cycle. According to these two economists any FDI has three stages: the first stage the money are flowing into the country, the second stage profit is obtained and it is reinvested without paying too much dividends, and the third stage where the dividend payments are becoming higher and higher, summing up to amounts higher than the entrances. It's been argued that for Romania as for all Central and Eastern European countries that the second phase begins 10-12 years after the beginning or entry of the main FDI wave into the host country. If the second phase starts earlier, the explanation lies in the unusually large profits made by foreign direct investment in that economy. In a causal manner, this seems to be the case in Romania, still in the second stage of the life cycle of investment development, considering its integration into the European Union (the expectation of high profits can be detected as a major cause), but unfortunately placed a deep downward phase [9].

It simply means that some TNCs subsidiaries, especially the ones acting on the field of consumer goods, automotive industry, or cement have reimbursed to their home companies the intra-companies credit, probably because they do not need in the nearest future investments or circulating capital, which is also a bad signal for our country, as it means they do not foresee a future for business development on the local market.

To make things worse this withdrawal of TNCs financing is accompanied by a decrease in banking exposure of financial institutions with foreign capital. This facts show that for Romania the sources of external financing are drying up, ironically, this is happening when money are cheaper than ever in history. If this tendency of extracted profits exceeding new investments continues, we will soon assist to diminishing FDI stock.

Without an aggressive policy for attracting foreign investors and without creating favourable conditions, especially wise fiscal measures, the macrostability and the fulfilling of the Maastricht criteria lose their importance. Foreign investors need legislative stability, they do not want other taxes, they want better collection for the existent taxes, and they need transparency, public investments, especially in the infrastructure.

The prolonged tensions between Russia and Ukraine exerted a negative influence on foreign direct investment: some companies from the energy sector, as Enel or Eni, and also for the trading sector as OBI or BauMax decided to move out the local market. There are also foreign banks that are moving out as a result of narrowing down business. There are still prospects for FDI and portfolio investments in Romania, but the geopolitical context is very important, as it is the approach other states take regarding the monetary policy, namely the States or the Eurozone.

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#### ЕКОНОМІЧНА КРИЗА ТА ПРЯМІ ІНОЗЕМНІ ІНВЕСТИЦІЇ В РУМУНІЇ

*Прямі іноземні інвестиції є істотним фактоор економічного розвитку і зростання на всіх рівнях: національному, регіональному та місцевому. Автори аналізують еволюцію прямих іноземних інвестицій в Румунії протягом останнього десятиліття, беручи до уваги вплив економічної та фінансової кризи, різні територіальні рівні, види іноземних інвестицій, економічної діяльності, а також основних країн походження. Метою роботи є пояснення деяких причин еволюції прямих іноземних інвестицій та виявлення деяких політичних наслідків для майбутнього періоду.*

*Ключові слова: прямі іноземні інвестиції, потоки прямих іноземних інвестицій, економічна і фінансова криза, види інвестицій.*

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#### ЕКОНОМИЧЕСКИЙ КРИЗИС И ПРЯМЫЕ ИНОСТРАННЫЕ ИНВЕСТИЦИИ В РУМУНИИ

*Прямые иностранные инвестиции представляют собой существенный фактор экономического развития и роста на всех уровнях: национальном, региональном и местном (графство). Авторы анализируют эволюцию прямых иностранных инвестиций в Румынии в течение последнего десятилетия, принимая во внимание влияние экономического и финансового кризиса, различные территориальные уровни, виды иностранных инвестиций, экономической деятельности, а также основных стран происхождения. Целью работы является объяснить некоторые из причин иллюстрируемой эволюции прямых иностранных инвестиций и выявить некоторые политические последствия для будущего периода.*

*Ключевые слова: прямые иностранные инвестиции, потоки прямых иностранных инвестиций, экономический и финансовый кризис, виды инвестиций.*

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## FOREIGN DIRECT INVESTMENTS AND INSTITUTIONAL PERFORMANCE: A ROMANIAN PERSPECTIVE

*Our paper uses statistical tools with the aim of empirically investigating the institutional determinants of foreign direct investments (FDI) in Romania. The analysis is focused on the public policies that are relevant from the FDI perspective between 2002 and 2012; more specifically, we direct our approach towards identifying the manner in which state controlled instruments can be employed in order to increase the country's performance in terms of attracting FDI. The variables we use are the inflows of FDI to Romania, on one hand, and the set of Worldwide Governance Indicators of the World Bank on the other hand.*

**Keywords.** Foreign direct investment, Romania, FDI determinants, institutional theory.

**Introduction.** Institutional theory deals with foreign direct investment (FDI) through the complex and uncertain environment in which they are located. From this perspective, the decision to locate foreign investments takes into account the institutional forces that shape the environment in which the foreign company will be implanted, such as regulations and incentives offered to foreign investors. The institutions are those that create the "rules of the game" in which multinational corporations and governments of the host countries are actors. In this context, FDI can be seen as a game or a competition between governments to attract foreign investment (Assuncao et al., 2011). Existing research highlights a number of drivers who take the logic of institutional theory to attract FDI, such as (i) the level of corruption; (ii) political instability and institutional quality as measured by assessing country risk, political freedom and civil coup number, the number of strikes, the effectiveness of law enforcement, etc.; (iii) financial and fiscal incentives: the level of taxation of companies, profit repatriation, concessions regarding taxes, tax rates effective bilateral and similar instruments.

Institutional theory is particularly important for countries in transition, which, in the process, acted specifically for the creation of institutions of a market economy. Empirical studies testing the impact of institutional variables on FDI in transition countries are numerous and they highlight the particular relevance of the institutional framework for investors. Bénassy-Quéré et al. (2007) emphasize the growing impact of the institutional aspect on the economic development of a country since the 1990s. A comprehensive analysis of the literature suggests a number of pillars underlying the framework of FDI attractiveness that are under the immediate influence of public decision-makers and public policy, as follows: (i) the level of corruption; (ii) the political instability and the quality of institutions: country risk, political and civil freedom, the number of hits, the number of strikes, the effectiveness of law enforcement; (iii) the financial and tax incentives: corporate taxation, profit repatriation, concessions regarding taxes, bilateral average effective tax rate (Altomonte (1998), Claessens et al. (2000), Garibaldi et al. (2001), Globerman and Shapiro (2002), Kinoshita and Campos (2003), Busse and Hefeker (2007)).

Our paper uses statistical tools with the aim of empirically investigating the institutional determinants of foreign

direct investments (FDI) in Romania and of observing if any link between the two might be identified. The analysis is focused on the public policies that are relevant from the FDI perspective; more specifically, we direct our approach towards identifying the manner in which state controlled instruments were employed in order to increase the country's performance in terms of attracting FDI, at least from the perspective of perceptions on institutional performance. The variables we use are the inflows of FDI to Romania, on one hand, and the set of Worldwide Governance Indicators of the World Bank on the other hand. The period under analysis is 2002-2012, as these years are of particular importance for Romania, as for the other countries in Central and Eastern Europe: on the one hand, these are the years before and after the EU membership, the adoption of EU legislation and implementation of European practices, and on the other hand, they capture the effects of economic and financial crisis has left the attractiveness of Romania for FDI.

Our paper is organized as follows: in Section 1 we present an overview of FDI in Romania after 2003, in Section 2 we describe the data and research methodology, in Section 3 we outline the main results and in Section 4 we conclude and set down a few directions for future research.

**1. Foreign direct investments in Romania – quantitative and qualitative issues.** The potential positive contribution of foreign direct investments to economic growth is an issue accepted as such in the Romanian academic and political environment. At the same time, when one takes a look at the official statistics on FDI observes that the stock of FDI is at a rather low level (at least compared to the other Central and Eastern European economies) and the FDI inflows have considerably fall after 2007-2008, accompanied only by a shy increase in 2013 (in 2013, FDI inflow was EUR 2,712 million).

By economic activity (according to NACE Rev. 2), FDI was channelled primarily to manufacturing (31.1%), out of which the largest recipients were: oil processing, chemicals, rubber and plastic products (5.9%), transport means (5.7%), metallurgy (4.1%), food, beverages and tobacco (4.0 %) and cement, glassware, ceramics (2.7%). Apart from industry, other activities that attracted FDI were financial intermediation and insurance (14.2%), trade (11.2%), construction and real estate transactions (9.8%), and information technology and communications (6.9%) – see Figure 2.

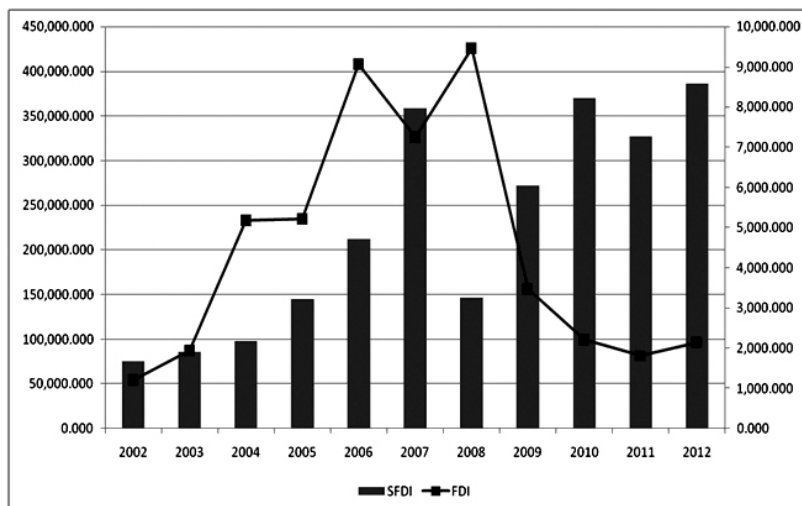


Fig. 1. Stock and flows of FDI in Romania, 2002-2012

Source: World Bank

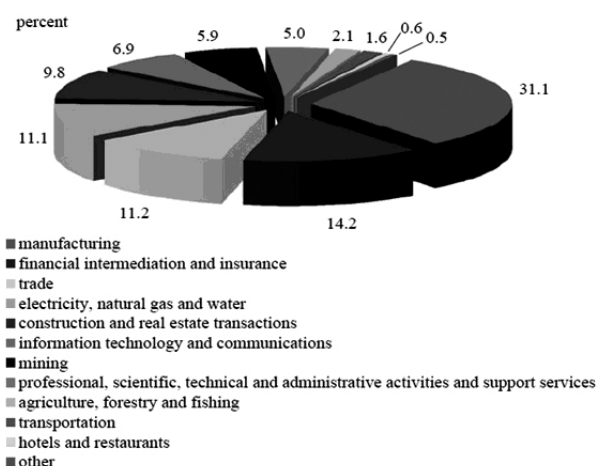


Fig. 2. FDI distribution across industries, end 2013

Source: National Bank of Romania

From a territorial point of view, FDI went mainly to BUCHAREST-ILFOV region (61.4 %). Other development regions benefiting from significant FDI inflows were: the CENTRE region (8.6 %), the SOUTH-MUNTENIA region (7.7%), the WEST region (7.6%), and the NORTH-WEST

region (4.5%) – see Figure 3. In terms of the origin of FDI, the hierarchy is unchanged since 2009: the main investor is the Netherlands (24.4%), Austria (19.1%), Germany (11.2%) and France (7.6%).

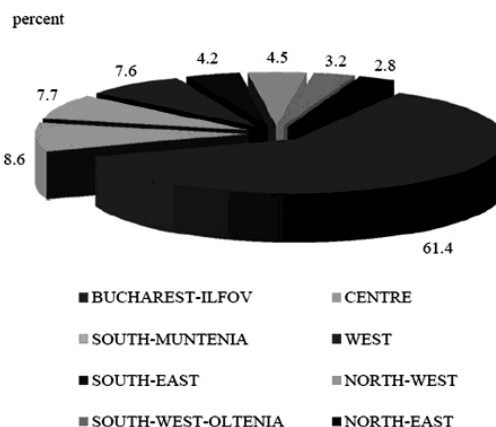


Fig. 3. FDI distribution across development regions, end 2013

Source: National Bank of Romania

Besides data and statistical measurements, the FDI volume reflects the attractiveness and quality of the Roma-

nian business environment and the perception of foreign direct investors. It is interesting to mention that in 2012, a

year that saw the Romanian economy grow by 0.7%, foreign direct investments inflows reached only EUR 1.6 billion, the minimum level of the entire decade. The causes of FDI evolution are internal and external; from an external point of view, the drop in FDI might be explained by the sovereign debt crisis in Europe (since EU investors dominate FDI inflows) and the increase in the level of risk aversion in the global economy (see Horobet, 2009, and Horobet et al., 2010); from an internal point of view, the management of the financial and European crises by the government, the mediocrity of Romanian infrastructure, the lack of institutional efficiency (bureaucracy, corruption, delays in public sector restructurings), might all be blamed for the low level of FDI inflows to Romania.

The institutional architecture, from the perspective of legislation directed to FDI and official bodies involved in attracting and supervising FDI, is another factor that explains the level of FDI. For what concerns the FDI legislation, Romania never benefited from the desired combination between a stable legal framework and high FDI offer. Between 1990 and 1996 the legal framework was attractive and stable, but the privatisation offer (FDI mainly came to Romania after 1990 by means of public companies privatisation) was extremely low and did not include public utilities or banks, which has not encouraged FDI inflows. On the other hand, the legal framework became unstable between 1997 and 2000, and discouraged FDI, despite a more generous privatisation offer. It is also noteworthy to mention that FDI promotional activity was split between various public bodies and institutions without an adequate budget, a situation completely different from the other transition economies. The Romanian Agency for Foreign Investments (ARIS – Agentia Romana pentru Investitii Straine) also functioned between 2002 and 2009; when created, ARIS replaced three governmental bodies holding responsibilities concerning FDI: the Direction of Relations with Foreign Investors, the departments in the Foreign Affairs Ministry and a Direction within the Ministry for Development and Prognosis. After ARIS dissolution in 2009, FDI promotion was assumed by the Ministry for Small and Medium Enterprises, Trade and Business Environment.

**2. Data and research methodology.** We use in our research data collected from the World Bank database on both foreign direct investments and institutional performance indicators. For FDI we use data on the flow of FDI (FDI) in million Euro, while for institutional performance we use data on the Worldwide Governance Indicators (WGI) calculated and published annually by the World Bank. The WGI are calculated on an aggregate basis and combine the views of a large number of enterprise, citizen and ex-

pert survey respondents in industrial and developing countries. There are six dimensions of governance considered in the WGI project, as follows: Control of Corruption (COR), Government Effectiveness (GOVEFF), Political Stability and the Absence of Violence (POLST), Regulatory Quality (QREG), Rule of Law (LAWAUT) and Voice and Accountability (VRESP). We briefly describe each indicator, based on World Bank methodology (see Kaufmann et al. 2010):

(1) Control of corruption captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests;

(2) Government effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies;

(3) Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism;

(4) Regulatory quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development;

(5) Rule of law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence

(6) Voice and accountability captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media;

These indicators are based on 32 individual data sources produced by a variety of survey institutes, think tanks, non-governmental organizations, international organizations, and private sector firms (Kaufmann et al., 2010). Fundamentally, these are composite governance perception indicators that use the individual data sources and rescale and combine them using a statistical methodology known as an unobserved components model. The six composite WGI measures are useful as a tool for broad cross-country comparisons and for evaluating broad trends over time. We use them in our analysis for the period 2002-2012 in order to gain insight into the relation between inflows of FDI in Romania and the quality of Romanian institutions and policies. The data frequency is annual. Figure 2 shows the evolution of these indicators between 2002 and 2012, while Table 1 summarizes the main trends (or their absence) in the evolution during the period under analysis.

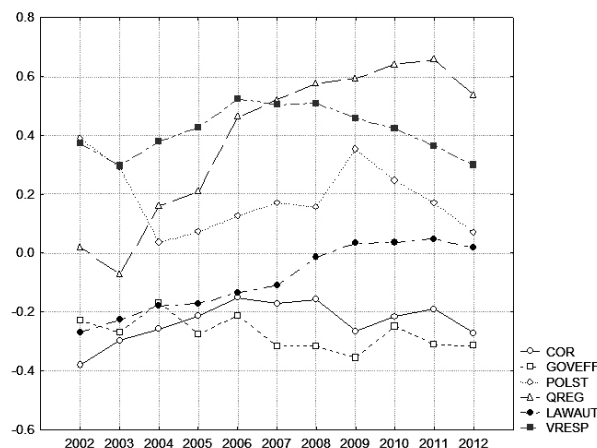


Fig. 4. WGI – Evolution 2002-2012

Source: Worldwide Governance Indicators and authors' computations

Table 1. Summary of WGI indicators evolution 2002-2012

Indicator	Evolution
COR	Growth until 2006 and strong declining trend after 2007
GOVEFF	No clear trend, with positive and negative changes each year
POLST	The only period when political stability increased was 2004-2009; after 2009 the perception on political stability declined
QREG	Growing trend until 2011, and then decline in 2012
LAWAUT	The only indicator with a permanent growth between 2002 and 2012
VRESP	Growth until 2006 and strong declining trend after 2007

Source: Authors' computations

An interesting insight into the ability of these indicators to offer information on institutional quality in a country is given, in our view, by the correlations between them. In the case of Romania, the value of correlation coefficients and their statistical significance is presented in Table 2. We notice that three of these correlation coefficients are statistically significant at 5% level (the coefficient between QREG and COR – 0.650, the coefficient between VRESP and COR – 0.677, and the coefficient between LAWAUT and QREG – 0.922). These values suggest a positive and strong link between the perception on control of corruption and regulatory quality, on one hand, and voice and accountability, on the other hand, as well as between voice

and accountability and regulatory quality. This means that a better perception on Romania's control of corruption (better corruption control in the country) is positively associated with better regulatory quality and better voice and accountability – still, from the correlation coefficient only one cannot detect which of the variables is the influence for the other. Also, this means that a higher confidence in the rules of the society is positively related to a higher regulatory quality. Overall, the WGI evolutions for Romania suggest that perceptions on institutional quality and performance have increased between 2002 and 2006, but have declined rather strongly after 2007.

Table 2. Correlations between WGI indicators, 2002-2012

	COR	GOVEFF	POLST	QREG	LAWAUT	VRESP
COR	1					
GOVEFF	-0.190	1				
POLST	-0.545	-0.229	1			
QREG	0.650*	-0.542	-0.17	1		
LAWAUT	0.450	-0.621	-0.104	0.922*	1	
VRESP	0.677*	-0.094	-0.064	0.451	0.143	1

Note: \* – correlation is statistically significant at 5% level

Source: Authors' computations

**3. Results.** We plot in Figure 5 the values for each of the six WGI indicators against FDI between 2002 and 2012. The plots also offer information on the correlation coefficient between the two variables (bottom of the graph –  $r$ ) and its statistical significance (bottom of the graph –  $p$ -value( $p$ )).

The correlations between WGI indicators and FDI in Romania are as follows: three positive (FDI-COR, FDI-QREG and FDI-VRESP), one negative (FDI-PLOST) and two close to zero (FDI-LAWAUT and FDI-GOVEFF). Two of these correlations are strongly positive and statistically significant: 0.738 for FDI and COR, and 0.827 for FDI and VRESP. These results suggest that FDI inflows to Roma-

nia have been positively correlated with the perception on corruption control and on voice and accountability, but also negatively correlated with the political stability. It is noteworthy mentioning that both COR and VRESP declined after 2006, which might explain to some extent the plunge of foreign direct investments in Romania after the beginning of the crisis. At the same time, the link between political stability and FDI has been negative during the entire period – but political stability (as perception) increased only between 2004 and 2009; in the end, this result might be interpreted as the absence of an effective link between the two variables.

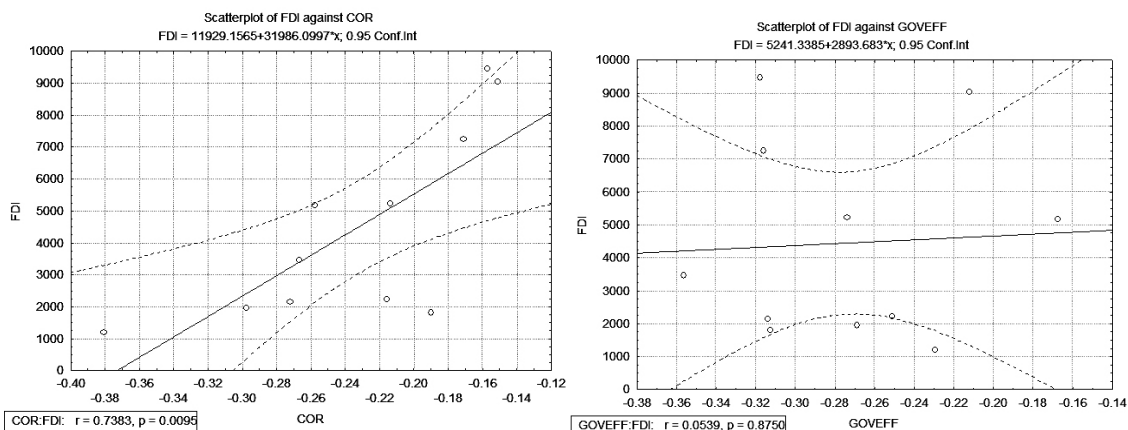


Fig. 5a. Scatterplots and statistical indicators for FDI against WGI indicators, 2002-2012



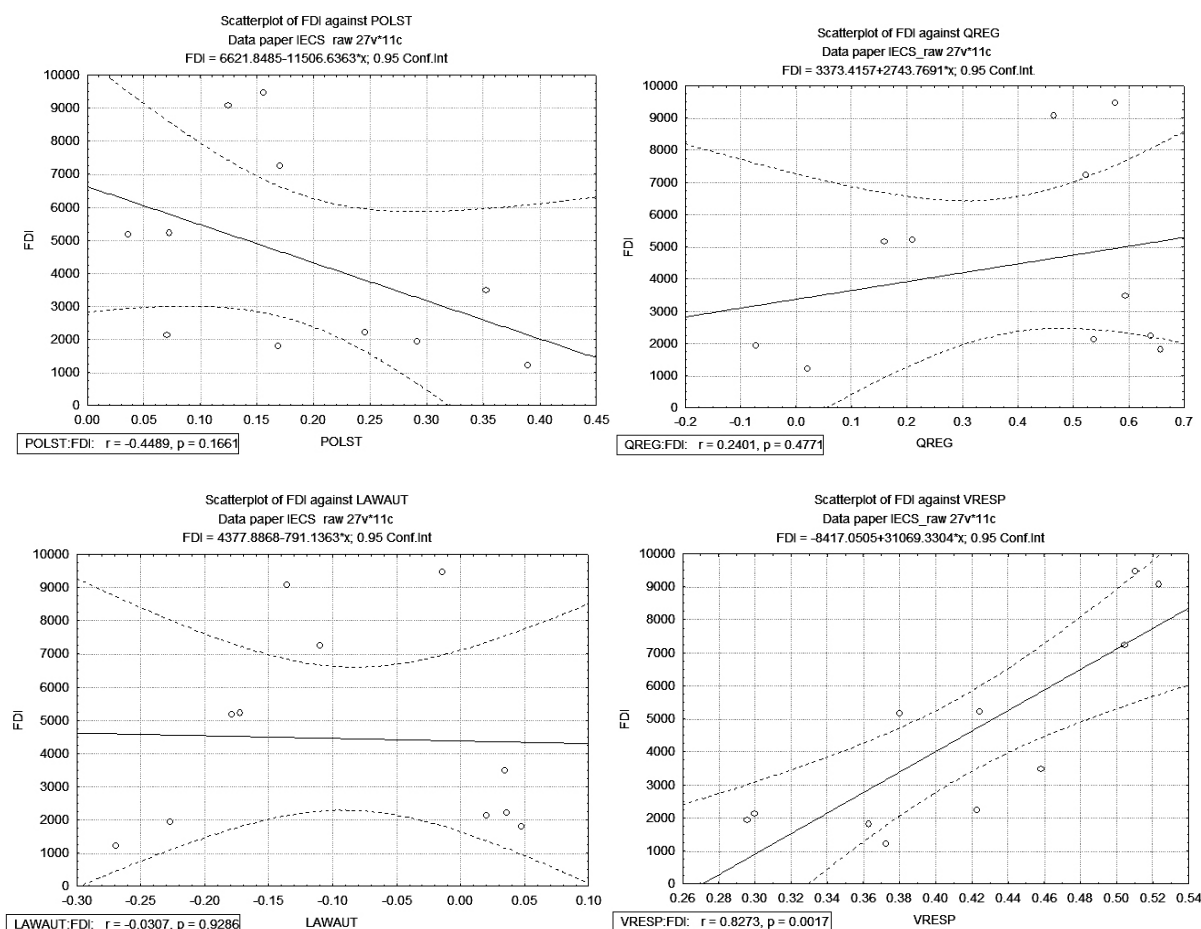


Fig. 5b. Scatterplots and statistical indicators for FDI against WGI indicators, 2002-2012

Source: Authors' computations

**Conclusion & Discussion.** Based on our research, it can be established a link between the quality of the institutional environment and FDI flows in Romania; in principle, the higher of the institutional framework quality the higher the volume of FDI. The experience of Romania after 1990 reveals two important aspects: first, the institutional framework for FDI was not a factor in attracting FDI (particularly those of significant size), but often a discouragement; second, FDI flows were correlated with two elements of the institutional framework: the control of corruption and voice and accountability. As a conclusion, we might say that foreign investors adjusted their presence in Romania to the negative evolution of institutional performance in Romania, especially after 2007.

It needs to be said, at the same time, that more research is needed in order to develop the statistical and econometrical analysis of the link between institutional performance and FDI. The following research directions might be pursued: (i) the use of a larger number of observations and, where possible (depending on the availability of data), a higher frequency (semi-annually, quarterly, etc.); (ii) the use of control variables, able to include a possible effect of intermediation between institutional performance and FDI (e.g., variables of economic performance, a gravitational variable etc.); (iii) The use of other variables indicating institutional performance (e.g., political risk indicators).

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### ПРЯМІ ІНОЗЕМНІ ІНВЕСТИЦІЇ ТА ІНСТИТУЦІОНАЛЬНІСТЬ: РУМУНСЬКА ПЕРСПЕКТИВА

Наша стаття використовує статистичні інструменти з метою емпіричного дослідження інституціональних детермінант прямих іноземних інвестицій (ПІІ) в Румунії. Аналіз зосереджений на державних політиках, які використовували ПІІ між 2002 і 2012; більш конкретно, ми направляємо наш підхід до ідентифікації манери, в якій контрольовані державою інструменти можуть бути використані для того, щоб збільшити продуктивність країни з погляду залучення ПІІ. Змінні, які ми використовуємо: приплив прямих іноземних інвестицій в Румунії, з одного боку, і набір індикаторів Worldwide Governance Світового банку, з іншого боку.

Ключові слова: прями іноземні інвестиції, Румунія, детермінанти ПІІ, інституціональна теорія.

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### ПРЯМЫЕ ИНОСТРАННЫЕ ИНВЕСТИЦИИ И ИНСТИТУЦИОНАЛЬНАЯ ПРОИЗВОДИТЕЛЬНОСТЬ: РУМУНСКАЯ ПЕРСПЕКТИВА

Наша статья использует статистические инструменты с целью эмпирического исследования институциональных детерминант прямых иностранных инвестиций (ПИИ) в Румынии. Анализ сосредоточен на государственных политиках, которые имеют отношение к ПИИ между 2002 и 2012. Более конкретно, мы направляем наш подход к идентификации манеры, в которой контролируемые государством инструменты могут быть использованы для того, чтобы увеличить производительность страны с точки зрения привлечения ПИИ. Переменные, которые мы используем: приток прямых иностранных инвестиций в Румынии, с одной стороны, и набор индикаторов Worldwide Governance Всемирного банка, с другой стороны.

Ключевые слова: прямые иностранные инвестиции, Румыния, детерминанты ПИИ, институциональная теория.

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## INSTITUTIONALISM AND CRISIS

*Contemporary scientific reunions and debates are focusing, for several years, on economic crisis. As a result, there are an unnumbered ways to analyse and to interpret the crisis. Our intention, in the present paper, is to analyze the economic crisis through another perspective: through the role played by institutions. Our scientific approach aims to examine whether public institutions play a role in the onset, progression or solve an economic crisis. For this we choose as representative public institution – the U.S. Federal Reserve System. To meet our purpose we focus only on Federal Reserve actions and their consequences, of any, by taking a short inside look to the Great Depression and 2007-2008 crisis. We tried to figure out which were FED's actions, were they suitable and effective? Could they be better, more appropriate to the specific situations? Those are questions that we try to answer in the present paper.*

**Keywords:** institutionalism, crisis, monetary policy, Great Depression, 2007-2008 crisis.

**Introduction.** Between the concepts and meanings that transcend the past to the future the diversity of research areas, are *institutions* and *institutionalism*, corresponding to a constant interest shown by humanity. They are found among the most popular and yet blamed landmarks of ages.

As a general formula, *social institution* means an infrastructure subdivision that – through its importance and role – cannot only be investigated in so-called "formal patterns", but in a continuous interaction between form and content, taking into account the dynamics involved by such a socio-economic and legal conglomerate. As a result, the institutionalism has become a consistent approach of reality, where the essence of institutions role and powers can be marked by studying the structure and its functioning in an economic system. Judging in such a manner, one of the most evocative institutional images (the one of maximum scale) is the "institution's institution": the state. We, however, made a caveat: although the state would like to be omnipresent in society, it does not succeed, if only because it can be characterized as "the most powerful inertia machine" (it is true that sometimes, a necessary "brake").

**Literature review.** Institutionalism intended to explain certain principles of the market economy, which were not revealed or emphasized by neo-classics. Institutionalism related concepts have however contradictory character: on one hand, they demand to be backed by the element which

owes their existence (the society), on the other, they take decisions and dictates, but not necessarily in the public or general interest. Here are some examples:

1) Thorstein Veblen's follower researchers adopted his theory (with minor changes), considering institutions as *given customs, invested with legal authority*. Their origin was searched, progressive, in moral conceptions or various psychological factors [1, p.363]. In this sense, the impact of economic events and intellectual movements became cause of the changes inside of social institutions.

2) John R. Commons insisted on adaptation trend of economic behavior to habits imposed by sovereignty of social and economic institutions. He conceived the evolution of society by reality driven changes (*pragmatic sociology*), showing that the modern economy can be known through the institutionalism. "This is the problem of modern economics, which is coming to be known as Institutional Economics. An institution is merely collective action in control, liberation, and expansion of individual action. It may be Communism, Fascism, or Capitalism." [2, p. 902].

3) Wesley C. Mitchell believes that between the evolution of economic doctrines, political events and institutions multiple mutual relations exist [1, p.365].

4) In William M. Dugger's conception, institutionalism basic task is to determine the understanding of the process of economic change over time [3, p.68].

5) Talcott Parsons sits to foundation of the institution as concept, so-called *value-type* (contract, property and

labor), they impose themselves in the entire social system and acquire strategic importance [4, 1973].

6) After Marcel Prélôt important is the organic integrated character of *institutionalized group* – and its relative independence to its individual particles [5, p.242].

7) Maurice Duverger sees the *institution* as a social *whole*, with a more or less stable character, involving mutual links (sustainable or not) among its members, and also relationships with other such bodies [5, p.242].

What role does have institutions in a crisis? They are responsible for economy components natural *resettlement* in place, regulated by state and legal norms. The mere existence of the market do not put things back to normal, because the market is a necessary, but not sufficient to re-install the balance in the economy. We offer a few examples:

- For Karl Polanyi, *self-regulating market* is a utopia, because the disequilibrium imposes a general regulatory factor: the institution of state. Thus, the market appears as a result of a consciously directed process with all the mechanisms involved.

- "Why Economics Will Change "asks Ronald Coase in 2002 after nearly a decade of winning the Nobel Prize for economics. The economy will be different, not because we think it, but because it really should change: "I talk about it because I do not only think it will change, I think it ought to change" he says [6, 2002].

- Douglass C. North and Lance E. Davis presents arguments for the role of institutions in the development of the market, showing that institutional change remains a focus of understanding the future and market failure [7, p.3-25]. Note that North's theory has recalibrated the time markers, as the author himself has reassessed the importance of institutions and their (in)efficiency. From such a perspective, institutional change is a complicated temporal process whose development is linked with the regulations and constraints in the economy and society [8, p.3-10].

- In "Great Transformations: Economic Ideas and Institutional Change in the Twentieth Century", Mark Blyth discusses the thinking of the last century, showing how much it was influenced by institutionalism, under constraints and uncertainty that dominated economic development [9, p. 3-48].

We are back on correlations between institutionalism and economic crisis. Economic theory questions the purpose of institutions and procedures under which they occur in the conduct of economic phenomena and processes, and in our everyday lives. In the past, *institutions* have sometimes been avoided by *economic analysis*, considering that they reveal only conjectural research and not economic tendentially. Currently, institutions are generating more or less effective ways of economic actors coordination. We say this for three reasons: *the institution* suggests a very different set of elements still together in a *well-defined register*, *institution* refers to *the need to provide a social status for some groups of individuals* – which means a very complex study horizon, *institution* symbolizes – at its highest level – the general interest of society.

Institutionalism has its well-established role in the history of economic doctrines. Just that we should not forget one thing: institutions and other elements of social and economic systems have *temporal* character. Thus, they require replacement after a period in which they worked on certain parameters, but that period's assumptions cannot be found in the immediate reality. The institutional system, an entity closely related to pragmatic thinking, refers – in our opinion – to the following:

- the habits of reasoning and action tend to influence other dimensions of socio-economic reality, *including* the institutions ways of formation and development;

- we find an evolution of referred organisms to forms becoming more sophisticated in *structure*, although not always effective;

- we note that in these complexes are found and (re)argues itself *new institutional formulas in relation to the "devalued" ones*

- in time, studies have preferred either institutions that have emerged momentarily or the consecrated ones;

- the individual and his role – *as agent of socio-economic and political life* – have been neglected by institutionalism studies in favor of emphasis on structures *constant* valid;

- *European* forms of institutionalism tend to generalize and to emphasize the theoretical aspects of the problem, by contrast, the *U.S.* have a strong descriptive and pragmatic character.

As we see it, increased imbalances in the economy and society, the role of the market debunking and the relations between state and citizen not being synced are factors announcing the collapse of power. There are signs of systemic crisis. They not only cause rhythm breakages, but economic collapse and internal lack of reconciliation possibilities, which is the most dangerous thing for a country. Globalization's mirage throws people into a carousel whose *center* (weight point) usually is the political leaders. But *crank arm* is hitting everything that means *periphery*: the poor, the unemployed, the sick, the languid, the confused, the lost and the credulous ones. The situation is even more serious if it becomes chronic. And the society assumes a risk to lose its traditional benchmark institutions.

Romanian researcher Ilie Badescu fully supports the idea that such finality of things lead to "civilizational crisis as generalized < institutional perplexity >" [10, p.142]. Meaning given by Academician Tudorel Postolache to this expression of Pierre Werner is "radical discrepancy between the aims pursued and the means to manage them." And we, the next generation, we should do well to avoid a new fracture of society. If nothing else, at least because of the fear of a re-institutionalized anarchy. It is actually the fear of a *crisis of order in place*: the reason would be the failure of "uncreative elites" who fail to modernize the institutional frame to match the innovative civilization [10, p.141-142].

As we understand, this *reaction inability* results in *eternal awe* to the mismatch between the new institutional system, endorsed by an old economic system – or vice versa. Such a misfire results, for example, from an unhappy coupling of *imported* economic measures, inappropriate for a domestic pattern of power, which might be obsolete. Or, as best we can give the example of the self-proclaimed sovereign financial institutions which issue programs and dictates courses of action for governments forced to appeal to the lending "solution".

By virtue of its definition, the state – the basic institution of society – must represent the economic and social life and to ensure not undermine it. The state has no right to be *offended* by the crisis, but to abandon its hegemonic manifestations in favor of national ones. It has to regain a landmark of an articulated system called *country*. It has to remember one thing: that within this world in crisis, *not quite everything* is reducible to fraud, corruption and misery. This is the reason of institutionalism: to nurture the trinity work – safety – welfare. And yet, according to Nancy Fraser, social inequity is not *only* result of economic injustice (as it assume most of us), but also of institutional and policy one: "The most general meaning of justice is parity of participation." [11, p.16]; "The political dimension is implicit in, indeed required by, the grammar of the concept of justice." [11, p.21] The phenomenon is linked, moreover, to the European policy in the field of equality and diversity: ac-

cording to Eurobarometer 2012 presented by the European Commission, 54% of EU citizens believes that the consequences of the economic crisis affected the financing of policies that promote equality and diversity [12, p.83].

We honestly believe that institutions *should be* bearers of citizens' interests. Especially in hard times, such as crisis periods, institutions require an economic, social, legal and political reinvention, as the crisis-induced changes requires. But mankind has much to evolve, for the principle of government "one for all and all for one" to materialize in the true sense of the word. In other words, the institutions will follow *first* the interests of the powerful, and *not of the many*. Progress means – however – that the social institution, not eternal (as it's not natural) *should represent the system to which it belongs*. Therefore, practically *history* is the only one that can imprint evolution or extinction of institutions created by it.

**Study case: A short inside look into the Great Depression and 2007-2008 Crisis.** The negative tone of our previous thoughts regarding the public institutions – the state – leads us to an short introspection into the american economic model. For our demarch we choosed two landmarks- the Great Depression and the 2007-2008 crisis, in order to emphasis the way institutions act in crisis times. What the two have in common: the financial markets were important sources and propagators of decline.

**The Great Depression – 1929-1933.** The link between financial markets and the Great Depression is quite obvious, because some dramatic events in financial market, such as: stock market collapse, waves of bankruptcy and bank failure, and contractions in the money stock, coincided with or preceded turning points of depression. What is not so obvious, and has been a source of arguing is the mechanism through which financial factors contributed to the Depression and the relative importance of such financial factors in explaining the origins and persistence of the Depression.

For most of people, the Great Depression is viewed as a supraproduction crisis. We will try to analyse this crisis from a monetary policy point of view and the U.S. governments' lack of flexibility regarding this policy.

Among the first advocates of monetary policy as an influencing contributing factor to the Great Depression were Milton Friedman and Anna Schwartz (*Monetary History of the United States*, 1963). In their opinion, changes in

money supply, determined by exogenous factors underlined the onset of the crisis. They considered co-movements of nominal GNP and the money stock, the movements of prices, and changes in the relative size of various components of the money stock as vital components of the realities/events of 1929-1940 period of time. They considered the stock market crash and the beginning of recession to be less important, and the big question was: how an initial downturn in 1929 became transformed into the Great Depression? One possible answer was that the money stock and implicit money multiplier were greatly influenced (reduced) because of banking crisis that took place between October 1929 and March 1933.

The lack of Federal Reserve response, meaning its inability to use open market operations and loans to banks, had as a result a severe economic activities' contraction. The Federal Reserve started to react in 1933 through money ease, they used this type of intervention 'till 1936, and since 1937 Federal Reserve promoted a contractionary monetary policy combined with economic decline.

"In other words, monetary and other demand shocks had persistent effects on output, excess capacity, and unemployment through various channels connecting them to changes in the underlying structure of the economy" [13, p.81].

James Hamilton (1987) wrote "the major factor influencing monetary policy during 1928-1929, was surely the stock market", leaving from the fact that Dow Jones index of industrial common stock prices doubled between February 1928 and September 1929. Meanwhile, Federal Reserve increased its lending sharply trough the 1928 and, in 1929 it remained high. Then a dilemma aroused for Federal Reserve: to expand or to contract the credit, and going further: to regulate the credit quantitatively or qualitatively. In other words to restrain the stock market or to encourage economic growth, by using discount rates or different types of bills discounted. The answer popped up in August 1929; the Federal Reserve decided to raise the discount rate to 6% (compared to 3.5% in December 1927 and 5% in July 1928) "as a warning against the excessive use of credit," with the understanding that open-market purchases might be necessary if signs of a weakening economy proved correct [14, p. 259-64]. Anyway, the stock market effect on monetary policy was just an indirect one, through borrowing for stock purchases.

**Table 1. Federal Reserve Credit and Gold Stock, 1918-33 (Annual averages, \$mils)**

	Federal Reserve Credit					Gold Stock <sup>4</sup>
	Bills dis-counted <sup>1</sup>	Bills bought <sup>2</sup>	US govt. secs.	Other <sup>3</sup>	Total	
1918	1134	287	134	168	1723	2871
1919	1906	324	254	141	2625	2842
1920	2523	385	324	158	3390	2582
1921	1797	91	264	46	2198	3004
1922	571	159	455	41	1226	3515
1923	736	227	186	56	1205	3774
1924	373	172	402	49	996	4152
1925	490	287	359	59	1195	4094
1926	572	281	350	55	1258	4165
1927	442	263	417	53	1175	4277
1928	840	328	297	40	1505	3919
1929	952	241	208	59	1459	3996
1930	272	213	564	38	1087	4173
1931	327	245	669	33	1274	4417
1932	521	71	1461	24	2077	3952
1933	283	83	2052	11	2429	4059

Notes: <sup>1</sup> Secured bank borrowing from the Fed; <sup>2</sup> Fed purchases of bills; <sup>3</sup> Mostly Fed float; <sup>4</sup> Held by the Treasury, the Fed, and as coin in circulation.

Likewise, any effect of gold on monetary policy was indirect through bank borrowing from the Federal Reserve to recover their reserves [15, 2008]. In short, gold standard has not constrained the Federal Reserve activity, at

least no more than usual [16, 2002 and 17, 2006]. In Table 1 and Figure 1 we can observe that in 1931, Federal Reserve credit reinforced gold inflow, and offset gold losses in 1932.

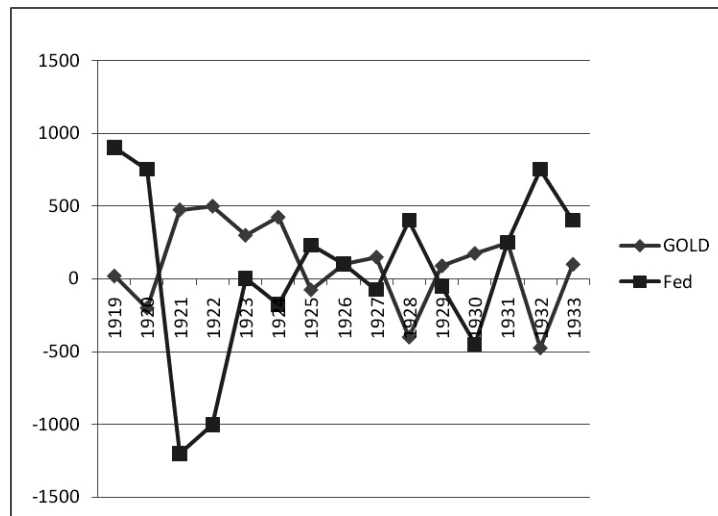


Fig. 1. Changes in Federal Reserve Credit (Fed) and Gold 1919-1931

Source: [15, p. 16]

Starting from different points, such as: real-bills doctrine, rate of interest (nominal or real), stopping the speculative excesses, the stock boom, misperceived constraints of the gold standard, or a narrow focus on financial stability, the researchers explained the monetary policies of that time. The conclusion was only one: the monetary policy was wrong and it brought or worsened the depression. From this perspective, a major role was played by Federal Reserves, which actions and behavior had consequences on depth and duration of the depression.

**2 2007-2008 Crisis.** Everybody is talking about Federal Reserve's role in solving the crisis; but there are also voices that are talking about Federal Reserve's role in triggering the crisis. After 9/11, due to fear of a possible crisis and maybe deflation, Federal Reserve dropped interest rates very low, expanding so the money supply. The level was so low, that the real Federal Funds rate (the nominal rate minus inflation) was actually negative. The result was cheap money/credit for mortgage loans. From the housing boom, to new financial instruments that didn't have the market test and a degree of recklessness that stretched beyond the control of regulators to collapse it

was but a small step. "It is tempting to blame this on greedy financiers, but they were simply responding to the poor incentives created by the Federal Reserve, Congress and others." [18, 2013].

What did the Federal Reserve do in such a situation? According to Ben S. Bernanke in a discourse at the Greater Austin Chamber of Commerce, Federal Reserve elaborated a strategy that relies on three components:

- an aggressive easing monetary policy
- providing liquidity to the private sector in order to support the functioning of credit markets and to reduce financial strains
- promoting financial stability by all available tools.

The easing monetary policy aimed to offset to the extent possible the effects of the crisis on credit conditions and the broader economy. The first actions didn't had the expected result, meaning that the economy was still weak, so other actions were needed. (For complete actions of Federal Reserve see **Table 2**) This kind of policy brings along inflation risk, and indeed the inflation rose in 2008.

Table 2. Federal Reserve 2008: A Timeline of Fed Actions and Financial Crisis Events

Jan. 22	In Emergency Move, Fed Cuts Rates Sharply by 0.75 Percentage Point to 3.5%
Jan. 30	Fed Cuts Interest Rates By A Half Percentage Point to 2.25%
March 11	Fed Announces New Emergency Lending Program. The Fed launched the Term Securities Lending Facility, aimed at lending up to \$200 billion in Treasury bonds to primary dealer banks secured for 28 days, extending the usual overnight deadline for such transactions. The Fed also authorized an increase in its swap lines with the European Central Bank and the Swiss central bank.
March 17	J.P. Morgan Buys Bear in Fire Sale, As Fed Widens Credit to Avert Crisis. Pushed to the brink of collapse by the mortgage crisis, Bear Stearns Cos. agreed—after prodding by the federal government and the Fed—to be sold to J.P. Morgan Chase & Co. for the fire-sale price of \$2 a share in stock, or about \$236 million.
March 17	Central Bank Offers Loans To Brokers, Cuts Key Rate. The Fed announced one of the broadest expansions of its lending authority since the 1930s. For the first time securities dealers could borrow from the Fed on much the same terms as banks. The Fed also lowered the rate charged on such borrowings from what's known as its discount window by a quarter of a percentage point, to 3.25%, and extended the maximum term to 90 days from 30.
March 18	Fed Cuts Rates by 0.75 Percentage Point to 2.5%.
April 30	Fed Cuts Rates by a Quarter Percentage Point
May 1	Fed Lowers Rates by Half Percentage Point to 2%.
June 25	Fed Holds Rates Steady at 2%
August 5	Fed Holds Rates at 2%.

Table 2 (continued)

Sept. 15	A Busy Day: Lehman Faces Liquidation; Merrill Lynch is Sold; AIG Seeks to Raise Cash.
Sept. 16	U.S. Government Takes Over AIG With Fed Help in \$85 Billion Bailout.
Sept. 16	Fed Holds Rates at 2%.
Sept. 29	Fed Holds Unscheduled Conference Call on Swaps.
Oct. 7	Fed Holds Unscheduled Conference Call on Severe Impairment of Commercial Paper Market. The topic was a deepening credit crunch threatening money market mutual funds and commercial paper, an important vehicle for short-term funding used by corporations.
Oct. 8	Coordinated Global Central Bank Interest Rate Cut. In an unprecedented step, the Federal Reserve, along with its counterparts in the euro zone, Japan, England, Switzerland and Sweden, announced a coordinated cut in interest rates. The Fed cut its benchmark rate by half a percentage point to 1.5%.
Oct. 14	A TARP Over Wall Street: The Bank Bailout. The U.S. government came to the banking sector's rescue, buying preferred equity stakes in nine major financial institutions including Bank of America Corp., JP Morgan Chase & Co., Goldman Sachs Group Inc. and others.
Oct. 22	Fed Announces Fresh Aid To Money Market Funds. The central bank offered to lend as much as \$540 billion to the industry.
Oct. 27	Fed Launches Commercial Paper Funding Facility. The program was aimed at addressing cash shortages in the commercial paper market. The facility began operating on Oct. 27 and closed Feb. 1, 2010.
Oct. 29	Fed Cuts Interest Rates By Half a Percentage Point to 1%.
Nov. 24	U.S. Government Bails Out Struggling Citigroup. This was the first of three eventual bailouts for the Wall Street giant, this one amounting to \$20 billion in fresh capital injections as well as guarantees for \$306 billion in toxic assets.
Nov. 25	Fed Starts Buying Mortgage Bonds. The Fed launched the Term Asset-Backed Securities Loan Facility, or TALF, aimed at supporting another troubled corner of the credit markets – securitized assets backed by increasingly sour loans.
Dec. 16	Fed Cuts Rates Near Zero to Battle Slump

Source: Federal Reserve 2008: A Timeline of Fed Actions and Financial Crisis Events, by Pedro Nicolaci da Costa, in Real Time Economics, 21 February 2014, <http://blogs.wsj.com/economics/2014/02/21/federal-reserve-2008-a-timeline-of-fed-actions-and-financial-crisis-events> [19]

In order to provide liquidity to the private sectors Federal Reserve appealed to the following:

- they narrowed the spread of the primary credit rate (the rate at which banks borrow from the Federal Reserve's discount window) over the target federal funds rate from 100 basis points to 25 basis points;
- they extended the term for which banks can borrow from the discount window to up to 90 days;
- they developed the program *Term Auction Facility*, under which predetermined amounts of credit were auctioned to depository institutions for terms of up to 84 days;
- they introduced facilities to purchase highly rated commercial paper at a term of three months and to provide backup liquidity for money market mutual funds;
- they approved bilateral currency swap agreements with 14 foreign central banks, in order to improve dollar funding conditions in important foreign markets.

Likewise during the Great Depression, the major concern of Federal Reserve was to provide and ensure financial stability by all means. This could be strengthening the financial infrastructure or acting together with other agencies to prevent the failure of systemically important firms. Among these actions we can mention:

- facilitating the acquisition of the investment bank Bear Stearns by JPMorgan Chase using a Federal Reserve loan, backed by assets of Bear Stearns and a partial guarantee from JPMorgan.
- stabilizing the large insurer, American International Group (AIG) through an emergency Federal Reserve credit, adequately secured by AIG's assets.
- putting together with the Treasury and the Federal Deposit Insurance Corporation (FDIC) a package of guarantees, liquidity access, and capital for Citigroup.
- supporting the actions by the Federal Housing Finance Agency and the Treasury to place the government-sponsored enterprises (GSEs) Fannie Mae and Freddie Mac into conservatorship
- working with the FDIC and other bank regulators in order to assist in the resolution of troubled depositories, such as Wachovia.

The conclusion was that the system was facing a serious weakness: the absence of well-defined procedures and authorities for dealing with the potential failure of a sys-

temically important nonbank financial institution, at least in the beginning. Starting from here, the US Administration and Federal Reserve addressed the Congress for a legislation that provides the necessary authorizations and resources to strengthen the financial system and, in particular, to deal with the potential failure of a systemically important firm. The aftermath was the *Emergency Economic Stabilization Act* (EESA). Therefore, the Federal Reserve's range of powers has expanded, as have the kinds of financial institutions it monitors and regulates. The justification for all of these new powers is that the Federal Reserve is best able to prevent a repeat of the 2008 meltdown by keeping in check the potential systemic problems revealed in that crisis [18, 2013].

**Conclusions.** The failure of classic interventionism leads to find new solutions in order to validate the state's presence and actions in private environment. In both situations, the Great Depression and 2007-2008 Crisis, the found solution was one that manage to please, equally, the private environment and the public institutions – the state/ the U.S. Congress. Finding this solution is explained by the change of economic paradigms in the US by leaving or replacing capitalism in its classic form with New Deal expressed by Keynes, which involves a partnership between state and society, institutions taking a proactive role in society and the economy.

It is all about a non-nocive presence of STATE, as institution, in economy.

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### ІНСТИТУЦІОНАЛІЗМ І КРИЗА

Сучасні наукові возз'єднання та дебати зосереджені, протягом декількох років, на економічній кризі. В результаті, є незліченна кількість способів аналізу та інтерпретації кризи. Метою цієї роботи, є аналіз економічної кризи з іншої точки зору: через ролі установ. Наш науковий підхід направлений на розгляд питання про те, чи суспільні інститути відіграють роль у виникненні, прогресуванні або вирішенні економічної кризи. Для цього виберемо в якості представника державної установи Федеральну резервну систему США. Для задоволення нашої мети ми орієнтуємося тільки на діях Федеральної резервної системи та їх наслідках у період з Великої депресії до кризи 2007-2008 років. Ми спробували з'ясувати, якими були дії ФРС, підходящими й ефективними? Чи можуть вони бути кращими та більш доречними в певних ситуаціях? Ось ті питання, на які ми намагаємося відповісти в даній статті.

Ключові слова: інституціоналізм, криза, грошово-кредитна політика, Велика депресія, криза 2007-2008.

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### ІНСТИТУЦІОНАЛІЗМ И КРИЗИС

Современные научные воссоединения и дебаты сосредоточены, в течение нескольких лет, на экономическом кризисе. В результате, есть бесчисленное количество способов анализа и интерпретации кризиса. Целью этой работы является анализ экономического кризиса с другой точки зрения: роли учреждений. Наш научный подход направлен на рассмотрение вопроса о том какую общественные институты играют роль в возникновении, прогрессировании или решении экономического кризиса. Для этого выберем в качестве представителя государственного учреждения Федеральную резервную систему США. Для удовлетворения нашей цели мы ориентируемся только на действиях Федеральной резервной системы и их последствиях в период с Великой депрессии до кризиса 2007-2008 годов. Мы попытались выяснить, какими были действия ФРС, подходящими и эффективными? Могут ли они быть лучше и более уместными в определенных ситуациях? Вот те вопросы, на которые мы пытаемся ответить в данной статье.

Ключевые слова: институционализм, кризис, денежно-кредитная политика, Великая депрессия, кризис 2007-2008.

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## GROWING A BUSINESS – MERGERS AND ACQUISITIONS

*Mergers and acquisitions analyzed as external growth strategy in the modern economic environment context; stock quote evolution analysis before and after mergers and acquisitions.*

Keyword: merger, acquisition, expansion, business combination.

**Introduction.** Many recent studies have approached the issue of mergers and acquisitions as they have become increasingly common on the financial market, with the main goals of risk reduction and rapid business development by pooling resources, fast access to innovation and international expansion. Some studies seek the results from the financial performance perspective, for example Reddy, K.S., Nangia, V.K., and Agrawal, R. (2014) have concluded that the 2007–2008 global financial crisis had a negative impact on M&A, but they discovered that after the crisis period emerging market countries increased their foreign acquisitions; Aharon D.Y., Gavius I. and Yosef R. (2009–2010) revealed an increase in the prevalence of mergers and acquisitions transactions, with no change in pricing, during the stock market bubbles; Johnson H.E. (2014) emphasizes the importance of financial statement analysis of

the acquired company's assessment. Other studies try to explain the evolution from the organisational identity point of view, (De Bernadis L. 2010/2011) or to identify possible factors of success and failure in mergers and acquisitions (Weber Y., Tarba S., Oberg C. 2013).

Although the literature covers a wide range of studies related to mergers and acquisitions, this review will focus on external growth strategy and the way business combinations influence the market capitalisation of the newly created group. Based on data provided by finance sites, the current thesis examines top Mergers and Acquisitions for the period 2011–2014 from the transaction value point of view and aims to identify the quote evolution trends before and after the business combinations.

**Methodology.** The practical approach consists of the empirical study of the amounts involved in mergers and

acquisitions between 2011-2014. The theoretical approach involved descriptive-qualitative research methods by detailing specific types of external growth, based on document reviews of published academic papers, economic books, studies and journals.

**Growing a business.** Under the influence of several factors organizations tend to develop in order to ensure business continuity, prosperity and progress. In this context, the pressure from competitors, but also from the customers presses heavily on investors so, the decision to grow the business is very important and depends on the analysis of several variables such as the size of the company, its flexibility, the economic and commercial interdependencies created within the business environment, previous results of the company, the possibility of achieving partnerships with other companies. These are all issues that investors are considering when making a decision for growing a business since development and growth should be continuous concerns in the business environment.

Thus, according to a careful analysis, the decision may be at a first stage, in favour of an internal or an external growth, both of them having advantages and disadvantages.

**Organic growth strategy.** Internal growth is based solely on the company's own resources. Thus, according to the company's internal capabilities, investors can make decisions to increase production while improving sales in different ways. As a strategic planning tool, the Ansoff Matrix (Figure 1) for example provides help in order to choose the proper growth strategy.

Internal growth strategy can take place through:

- Market development – through this strategy the company tries to extend by entering with its own products new segments of the market or new markets;
- Market penetration – this strategy involves use of existing products on existing markets in order to increase market share either by selling more products or services or by reaching new clients; this strategy leads to improvement of the distribution network;
- Diversification – this strategy implies entering new markets, different from the current ones, with new products;
- Product development – this strategy aims to rise the market share by offering different new products on existing markets.

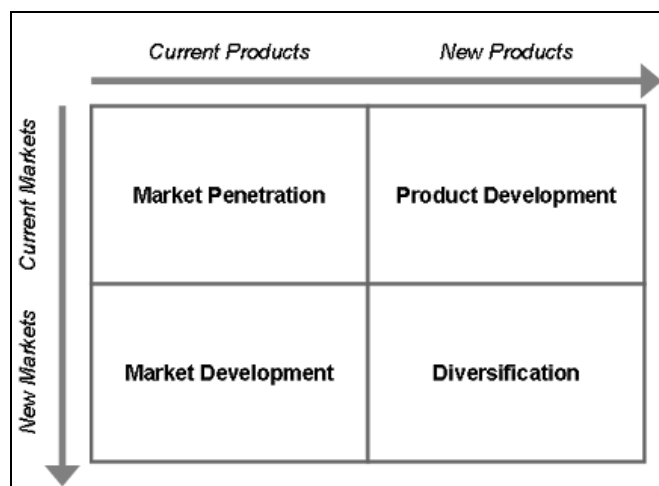


Fig.1. Ansoff Matrix

Source: <http://www.mejoracompetitiva.es/>

Organic growth implies, overall, the expansion of a company through internal funds, such as reinvested retained earnings, without relying on external loans. The finance can also be provided through shareholders contribution and may concern acquisition of new equipment or production technologies and establishment of new production lines.

Although this type of growth can be attractive for small business because the indebtedness degree remains at an acceptable level and the ownership will still be held by existing shareholders, it also presents disadvantages such as limited resources, market barriers, mandatory positive cash flows and a slow growth.

**External growth strategy.** In contrast with above mentioned strategies is the external growth through mergers, acquisitions and other alliances between companies. By merger we understand that a company buys with cash another firm or issues stock in exchange for the shares held by the other firm's owners. An acquisition refers to a transactions in which the major assets of the controlling shares of another company are bought. (Guerard Jr. J.B, Schwartz E. 2007, pg.425).

This growth tactic is becoming more and more common in the modern economic environment, in the

context of globalization and increased interdependencies between economies.

If in the case of internal growth the emphasis is on developing through own resources, in this case the main purpose is to create strong alliances with companies in order to add more value to the business.

Several needs and business perspectives underlie mergers and acquisitions. In normal economic conditions, more intense competition, scientific progress and customer needs diversification force companies to ensure a constant and fast improvement path in order to survive. In times of crisis and short after, companies find themselves in difficult situations when the internal development may not be strong enough in order to ensure growth. The need for new skills, new market demands, difficult access to financing, the imperative need for great results in short time intervals, all these push businesses to a new and challenging type of business combination.

**Types of mergers and acquisitions.** There are various types of mergers and acquisitions depending on different characteristics of business, economic environment or financing operations and, although, each term describes different types of activities. While mergers illustrate the creation of a new company by a willingly



merging of other companies, acquisitions appear when a company buys another company, in some cases under hostile circumstances.

The most common types of mergers are:

- Vertical mergers- encountered between companies within the same industry but operating on different levels, for example by merging directly with a supplier or a client;
- Horizontal mergers- common in industries with fewer companies that operate in the same industry field and offering the same products and services; in such cases the competition tends to be very high so, by merging, potential gains become much greater; however, these types of mergers can become dangerous for the market because the risk of monopolies arises when two or more powerful competitors decide to merge;
- Conglomerate mergers- in this case two or more companies activating in different domains decide to merge for other reasons.

Also, an acquisition describes a business combination achieved by asset purchase or by stock purchase. In the first case the acquirer buys a part of the assets or the assets entirely. The buyer has the privilege of selecting all the assets or liabilities he wants. A value will be assigned to each selected position, but this may be a difficult and expensive process. If the acquisition takes place by stock purchase, all the assets and liabilities are going to be transferred according to the control percentage so the process runs easier and involves low costs and the shareholder bears a lower tax.

Unlike mergers, acquisitions may need a hostile takeover in order to be accomplished. If the parties involved do not come to an agreement, the acquisition requires a management replacement in the structure of the acquired company. This situation appears when the combination process is carried out against the will of the target companies' board which rejects the offer and disrupts the acquisition process by refusing to cooperate in order to achieve the due diligence for example.

Other types of acquisitions are known, such as reverse takeovers where a private company acquires a public company or backflip takeovers when the acquiring company becomes a subsidiary of the purchased company.

Along with mergers and acquisitions, business alliances refer to agreements between businesses, such as joint ventures or strategic alliances, when two or more companies decide to unify their resources in order to cope with the economic environment challenges and ensure profitability. All companies remain independent and the benefits obtained are expected to be bigger than if they had activated for themselves on the market.

**External growth characteristics.** If we analyse the past 7 years we notice that external growth strategies also start from the inability of companies to survive on the market due to the severe impact of the crisis. Usually mergers, acquisitions and business combinations arise from the desire of expansion. By creating synergies, business can generate more profit and can diversify operational domains.

Among the main reasons for merger and acquisition are included strengthening and improving financial position, penetration of new markets, obtaining cheap financing sources, increasing and improving production process. In a changing world, maintaining competitiveness is becoming increasingly difficult. It is not easy for a company to keep up with the latest technologies, especially for small businesses. Instead, joining with other company can bring many benefits embodied especially in lowering of costs and obtaining good results in a much shorter period of time.

Mergers and acquisitions show both advantages and disadvantages. As benefits can be mentioned: expansion of business in different geographical regions, reduced manufacturing costs, market share growth, enlarged customer base, more financing resources available, increase of sales, expansion of research and development opportunities, increase of the production capacity, new markets opportunities, increase of the negotiation power. Overall business combinations strengthens companies, immediately expands assets and especially market share and ensures a better allocation of resources by sharing know-how and technological infrastructure. Also, through mergers is transmitted easier and with greater effect the management team knowledge.

Despite the fact that alliances of all kinds help companies to evolve, there are some disadvantages worthy of being taken into account. First of all, bigger companies involve greater risks. If in the case of a simple business the control was more easily exercised because the business was already known, in case of synergies can appear a problem of corporate governance and business administration, because difficulties may arise from cultural differences for example. The management must increase its capabilities as they enter new markets and more employees and assets are to be handled with. It is also possible for the investors to deal with an internal competition inside the company, among staff within united businesses.

**Due diligence.** Prior to initiate the purchase process, the buyer should make sure that it is well informed about the business that he wants to buy. This requires a careful analysis of financial and economic situation of the company to be acquired. A management review and a legal compliance review are also needed.

In this respect the due diligence aims to verify the annual financial statements of previous years and assess future projections of its future performance. An important aspect would be the existence of previous audit reports outlining an advised opinion on the company's business to be acquired.

Are taken into consideration income and expenditure budgets proposed and approved for the next period, estimated cash flows and correlation of these future business projections with previous situations, in order to ensure sustainability of the schedules.

Also, through due diligence can be evaluated the indebtedness degree and can be determined whether or not the company has sufficient resources to sustain its activity. Technological endowment and know-how are very important aspects to be evaluated and so is the client base of that will be incorporated into the new company. Buyer must take the necessary steps to determine the characteristics of clients which he will assimilate into its business portfolio. Pre-merger situation assessment involves determining client range, knowledge of satisfaction felt from the products and services received, the contractual terms under which trade relations have developed up to the acquisition or merger moment.

**Mergers and acquisitions in the last period.** In the last 2 years merger and acquisition activity recorded an increase. Cross border mergers and acquisitions were on a rise between 2012 and 2014, among transactions the largest share is held by the industrial sector followed by the real estate and healthcare fields.

Top mergers and acquisitions performed during last 4 years can provide an overview of business combination evolution. As shown in tables below, the amounts involved in business combinations are maintained at high levels.

**Table 1. Top Mergers and Acquisitions 2011**

Acquiror	Acquired	Transaction value (bil USD)
Preferred Shareholders	AIG	58,00
SAB Miller Beverage Investments	Foster's Group Ltd	12,00
Shareholders	Fiat SpA-Auto Business	18,00
Nippon Steel Corp	Sumitomo Metal Industries Ltd	22,00
Takeda Pharmaceutical Co Ltd	Nycomed Intl Mgmt GmbH	13,00
Cargill Inc	Cargill Inc	14,00
Johnson & Johnson	Synthes Inc	20,00
Duke Energy Corp	Progress Energy Inc	25,00
AMB Property Corp	ProLogis	15,00
Deutsche Boerse AG	NYSE Euronext Inc	12,00
Shareholders	Marathon Oil-Downstream Bus	16,00
BHP Billiton PLC	Petrohawk Energy Corp	15,00
Express Scripts Inc	Medco Health Solutions Inc	34,00
United Technologies Corp	Goodrich Corp	18,00
Kinder Morgan Inc	El Paso Corp	36,00

Source: www.gfmag.com

**Table 2. Top Mergers and Acquisitions 2012**

Acquiror	Acquired	Transaction value (bil USD)
Glencore International PLC	Xstrata PLC	45,00
Shareholders	Kraft Foods Inc-N Amer Grocery	36,00
NK Rosneft'	TNK-BP Ltd	28,00
SAREB	Bankia SA-Bad RE Assets	25,00
FROB	Banco Financiero y de Ahorros	23,00
Shareholders	ConocoPhillips-Refining ,Mktg	21,00
Walgreen Co	Alliance Boots GmbH	21,00
SoftBank Corp	Sprint Nextel Corp	20,00
Anheuser-Busch Inbev	Grupo Modelo SAB de CV	20,00
China Telecom Corp Ltd	China Telecom Corp-3G Assets	18,00
FROB	Bankia SA	17,00
CNOOC Canada Holding Ltd	Nexen Inc	17,00
Freeport-McMoRan Copper & Gold	Plains Expl & Prod Co	17,00

Source: www.gfmag.com

**Table 3. Top 10 Mergers and Acquisitions 2013**

Acquiror	Acquired	Transaction value (bil USD)
Applied Materials (AMAT)	Tokyo Electron (TOLEY)	10,00
Spectra Energy Partners (SEP)	Spectra Energy Corp.'s (SE)	9,00
American Airlines (AAL)	US Airways	11,00
Thermo Fisher Scientific (TMO)	Life Technologies	13,00
Liberty Global (LBTYA)	Virgin Media	16,00
Publicis Groupe (PUBGY)	Omnicom Group (OMC)	17,00
Comcast (CMC SA)	NBC Universal Media	17,00
Michael Dell and Private Equity Firm Silverlake	Dell	25,00
Berkshire Hathaway (BRK.B)	Partners Buy H.J. Heinz	23,00
Verizon (VZ)	Verizon Wireless Stake (VOD)	130,00

Source: www.investopedia.com

**Table 4. Top Mergers and Acquisitions 2014**

Acquiror	Acquired	Transaction value (bil USD)
Novartis AG (NVS)	GlaxoSmithKline	20
Facebook Inc (FB)	WhatsApp	22
Actavis (ACT)	Forest Laboratories	25
Reynolds American (RAI)	Lorillard (LO)	27
Halliburton Company (HAL)	Baker Hughes Incorporated (BHI)	35
Medtronic (MDT)	Covidien	43
Actavis (ACT)	Allergan (AGN)	66
AT&T (T)	DirecTV (DTV)	67
Comcast Corporation (CMC SA)	Time Warner Cable (TWC)	70
Kinder Morgan	Kinder Morgan Energy Partners LP; Kinder Morgan Management; El Paso Pipeline Partners	76

Source: www.investopedia.com

**Results.** If we analyse the effects of business combinations operations on the market capitalization of listed companies we can see an improvement. The number of mergers and acquisitions increased gradually after the

crisis period up to 2014 as a Thomson Reuters study revealed, and strong gains are recorded in media, health-care and energy fields.

As shown in graphs below, the decision taken for business combinations has been a very good one for the companies analyzed regarding the stock capitalization.

For example, the acquirer Berkshire Hathaway (CEO Warren Buffett), an American multinational conglomerate holding company founded in 1839 as a textile manufacturing company, has passed over the years through numerous business combinations changes and recorded steady improvement in market capitalization (Fig 2, Fig.3).

Comcast Corporation, a multinational mass media company, the largest broadcasting and largest cable company in the world by revenue, according to the Institute of Media and Communications, merged in 2014 with Time Warner Cable with good results in terms of stock quote evolution (Fig.5). However, in April 2015 the deal was called off and Comcast gave up Time Warner Cable because of regulators which concluded that there would be too much market power for one company.

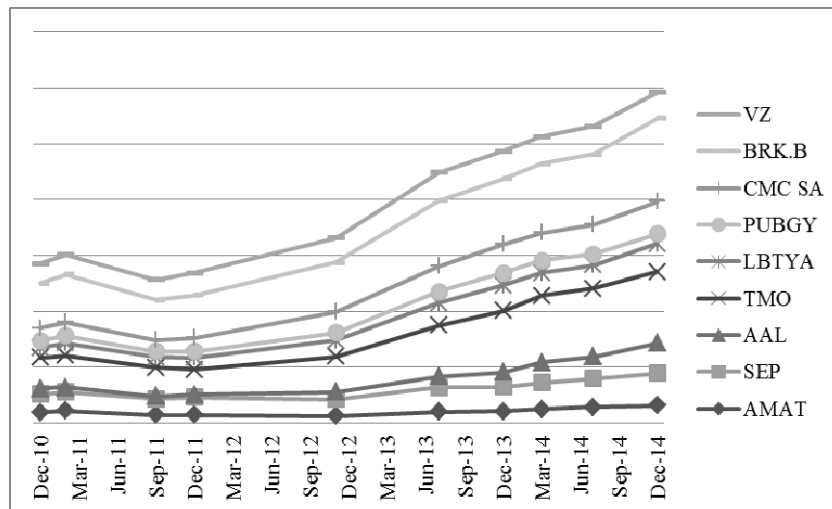


Fig. 2. Acquirer Stock Quote evolution – 2013 Mergers and acquisition

Source: finance.yahoo.com

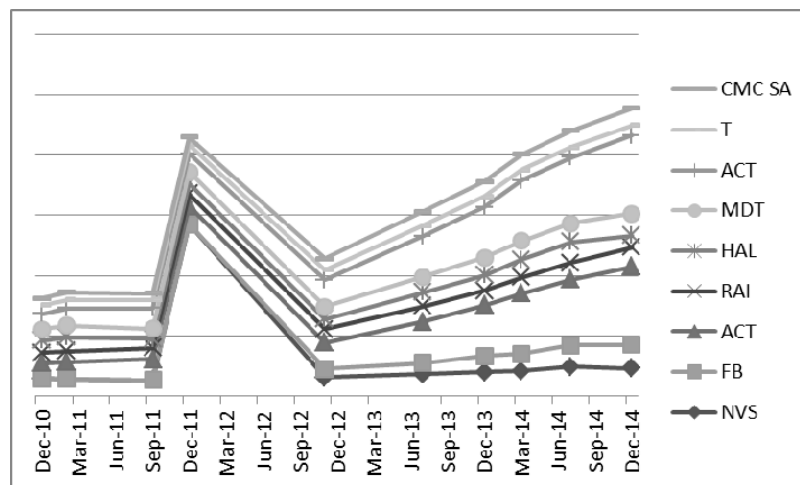


Fig. 3. Acquirer Stock Quote evolution – 2014 Mergers and acquisition

Source: finance.yahoo.com

Of course, to this development also contributed improved business environment conditions in the period following the global financial crisis, but if we consider both acquirer and acquired companies evolutions, the trends are conducive to the initial aim of the business combination, namely the development and strengthening of companies. For example Figure 4 below shows the evolution of stock quotes for both Applied Materials and Tokyo Electron, two of the leading vendors of semiconductor manufacturing equipment that merged in 2013.

Tokyo Electron Limited is a Japanese electronics and semiconductor company founded in 1963 and is the largest manufacturer of integrated circuits and flat panel displays

in Japan and the third in the world. Applied Materials, an American corporation that supplies equipment, services and software to enable the manufacture of semiconductor, flat panel display, Glass, WEB and solar (crystalline and thin film) products, began expansion in 1996 by acquiring various companies up to 2013. In 2013 Amat announced its merger with Tokyo Electron Limited and the result was to become the world's largest supplier of semiconductor processing equipment. Unfortunately, the deal that was expected to be profitable had significant regulatory problems and the shares of Amat were falling down and during 2015 the merger has been cancelled.

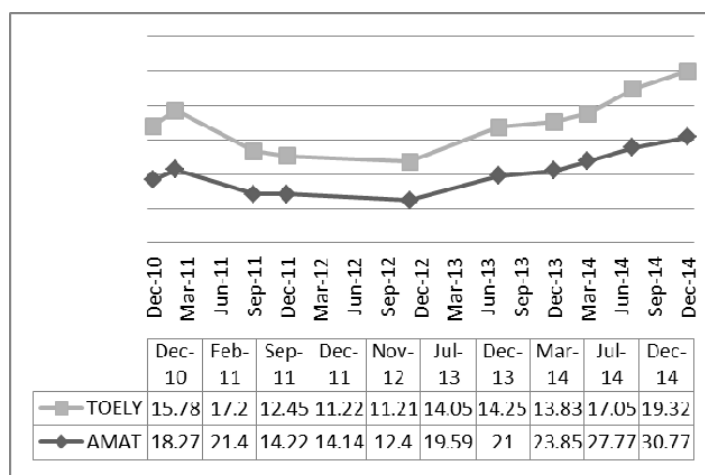


Fig. 4. Quote evolution – 2013 Applied Materials and Tokyo Electron merger

Source: finance.yahoo.com

Figure 5 shows the stock quote trends for Comcast Corporation and Time Warner Cable, the two largest U.S. cable companies.

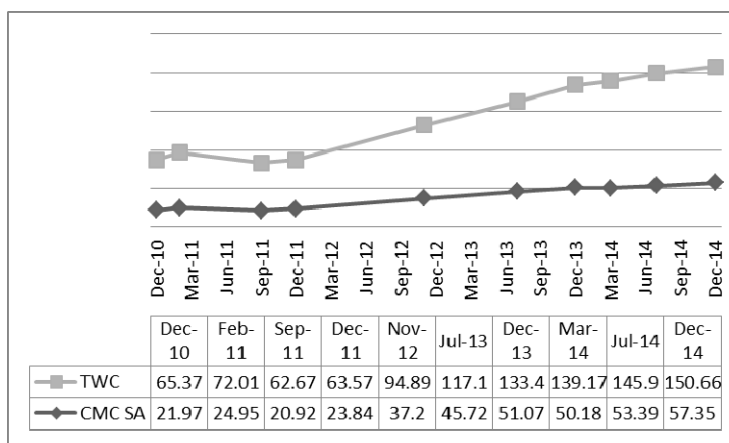


Fig. 5. Quote evolution – 2014 Comcast Corporation and Time Warner Cable merger

Source: finance.yahoo.com

**Conclusion & Discussion.** Six years after the financial crisis the world began to recover and the global growth prospects for the world economy show signs of strengthen for the following two years. Due to the downward trend of business during the financial crisis, investors are trying to overcome the negative impact and find new opportunities for expansion, or, in the worst case, recover as much as possible of their investment.

Organic growth is slow and sometimes arduous but offers the advantage of financial independence and reduces the risk from indebtedness to financial institutions. However, under the present circumstances a rapid and successful expansion is required. External growth through business combinations becomes an important and large part of the financial world. Involvement in such transactions brings both advantages and disadvantages, but often business success depends on flexibility and open-mindedness, hence assuming risks can bring higher future gains. Regrouping of companies pursue basically getting control over productive assets and vast knowledge available to the largest financial market actors, in order to increase the revenue. Alongside, the constant improvement of the management team is crucial in order to ensure a proper control of a growing business.

As shown in the above tables and graphs, amounts involved in business combinations are at high levels and

results of mergers and acquisitions can be regarded as underlying an increase in market capitalization. Analyzing the evolution from the period between 2010 and 2014 we can identify an uptrend for the stock quotation but there are other several important aspects to be considered when analyzing the profitability and the long term trend of quote evolution. For example, if we take into account the cases of Amat and Comcast and we expand the analyzed period, we discover that, in fact, the business combination process resulted in a positive outcome on a short run only and the mergers were eventually cancelled because of regulation problems.

The analysis of the market capitalization is not enough in order to establish whether a business combination is a successful one or not. As a suggestion for future research, different directions regarding merger and acquisition results should be taken into account such as market capitalization analysis on a long term period after the business combination takes place, management issues and antitrust regulatory matters.

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### ЗРОСТАННЯ БІЗНЕСУ – ЗЛИТТЯ ТА ПОГЛИНАННЯ

*Злиття та поглинання проаналізовані як елементи зовнішньої стратегії зростання в сучасних умовах економічного середовища. Проаналізовано еволюцію котирування акцій до і після злиттів і поглинань.*

*Ключові слова: злиття, поглинання, розширення, об'єднання бізнесу.*

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### РОСТ БИЗНЕСА – СЛИЯНИЯ И ПОГЛОЩЕНИЯ

*Слияния и поглощения проанализированы как элементы внешней стратегии роста в современных условиях экономической среды. Проанализирована эволюция котировки акций до и после слияний и поглощений.*

*Ключевые слова: слияние, поглощение, расширение, объединение бизнеса.*

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## ANALYSIS MODELS OF PROFITABILITY IN AGRICULTURE

*In this article there is developed a synthetic theoretical framework regarding the profitability analysis through economic and financial rates of return using different models, and also it is made a case study on the similarities and differences between various models of rates of return analysis in agriculture. The motivation of choosing this theme is to determine the relationship between financial and economic profitability using Pearson correlation coefficient. The research conducted leads to two main categories of results; on the one hand there is made a qualitative theoretical synthesis on the rates of return in models, on the other hand it is determined the correlation between financial and economic profitability in the agriculture organizations.*

*Keywords: economic rates of return, financial rates of return, Pearson correlation coefficient, agriculture.*

**Introduction.** It is known that agriculture is an important branch of the national economy, holding a significant share in Gross Domestic Product. In this context it must be taken measures that contribute to increasing of agricultural holdings profitability. The need to develop a profitable business derives from the fact that the use of inputs who are obtained with a particular effort should be balanced by the effects obtained from the execution of the activity, ie getting a surplus of effects (results) compared with the efforts (expenses) involved. The profitability is the main part of the economic and financial mechanism, reflecting the leverage of available resources.

The farm profitability reflects the measuring of effects materialized in revenues with the efforts involved materialized in expenditure. The economic efficiency principle requires that any economic activity to achieve an increase of net economic effects in a higher level of the efforts needed to obtain them. The most important effect is the profit, specially the net profit, which remains at the disposal of associates/shareholders.

**Methodology.** In order to achieve the proposed objectives, in this paper there were studied a series of material from the specialized literature: books, articles, websites and other relevant material. This research is conducted over a period of four years (2010-2013) at a farm. Determination and analysis of financial and economic rates of return was made at the level of each year, using a series of

specific models. After that we proceeded to calculate the Pearson correlation coefficient between: financial rate of return-economic rate of return; financial rate of return-commercial rate of return; economic rate of return-commercial rate of return.

The research hypotheses that we wanted to check consists of:

- 1.The calculation of the economic and financial rate of return using different models leads to different results;
- 2.There is a high correlation between the financial, economic, commercial rate of return.

#### 1. Profitability and its importance for organizations

In the literature there are different approaches of the profitability. So the profitability may be defined as the expression of the result obtained by the organization as a result of an activity of transformation/exchange (Pavaloaia et al, 2010). We appreciate that one of the most relevant definitions of profitability is: In terms of heritage, the profitability can be defined as the measurement of the two components at the year end, on the one hand the volume of production expenses incurred in carrying out basic activity and other activities, works and services, and on the other hand, the income earned (Burja, 2009).

The profitability of a farms, as well as for any organization, is a form of expression of economic efficiency, including a number of key economic and financial aspects of an organization, as a relevant indicator for decision making

and its orientation options (Burja et al, 2008). It is important to note that the economic efficiency is an economic category broader than profitability.

The profitability can be expressed using two categories of indicators: profit and rates of return. The profit reflects the absolute size of the profitability and rates of return refers to the degree to which capital and resource generate profit. (Isfanescu et al, 2002).

It is find that there is not a consensus on the notion of profitability, so it is often stated that when an organization makes profit it is profitable.

## 2. Assessing profitability through rates

The rate of return is a relative measure that expresses the degree to which capital generates profit. In the overall of the economic-financial indicators, the rate of return is situated among the most synthetic indicators of efficiency of enterprise activity (Gheorghiu, 2004).

The rate of return as an indicator of efficiency, can take different forms, as consider gross profit or net profit at the numerator, or changes the reporting base which is expressing the effort or production expenses. Different forms of expression the rates of return have a varied information value and reflect the many sides of economic and financial activity of the organization. The indicators built according to the capital are expressing the interests of investors, while the indicators build on consumed resources highlights the interests of managers.

The rates of return has the following peculiarity (Pavaloaia et al, 2009):

- the rate of return is a relative measure that expresses the degree to which capital as a whole generates profit;
- for the economic and financial indicators, rate of return is among the most effective indicators for measuring the activity of organizations;

- the level of the rates of return reflects the performance of the organization at all stages of the economic circuit compared to the costs which reflect the results of the production stage;

- rates of return, unlike the profit, allow a comparative analysis in space between similar organizations as a profit but with a different workload.

## 3. Analysis of the economic rate of return by specific models

Economic rate of return (Re) measures the performance of the total assets without consider the way of acquire the capital (own or borrowed) allocated for the construction of the asset. For this reason it is said that the economic rate of return is independent by the funding policy promoted by the organization (Buglea, 2011).

The economic profitability should provide the remuneration of invested capital, ie to be superior to the inflation rate and to the economic and financial investments risk (Burja, 2009).

Economic rate of return analysis reveals a number of issues regarding the organization management (Petcu, 2009)

- the concordance between the rate of return achieved and objectives sets according to the current organization assets and their structure;
- the correlation between the investment and market capacity: assessing the size of investments;
- the level of the rate of return compared with the average sector and other organizations in the same sector;
- own dynamics and comparative with the sector and main competitors.

In the literature there are several ways of calculating the economic rate of return (Re). In this paper we will highlight two of these ways that you consider to be the most significant.

Table 1. Economic rate of return

No.	Indicators	UM	Period			
			2010	2011	2012	2013
1	Gross result	lei	73.377	69.549	38.205	15.171
2	Total asset	lei	9.602.772	8.563.625	15.709.368	13.815.987
3	Gross operating surplus	lei	1.179.333	1.229.600	1.148.115	1.065.599
4	Economic rate of return: 1:2	%	0,76	0,81	0,24	0,11
5	Gross economic rate of return: 3:2	%	12,28	14,36	7,31	7,71

Source: author projection based on the farm data

The first way of calculating the economic rate of return is: (Robu et al, 2014)

$$Re = \frac{P}{At} \times 100 \quad (1)$$

where P = profit before tax; At = total assets.

Factor analysis can be done according to the following models:

### Model 1

$$Re = \frac{P}{At} \times 100 = \frac{CA}{At} \times \frac{P}{CA} \times 100 \quad (2)$$

### Model 2

$$Re = \frac{P}{At} \times 100 = \frac{\frac{P}{CA} \times 100}{\frac{1}{\frac{CA}{Ai}} + \frac{1}{\frac{CA}{Ac}}} \quad (3)$$

where CA = turnover; Ai = fixed assets; Ac = current assets.

Analysis of the economic rate of return based on the model 1 leads to highlight two major categories of indicators that influence economic profitability:

total assets rotation speed:  $\frac{CA}{At}$

$$\text{comercial rate of return: } \frac{P}{CA} \times 100$$

Analiza factoriala a ratei rentabilitatii economice evidențiază factorii direcți care influențează nivelul și dinamica sa, respectiv:

Factor analysis of the economic rate of return highlights the direct factors who influence the level and its dynamics:

1. the influence of the total assets rotation speed

$$\Delta \frac{CA}{At} = \left( \frac{CA_1}{At_1} - \frac{CA_0}{At_0} \right) \times \frac{P_0}{CA_0} \times 100 \quad (4)$$

$$\Delta_{2010-2011} = 0,25\%$$

$$\Delta_{2012-2013} = 0,06\%$$

2. the influence of the total assets rotation speed

$$\Delta \frac{P}{CA} = \frac{CA_1}{At_1} \times \left( \frac{P_1}{CA_1} - \frac{P_0}{CA_0} \right) \times 100 \quad (5)$$

$$\Delta_{2010-2011} = 43,90\%$$

$$\Delta_{2012-2013} = -0,20\%$$

## Analysis and interpretation of results

We note that reducing the total assets rotation speed with 0.19% (from 0.25% to 0.06%) and drastic reduction of

commercial rate of return (from 43.90% to -0.20%) led to the reduction of the economic rate of return, so in 2013 decreased with 85.5% compared to 2010.

In terms of total asset rotation speed by turnover, it is continuously decreasing from year to year. When we are referring to the growth rate of total assets they have increased with 43.9% in 2013 compared to 2010 while turnover increased only with 18.9% during the same period. This situation reflects the inefficiency of using agricultural holding assets in generating economic effects.

Regarding the commercial rate and its influence on economic rate of return we notice a drastic reduction of commercial rate of return mainly due to the significant reduction of the gross income. The decreasing of the gross income is mainly explained by the influence of unprofitable financial activity of the farms.

In conclusion, analyzing the influence of two factors on economic rate of return and its low values we propose the following improvement measures: increasing the rotation speed of total asset by turnover; better utilization of farm assets in particular of the fixed assets; increasing the gross profit by increasing financial efficiency of the activity and

through the use of available assets; reduce operating costs while increasing operating income; reduce financial costs.

The second way of calculating the economic rate of return is: (Pavaloaia, 2010)

$$Reb = \frac{EBE}{Ae} \times 100 \quad (6)$$

Reb – gross economic rate of return; EBE – gross operating surplus; Ae – economic assets.

To highlight the factors that influence the size of this rate, the model can be written:

$$Reb = \frac{EBE}{Ae} \times 100 = \frac{EBE}{Va} \times \frac{Va}{Af} \times \frac{Af}{Ae} \times 100 \quad (7)$$

where Va = added value; Af = fixed assets;  $\frac{EBE}{Va}$  – margin

rate on added value;  $\frac{Va}{Af}$  – tangible assets return;  $\frac{Af}{Ae}$  – share of tangible assets in economic assets.

The factors influence is measured using chain substitution. Total change of economic rate of return is given by:

$$\Delta = Reb_1 - Reb_0 = \frac{EBE_1}{Va_1} \times \frac{Va_1}{Af_1} \times \frac{Af_1}{Ae_1} \times 100 - \frac{EBE_0}{Va_0} \times \frac{Va_0}{Af_0} \times \frac{Af_0}{Ae_0} \times 100 = \pm \% \quad (8)$$

The increase /decrease of the rate is due to the influence of the following factors:

$$\Delta mva = \frac{EBE_1}{Va_1} \times \frac{Va_0}{Af_0} \times \frac{Af_0}{Ae_0} \times 100 - \frac{EBE_0}{Va_0} \times \frac{Va_0}{Af_0} \times \frac{Af_0}{Ae_0} \times 100 = \pm \quad (9)$$

3. margin rate on added value

4. tangible assets return

$$\Delta ric = \frac{EBE_1}{Va_1} \times \frac{Va_1}{Af_1} \times \frac{Af_0}{Ae_0} \times 100 - \frac{EBE_1}{Va_1} \times \frac{Va_0}{Af_0} \times \frac{Af_0}{Ae_0} \times 100 = \pm \% \quad (10)$$

5. share of tangible assets in economic assets

$$\Delta pic = \frac{EBE_1}{Va_1} \times \frac{Va_1}{Af_1} \times \frac{Af_1}{Ae_1} \times 100 - \frac{EBE_1}{Va_1} \times \frac{Va_1}{Af_1} \times \frac{Af_0}{Ae_0} \times 100 = \pm \% \quad (11)$$

$$\Delta mva_{2010-2011} = 2,16\%$$

$$\Delta mva_{2012-2013} = 7,58\%$$

$$\Delta ric_{2010-2011} = -0,17\%$$

$$\Delta ric_{2012-2013} = 8,01\%$$

$$\Delta pic_{2010-2011} = 0,09\%$$

$$\Delta pic_{2012-2013} = 0,83\%$$

### Analysis and interpretation of results

According with the analyzed model, the gross return rate is influenced by three factors: the margin rate on value added, tangible assets return, the share of tangible assets in total economic assets.

Gross operating surplus measures the surplus/deficit released by operating activities. This indicator measures the effectiveness of economic capital, ie the added value by economic capital. The margin rate on added value (determined on the above formula) have an increase from 2.16% in 2010-2011 to 7.58% in 2012-2013 because while the added value decreases, gross operating surplus increase. If we are referring to the added value, this is decreases by about 51% in 2013 compared to 2010.

If we refer to the tangible assets return, those have negative values, decreasing from -0.17% in 2010-2011 to -8.01% in 2012-2013. The return of tangible assets determined as ratio of value added and fixed assets, is continue to decrease so that the added value create based on fixed assets is 11.81% in 2010, 11.67% in 2011, 8.36% in 2012 and 3.86% in 2013. This situation is due to the fact that the decreasing rate of value added is faster compared with the decrease rate of tangible assets.

Regarding the share of tangible assets in total assets, it is found that this it increases from 0.09% in 2010-2011 to

0.83% in 2012-2013. A detailed analysis of this indicator reflects the following: the share of tangible assets in total assets is an average of 72%; the share of current assets in total assets is low, below 25%

In conclusion, analyzing the influence of the three factors and the reduction of economic rate of return we propose the following measures: increasing the adding value; reducing the raw materials costs; increasing the return of tangible assets by their superior utilization in creating added value; better utilization of assets; increasing the share of current assets (especially the available funds) in total assets.

### 4. Analysis of the return on equity by specific models

Return on equity (Rf) express the correlation between net profit and equity, ie the capacity of the organization to emit net profit (<http://www.biblioteca-digitala.ase.ro/biblioteca/pagina2.asp?id=cap4>). This indicator is of particular importance because it expresses the net remuneration of shareholders representing thus support their strategic decisions.

ROE has the following features (Pavaloaia, 2010):

– measure the return on equity, ie the financial investment of capital;

- it is influenced by the depreciation policy and provisions as well as the way of obtaining capital, their structure and indebtedness situation;
- the financial return rate must be higher than interest rate in order the organization shares to be attractive.

It is calculated as the ratio between the net result of the financial year and equity.

$$R_f = \frac{P_n}{K_p} \times 100 \quad (12)$$

Table 2. Return on equity

No	Indicators	UM	Period			
			2010	2011	2012	2013
1	Net profit	lei	58.540	59.767	29.764	12.644
2	Equity	lei	3.588.634	3.648.400	3.764.213	3.776.857
3	Return on equity 1:2	%	1,63	1,64	0,79	0,33

Source: author projection based on the farm data

Financial rate of return have lower values that the interest rate, experienced a significant decrease from 1.63% in 2010 to 0.33% in 2013, ie about 79%, which indicates an unfavorable situation of the return on equity. It was founded that the net profit it is significantly decrease (by 78.4% in 2013 compared to 2010), while the equity it is increasing (5.2% in 2013 compared to 2010).

The change of the financial return can be explained on the basis of two economic models (Burja et al, 2008).

**Model 1** refers to the influence of the commercial rate of return and capital rotation speed on the equity return.

$$R_f = \frac{PN}{CA} \times \frac{CA}{Kpr} \times 100 \quad (13)$$

where PN/CA = net commercial rate of return; CA/Kpr – rotation speed of equity.

According to this model the factors that are influencing the retrun of equity are:

- net comercial rate of return

$$\Delta R_f \left( \frac{PN}{CA} \right) = \frac{PN_1}{CA_1} \times \frac{CA_0}{Kpr_0} \times 100 - \frac{PN_0}{CA_0} \times \frac{CA_0}{Kpr_0} \times 100 \quad (14)$$

$$\Delta R_{f_{2010-2011}} = -0,23\%$$

$$\Delta R_{f_{2012-2013}} = -0,49\%$$

- rotation speed of equity

$$\Delta R_f \left( \frac{CA}{Kpr} \right) = \frac{PN_1}{CA_1} \times \frac{CA_1}{Kpr_1} \times 100 - \frac{PN_1}{CA_1} \times \frac{CA_0}{Kpr_0} \times 100 \quad (15)$$

$$\Delta R_{f_{2010-2011}} = 0,24\%$$

$$\Delta R_{f_{2012-2013}} = 0,03\%$$

#### Analysis and interpretation of results

From the above model we can observe that the decrease of the commercial rate of return (from -0.23% to -0.49%, ie negative growth of 113%) and the rotation speed of equity reduction (0.24% to 0.03%, ie a reduction of 85.7%) led to the diminish of the return of equity.

Net commercial rate express the comerciala efficiency of the farm, in our model it has negative values, so we consider that the situation is unfavorable and can have serious consequences for the entity. In our opinion the decrease of return equity is duet o the influencebof the factors: significant reduction of net profit; increasing of turnover.

Regarding the rotation speed of equity, this reflects the agricultural holding capacity to use their own resources to generate a turnover as high as possible. The reduction of the rotation speed of equity it is explained by the fact that the rate of growth of turnover is higher than growth rate of equity.

**Model 2** of the analysis of the return on equity it is based on the influence of the following factors: net comercial rate of return, rotation speed of capital invested, share of invested capital in equity.

$$R_f = \frac{PN}{CA} \times \frac{CA}{CI} \times \frac{CI}{Kpr} \times 100 \quad (16)$$

where PN/CA = net comerciale rate of return; CA/CI = rotation speed of capital invested; CI/Kpr = share of invested capital in equity.

According to this model the factors that are influencing the retrun of equity are:

- net comerciale rate of return

$$\Delta R_f \left( \frac{PN}{CA} \right) = \left( \frac{PN_1}{CA_1} - \frac{PN_0}{CA_0} \right) \times \frac{CA_0}{CI_0} \times \frac{CI_0}{Kpr_0} \times 100 \quad (17)$$

$$\Delta R_{f_{2010-2011}} = -0,23$$

$$\Delta R_{f_{2012-2013}} = -0,49$$

- rotation speed of capital invested

$$\Delta R_f \left( \frac{CA}{CI} \right) = \left( \frac{CA_1}{CI_1} - \frac{CA_0}{CI_0} \right) \times \frac{PN_1}{CI_1} \times \frac{CI_0}{Kpr_0} \times 100 \quad (18)$$

$$\Delta R_{f_{2010-2011}} = 0,23$$

$$\Delta R_{f_{2012-2013}} = 0,01$$

- share of invested capital in equity

$$\Delta R_f \left( \frac{CI}{Kpr} \right) = \left( \frac{CI_1}{Kpr_1} - \frac{CI_0}{Kpr_0} \right) \times \frac{PN_1}{CI_1} \times \frac{CA_1}{CI_1} \times 100 \quad (19)$$

$$\Delta R_{f_{2010-2011}} = -0,08$$

$$\Delta R_{f_{2012-2013}} = 0,01$$

#### Analysis and interpretation of results

Based on the model presented above it is founded that the return on equity it is significantly influenced by fluctuation (especially downward) of the commercial rate of return, rotation speed of capital invested, share of invested capital in equity.

The rotation speed of capital invested shows the number of uses in a reporting period. To increase the rotation speed of capital it is necessary to increase the use of capital, respective the turnover (Burja, 2006).

In our opinion the measures that should be taken in order to increase te return on equity are:

- enhancing the activity of the farm, namely the operating activity while reducing operating costs;
- high capitalization of amounts borrowed from banks (bank loans and long-term) which must lead to business growth and diversification of agricultural holdings;
- increased turnover by increasing production sold which can be achieved through several actions: diversification of markets, diversification of production sold, increase market share, etc;
- accelerating the rotation of equity;
- superior utilization of agricultural holding assets that increase the performance of the organization;
- increasing the share of equity in the capital invested;
- superior utilization of capital employed to determine the increase farm income.



### 5. Analysis of the relationship between financial and economic profitability using Pearson correlation coefficient

Pearson correlation coefficient is a statistical model that determines the intensity of the relationship between two variables in the distribution of data. The formula is as follows:

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}} \quad (20)$$

Table 3. Correlation between variables using Pearson model

No.	Indicators	Value
1	Rata rentabilitatii economice-Rata rentabilitatii financiare	0,988
2	Rata rentabilitatii economice-Rata rentabilitatii comerciale	0,936
3	Rata rentabilitatii financiare-Rata rentabilitatii comerciale	0,970

Source: author projection based on the farm data

Analyzing the data from table no. 3 results the following:

- The correlation between the variables considered is very high, values very close to 1;
- The strongest correlation is registered between economic and financial profitability, 0.988 for the following reasons: there are common factors that influence both rates – such as commercial rate, both rates of return have as numerous the profit
- Between economic profitability and commercial profitability there is a correlation of 0.936 because the economic profitability is influenced by the commercial profitability – according to equation no. 2 and 5;
- Also a strong correlation is between financial profitability and commercial profitability because financial profitability it is influenced by the commercial profitability – according to equations no. 13, 14, 16, 1

### Conclusion & Discussion

The objective of any organization is to develop a profitable activity. Given that Romania is on the last places in the EU in terms of economic development and taking into account Romania's agricultural potential, it is necessary to analyze the profitability of farms using different models.

In this research we analyze the economic and financial profitability using a series of specific models, models who were applied to a successive period of four years. From the results obtained by applying these models it was found that each model leads to different results, so it is verified research hypothesis no. 1.

The objective of any organizations is that the rates of return to be as high as possible. In our case these values are very low which shows an inappropriate management of resources and a significant gap between the effects obtained and committed efforts.

Analysis of the correlation between financial rate of return (Rf), economic rate of return (Re) and commercial rate of return (Rc) was performed using Pearson coefficient, observing that there is a very high correlation (over 0.9) between Rf-Re, Rf -Rc, Re-Rc, si it was verified research hypothesis no. 2.

In the research conducted can be identified some limiting aspects: reduced number of farms considered which can influence the results of the survey, there are a number

where n = number of elements/variables; x, y = elements/variables taken into account.

In terms of interpreting the value of r, the situation is as follows: (<https://statistics.laerd.com/statistical-guides/pearson-correlation-coefficient-statistical-guide.php>)

- $r \in [0; 0.2] \rightarrow$  very weak correlation
- $r \in [0.2; 0.4] \rightarrow$  weak correlation
- $r \in [0.4; 0.6] \rightarrow$  reasonable correlation
- $r \in [0.6; 0.8] \rightarrow$  high correlation
- $r \in [0.8; 1] \rightarrow$  very high correlation

of other models of profitability analysis which were not taken into account.

In terms of future research, this work represents the beginning of an extensive research which refers to determining the correlation between profitability indicators considering all farms in Romania who meet certain conditions, expanding research by performing a multiple regression equations.

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### АНАЛІЗ МОДЕЛІ РЕНТАБЕЛЬНОСТІ В СІЛЬСЬКОМУ ГОСПОДАРСТВІ

У цій статті ми розробили синтетичну теоретичну основу аналізу рентабельності через економічні та фінансові норми прибутку з використанням різних моделей, а також зробили тематичне дослідження подібностей та відмінностей між різними моделями швидкостей зворотного аналізу в сільському господарстві. Мотивація вибору цієї теми – визначення взаємозв'язку між фінансовою та економічною рентабельністю, використовуючи коефіцієнт кореляції Пірсона. Проведене дослідження, приводить до двох основних

категорій результатів: з одного боку, проводиться якісний теоретичний синтез моделей оцінки темпу окупності, з іншого боку, це визначається співвідношення між фінансовою та економічною рентабельністю в сільському господарстві.

Ключові слова: економічні темпи повернення, фінансові ставки прибутковості, коефіцієнт кореляції Пірсона, сільського господарства.

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### АНАЛИЗ МОДЕЛИ РЕНТАБЕЛЬНОСТИ В СЕЛЬСКОМ ХОЗЯЙСТВЕ

В этой статье мы разработали синтетическую теоретическую основу анализа рентабельности через экономические и финансовые нормы прибыли с использованием различных моделей, а также сделали тематическое исследование сходств и различий между различными моделями скоростей обратного анализа в сельском хозяйстве. Мотивация выбора этой темы – определение взаимосвязи между финансовой и экономической рентабельностью, используя коэффициент корреляции Пирсона. Проведенное исследование, приводит к двум основным категориям результатов: с одной стороны, проводится качественный теоретический синтез моделей оценки темпа окупаемости, с другой стороны, это определяется соотношением между финансовой и экономической рентабельностью в сельском хозяйстве.

Ключевые слова: экономические темпы возращения, финансовые ставки доходности, коэффициент корреляции Пирсона, сельского хозяйства.

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### ANALYSIS OF BUDGET DEFICIT AND ITS PROBLEMS IN LITHUANIA

*Budget deficit is one of the most important parts of macroeconomics. Since 1990, the government of the Lithuanian Republic has been faced with problems in balancing the budget deficit; most of the years, the country's budget was deficit with the lack of incoming money flow. The budget deficit value in Lithuania has been a significant theme since 2004, when Lithuania became part of the European Union, and one of the liabilities was to insure the litas replacement with euro currency and the budget deficit was one of the Maastricht's criteria. Also it is very important to maintain effective management of public finances. The government is responsible for managing the country's budget in respect to various economical parameters, for example, GDP, inflation rate, unemployment rate, etc., in order to plan income level and distribute it to the relevant economic areas. Also, the budget deficit's problems are revealed in this article.*

**Keywords:** budget deficit, macroeconomic parameters, budget, convergence criteria.

**Introduction.** The budget deficit would be optimal, because it is very important in stabilizing the economy and promoting its development. Response to 2008. crisis in many countries, including Lithuania pay more attention to fiscal deficit reduction. Economics is a constant variable, for this reason balancing the budget deficit is a very complicated process. Due to the fact that all developing countries are faced with a lag in their fiscal policy, Lithuania is not the exception. Lithuania had difficulties managing the budget deficit during the world financial crisis in 2009. Public debt had increased to its highest levels; the lack of income in the public budget brought problems to different sectors due to instability in financial sectors. Budget deficit is often explored in research as one of the variables in macroeconomics' situation in the country.

Budget deficits' analysis is presented in this article, including internal and external variables for budget deficit. Internal factors' analysis, public budget income collection problems and expenditures distributions problems are analysed in this article. Calculation is made to measure the impact of budget deficit redemption methods. The importance of effective and sustainable public finances is revealed in this research.

**Purpose.** To make Lithuania's budget deficit and its problems analysis, evaluating internal (public income and expenditures) and external (macro economical parameters) factors.

**Methods of research:** Systematic analysis of scientific literature, statistical analysis, logical comparative analysis, meta-analysis, graphical data analysis and comparison, correlation analysis, using one-regression model, multivariable regression model, the expert forecast, prognosis using regression model.

**Theoretical Analysis of Budget Deficit and It's Problems.** Budget deficit exists when, during a certain period of time, public expenditures become higher than the public income. According to Buskeviciute (2008), budget deficit exists when income is lower than the expenditures. To widen the description of budget deficit Rakauskiene (2006) says that there are two types of budget deficits: active and passive. Active budget deficit can be recognised when public expenditures are above public income whereas passive budget deficit can be seen when taxes are not collected due to economic growth decrease, public debt is not honoured, taxes privileges. The more detailed budget deficit conception is prepared by Sineviciene ir Vasiliauskaite (2010): fiscal policy can be contra-cycled in developing countries; this fact is explained by non-discrete fiscal policy (self-contained economic stabiliser). This theory explains that having an increase of public income, collected taxes amounts grow together and public expenditures decrease – the public budget is surplus. On the other hand, when the economy is decreasing, public budget does not collect enough income to cover expenditures (social welfare) in this case budget is deficit.

Furthermore, the budget deficit value depends on its calculation method. The possible calculation methods presented below:

Conventional fiscal balance (also known as the absolute position). This balance is calculated as follows: consolidated government revenues to and non-repayable transfers minus costs and net borrowing.

Current balance is calculated from current income minus current expenditure.

Liquidity balance. It is calculated as follows: from the conventional balance subtracted by foreign borrowing and

domestic non-bank loans. According to this balance, budget deficit impact is to domestic monetary policy.

Primary balance is calculated by subtracting the conventional balance of public debt interest paid.

Operational balance. In order to calculate the balance, current balance is deducted by gross debt services which is compensation for the creditors for inflation.

The structural or neutral budget balance. Structural variation is not evaluated as conventional fiscal balance. The calculation of structural balance consists of balance evaluation based on potential GDB growth.

Public budget deficit scheme is explained by the basic fiscal policy model an economist JM Keynes. According to his theory, when the economy is in recession that means countries have high unemployment rate, the need to increase the general demand is actual. In this case, the economy in such a situation, as shown in Figure 1. –

Balance of the product is formed at E, and the downturn phase aggregate demand is reflected in the points A and B, then there is a need to stimulate the economy. The government needs to implement fiscal policy, which measures the growth of government expenditures, tax cuts or increase of transfer payments. However, the result is oriented to the budget deficit growth.

Reversed situation, a growing economy has low unemployment, but also the rise of inflation, according to Keynesian theory. Inflation gap indicates that aggregate demand exceeds supply on the potential product. In this case, the government implements suspended fiscal policy, its instruments are government expenditures' cuts, tax increases or reduction of transfer payments. The consequence of this policy is budget surpluses (Snieska and others (2005). In such economic situation budget deficit should not be formed.

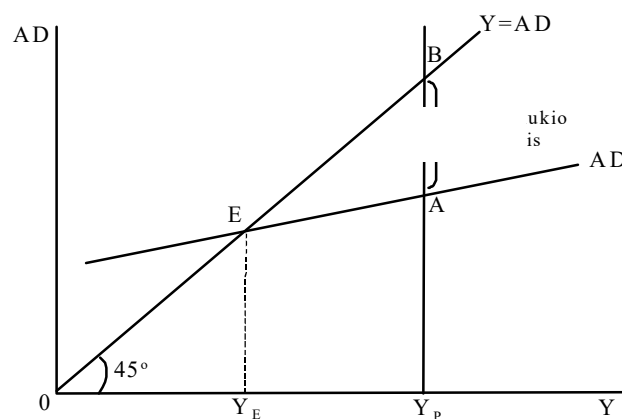


Fig. 1. The recession phase of the common demand and GNP equilibrium

Source: Snieska, 2005

Stabilising the economy should be used instruments as progressive taxation and a smart benefit rules. The higher the tax rate, the more sensitive collected taxes amounts is to GDP growth, because of this, budget deficit or surplus grows faster (Gyls, 2009). The weakness of this model is that it fails to eliminate unwanted variation in GDP, but only reduces economic variation. In order to ensure proper management of the budget deficit; efficient and smart tools have to be applied in relation with other macro-economic indicators (ex. GDP growth and public debt). The methods

of public debt redemption should be properly evaluated. Buškevičiūtė (2008) presents five ways of covering the budget deficit (Fig. 2): the additional money issue, the reduction of public expenditures, higher tax rates or expanding the tax base, the official foreign reserves, borrowing in the domestic and foreign markets. Each of these methods has advantages and disadvantages according to different authors' opinions on the deficit recovery methods and their applicability.

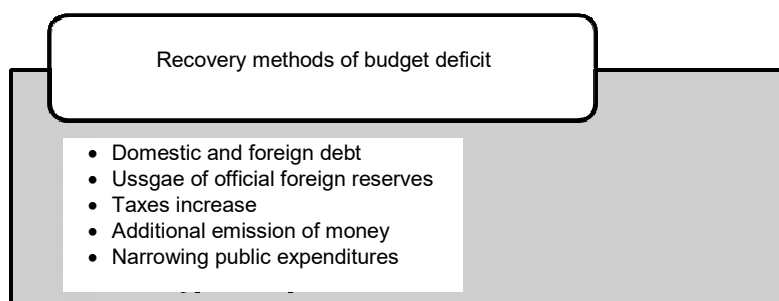


Fig. 2. Recovery methods of budget deficit

Source: created by authors referring to Buškevičiūtė, 2008)

Some authors claim that additional emission of money can be used when low inflation rate and fiscal deficits are observed in countries. Sang Ho (2007) agrees that additional money emission can be beneficial for the economy in order to cover public spending's, but not public

debt because the aggregate supply rise together with GDP and growing inflation stimulates consumption and economic growth. In this situation, government expenditures should be at the same level as the revenue in the long run, this is what economists call a fiscal

consolidation, to implement this method, planning must consist of very careful and strategic programs:

- increased taxes;
- expenditures reduction;
- implementation of structural reforms. (Janulyte, 2011)

Covering budget deficit with domestic and foreign debt are one of the most popular methods of modern economy, as the loan markets are quite simple and accessible to all, but the lending rate might alter significantly due to various factors. Fiscal budget can be covered using non-essential methods that do not cause inflation rate growth. This could be a debt, the government securities distributed in the financial market. Sang Ho (2007) states that the budget deficit covering methods are borrowing, but sometimes the increase in public debt might causes only a further increase in the budget deficit. The analysis of the budget deficit and its problems revealed that the biggest problem is the application of appropriate methods of budgeting. These difficulties are caused by administrative and economic problems. Budget deficit covering methods have a negative impact on the country's economy. Reducing public expenditures, citizens might become dissatisfied due to lower transfer payments and might begin a strike, in the long term this might increase emigration. Increasing public revenue while raising tax rates or expanding the taxes base could be hard to implement as the planned funds might not necessarily be collected because of the avoiding of taxes and shadow economy in Lithuania.

Many authors conclude that public budget must be managed with paying attention to the economic situation in the country. The budget deficit might be affected by various macroeconomic factors. The main macroeconomic factors were found out, which are closely related to the budget deficit level. They are the current account balance, GDP, inflation and unemployment rates, interest rates, and public debt management costs. Gu Xin (2012) claims that the current account balance affects the state budget deficit level, but this relationship is reflected in the evaluation of more qualitative than quantitative factors. Meanwhile, Chinna, Ito (2007) considers that the current account balance has a positive impact on the state budget deficit, when current account balance rises, the budget deficit decreases. This effect is stronger in industrially developed countries. Some authors point out GDP and the budget deficit correlation importance, Kregzde (2013) states that the budget deficit and GDP changes could affect the public debt, which increases public spending and borrowing costs. If the budget deficit grows at a certain rate to GDP, there is no debt need, but if budget deficit grows faster than GDP grows, government debt will increase.

When GDP growth is slow and budget deficit increases faster, public debt increases, when the situation is the opposite – public debt decreases (Kregzde, 2013). Budget deficit is related to inflations and unemployment rate by many authors.

When the impact of interest rate on the budget deficit is assessed, it is important that the direct correlation is noticed between these factors, but the highest impact on the interest rate is when the public budget is lacking funds and there is a need to borrow additionally. Whereas borrowing from markets affects debt costs because of the interest payments, which could increase the deficit volume. The analysis of scientific publications revealed that authors agree with the general opinion, but Karmelavicius and Klyviene (2012) distinguish different reasons why these factors have an economic relation. According to the authors, classical economic theory states that if public expenditure policy affects interest rates, later it has a significant impact on the volume of investment and public spending increases moving out private investment from the country.

Fiscal stimulus packages depend for their effectiveness on the assumption of savings behavior. Under the same assumption, higher fiscal deficits can have problematic implications if they turn out to be permanent. First, if they occur in large countries they significantly raise the world real interest rate. Second, they cause a short run current account deterioration equal to around 50% of the fiscal deficit deterioration. Third, the longer run current account deterioration equals almost 75% for a large economy such as the United States, and almost 100% for a small open economy. (Kumhof, Laxion 2013)

#### Situation analysis of budget deficit and the its problems in Lithuania

As mentioned before, Lithuania through the period of existence was faced with budgetary problems, public revenue downfalls and public spending increases, so most of the period of the Lithuania's budget was deficit.

The increase of the budget deficit in the economic crisis and post-crisis period occurred during 2008-2012. Reduction of the budget deficit to the level of crisis period in 2008-2012, as Lithuania was preparing to have the euro in 2015 (Figure 3). Lithuania's budget deficit reached its highest level in 2009. Budget deficit went down and continued to grow, it was necessary to wait for economic recovery when exports and domestic demand increase. However, lack of funds forced the increase in public debt, since it is complicated to borrow from domestic market for longer period. The government had to find the necessary financial resources abroad.

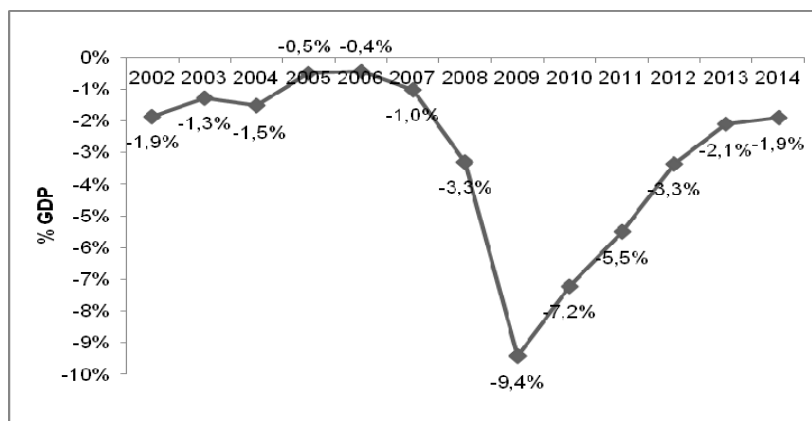


Fig. 3. Lithuania budget deficit in 2002-2014

Source: Department of Statistics in Lithuania and Lithuania Ministry of Finance

The analysis of the public budget showed the current situation in the EU. It is important to find out and compare the size of the public deficit to GDP ratio and the cost income ratio to GDP. The different European national budgets of income and expenditure levels are comparable with those of the country's GDP generated in 2013 (Table 1). As this can be seen in almost all the countries expenditures are over collected from income, with the exception of Germany, whose income is 0.1 per cent point higher than its costs. So this time, the budget deficit is one of the features of the economies. It should also be noted that the

national budget revenue and expenditure range from 40-50% of GDP. Among the largest national budgets include countries such as Denmark, France and Finland, their budget level is more than half of the country's GDP and relatively low budget (about 30% of GDP) is characterized by Lithuania, Romania and Slovakia.

EU budget deficit level seen in Table 1. The table shows that the highest budget deficits are in Greece (-12.7% of GDP), Ireland (-7.2%), Spain (-7.1%), Portugal (-4.9%) in 2013.

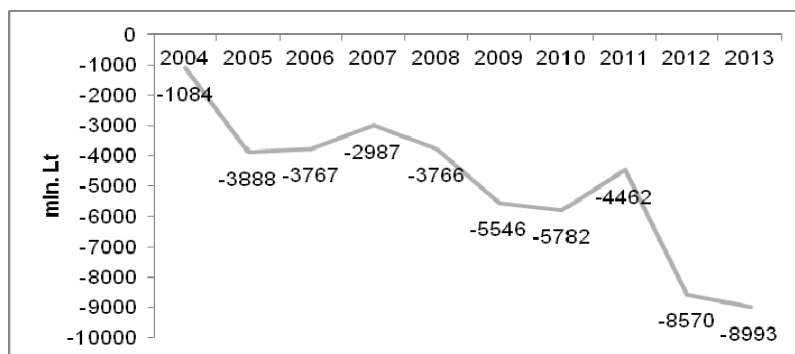
**Table 1. Budget deficit level in different EU countries 2013 m.**

Country	Budget deficit% GDP	Country	Budget deficit% GDP
Belgium	-2,6	Lithuania	-2,1
Bulgaria	-1,5	Luxemburg	0,1
Czech Republic	-1,5	Hungary	-2,2
Denmark	-0,8	Malta	-2,8
Germany	0	Netherlands	-2,5
Estonia	-0,2	Austria	-1,5
Ireland	-7,2	Poland	-4,3
Greece	-12,7	Portugal	-4,9
Spain	-7,1	Romania	-2,3
France	-4,3	Slovenia	-4,7
Croatia	-4,9	Slovakia	-2,8
Italy	-3	Finland	-2,1
Cyprus	-5,4	Sweden	-1,1
Latvia	-1,0	United Kingdom	-5,8

Source: created by authors using data from EUROSTAT

The main budget deficit problem is determination of covering method. Lithuania currently could use three deficit coverage methods: public expenditure cuts, government revenue increase and domestic and foreign debt. All these methods reduce the state budget deficit, but each of them could negatively affect the balance of public budget. In order to investigate the state budget applicability opportunities of redemption methods in Lithuania, it is needed to make an assessment of method effect on the budget deficit. Lithuanian budget revenues mainly consist of taxes: VAT, excise, personal income and corporate income taxes. Other state budget deficit coverage measure is the reduction of public spending. Calculation of

Lithuanian public debt burden is counted using the Lerner (1948) model, estimated debt burden shows that the Lithuanian public foreign debt is a burden for future generations. This makes a negative impact on the country's economy, meaning that funds allocated to the capital increase is less than the interest paid and additional borrowing to repay debt (Figure 4). It can be seen that foreign debt burden continues to grow because it is difficult to borrow the required amount in the long term in Lithuania's domestic market as there is no demand for financial instruments and capital market is not developed enough, for this reason, Lithuania has to borrow abroad and further increase of the debt burden to the population is obvious.



**Fig. 4. Foreign debt burden in Lithuania**

Source: created by authors according to data from Lithuania Ministry of Finance

The evaluation of the state budget deficit covering methods applicability revealed that significant changes could increase public revenue and reduce public expenditures, since the calculation of the external debt burden by Lerner model shows the growing burden of public debt, and according to the theory, the greater debt burden is, the more it reduces consumption and budget deficits growth is a threat to Lithuania.

**Methodology.** The Republic of Lithuania's deficit analysis consists of four parts, the first is internal deficit factors evaluation and comparison of the Baltic countries in the context of (public revenue and expenditure comparison). Another part is the regression models with external factors – macro-economic indicators and impact analysis of these factors on the Lithuanian budget deficit including the budget deficit's forecast.

In the first part, budget deficit is analysed through income and expenditure comparison. Selected countries

observed and compared in further analysis. Figure 5 provides stages of comparative analysis.



Fig. 5. Stages of comparative analysis

Source: created by authors

Literature review revealed that the budget deficit is influenced by other parameters characterizing the country's economy. In order to analyse how different macroeconomic indicators could affect the state budget deficit correlation-regression analysis is used. Research is done to find a link between the budget deficit and other macroeconomic indicators: inflation, unemployment rate, GDP, current account balance, the base rate and borrowing costs. Statistics for regression model are collected quarterly from 2002-2013 and it consists of 48 data points. Models will be analysed using the following variables: the dependent variable  $Y$  – Lithuanian public budget deficit to GDP ratio, expressed as a percentage and independent variables  $X_j$  ( $j = (1; 6)$ ):

- $X_1$  – current balance account
- $X_2$  – GDP
- $X_3$  – inflation rate
- $X_4$  – unemployment rate
- $X_5$  – EURIBOR
- $X_6$  – public debt costs

When most reliable dimensional regression models are determined, the adequacy of regression models is evaluated

by using adequacy and reliability of equations, using certain indicators mean square deviation of error (RMSE), mean absolute error (MAE), mean absolute error,% (MAPE) and Teil's overlapping coefficient (U). The evaluation of the reliability of forecasting models is made for 2015-2017. The 2015-2017 year budget deficit is calculated by applying the most reliable (with highest determination coefficients) regression equation, the assessing the macroeconomic indicators forecasted values.

### Results.

**Comparison of public income and expenditures in Baltic States.** Lithuanian state budget revenue and expenditure may explain the origin of the deficit, such as a reduction of public revenue caused by loss of tax revenue, rising cost and difficulties in setting realistic fiscal policy objectives. Lithuanian public budget and the management compared with the Baltic countries, as their economies are similar in size, countries are faced with the same economic problems, for example unemployment, shadow economy, etc.

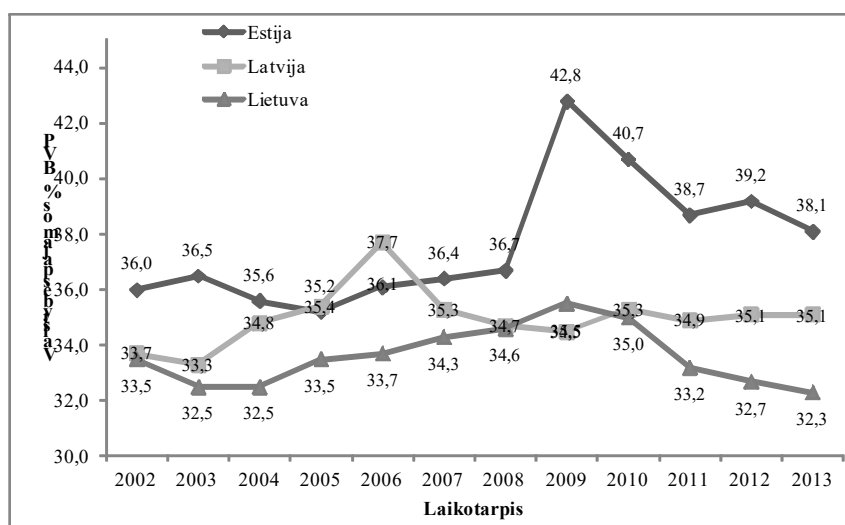


Fig. 6. Baltic States public revenue % BVP, 2002-2013 m.

Source: EUROSTAT data

Budget deficit dynamics analysis during 2002-2013 year showed that from 2002 to 2007 Estonian public budget was in surplus during the economic crisis period in 2008-2010 budget deficit increased to 3% of GDP (2008) and then it began to decline again, while Latvia's and Lithuania's budget deficit were in a critical situation -9.2% of GDP and -9.4% of GDP. Almost all over the analysis period in all three Baltic countries' budget deficit did not exceed the EU average, with the exception of 2009-2010. However, Estonia has always had the lowest budget deficits in all three Baltic countries, it is determined that the Estonian budget was managed without any debt. Estonia does not need to borrow in order to refinance the debts of the previous periods. In 2013 all Baltic States countries' public income and expenditures balance does not exceed 3% of GDP satisfying the Maastricht criteria.

Public revenues from the GDP show the size of the collected income. Figure 6 reveals that since 2007, the highest revenue level is collected by the Estonia average over the period of 37.7% of GDP). Lithuanian and Latvian income did not significantly change during the year 2002-2013. Average over the period of Lithuanian public revenue reaches for 33.6% of GDP, while in Latvia – 35% of GDP. The largest part of the public income is tax revenues which are more than 70% of all income in all countries. To sum up, the Baltic state revenue collection rate in the country is similar to about 35%, only Estonia stands higher income levels for the collection, which is about 40% of GDP.

The level of public expenditures is similar enough, most of the time in all countries the spending level is slightly above the income in the Baltic countries. Of course, except for

2009-2010, when due to the economic crisis, public spending has increased significantly in all countries above 40% of GDP because of the increased level of unemployment, inflation and the increased cost of debt (Fig. 7). It should be noted that in 2011-2013 the level of public expenditures changed differentially in the Baltics another.

After the Lithuanian, Latvian and Estonian public budget structure and dynamics analysis, it was discovered that, by 2011 country budgetary trends were the same, and later in 2012-2013 Lithuania stood out for maximum public deficit, reason for this could be start of using euro in Estonia and Latvia. Furthermore, the comparison of fiscal

targets shows that Estonia and Latvia fully integrated into the EU aims for sustainable growth. Whereas Lithuania still remains one of the main objectives to be ready to adopt the euro in 2015 and to maintain sustainable public finances. When analysing the revenue structure of Lithuania it was noticed the decrease in tax revenue and cost structure showed that most of the funds allocated to social spending: social security, health services and education. Horizontal and vertical state budget revenue and expenditure analysis revealed that the underlying fiscal problems are tax collection and shadow economy in Lithuania.

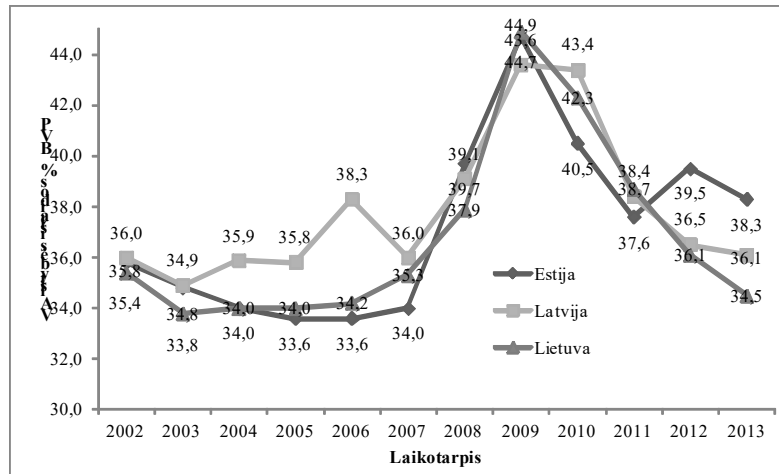


Fig. 7. Baltic States public expenditures % BVP, 2002-2013 m.

Source: EUROSTAT data

To sum up, Baltics budget deficit changed differently, it is necessary to be compared to the budgetary principles in these countries. In the Baltic countries, the budgetary similarity is to achieve the lowest possible budget deficit or even achieve a balanced budget level. According to, Navickas and Stuopyte (2000) goals of balance of the budget must be constantly adjusted to economic changes, but the constant artificial balance could be dangerous to the state and its economy than continuous public borrowing. Comparing the three Baltic fiscal targets, it was noticed that Lithuania had still one of the main aims to adopt the euro and meet the convergence criteria according 2014 budget plan. Meanwhile Estonia and Latvia governments have planned specific goals to improve the economic situation and quality of life for their society.

**Lithuanian budget deficit regression analysis with other macroeconomic indicators.** The state budget deficit level is constantly linked with other macroeconomic indicators in order to explain the correlation between these variables correlation-regression model methodology is used. Regression models were calculated with Lithuanian

budget deficit to current account balance, GDP, inflation, unemployment, GDP and EURIBOR and borrowing costs. The aim of this analysis is to examine the influence of macroeconomic indicators to Lithuania's budget deficit in order to evaluate the possibility of using them for budget deficit planning and management.

Linear regression model with the Lithuanian budget and current account balances is created. The linear relationship is seen between these variables, the correlation coefficient is -0.65 meaning that the variables are negatively correlates (Fig. 8). Chinna and Ito (2007) claim that the indicators correlate in countries with more developed industry. The authors confirmed that the correlation coefficient showed an average dependence and Lithuanian industry was not heavily developed. The model is adequate because Fisher criteria is equal to 33.59 (Fisher's critical value equal to 4.0), whereas  $33.59 > 4.0$ , the calculated determination coefficient is significant 40.94% and standard error of regression equals to 2,1 prove that the regression model is adequate and appropriate to continue the research.

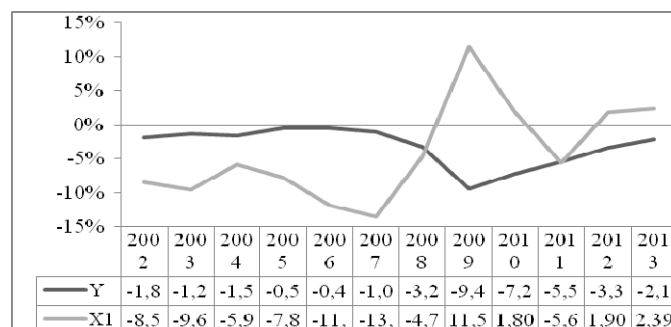


Fig. 8. Lithuania budget deficit and current account balance 2002-2013 m.

Source: EUROSTAT

Further analysis of regression model consists of equation evaluation. Linear regression equation is  $Y=C+b_1X_1$ . Value of  $b_1 = 0.28$  indicates that a 1 percentage point increase of the current account balance results budget balance fall 0.28 percentage point. The budget deficit increases and the surplus declines in this case.  $C = -4.71$  indicates that if the current account balance is equal to 0, then the Lithuanian budget deficit would be equal to -4.71%. Literature analysis determines that there is a link between the economic indicators. However, Gu Xin (2012) tells that there is a direct correlation between the budget deficit and the current account balance, but in Lithuania's situation, this dependence is negative.

Other indicators are Lithuanian budget deficit and the unemployment rate. Fig. 9 shows their dynamics. Kregzde (2013) states that high state budget deficit level is increased by unemployment. In fact, we can see a negative trend between these macroeconomic indicators over the analysed year 2002-2013. When the unemployment rate declined, the budget deficit also decreased and vice versa. Such changes in macroeconomic indicators are a reflection

of the traditional J.M. Keynes theory, when the unemployment rate is high, the government needs to stimulate the economy (public spending growth, tax cuts or transfer payment increases), then the inevitable consequence of such a fiscal policy – the budget deficit growth. In 10th figure we could see a clear trend, the higher budget balance, the lower unemployment rate. This is confirmed by a correlation coefficient of -0.78 (strong negative linear correlation) and standard error of regression, which value is 1,74.

The state budget deficit and unemployment regression model equation value  $b_1 = -0.51$ , this means that increase of 1 percentage point of unemployment and the budget balance decrease by 0.51 percentage points. This model crossing value  $C$  is equal to 2,45 – where the unemployment rate is equal to 0%, the Lithuanian state budget balance is in surplus and up to 2.45% of GDP. The regression equation  $Y=0,51*X_4+2,45$ . Fisher criteria is equal to  $71,55 > 4$ , model is adequate. The determination coefficient equals to 0,60.

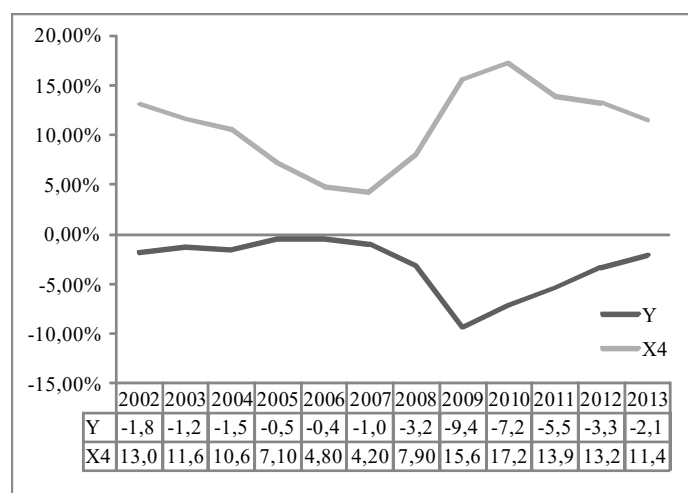


Fig. 9. Lithuania budget deficit and unemployment rate 2002-2013 m.

Source: EUROSTAT

Other regression models showed a weak correlation between the variables and the Lithuanian budget deficit.

The multivariable regression model is the most significant. Lithuania's budget deficit correlates with all the selected macroeconomic indicators in one bundle. Regression equation:

$$Y = -0,0506 * X_1 - 0,0003 * X_2 - 0,0095 * X_3 - 0,7657 * X_4 - 0,1448 * X_5 + 0,0088 * X_6 + 10,4135$$

Regression model is reliable because of the Fisher criteria ( $33.48 > 4$ ), the determination coefficient is 80.57%, and standard error of regression equals to 1,21. Also, Durbin-Watson Statistic shows positive autocorrelation between variables (Durbin-Watson stat=0,60). Lithuania budget deficit level more sensitive reacts to the changes of the unemployment rate, an increase in the unemployment rate 1% point, to reduce the budget deficit of 0.77% points, the least sensitive to the change of GDP budget deficit. This conclusion leads to possibility adapt regression model for budget deficit prognosis and further economical investigations of budget deficit relations between variables.

#### Lithuania's budget deficit prognosis for 2015-2017.

The possibility to create regression models of the state budget deficit and other macroeconomic indicators, allows us to analyse the possible scenarios and forecast a possible trend for budget deficit in Lithuania. According to the most reliable regression models including budget deficit and the unemployment rate and multiple regression models.

The first regression model with unemployment rate is suitable to perform Lithuanian state budget forecast. Using equation calculated based on regression between variables:  $Y = -0.51 + 2.45 * X_4$ . Assessment of reliability of prognosis calculated indicators showed in Table 2. MAPE is below 100% so the forecast by the regression equation can be considered reliable. Error coefficients satisfy the required values: Tail's rate approaching to zero (0.21), dispersion error, shows the possible predictive values changes, it is equal to 0.12 and covariance coefficient of 0.88. According to coefficients which evaluate reliability of forecast, regression model with the unemployment rate could be used in further analysis.



**Table 2.** Indicators to evaluate reliability of regression model with budget deficit and unemployment rate

Indicators	Value
Mean square deviation of error (RMSE)	1,71
The average absolute error (MAE)	1,44
The average absolute error% (MAPE)	99,38
Tell's overlapping coefficient (U)	0,21
Displacement error	0,00
Dispersion error	0,12
Covariance error	0,88

Source: made by authors

Last prognosis scenario adjusted to multiple regression model ( $Y = -0,0506 \cdot X_1 - 0,0003 \cdot X_2 - 0,0095 \cdot X_3 - 0,7657 \cdot X_4 - 0,1448 \cdot X_5 + 0,0088 \cdot X_6 + 10,4135$ ). The average absolute error of 59.10% – using the equation forecast is significant (Table 3). Tell's overlap factor of 0.14 is the lowest

compared with selected regression models. Tell's displacement error rates is zero, dispersion error rate is 0.05 and covariance error is 0.95. The forecast has reasonable statistical properties and appropriate indicators.

**Table 3.** Indicators to evaluate reliability of multivariable regression model

Indicators	Value
Mean square deviation of error (RMSE)	1,12
The average absolute error (MAE)	0,84
The average absolute error% (MAPE)	59,10
Tell's overlapping coefficient (U)	0,14
Displacement error	0,00
Dispersion error	0,05
Covariance error	0,95

Source: made by authors

Lithuanian state budget deficit forecasts regarding regression model with the current account balance is projected by data from the Ministry of Finance's macroeconomic indicators projections (2014). Forecasted period 2015-2017 year according to the current account balance level obtained in 2015. State budget deficit will rise to 3.06%, while next year the growth of the current account deficit should decline in 2016. – 3.03% in 2017. – 2.83%. This suggests that the growth in internal demand, rising import demand and increased level of consumption in the country increases the collected tax revenue, and budget revenues growth and thereby reduces the budget deficit.

According to the calculations obtained from regression model with unemployment, Lithuanian state budget deficit in 2015 equals to 2.12% of GDP. In 2016 it is expected to fall to 1.51%, and in 2017 reach 0.85% of GDP. According to the regression equation with unemployment, the budget deficit is expected to meet the Maastricht criteria for the entire forecast period. Projections results seem logical, since the drop in the unemployment rate in the country is

expected to increase consumption, the following increases tax revenue of VAT and also other consumption taxes, taxes related to labour taxation too.

Lithuanian public budget deficit forecast for the years 2015-2017 using a multivariable linear regression model, which consists of six variables, the results are that budget deficit is expected to decline (2015. – 1.52%; 2016. – 1.21%; 2017 – 0.95%).

Summarizing the Lithuanian state budget deficit projections results (Table 4). Regression model to the current account balance is declined, as Lithuania deficit values are not adequate to reality. In the first case, the application of the regression equation with the unemployment rate Lithuanian government deficit is higher and varies more slowly than the multiple regression model equation. After application of the second pair regression equation with unemployment, budget deficit should drop to -0.85% of GDP. The forecast, according to a multivariate regression model is more continuous, you can see a clear decreasing trend in the budget deficit to 0.95% of GDP in 2017.

**Table 4.** Lithuania's budget deficit prognosis for 2015-2017

Regression model	2015	2016	2017
With unemployment rate	-2,12%	-1,51%	-0,85%
Multivariable	-1,52%	-1,21%	-0,95%
Lithuanian Ministry of Finance	-1,2%	-0,5%	+0,2%

Source: created by authors

After the forecast using different regression models, it can be concluded that the budget deficit accurate prediction tool is the multivariable regression model. However, compared with the Ministry of Finance forecast, calculated Lithuania budget deficit is bigger than the forecast of the Ministry of Finance as surplus budget is prognosed till 2017. All projected budget forecasting regression models showed that the budget deficit is expected to fall over the next three years.

**Conclusion & Discussion.** After literature analysis of the public budgeting, conclusion is found that the public budget

deficit is one of the macroeconomic factors, which is important for research of the economic situation in the country. The analysis of the budget deficit reveals that the main factors which might cause the budget deficit is ineffective fiscal policy, inefficient large-scale investment in the country's economic development, unpredictable circumstances, such as wars, natural disasters, and economic crisis.

Lithuania budget deficit dynamics analysis showed that in the 2001-2013 year almost all public spending exceeded revenues for most of the periods. The main objective of the Government of Lithuania is to achieve the budget deficit

level corresponding to the convergence criteria – 3%. Lithuania budget deficit management issues related to avoidance of taxes and the shadow economy, as well as using proper budget deficit covering methods: increase of revenue, reduction of expenditures and government debt. The increase of debt services costs clarifies that fiscal policy in the country is pro-cyclical.

Baltic countries stood out as the best in overcoming the economic crisis, these countries' budget deficits are among the lowest in the European Union. After the analysis of Lithuania, Latvia and Estonia income dynamics and structure of expenditure results are that, the income level is 32-38% of GDP in the Baltic countries, the main reason for the revenue decline is decreasing collected amount of taxes. When the revenue structure of Lithuania analysis was performed, the decrease of taxes revenue and EU sponsorship was noticed but expenditures structure showed that most of the funds are allocated for social expenditure: social protection, health and education services. Lithuania allocates the biggest part of its income to these three areas account in all Baltic countries.

In order to find out the public budget deficit economic dependence with other macroeconomic factors in Lithuania, econometrics models were adapted linear regression models. Selected economic indicators are the current account balance, GDP, inflation and unemployment rates, interest rates and government borrowing costs. After the budget deficit correlation analysis, it is concluded that the strongest influence on the state budget deficit makes the current account balance and the unemployment rate, government borrowing costs and EURIBOR. Multivariate regression equation with all the analysed macroeconomic indicators explains 81% of Lithuania's budget deficit alterations.

Adequate and reliable unemployment and multivariate regression models were used for Lithuanian state budget prognosis. 2014 data was forecasted with expert forecasting methods using data from the Ministry of Finance, the Lithuanian state budget deficit should fall to 1.9% of GDP. 2015-2017 year prognosis was adapted to two regressions with these macroeconomic indicators, according to the forecast of these indicators. Lithuania's budget deficit is expected to fall over the next three years.

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### АНАЛІЗ БЮДЖЕТНОГО ДЕФИЦИТУ І ЙОГО ПРОБЛЕМНІСТЬ У ЛИТВІ

Дефіцит бюджету є однією з найбільш важливих частин макроекономіки. Починаючи з 1990 року, уряд Литовської Республіки зіткнувся з проблемами балансування дефіциту бюджету; більшість років, у бюджеті країни був дефіцит з відсутністю вхідного грошового потоку. Значення дефіциту бюджету в Литві було великим з 2004 року, коли Литва стала частиною Європейського Союзу, і одним із зобов'язань було застрахування заміни літів на євро валюту та бюджетного дефіциту, стало одним з Маастрихтських критеріїв. І це дуже важливо для підтримки ефективного управління державними фінансами. Уряд несе відповідальність за управління бюджетом країни відносно різних економічних показників, наприклад, ВВП, інфляція, безробіття і т.д., для того, щоб планувати рівень доходів і поширювати його на відповідних економічних районах. Крім того, у статті розглянуто проблеми бюджетного дефіциту.

Ключові слова: дефіцит бюджету, макроекономічні параметри, бюджет, критерії конвергенції.

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### АНАЛИЗ БЮДЖЕТНОГО ДЕФИЦИТА И ЕГО ПРОБЛЕМНОСТЬ В ЛИТВЕ

Дефицит бюджета является одной из наиболее важных частей макроекономики. Начиная с 1990 года, правительство Литовской Республики столкнулось с проблемами балансирования дефицита бюджета; большинство лет, в бюджете страны был дефицит с отсутствием денежного потока. Значение дефицита бюджета в Литве было большим с 2004 года, когда Литва стала частью Европейского Союза, и одним из обязательств было по страхованию замены лита на евро валюту и бюджетного дефицита, стало одним из Маастрихтских критериев. И это очень важно для поддержания эффективного управления государственными финансами. Прави-

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тельство несет ответственность за управление бюджетом страны в отношении различных экономических показателей, например, ВВП, инфляция, безработица и т.д., для того, чтобы планировать уровень доходов и распространять его на соответствующих экономических районах. Кроме того, в статье рассмотрены проблемы бюджетного дефицита.

Ключевые слова: дефицит бюджета, макроэкономические параметры, бюджет, критерии конвергенции.

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## RURAL TOURISM AND AGRITOURISM – FORMS OF SUSTAINABLE DEVELOPMENT IN MĂRGINIMEA SIBIULUI

*The delightful geographical framework, the purity of nature, the accessibility of places, the richness and diversity of cultural heritage, make Mărginimea Sibiului an area with great tourism potential. The area holds more than 30% of the total accommodation capacity available in Sibiu. Although it is a rural area, tourist offer is diverse (active tourism and recreation, traditional cuisine, cultural tourism and business segment coverage through specific facilities, all these in addition to the multitude of leisure), and the degree of comfort is increased. In Mărginimea Sibiului, agritourism and rural tourism creates opportunities for local and regional economic growth and help create new jobs through harnessing the specific cultural and natural heritage. Also, an important part of the new jobs created represents an opportunity for regional female employment. Hence the need to implement many projects, which bring to the forefront the stabilization of the active population in rural areas, the capitalization of natural and anthropic tourism potential in the context of eco-economy, and thus raising living standards.*

**Keywords:** sustainability, rural tourism, agritourism, development.

### Introduction

Tourism is one of the industries that should be involved in sustainable development as a resource industry dependent on nature endowment and cultural heritage of each society; tourism sells these resources as part of its product and at the same time, shares some resources with other users, including the local population.

It is in the interest of tourism to be active on the issue of sustainable development and to work in cooperation with other industries in ensuring the quality of the resource base and its survival.

The tourism industry is seen by its specificity, as related to the environment, but its size and presence have created negative physical and social impacts on the environment.

As hundreds of millions of travellers crossing borders each year, the temptation to obtain high income generated by receiving visits, may lead to development decisions, thus resulting a decrease of green, natural elements. However the number of green tourism campaign is growing, causing only some green attitude, but in the end, all have an impact on the brand and credibility sector (Stănculescu Gabriela Cecilia, State Olimpia, 2012).

In Romania, organized tourism in natural areas is suffering from many viewpoints. The low quality of tourist services is the first negative aspect worth mentioning. Secondly, the national legislation is deficient in this area of natural and anthropogenic environmental protection. A third negative aspect is the practice called "Greenwashing". This refers to companies that call themselves as "sustainable", "green", "responsible", "eco-touristic", but in fact they do not meet generally accepted standards, or even are in contradiction with these concepts (Hornoiu, R., Nistoreanu, P., Tănase, M. O., 2009).

### The sustainability of rural tourism and agritourism

Tourism, by nature, is one of the main users of the environment and hence an important contributor to its damage. Enhancing tourism trips generated, as expected, the increased of the negative environmental impact and on the long term, a reduction in tourism development opportunities. Rodica Minciu and collaborators argue that, in this context, there is the increasingly acute problem of finding and promoting those forms of travel with low environmental impact, including ecotourism, rural tourism, tourism in pro-

tected areas, cultural tourism, adventure tourism etc., while encouraging, stimulating potential tourists to consume these types of products / holidays (Minciu Rodica, Pădurean Mihaela, Popescu Delia, Hornoiu R., 2012).

Studies conducted worldwide have shown an understanding and an increasing receptivity of tourists towards sustainable forms of travel, but their owned place in the structure of tourist traffic is modest, mainly argued on the insufficient offer, determined on its turn by a misunderstanding of the demand and the additional requirements which the consumers of such holidays must respond, especially regarding their behavior.

Also, promoting its sustainable forms such as ecotourism, rural tourism and agro-tourism, adventure tourism, cultural tourism and, not least, tourism in protected areas as well as encouraging tourists in their practice are able to provide an attenuation of negative environmental consequences (Hornoiu R., 2009).

At the same time, many countries are making significant efforts to develop and operationalize a number of certification systems designed to confirm that a tourist company has improved its performance, in terms of a number of indicators including: health and safety, conservation and biodiversity, environment, product management, quality, etc.

By focusing on quality tourism certification schemes, health, hygiene, safety and the three dimensions of sustainable development (environmental, socio-cultural and economic) the aimed was to increase tourist satisfaction. According to the World Tourism Organization assessments, in the world there are currently more than 80 certification programs for sustainable tourism and ecotourism in which skills are found aspects of tourism impact on the economic, socio-cultural and ambient environmental. Most programs assess accommodation, only a few are certifying sectors and other aspects of the tourism industry (Hornoiu, R., Nistoreanu, P., Tănase, M. O., 2009).

### Rural tourism and agritourism in Mărginimea Sibiului

Sibiu and its surroundings are one of the most visited areas in Romania. Mărginimea Sibiului has become during the last years a famous tourist attraction, visited by thousands of foreign and Romanian tourists, an established brand. Most of the villages in the area have retained strong spiritual and folk traditions, giving these communities a

special physiognomy. The delightful geographical framework, the purity of nature, the accessibility of places, the richness and diversity of cultural heritage, make Mărginimea Sibiului an area with great tourism potential.

The area consists of 21 localities, with the centre in Săliște, all with a unique ethnological, architectural and historical heritage. These places are: Boița, Sadu, Râu Sadului, Tâlmăciu, Tâlmăcel, Cîsnădioara, Cîsnădie, Rășinari, Poplaca, Gura Râului, Orlat, Fântânele, Sibiul, Vale, Săliște, Cristian, Galeș, Tilișca, Rod, Poiana Sibiului and Jina.

The Forbes magazine considers it the most romantic ecotourism area in the world. By its aspects of material and spiritual culture, Mărginimea Sibiului lies between the ancient hearths of Romanian ethnogenesis. Inhabitants of these settlements in Sibiu were told "Mărgineni" because they lived in an area of contact between the hills and mountains, the old Austro-Hungarian border in southern Transylvania. This area has developed a mixed economy based on agriculture, livestock and crafts, with special weight on sheep breeding.

The typical peasant atmosphere, preserved traditions and customs, the hospitality of the villagers, increase the attractiveness of the region. This unique zone in Romania has proven the value it has in tourism when, in 2009, received the "Golden Apple" awarded by FIJET, the equivalent Trophy of "Oscar" Award in tourism, due to the traditional wedding from Sibiul, the landscape, the hospitality of people and the agro-tourism from Sibiul.

At the forefront of Mărginimea Sibiului, is the established ethno-folkloric area, that has benefited from national notoriety and that has developed as an authentic Romanian space. The three localities in which are kept German influences, travel and geographical criteria included in the same major anthropogenic tourist resource, contribute to the multicultural character of the analysed area and add to the attractiveness of tourism a region already established for agro-tourism and active tourism.

The endowment of territory with many accommodation facilities, catering and entertainment is, among other components, a fundamental premise of harnessing the tourism potential in the area. Establishments of tourist reception are generally represented by agro-touristic pensions, as it is a mostly rural area, but does not lack of villas, holiday homes and chalets.

In the concentration area of the Mărginimea Sibiului accommodation structures were included the 18 localities that traditionally define the ethno-folk area (Boița, Fântânele, Galeș, Gura Râului, Jina, Orlat, Poiana Sibiului, Poplaca, Rășinari, Râu Sadului, Rod, Sadu, Săliște, Sibiul, Tâlmăcel, Tâlmăciu, Tilișca and Vale), plus three other localities in the vicinity of the area (Cristian, Cîsnădie and Cîsnădioara). Among the localities mentioned above, the most important accommodation capacities are in Rășinari, Sibiul, Gura Râului and Cîsnădioara, accounting for about two-thirds of beds available in this area.

Besides in terms of tourism management development programs/ travel promotion is more effective the juxtaposition of Cristian, Cîsnădie, Cîsnădioara to Mărginimea Sibiului than to Sibiu (practically any entity associated with Sibiu would go clear in the background due to the concentration of well-known tourist attractions in the city), and their exclusion from any area and form a separate entity would generate fragmentation which could lead to an administrative inefficiency in terms of tourism.

#### Accommodation, gastronomy and culture in Mărginimea Sibiului

Mărginimea Sibiului area holds more than 30% of the total accommodation capacity available in Sibiu. Although it is a rural area, tourist offer is diverse (active tourism and recreation, traditional cuisine, cultural tourism and business segment coverage through specific facilities, all these in addition to the multitude of leisure), and the degree of comfort is increased.

At the level of 2013, Mărginimea Sibiului had 1002 beds distributed in 37 establishments of tourist reception with accommodation functions. According to specific area, agro-tourist pensions are the predominant type of accommodation units (62.20%), concentrating the largest number of available places (446 seats, namely 44.50% of the total accommodation capacity in the area considered). They are followed by structures for school camps and tourist pensions.

Approx. 2/3 of the total accommodation capacity of the Mărginimea Sibiului inventory is not classified by the National Tourism Authority and the weight capacity for accommodation units that has not been identified with a comfort level amount to 16% of the total. Thus, in Table 1 we presented the accommodation capacity from the area:

**Table 1. Tourist accommodation capacity in Mărginimea Sibiului by types of establishments of tourist reception – no. units and no. beds**

Types of tourist accommodation structures	2011		2012		2013	
	No. of units	No. of beds	No. of units	No. of beds	No. of units	No. of beds
<b>Hotels</b>	1	30	1	30	1	30
<b>Motels</b>	2	60	2	60	2	60
<b>Tourist Chalets</b>	2	51	2	51	2	51
<b>School and preschool camps</b>	3	359	3	345	3	346
<b>Tourist pensions</b>	4	66	5	66	6	66
<b>Agro-tourist pensions</b>	21	399	23	444	23	446
<b>Total</b>	33	965	36	996	37	1002

Source: INSSE, 2014

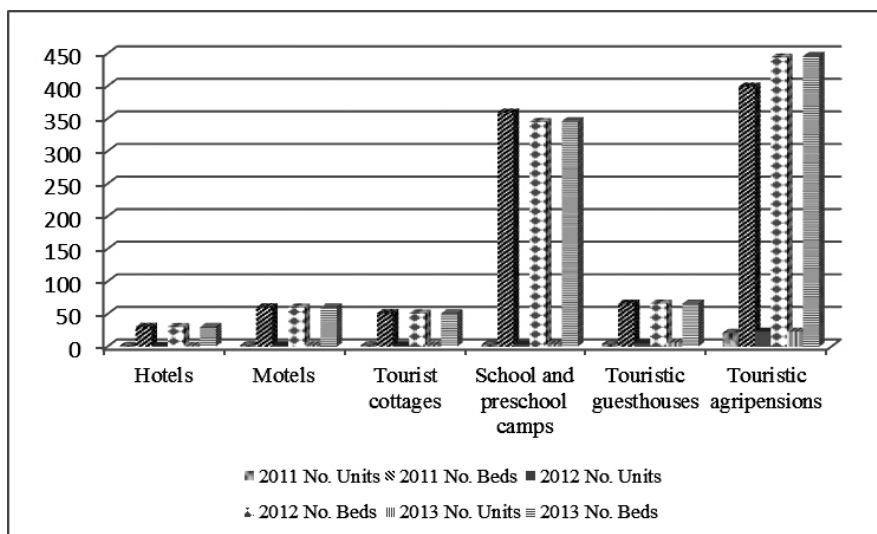
From the analysis in the field, it was found that units with a low degree of comfort (2 daisies) predominate in number and size of accommodations, followed by those with a medium degree of comfort (3 daisies), encompassing about a quarter of the total accommodation capacity in the area considered. A notable number of units have the possibility to rent ATVs (17%) or to provide horse-drawn sleigh rides in winter (33%). This mismatch between sources can be explained by the fact that the approval may not distinguish between tourism and agritourism guest-house but differentiated statistics appears. In the analysis

of tourism infrastructure, we used the information coming from the base of the National Authority for Tourism, which contains only the accommodation classified, the number of accommodation facilities with accommodation being much higher in reality (confirmed case of field investigation and the information presented in tourism portals).

The number of rural tourism has decreased significantly in 2011 compared to 2010 due to the fact that many business entrepreneurs renounced due to fierce competition in certain places such as Sibiul, Gura Râului and due to persistent economic- financial crisis.

In terms of allocation of accommodation in Mărginimea Sibiului, in some areas may be observed concentration of tourist attractions that overlap with known both nationally

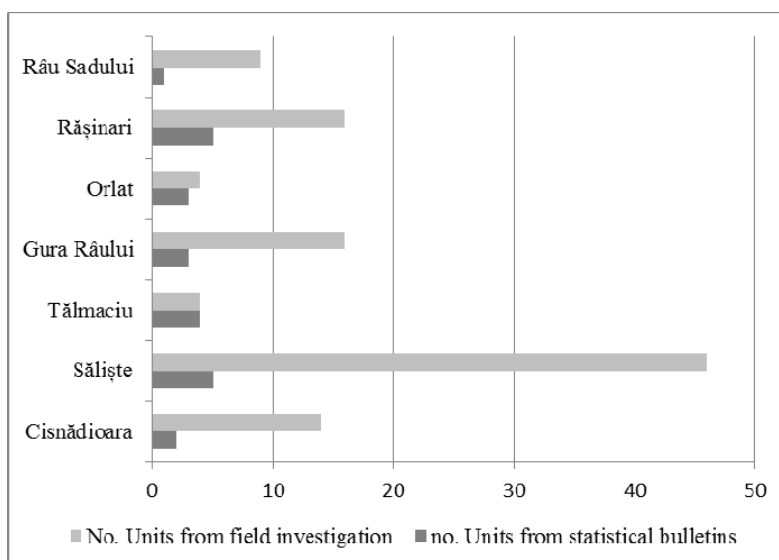
and internationally. The most important of accommodation are in Rășinari, Sibiul, Gura Râului and Cisnădioara, totalling nearly two thirds of beds available in this area.



**Fig. 1. Tourist accommodation capacity in Mărginimea Sibiului from types of structures**  
No tourist reception, No. beds

Source: INSSE, 2014

On Mărginimea Sibiului villages, the situation is as follows:



**Fig. 2. Tourist accommodation capacity in villages from Mărginimea Sibiului**  
(No tourist reception) – Data from statistical bulletins and field investigation

Source: INSSE, 2014

It is noted significant differences between the number of units and places of official statistics and the number of units actually existing sites. These differences are explained, while the hostel type accommodation agritourism works on the basis of certificates issued by the Ministry.

Although the specific gastronomy is one of the attractions of this area, few accommodation units have their own restaurants (24%), most of them preferring to provide tourists an equipped kitchen, barbeque and dining room where they can eat. However, the number of tourist's pensions preparing meals is higher, not necessarily as part of organized services of a restaurant. Providing parking space for

tourists is a priority for the accommodation in this area; moreover, there is a high availability from them (33% of units) to ensure auto transport to and from the tourist accommodation units (transfer from airport / train station). In this context it should be noted that the concept of quality is seen by 41.1% of the pension administrators as the degree to which a product meets the requirements of a group of customers in other words ecotourism operators are aware that it is necessary to work to identify, understand and comply with these requirements by implementing an efficient quality management system.

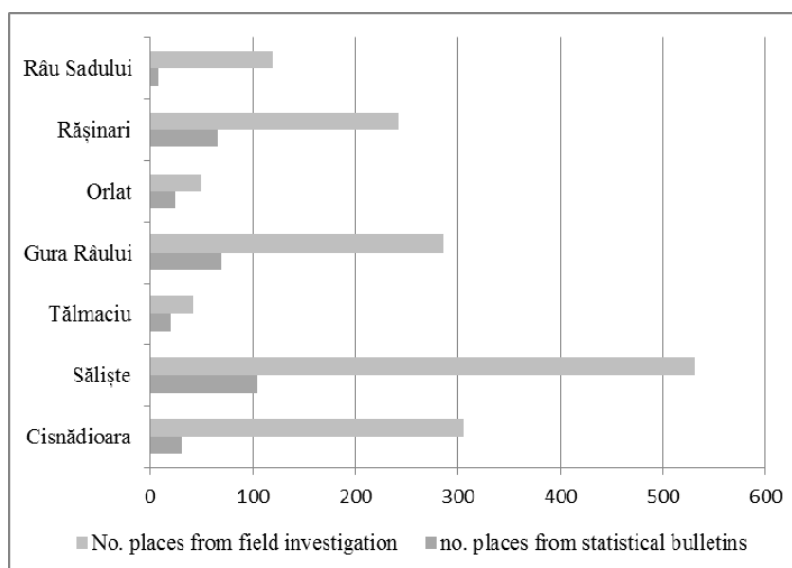


Fig. 3. Tourist accommodation capacity in villages from Mărginimea Sibiului (No. beds) – data from statistical bulletins and field investigation

Source: INSSE, 2014

Also, 81.1% of pension administrators stated that "customer orientation should be a mandatory rule to be implemented in the units providing eco-touristic services" and 98.9% that "continuously improve the quality of tourism products" is a principle leading to performance in ecotourism.

As for the situation overnight stays, data recorded in official statistics show a growing preference for accommodation in Mărginimea Sibiului for the whole year, with a few notable peaks during the winter holidays and Easter and for the summer holidays. Fig. 4 present the evolution of the number of nights spent on settlements:

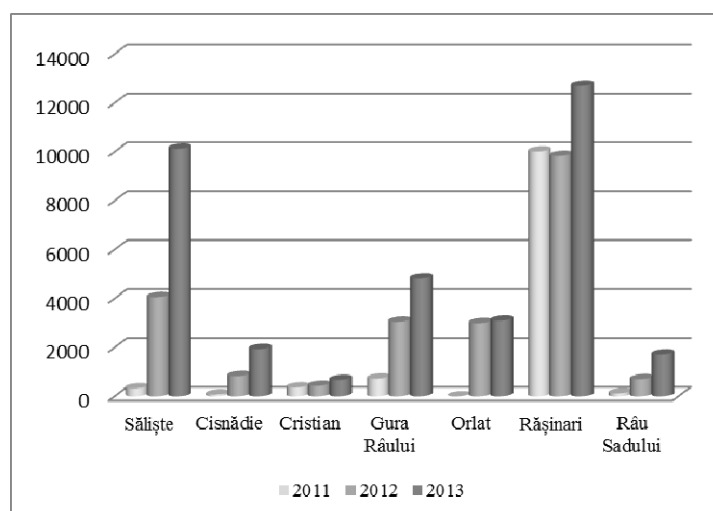


Fig. 4. Evolution of the number of nights spent on rural guesthouses in Mărginimea Sibiului (no.day/tourist)

Source: INSSE, 2014

We note that Rășinari, which is near Sibiu has attracted more tourist nights even than other villages, although the number of tourists attracted drawn is smaller than in the other destinations. This aspect is the fact that the proximity of Sibiu offers many recreational opportunities, practicing various forms of tourism, especially cultural and hence an increasing average length of stay.

Improving service quality in tourist pensions, who qualify to be classified as eco-guesthouses, can make a substantial contribution to the development of the Mărginimea Sibiului area, but to be valued at a higher level, tourism potential must seize the unique mountain resources, which is the main attraction for tourism devel-

opment. The development of agritourism and rural tourism in the area contributes to:

- preservation of natural heritage and biodiversity of SCI Frumoasa;
- respect for socio-cultural authenticity of the local community;
- preservation of cultural heritage and traditional values of the area, contributing to inter-cultural knowledge;
- facilitating sustainable long-term economic activities which bring socio-economic benefits equal to all local actors, including stable employment and opportunities to achieve financial incomes and social services for communities, thereby contributing to the prosperity of the area.

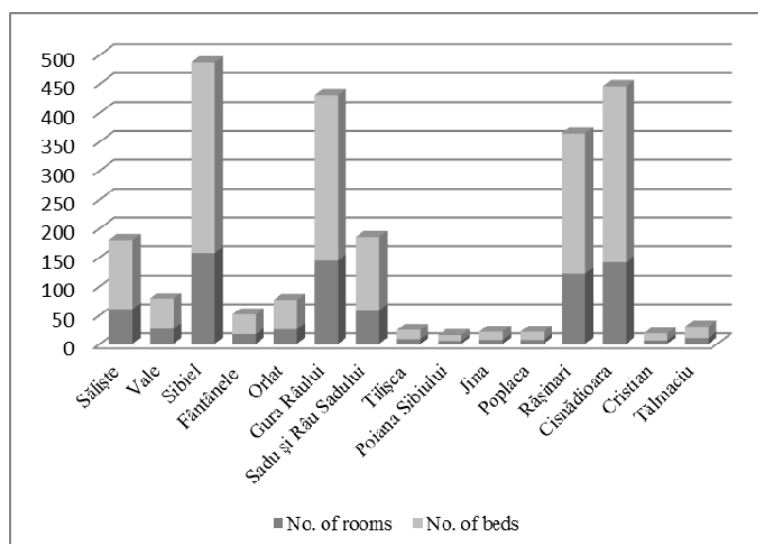


Fig. 5. Tourist accommodation capacity in Mărginimea Sibiului – No. rooms, No. beds

Source: INSSE, 2014

In Mărginimea Sibiului, agritourism and rural tourism creates opportunities for local and regional economic growth and help create new jobs through harnessing the specific cultural and natural heritage. Also, an important part of the new jobs created represents an opportunity for regional female employment. Hence the need to implement many projects, which bring to the forefront the stabilization of the active population in rural areas, the capitalization of natural and anthropic tourism potential in the context of eco-economy, and thus raising living standards.

Tourism development takes into account the principles of sustainable development, in the sense of conservation, and protection of natural and cultural heritage, but also reduces human pressure on the environment, inherent in the tourism practiced widely.

### Conclusions

Mărginimea Sibiului has a great diversity of natural resources which form part of the "basic" tourism product. The most important opportunities for tourism development in the short term are given by the niche tourism (equestrian tourism, adventure tourism, ecotourism, etc.) based on natural resources (forest areas, protected areas, areas that offer winter sports opportunities etc.). Valorisation tourist attractions is largely limited by the quality of tourist areas infrastructure, services in general and recreational services in particular, all of this representing major obstacles in tourism development. These restrictions may however be partially mitigated by professional actors in rural tourism, which will have to highlight the strengths of tourism in the area, thus reducing the negative impact created by gaps still exist in terms of infrastructure. It is therefore necessary an modern, realistic approach of the advantages and opportunities that rural tourist areas presents.

Agritourism and rural tourism as economic and social activity must become a component of sustainable tourism. To enable the rural tourism development of Mărginimea Sibiului, current tourism needs to store the principles of sustainable development to support conservation both in terms of natural and cultural heritage of this area.

An important principle of ecotourism, which the actors involved in tourism activities should integrate into practice, is that more important than quantity is quality. Mărginimea Sibiului communities or other areas of rural tourism, agro-

tourism and ecotourism, should measure tourism success not only by the number of visitors, but also the average length of stay, in the sense to increase its revenues and quality travel experience. It is estimated that an eco-tourist is willing to pay more, even if it does not receive comfort, but with the condition that the "sacrifice" that he makes leads to environmental protection.

All these things can be achieved through distinctive trait of the Mărginimea Sibiului communities, which consists in the open and receptive cultural spirit of the locals to authentic cultural values, expressing a parallel evolution of civilization, between pastoral and technical areas, between archaic and cultural progress, between tradition and innovation.

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### СІЛЬСЬКИЙ ТУРИЗМ ТА ВІДПОЧИНОК – ВИДИ СТАЛОГО РОЗВИТКУ В ПРОВІНЦІЇ СІБІУ

Чудове географічне розташування, чистота природи, доступність місць, багатство і різноманітність культурної спадщини, зробили провінцію Сібіу областю з великим туристичним потенціалом. Площа провінції займає більш ніж 30% від загальної площі Сібіу. Хоча це й сільська місцевість, туристичні пропозиції є різноманітними та активними (туризм і відпочинок, традиційна кухня, культурний туризм і охоплення бізнес-сегменту за допомогою спеціальних засобів, все це на додаток до відпочинку), і ступінь комфорту збільшується. У провінції Сібіу, агротуризм і сільський туризм створює можливості для місцевого та регіонального економічного зростання та створення нових робочих місць шляхом освоєння культурної і природної спадщини. Крім того, важливою частиною нових робочих місць, створених являє собою можливість для регіональної жіночої зайнятості. Звідси необхідність для реалізації багатьох проектів, які висувають на перший план стабілізацію активного населення в сільській місцевості, капіталізація природного і антропоного туристичного потенціалу в контексті екологічної економіки, і, таким чином, підвищення рівня життя.

Ключові слова: стійкість, сільський туризм, агротуризм, розвиток.

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### СЕЛЬСКИЙ ТУРИЗМ И ОТДЫХ – ВИДЫ УСТОЙЧИВОГО РАЗВИТИЯ В ПРОВИНЦИИ СИБИУ

Замечательное географическое расположение, чистота природы, доступность мест, богатство и разнообразие культурного наследия, сделали провинцию Сибиу областью с большим туристическим потенциалом. Площадь провинции занимает более 30% от общей площади Сибиу. Как и сельская местность, туристические предложения разнообразны и активными (туризм и отдых, традиционная кухня, культурный туризм и охват бизнес-сегмента с помощью специальных средств, все это в дополнение к отдыху), и степень комфорта увеличивается. В провинции Сибиу, агротуризм и сельский туризм создает возможности для местного и регионального экономического роста и создания новых рабочих мест путем освоения культурного и природного наследия. Кроме того, важной частью новых рабочих мест, созданных представляет собой возможность для региональной женской занятости. Отсюда необходимость для реализации многих проектов, которые выдвигают на первый план стабилизацию активного населения в сельской местности, капитализация природного и антропоного туристического потенциала в контексте экологической экономики, и, таким образом, повышение уровня жизни.

Ключевые слова: устойчивость, сельский туризм, агротуризм, развитие.

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## BETWEEN THE WEST AND THE EAST: UKRAINIAN ECONOMIC THOUGHT AS THE CROSSROADS

*Ukrainian economists, similarly to Ukrainian society, are in the middle of the process of turning from the East to the West. However, the visibility of their work remains low both in the East and the West. The analysis of their publication activity (using data from the Web of Science and eLibrary) confirms these assumptions. It is argued that the first step in this eventual transition consists in building the space for economic debates at the national level. Active and healthy debates at the national level will increase chances of Ukrainian economists to be heard internationally.*

Keywords: economic sciences, Ukraine, publication activity, content analysis.

**Introduction.** The process of nation-state building is still ongoing in today's Ukraine. It started with the Act of declaration of independence of Ukraine in 1991, but it is far from being over a quarter-century later. The country is still defending its independence, including by military means. The military and geopolitical dimensions of the fight for independence tend to overshadow its intellectual dimension, however. An element of the sustainable (as opposed to failed) nation-state refers to a space for economic debates at the national level that may eventually contribute to the emergence of a distinctive economic thought. This article discusses the current state of intellectual debates in the area of economic sciences and argues that Ukrainian economists tend to contribute to scholarly discussions either in the West (in Western Europe and North America) or in the East (in Russia). As a result, an existing potential for economic debates at the national level that would be focused on the particular problems and challenges that Ukraine faces remains untapped.

**Data and methods.** The article uses statistical data about publications of scholars affiliated with Ukrainian scientific organizations in the West, in Russia and in national scholarly journals. As a source of information about publications of economists with a Ukrainian affiliation in Western Europe and North America, the Web of Science, WoS, core

collection was chosen. WoS is the most respected and authoritative source of information on publications in the most rigorously peer-reviewed periodicals in the world. More specifically, 35 journals in economics with the highest impact factor in 2014 were selected for the study (their list is available from the author upon request). The search covered the period from 1991 through 2015.

As a source of information about contributions of economists affiliated with Ukrainian research centres eLibrary (Russian Index of Scientific of Scientific Citation) was used. Compared with WoS, eLibrary is far less selective: it includes almost all periodicals published in Russian language. 10 economic journals with the highest citation index in this database were searched: Вопросы экономики, Мировая экономика и международные отношения, Российский Журнал Менеджмента, Journal of Institutional Studies, Финансы, Проблемы прогнозирования, Проблемы теории и практики управления, Общество и экономика, Инновации и Менеджмент в России и за рубежом. The search covered the period from 2003 through 2015 (eLibrary was created in 1999 and it does not offer a comprehensive coverage for the early period of its existence).

Ukraine does not have a national database of scientific publications similar to eLibrary in Russia or Persée in France. Thus, contributions published in a single Ukrainian



periodical, *Actual Problems of Economics* (Актуальні проблеми економіки), were analyzed. This journal arguably has the highest international visibility (being indexed in Scopus and, for a short period of time, in WoS), but it is run by a Ukrainian research center and publishes contributions mostly in Ukrainian (contributions in Russian are also accepted, yet they constitute a relatively small fraction of the published materials – 13% of the shortlisted papers from this periodical). Taking into consideration that *Actual Problems of Economics* is a monthly publication, the search covered the period from 2013 through 2015, which produced a sample of 278 publications.

The data about scholarly contributions of researchers affiliated with Ukrainian scientific organizations in the West (WoS), in the East (eLibrary) and in their own country (*Actual Problems of Economics*) was analysed using methods of descriptive statistics and content analysis. "Content analysis is a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use" [4, p.18]. In the circumstances, titles of the shortlisted contributions were content-analysed using the computer program QDA Miner with the module WordStat. The content analysis allowed identifying the most common words and their combinations, which, in turn, helped describe common themes in the publications.

**Statement of the problem.** The well-known maxim in science, publish or perish, has had a particular translation for Ukrainian scientists in general and economists in particular: in order to survive in academia, one must publish either in Russian scholarly journals, or, even better, in scholarly journals published in Western Europe and North America. As a result, scientific life in Ukraine tends to be externally oriented. It comes as no surprise that studies of today's Ukrainian academic milieu are rare. How to study something that has not taken yet a well recognizable and particular shape? Scientific community in this country lives according to the rules and norms that are externally generated and imposed. These rules and norms are set either by people vested with political power [11] or simply "imported" from abroad. Members of the academic community in Ukraine have not managed to elaborate, defend and enforce their own rules in a bottom up manner. In the other words, the academics have not succeeded to find internal sources of the institutional development in science (D. North defines institutions as "the rules of game" [6, p.3] in a particular area of human activity, namely, science).

The vulnerability of science to external influences is not specific to Ukraine. The autonomy of science cannot be taken for granted even in the most developed – judging by the level of research productivity and the size and scope of scientific output – countries. For instance, in the United States science has been subject to attacks from business on several occasions, especially in the 19th and the early 20th centuries [1]. Business people repeatedly attempted to impose their own rules of the game on scientists, which would have allowed transforming scientific organizations into profit-making enterprises like any other firm. T. Veblen complained: "The university is conceived as a business house dealing in merchantable knowledge. Placed under the governing hand of a captain of erudition, whose office it is to turn the means in hand to account in the largest feasible output" [10, p.62].

What makes the Ukrainian situation specific is the fact that in addition to the attempts of politicians (people vested with political power) and business people (people vested with economic power) to undermine the autonomy and integ-

ity of scientific institutions, national institutions of science are weak compared with foreign institutions of science. The fact that Ukrainian scholars consider the publication of their contributions abroad as a first-best choice means that there is no "game" at the national level, i.e. little or no interaction supported by national institutions of science. Let us consider the situation in economic sciences as an example.

In the West, efforts to make economics a paradigmatic science abound. T. Kuhn defines scientific paradigm as "the body of beliefs (one) could take for granted" [5, p.88]. The body of beliefs that mainstream economists tend to take for granted includes "stable preference, rational choice, and equilibrium structures" [2, p.5]. For an emerging economy that is far from conditions of stability these assumptions seem to be too restrictive. Attempts to remain within the range of beliefs that the other mainstream economists would share also explains the drift into predominantly applied research that avoid asking difficult theoretical questions.

In the East, economists have their own priorities regarding the topics that are important and publishable. The ideas of sovereignty and empire-building – political, but also economic – attract Russian social scientists' attention. For instance, eLibrary lists (as on 26.08.2015) 188 articles on the topic "sovereign democracy" and 120 articles on the topic "sovereign market". The issue of sovereignty certainly rings a bell for those interested in studying the process of nation-state building.

Two obstacles prevent Ukrainian economists to contribute to this discussion of sovereignty in Russia, however. First, the Russian discussion focuses almost exclusively on the sovereignty of Russia itself. It is not excluded that Russia can enhance its sovereignty at the expense of the sovereignty of the other countries thus attempting to rebuild an empire. Second, sovereignty represents only one form of nation-state building. M. Foucault differentiates in this regard sovereignty, discipline and security as three alternative techniques that power holders may use in order to assert their control over a country. "Sovereignty is exercised within the borders of a territory, discipline is exercised on the bodies of individuals, and security is exercised over a whole population" [3, p.11]. In the other words, the exclusive focus on sovereignty prevents social scientists from studying the entire range of techniques of power that underpin the process of nation-state building. The issues of territory (including the question of reshaping or protecting national borders) then overshadow everything related to the control of human bodies and various processes.

The concept of security looks particularly promising for economic research. With its help one can show, for instance, how to control individuals and their behaviour by shaping interactions on the market in a particular manner. Instead of explicitly allowing or prohibiting certain actions, it is possible to design interactions on the market in such a manner that they will bring outcomes desired by the power holders. The strategy of gatekeeping is a case in point: by controlling access to the market (or any other field of interactions) the power holders decide the ratio of buyers and sellers, which enables them to capture rents and to further enhance their power [7]. The concept of security also allows finding strategies of resistance to the power that takes mostly unobservable and indirect forms.

This paper aims to confirm that sciences in Ukraine are still not embedded in national institutions and, consequently, Ukrainian scholars play the game whose rules they neither set nor influence. More specifically, the present paper discusses the following research questions us-

ing economic sciences as an example. First, what characterizes current patterns in the publication activity of economists affiliated with research organizations in Ukraine? Second, how do these patterns relate to particular problems and challenges that Ukraine currently faces?

**Results.** Among the articles that scholars affiliated with Ukrainian universities and academic institutions published

in the scholarly journals indexed in WoS, economic manuscripts represent a tiny fraction (Table 1). This pattern is common for the most post-socialist countries, however. Some gains made during past five years do not suffice for changing it, apparently. Works of economists with a Ukrainian affiliation are not highly visible in eLibrary either.

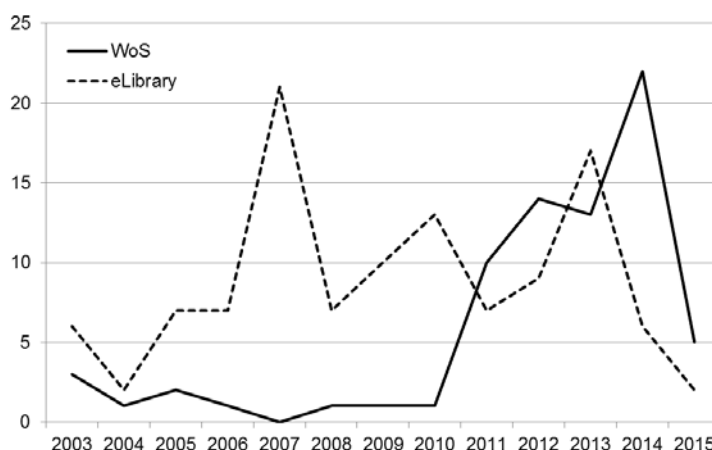
**Table 1.** Number of scholarly publications included in the Web of Science core collection, selected countries, 1991-2015

	Ukraine	Russia	Poland	Lithuania	Kazakhstan
Total	125159	739018	430229	36695	8910
In the area of economics (% of Total)	1535 (1.2%)	2778 (0.4%)	3771 (0.9%)	2017 (5.5%)	313 (3.5%)
Past five years, 2011-2015 (% of all publications in the area of economics)	924 (60.2%)	1049 (37.8%)	1817 (48.2%)	843 (41.8%)	264 (84.3%)

Source: WoS as on 26.08.2015

The situation with publications in top economic journals turned to be even less promising. Scholars affiliated with Ukrainian scientific organizations published 77 articles in top 35 economic journals included in WoS and 114 articles in top 10 economic journals included in eLibrary. The distribution of these contributions by year of publica-

tion and periodical title shows that, on one hand, in 2011-2012 and 2014-2015 the number of studies reported in WoS actually exceeded the number of studies reported in eLibrary (Figure 1). More time is needed to confirm if this fact reflects the re-orientation of Ukrainian economists from the East to the West.



**Fig. 1.** Number of scholarly articles published in top 35 economic journals included in WoS and in top 10 economic journals published in eLibrary, 2003-2015

Source: WoS and eLibrary as on 29.09.2015

On the other hand, in both cases publications tend to appear in only few periodicals from the list of top journals. For instance, 93.5% of all articles of authors with a Ukrainian affiliation were published in a single periodical from the WoS list, Value in health. 44% of all articles of scholars from Ukraine appeared in Инновации, a St. Petersburg based periodical included in eLibrary. These periodicals publish results of mainly applied research in rather narrow areas of

economic knowledge (namely, pharma-economics and economics of innovation and technology). Furthermore, all contributions published in Value of health were authored by people affiliated with a single research center, namely Lviv National Medical University named after Danylo Halytsky. Thus, the visibility of Ukrainian economists abroad can be attributed to a particular culture and research networks that progressively emerged in selected places.

**Table 2.** Frequency of the most popular words in publication titles, WoS, eLibrary and Actual Problems of Economics

World of Science		eLibrary		Actual Problems (in Ukrainian)		Actual Problems (in Russian)	
Ukraine	57	Украины	50	Розвитку	61	Развития	5
Analysis	26	Инновационн*	21	Економічн*	44	Анализ	4
Cost	22	Развития	20	Систем*	32	Аспекты	4
Treatment	19	Проблемы	15	Економіки	25	Управления	4
Pharma-economics	9	Экономики	10	Управління	23	Экономических	4

Table 2 (continued)

World of Science		eLibrary		Actual Problems (in Ukrainian)		Actual Problems (in Russian)	
COPD (chronic obstructive pulmonary diseases)	8	Перспективы	9	Формування	23	Инновационных	3
Costs	8	России	7	Підприємств*	20	Менеджмента	3
Evaluation	8	Экономическ*	11	Аналіз	19	Систем	3
Therapy	8	Деятельности	6	Країн*	17	Эффективности	3
Patients	7	Промышленности	5	Інноваці*	13		
Based	5	СНГ	5	України	11		
Drugs	5	Состояние	5	Умовах	10		
Effectiveness	5	Формирования	5	Діяльності	9		
Formulary	5	Института	4	Політики	9		
Acute	4	Контексте	4	Теорії	8		
Children	4	Новые	4	Визначення	7		
Consumption	4	Технологий	4	Досвід	7		
Direct	4	Управления	4	Забезпечення	7		
Economic	4			Засади	7		
Results	4			Зростання	7		
				Контексті	7		
				Оцінювання	7		
				Поняття	7		
				Проблемы	7		
				Ринку	7		
				Туризму	7		

The content analysis of publication titles further confirms that the contributions to WoS refer to the narrow area of pharma-economics. Results reported in Table 2 also suggest that priorities set in publications by authors with affiliations in Ukraine differ depending where they publish their papers, in Russian language periodicals included in eLibrary or in the national periodical Actual Problems of Economics. For instance, references to system approach and concept, theory, institution, or model "building" are more common in the contributions addressed to the Ukrain-

ian readers. Divergent accents in the contributions made to WoS, eLibrary and the Ukrainian audience are further illustrated by the most frequent clusters of words in publication titles (Figures 2-4). In the case of eLibrary, one of the clusters contains words "problems", "economy" and "Ukraine". In the case of WoS, "Ukraine", "treatment" and "cost" form a common cluster. In the contributions to Actual Problems of Economics, emphasis is made on "building", "development" and "transformation".

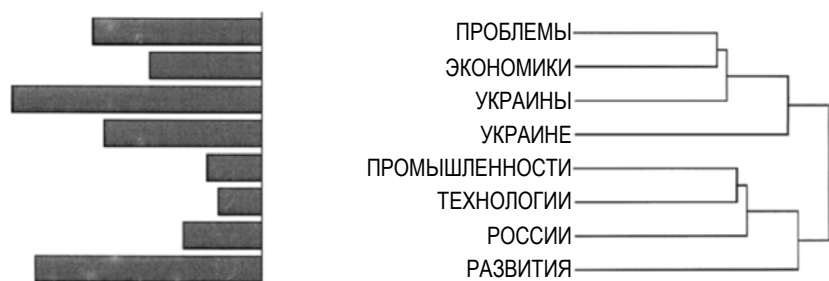


Fig.2. Dendrogram reflecting co-occurrence of the most popular words in publication titles, eLibrary, fragment

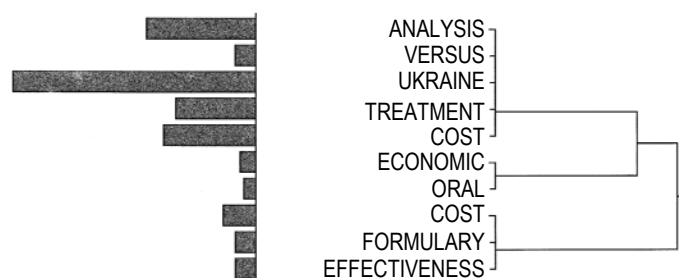


Fig.3. Dendrogram reflecting co-occurrence of the most popular words in publication titles, WoS, fragment

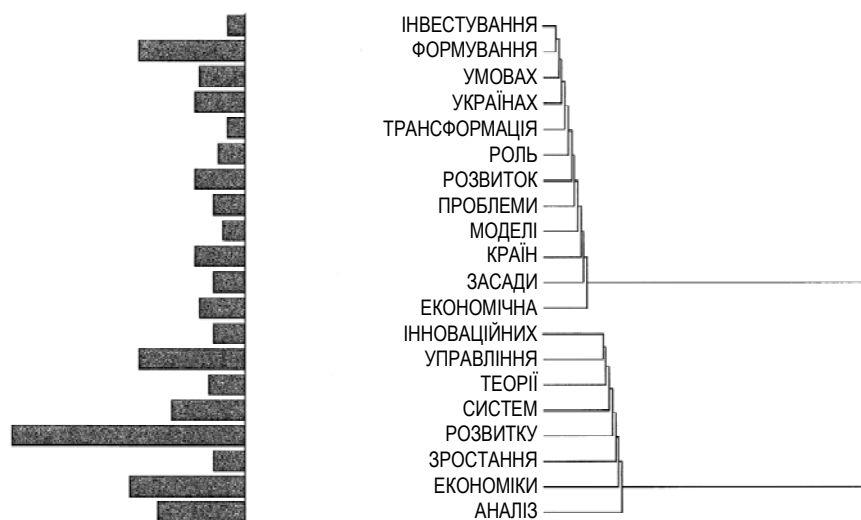


Fig.4. Dendrogram reflecting co-occurrence of the most popular words in publication titles, Actual Problems of Economics, fragment

**Discussion.** Works of Ukrainian economists are highly visible neither in the West nor in the East. An explanation for this lack of visibility (not to speak about the impact of their works measured, inter alia, by the number of citations) refers to the differences in priorities at the international and national levels. Internationally, economists affiliated with Ukrainian research institutions found a rather narrow niche of purely applied research in very specific branches of economics. The search for concepts that would help better understand the process of nation-building in Ukraine does not have much chance to attract attention of foreign readers unless this search is fuelled by healthy and active discussions at the national level. It is not enough to say that particular concepts or models are needed – they have to be proposed, criticized, eventually rejected, and subsequently improved etc. There is currently no national economic debate in Ukraine, as the content analysis shows, on the economic theory and consequences of war (which is quite surprising, keeping in mind the annexation of Crimea and the ongoing military conflict in Eastern Ukraine). Only one article (published in Actual Problems of Economics) discusses corruption, the second most urgent problem that Ukraine faces. The list of omitted, forgotten or tabooed topics does not stop here.

In the present conditions Ukrainian economists have three options: (i) to accept rules of the game on the Western market for scholarly publications by deliberately omitting most issues relevant to the process of nation-state building; (ii) to accept rules of the game in the Russian academia by denouncing the idea of the Ukrainian nation-state and ignoring several important aspects of nation-state building and (iii) to develop their own intellectual space for discussing economic aspects of nation-state building in the Ukrainian context as well as in the other national contexts [9]. By choosing the third option, Ukrainian social scientists and economists in particular would be able to intellectually contribute to the ongoing process of nation-state building in their country. A nation-state without its own intellectual life and debates is hardly possible.

The option of developing the space for Ukrainian economic debates does not exclude the publication of Ukrainian economists' works either in the West or in the East. The opposite is true: the existence of vivid and healthy intellectual debates at the national level would eventually attract attention of foreign scholars and increase their willingness to

learn more about these debates. After all, the issues of nation-state building could be of interest not only in the post-soviet countries, but also in Latin America, Africa, Middle East, and the Balkans, to list just a few macro-regions.

**Conclusions.** Practical steps toward creating a space for economic debates at the national level might eventually include the following. First, the creation of a national scientific database indexing publications in the leading Ukrainian scholarly journals will reduce information costs of searching relevant information. The experience of eLibrary suggests that such database shall not be too inclusive, nevertheless. On the other hand, it is necessary to avoid considerations of personal and group loyalties when selecting periodical titles (and, eventually, monographs and dissertations) to be indexed in the database.

Second, there is a need for reforming the process of peer-review. Open intellectual debates are possible when the only criterion for participating in them refers to the merit of a contribution as opposed to the considerations of network membership, administrative resources and so forth. The system of random selection of reviewers might eventually help minimize the impact of reviewers' personal and group biases [8]. The other solution refers to open on-line review as a step preceding the formal publication.

Third, in the current conditions research subventions and grants are scarce. The scarcity of research funds only increases the importance of transparency and fairness in their distribution. In order to minimize the impact of personal/group loyalties when awarding research grants, it is necessary to rely on open competition and the reformed process of peer-review, as outlined above.

Fourth, truly free debates are impossible without the security of jobs in academia. The system of tenure (permanent employment after 4-6 year trial period) represents an institutional precondition for academic freedom [8].

To summarize, the way to the West that Ukraine seems to start might well have its beginning in building the space of intellectual debates in general and economic debates in particular at the national level. Without the deep embeddedness of economic thought in national institutions of science chances to succeed outside few narrow niches are minimal, if they exist at all.

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### МІЖ ЗАХОДОМ ТА СХОДОМ: УКРАЇНЬСЬКА ЕКОНОМІЧНА ДУМКА НА ПЕРЕХРЕСТІ ДОРІГ

Українські економісти, як і суспільство в цілому, знаходяться в процесі переорієнтації зі Сходу на Захід. Однак репрезентативність і вплив їхніх робіт як у Росії, так і на Заході залишаються низькими. Запропонований аналіз публікаційної активності авторів, афілійованих з українськими науковими організаціями (з використанням даних Web of Science і eLibrary) підтверджує дані спостереження. У статті запропоновано в якості першого кроку в процесі переорієнтації сконцентруватися на створенні простору для економічних дебатів на національному рівні. Активні і здорові дебати на національному рівні здатні збільшити шанси українських економістів бути почутими за кордоном.

Ключові слова: економічні науки, Україна, активність публікації, контент аналіз.

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### МЕЖДУ ЗАПАДОМ И ВОСТОКОМ: УКРАИНСКАЯ ЭКОНОМИЧЕСКАЯ МЫСЛЬ НА ПЕРЕКРЕСТКЕ ДОРОГ

Украинские экономисты, как и общество в целом, находятся в процессе переориентации с Востока на Запад. Однако репрезентативность и влияние их работ как в России, так и на Западе остаются низкими. Предложенный анализ публикационной активности авторов, аффилированных с украинскими научными организациями (с использованием данных Web of Science и eLibrary) подтверждает данные наблюдения. В статье предложено в качестве первого шага в процессе переориентации сконцентрироваться на создании пространства для экономических дебатов на национальном уровне. Активные и здоровые дебаты на национальном уровне способны увеличить шансы украинских экономистов быть услышанными за рубежом.

Ключевые слова: экономические науки, Украина, публикационная активность, контент анализ.

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## THE IMPORTANCE OF INVESTING IN EDUCATION FOR SUSTAINABLE HUMAN DEVELOPMENT. THE CASE OF ROMANIA

In this article, we expect to underscore the importance of investment in education for sustainable human development by analysing the degree of correlation and interdependence that exists in Romania, between the Human Development Index and two different factors: the public spending for education and the public and private investment in the form of R & D expenditure.

Keywords: education, sustainable human development, HDI.

### Introduction: Knowledge capital – the major challenge of the XXIst century

The stage in which we find ourselves is characterized by "the economy, organization and management based on knowledge" (Nicolescu, 2004). The novelty of these concepts is the translation of the organization assets issues, from tangible to intangible, in the present the firm performance being reflected by the share of the intangible assets in total. In the new economy, intangible assets such as knowledge become the new core skills. We can say that in this period (and in the near future) it will occur a "creative destruction", but very much needed to progress. Indeed, this process of knowledge revolution, that consists in the transition from the economy dominated by natural resources, to the economy dominated by knowledge, is particularly extensive and profound, producing essentially changes, analogous to the ones produced by the Industrial

Revolution, according to experts (Brailean, 2001; Dragănescu, 2003; Drucker, 1999a, 1999b, 2004; Hesselbein, Goldsmith, Beckhard, 2000; Nicolescu, 2007, 2011; Oprean, 2008; Oprean, 2014; Rosca, 2006 and others).

We live in a world that stresses the monetary estimation of intangible resources. We are managing with "cognitive domain" in which ideas are worth billions, while all products cost less. In the vision of Peter Drucker (2004), in the future other factors will be effective: "the traditional factors of production – land, work and capital – have not vanished. But they have become secondary. Knowledge is the main asset that is truly important today". The new economy requires a re-examining of the hypothesis of production factors. Knowledge is a fundamental part of the system of economic and social contemporary development. Dispersion of innovations and high technology conver-

gence will assume a key part in accelerating the significance of knowledge in the context of globalization.

In this context, land, labour and capital are important, primarily as restrictions or as limitations. Without them, even knowledge cannot produce; without them, no management can act. But where there is an effective management, i.e. an application of knowledge upon knowledge, we can always get other resources.

The new economy requires a growing interest to so-called employee's company based on knowledge, to intellectual capital and learning organizations. Thus, the share of intangible assets in the economy has increased. This intangible capital is made up mostly of investment in training, education, research and development, information and coordination, more precisely of investment for the production and transmission of information. In the US, it is estimated that the value of intangible capital surpassed the value of tangible capital (stocks, equipment, infrastructure, natural resources) by 1973.

For full exploitation of intellectual capital, the concept itself should be understood. Without understanding the role of intellectual capital, companies cannot create and implement strategies and policies for assessment, protection and maximization of the "most precious asset". We can say that intellectual capital is, in fact, all monetary and without physical form resources, that have the ability to add value to the company's performance and potential, it is also the term granted to joined intangible assets which empower the organization to function successfully.

Measuring intellectual capital has turned into the main part of examination for researchers and practitioners, the concerns for monitoring and evaluating this type of capital being intensified in the present. As regards the invisible, intangible capital, management faces real difficulties in the assessment and measurement of these types of capital. The traditional accounting have not yet found a solution in terms of their pertinent recording and evaluation, these issues becoming a research topic worldwide.

Information and advanced technologies can essentially change a country's economy. In OECD countries, investment in research and development, in public education and computer programs increased by 3% per year since the 80s. The result is that today, not the natural treasures can explain the discrepancies between countries, but the quality of equipment and human capital. Accordingly, innovation tends to be the only means by which a firm can survive in a globalized economy and strong competition.

Without trying to give a "technical" definition of innovation, we found particularly significant the pragmatic definition given by Drucker (2004): "Innovation is the specific instrument of an entrepreneurial manager, the means by which he exploits the change as an opportunity for different business or different services". This definition was given in 80 and was perfectly valid for that period. But now things have changed significantly, meaning that if innovation in 1980 was a path to success in business, now it is a condition of survival. Today, who does not innovate perish!

Some authors (MacGillivray, Clarke, 2006; MacGillivray, 2007; Sumner, 2004; Tanasescu, Oprean, 2013) bring to the front the idea of well-being, which suggests a way of life, both at typical individual and society in general. Guaranteeing a reasonable standard of living presumes a way of life perfect with human dignity, which is measured by the merchandise and services that individuals have and the conditions under which individuals live. Well-being is a vital part of the human condition, it mirrors a system connected with

socio-economic context in which everybody fits in terms of ownership, level of consumption, material and money related status, social and cultural hierarchy. Consequently, the welfare state shows up as an aspiring individual optimum by his method for producing, sparing and expanding.

In general, well-being measures can be grouped into two wide classifications: objective and subjective measures. The first class measures well-being through certain detectable facts, for example economic, social and environmental insights. Individuals' well-being is surveyed indirectly utilizing cardinal measures. Then again, subjective measures of well-being catch individuals' sentiments or genuine experience in a direct manner, evaluating well-being through ordinal measures (McGillivray, Clarke 2006). One of the first endeavours to build a composite index of well-being was in 1979 when David Morris from the Overseas Development Council created the Physical Quality of Life Index (PQLI). This index combined new born child mortality, life expectancy and adult literacy (McGillivray, 2007; Stanton, 2007; Sumner, 2004).

Another case is the Human Development Index (HDI) made in 1990, combining a long and healthy life, access to information and a good way of life. The economic investigators of the 1980s needed to face critics for that human development methodology was not explicitly connected to economic development. Increase incomes and expenditures are not the only consequences of improvement. It was perceived that a single dimension, for example the Gross Domestic Product, is just a pointer of development, expressed in money related units and not an indicator of human development which is multidimensional. Investments in health and education cannot be added specifically to GNP, but rather can increase the value to human capital and in this matter to contribute to the economy and social welfare. Mahbub Ul Haq (1934-1998), Pakistani economist with Indian economist Amartya Sen, Nobel Prize laureate in 1998, assumed a key part in formulating development model. They wanted to bring individuals into the middle of the public agenda on development strategy at national and worldwide level, and the first Human Development Report was launched with the reason that: "People are the real wealth of a nation." United Nations Development Programme (UNDP) published since 1990 "Human Development Report". The report addresses the fundamental issue, how to make an interpretation of economic growth into human improvement. The fundamental contribution of this report is to compute the yearly Human Development Index for 130 nations at first, subsequently for 182 nations. HDI is a composite index that incorporates education, health, and expectations for everyday comforts and it was the first serious endeavour to assess the development that goes beyond the income dimension.

#### **Investment in education – the key component to ensure long-term authentic human development**

The process of accumulating knowledge is an essential and necessary one, whereas the university represents the most appropriate context for the accomplishment of this goal. Learning the mechanisms of adaptation to change, to the permanent dynamics of internal and external environments for the organization represents an added-value dimension in a competitive academic context. Increased adaptively, learning and efficiency are the prerequisites for survival; one can acquire such understanding from personal and other experiences, both in terms of success and failure (Oprean, Burdusel, Oprean, 2010).

Ideas can define, shape and change a society, hence it is important to consider the various forums of intellectual debate and generators of ideas (academics), their audience as well as the role of the public intellectual: e.g. Confucius – founder of a moral, ethical, philosophical and socio-political doctrine; and Confucian culture has long placed a high premium on education; his teachings are even now more topical than ever; with a strong emphasis on virtue, morality. Furthermore, both Socratic method of teaching – meant to encourage critical thinking and active learning (i.e. the Socratic method is widely used in US law schools) and Confucian philosophy have witnessed a revival in recent years (Burdusel, 2014).

Education is one of the key components through which we become individuals that act and connect on the premise of a typical society and one of the key 'makers' of culture. Because of that, it is an imperative factor for achieving sustainable development (Oprean et al, 2011).

Starting from the assumption that education is a fundamental human right, some studies (Burdusel et al, 2014) examine the role of higher education institutions, and especially humanities, in preparing citizens to cope with the unpredictable and challenging facts of life and effects of other's activities, as well as enabling graduates to relate and effectively communicate with other individuals, communities – from geographical areas either nearer or further away – and better understand the world they live in. Several key documents have endorsed this right and further added new dimensions to the concept of education as a means of social advancement, raising individual and collective awareness about: the power of tradition in assuring smooth continuity and a grasp of modernity, differences in terms of culture, civilization, language, socio-political views and economic development should not generate unbridgeable gaps, and furthermore, the necessity to study related disciplines in order to open new vistas to knowledge and widen the perspective.

The contribution of education to economic development happens through two systems. The primary, and best known is the formation of new knowledge, otherwise called the "Schumpeterian growth" (Schumpeterian growth hypothesis, developed by Aghion and Howitt (1992) and Grossman and Helpman (1991), focuses on innovations that improve the quality of products, so the older products become obsolete through a process called by Schumpeter (1942) as creative destruction). Better instructed people would later get to be researchers and investors attempting to help expand the stock of human intelligence by growing new methodologies and innovations. This brings us to the second mechanism by which education influences economic development, i.e. the transmission of knowledge and information. Schools give the necessary instruction to comprehend the new information and at this section we consider Romania as being among the main nations. Increment in education has enormously encouraged innovation process that occurred in the PC business, for instance, but in the event that there would be no schools to educate students how to utilize these new applications, the innovation impact would have been much reduced.

General, the human capital is dealt with as an investment and the human capital aptitudes can be utilized basically anytime, depending on the social and economic environment in which people can be set at a certain time. More than this, investment is a continuous one, focusing on either the improvement (training or proceeding with training

courses, for instance) or keeping up the human capital stock (periodic medical examinations, for instance).

The aggregated human capital at national level was mainly used to describe the level of advancement of a nation or clarify its development. One regular clarification for the economic boom in the second half of the twentieth century in a few Southeast Asian nations (South Korea, Singapore, Taiwan and Hong Kong specifically) comprises of enormous interests in training by governments and citizens of those nations. In the recent years, it was observed that highly specialized occupations expanded at all levels of education to the detriment of unskilled, weak specialized work and of managers on lower levels.

Governments, without a doubt, play a central part in coordinating the formation and improvement of human capital. Public budgets are generally the main donors, however private spending, households and firms are also likewise important. The beneficiaries of human capital development are both people, organizations and society. Contributing in human capital as a political choice with significant distributional and growth impacts is conditional on every one of these issues.

In the global civilization, the emerging economies that depend on innovations have a priority segment that is the technology advancement that can lead to a high level of competitiveness and human development. Technological progress is fundamental to human progress. The digital, genetic, molecular innovations open new perspectives and they "break limits" about how individuals can utilize technology to develop knowledge, stimulate growth and development. New technologies are disseminated, both between nations and inside them.

Technological innovations influence human development. Human development and technological advancement are sustained and potentiate one another:

- Technological innovations can upgrade human potential and aptitudes;
- Technological innovations are a method for guaranteeing human development;
- Human development is a vital means to support technological development.

As indicating by a report distributed by OECD (2014), the education segment is more innovative than other public sector areas, including health and public administration. The most outstanding distinction between them consists in the proportion of innovative jobs in terms of knowledge or methods (see figure 1 beneath, where sectors are positioned in ascending order of the rate of highly innovative jobs in knowledge or methods). Forty-eight percent of jobs in education include innovation in knowledge or methods, compared with 38% in health and 26% in public administration. Innovation levels in technology, tools or instruments are also higher in education (21% of jobs) than in health (16%) and public administration (13%). One quarter of occupations in education and health include product or service innovation, compared with 18% in public administration.

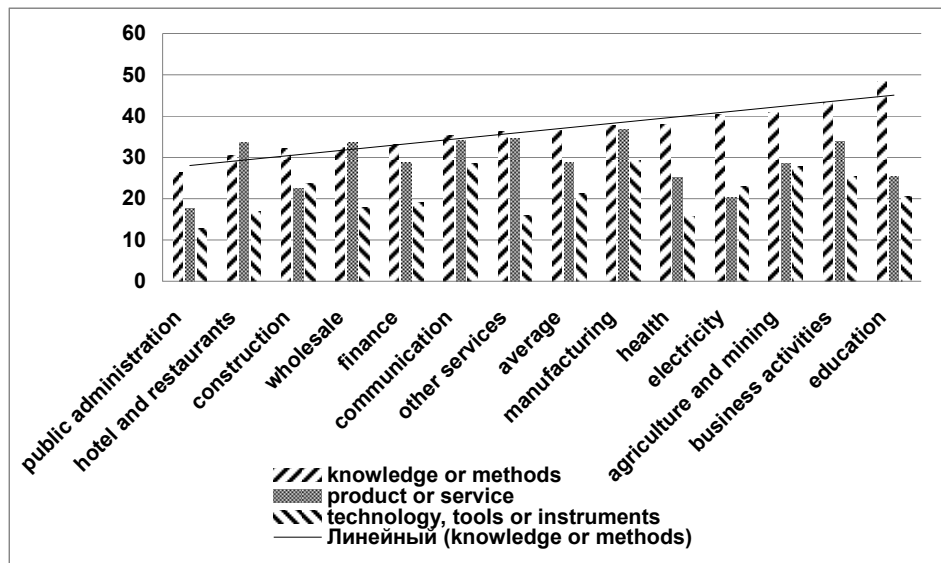


Fig. 1. Professionals in highly innovative jobs, by sector and innovation type

Source: OECD (2014), Measuring Innovation in Education: A New Perspective, Chapter 4

#### Research Data: HDI Evolution and correlation analysis

Since 1990, at the request of the United Nations Development Programme (UNDP), an independent team of experts prepare each year a Human Development Report which is an overview of the major issues facing the world today. Although the series of publications like the Human Development Report has a back history, the specifically dedicated series to Romania started in 1995. In light of the Human Development Index (HDI), the ranking is performed annually, and the countries are ranked according to their level of human development.

The HDI is a summary measure for evaluating long-term advance in three essential measurements of human development: a long and healthy life, access to knowledge and a decent way of life. Just as in the 2013 HDR, a long and healthy life is measured by life expectancy. Access to knowledge is measured by: i) mean years of education among the grown-up population, which is the average number of years of education got in a life-time by individuals aged 25 years and older; and ii) expected years of education for children of school-entry age, which is the aggregate number of years of schooling a child of school-entry age can hope to get if prevailing patterns of age-particular enrolment rates stay the same throughout the child's life. Standard of living is measured using the Gross National

Income (GNI) per capita indicator, expressed in constant 2011 international dollars, converted using purchasing power parity (PPP) rates. HDI highlights the progress or regress of countries in achieving performance measured by the component indicators. So, while achieving a high HDI implies a high level of income, it is more a matter of social policy and public revenue guidance for the efficient development of the social sector. The idea of human development goes beyond per capita income, the human resource improvement and the fundamental needs as a measure of human advancement and it assesses some elements, for example the freedom and dignity of individuals and their part in development.

Romania's HDI value for 2013 is 0.785– which is in the high human development category–situating the nation at 54 out of 187 nations and domains (Human Development Report, 2014). Between 1980 and 2013, Romania's HDI value expanded from 0.685 to 0.785, an increment of 14.5 percent or a normal yearly increment of around 0.41 percent. Table 1 and figure 2 review Romania's progress in each of the HDI indicators. Between 1980 and 2013, Romania's life expectancy at birth expended by 4.1 years, mean years of schooling expended by 2.8 years and expected years of schooling expended by 2.1 years. Romania's GNI per capita expended around 65.1 percent between 1980 and 2013.

Table 1. Romania's HDI trends

Legend 1 <sup>st</sup> column	Life expectancy at birth	Expecting years of schooling	Mean years of schooling	GNI per capita (2011 PPP \$)	HDI value
1980	69,7	12	7,9	10557	0,685
1985	69,6	12	8,6	1256	0,701
1990	69,5	12,1	9	11295	0,703
1995	69,5	11	9,5	10343	0,693
2000	70,5	11,7	9,9	9796	0,706
2005	72,4	13,4	10,1	13363	0,75
2010	73,5	14,2	10,6	16401	0,779
2011	73,6	14,1	10,7	16825	0,782
2012	73,7	14,1	10,7	16806	0,782
2013	73,8	14,1	10,7	17433	0,785

Source: United Nations Development Programme, www.undp.org



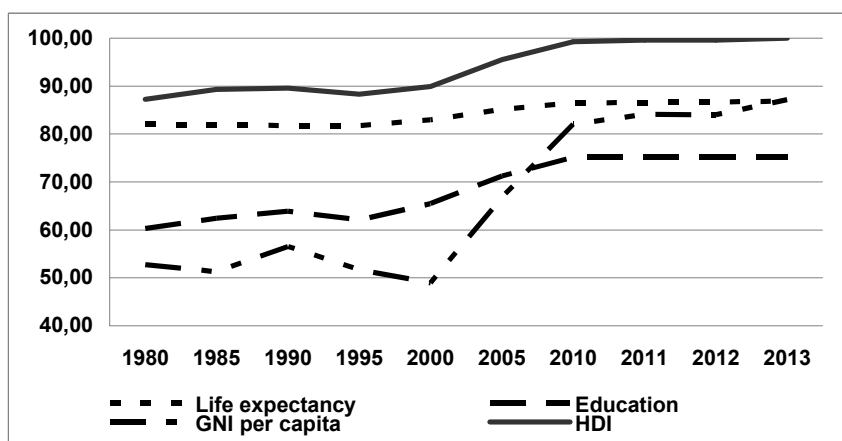


Fig. 2. Trends in Romania's HDI component indices 1980-2013

Source: United Nations Development Programme, [www.undp.org](http://www.undp.org)

As we have seen, although the trend in Romania of the Human Development Index has improved in recent years, however, our country still has a lower position in the overall ranking compared to other countries in Central and Eastern Europe such as the Czech Republic, Hungary, Poland, Slovakia, etc.

Further, we intend to analyse the correlation between the level of human development in Romania, rated by HDI, and the next two parameters during 2005-2013:

1. The research-development expenditure, or the expenses incurred in research and development units, which refer to the current and capital expenditure within the remit of the respective units in all sectors: business, government, higher education, private non-profit;

2. The education expenditure conducted from the state budget of Romania in the period considered, both current and capital expenditure.

The values of the above presented indicators are shown in the table below:

Table 2. Romania's HDI, education and research-development expenditures during 2005-2013

Indicators	2005	2006	2007	2008	2009	2010	2011	2012	2013
HDI*	0,75	0,813	0,837	0,781	0,774	0,767	0,781	0,782	0,785
Education expend.** – mill RON	2371,3	4309,9	6470,5	7367,9	5176,3	4315,2	4207,6	3994	3867,2
R-D expend.*** – mill RON	1183659	1565802	2177335	2980674	2356907	2413467	2786830	2872728	2464779

Source: \* Data from Human Development Reports 2005-2014, United Nations Development Programme

\*\*, \*\*\* Data issued by the Romanian National Institute of Statistics, [statistici.inse.ro](http://statistici.inse.ro)

To analyse the definite impact exercised by the public education expenditures and the R-D expenditures on HDI, i.e., to know the pattern and intensity of the relationship

between each two indicators, we compute the Pearson's correlation coefficient (Table 3).

Table 3. The Pearson's correlation coefficient

		HDI	Educ. exp.	RD exp.
HDI	Pearson Correlation	1	,522	,025
	Sig. (2-tailed)		,150	,950
	N	9	9	9
Educ. exp.	Pearson Correlation	,522	1	,519
	Sig. (2-tailed)	,150		,153
	N	9	9	9
RD exp.	Pearson Correlation	,025	,519	1
	Sig. (2-tailed)	,950	,153	
	N	9	9	9

Source: authorial computation, using SPSS Software

By analysing the correlation coefficient, we can observe a positive correlation of average intensity between HDI and education expenses made by the Romanian state budget (the correlation coefficient is 0.522) and between HDI and R & D expenditure (made within the research and development units in all sectors) it is observed a positive correlation, but low intensity (correlation coefficient is 0.025).

The results confirm that education and hence investment in education ought to constitute key segments to guarantee long-term authentic human development, human performance being the establishment of the knowledge base. Invest-

ing in continuing education in this way shows up as a need for people and protection against the risks of unemployment and poverty. Then again, organizations can get a higher benefit by putting resources into the education of their workers rather instead of expending the economic capital stock. Impacts regarding the labour productivity are seen instantly, employees get to be more creative, having a high decisional freedom and can respond more efficiently with optimal solutions in the new and unexpected circumstances.

The unique interest for investing in human capital is reflected in the steady concern of the OECD to support eco-

conomic growth through development projects of educational capital. Cross-national studies reported for OECD nations demonstrate that the rate of return of investment in education is higher for university graduates than for high school. At the same time, unemployment and poverty probability diminishes with increasing in training. Regarding the macro level, the return rate of investment in secondary education in general exceeds the return rate of the capital employed in the business (manufacturing or commercial activities), while the benefits of investing in tertiary education are placed at similar levels to the rate of return on capital in commercial or production activities.

**Conclusion & Discussion.** We addressed the issue of investment in education – the key component to ensure long-term authentic human development. The key principle that should govern the private or public investment policies in modern orders, ought to be the one to empower and support the investment in human and social capital. This rule can be applied to related systems guaranteeing the welfare and quality of life as well as in different parts of social and economic development. Welfare addressed in a traditional style, in light of the system of transferable bureaucratic service and so-called social engineering, must give way to new approaches of active welfare, of proceeding with education and development of life quality assurance systems by resorting to a set of priority investment programs, for example those identifying with investment in education.

Following our analysis, we can observe a positive correlation of average intensity between HDI and education expenses made by the Romanian state budget (the correlation coefficient is 0.522) and between HDI and R & D expenditure (made within the research and development units in all sectors) it is observed a positive correlation, but low intensity (correlation coefficient is 0.025). The outcomes affirm that education and henceforth investment in education ought to constitute key parts to guarantee long-term legitimate human development, human performance being the foundation of the knowledge base.

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### ВАЖЛИВІСТЬ ІНВЕСТИЦІЙ В ОСВІТУ ДЛЯ СТАЛОГО ЛЮДСЬКОГО РОЗВИТКУ: ПРИКЛАД РУМУНІЇ

У цій статті ми підкреслюємо важливість інвестицій в освіту для сталого людського розвитку, аналізуючи ступінь кореляції і взаємозалежності, яка існує в Румунії, між індексом розвитку людського потенціалу та двох різних чинників: державні витрати на освіту та громадські та приватні інвестиції у вигляді R & D витрат.

Ключові слова: освіта, стійкий людський розвиток, індекс розвитку людського потенціалу.

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### ВАЖНОСТЬ ИНВЕСТИЦИЙ В ОБРАЗОВАНИЕ ДЛЯ УСТОЙЧИВОГО ЧЕЛОВЕЧЕСКОГО РАЗВИТИЯ: ПРИМЕР РУМУНИИ

В этой статье мы подчеркиваем важность инвестиций в образование для устойчивого человеческого развития, анализируя степень корреляции и взаимозависимости, которая существует в Румынии, между индексом развития человеческого потенциала и двух разных факторов: государственные расходы на образование и общественность и частные инвестиции в виде R & D расходов.

Ключевые слова: образование, устойчивый развитие общества, индекс развития человеческого потенциала.

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#### CASE STUDY

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### IN THE EARLY JOSEPH ALOIS JULIUS SCHUMPETER'S FOOTSTEPS – MARRIAGE, TRAGEDY AND EMIGRATION

*At the age of 42 Joseph Alois Schumpeter married the 20 years younger Anna ("Annie") Josefina Reisinger. Joseph Schumpeter is looking forward to being a father, and the couple have a child, Joseph, but both Annie and the baby dies during confinement. The tragedy is a fact, and Schumpeter loses the joy of scientific creativity and concentration. His existence is concurrently burdened by private financial problems. He holds fast to his creative youth work, *Theorie der wirtschaftlichen Entwicklung*, which is a companion through life and the foundation stone of modern entrepreneurial research worldwide. The article analyzes the important events in Schumpeter's life and its importance to scientific development in economic theory.*

*The article analyzes the important events in Schumpeter's life and its importance to scientific development in economic theory. *Theorie der wirtschaftlichen Entwicklung* (English title; *The Theory of Economic Development*) was first published in 1912. After emigration to Harvard in 1934, the third edition was translated into English and opened up for a broader readership worldwide. However, the seventh chapter was omitted from the second and third edition, which formed the basis for the translation into English. It is a fact that the English version of 1934 in turn has served as the basis for translation to many other languages. How well known and understood was actually Schumpeter's innovative and independent scientific contribution from his early days, and what are the consequences of the Lost Chapter in economic theory? The author of the article walks in the early Schumpeter's footsteps by visiting places where the famous economist used to live and work, and thereby making interviews with key persons on sites to analyze the background for the historical development in economic philosophy. The article concludes that personal freedom, especially in connection with wage labor and market profit are preconditions for scientific independent activity.*

**Keywords:** Joseph A. Schumpeter, wages, innovation, debt, emigration, economic development.

**Introduction.** Year 2012 marks one hundred years of the first publishing of Joseph Alois Julius Schumpeter's *Theorie der wirtschaftlichen Entwicklung* (English title; *The Theory of Economic Development*). The book has played a very important role, not only in philosophy and in the science of economics, but also in Schumpeter's own life; he never stopped working on the topics on which the theory was constructed [1]. Studying Schumpeter's theories is also relevant from an economic-historical perspective, and his theories are very up to date especially in the world situation of today, characterized by global financial crisis and mass unemployment.

In 2012, I started a research program: In the footsteps of Joseph Alois Julius Schumpeter. The program included many activities; visiting main sites where the famous economist used to live and work, in-depth interviews with key persons on site, research in relevant archives, collecting and spreading information about Schumpeter's science globally through academic institutions, libraries, organizations, forums and summits. The activities also included the beginning of a global teaching program primarily based on Schumpeter's theories, writing and publishing papers, articles and books based on the research program findings. The first research trip was to Trest, Jihlava (The Czech Republik) and Chernivtsi (Ukraine) in October 2012 [2], followed by a research period at Harvard University Archives, Massachusetts, in February 2013, then a visit to Bonn (Bonn University and Bonn University Archives and Library), and Vienna (Vienna University and Vienna University Archives) in May 2013 [3], Egyptian National Library and Archives, November 2014, and Tokyo and Kobe, Japan, February 2015. The research program is now in its final stage and Fil. Dr. Jan-U. Sandal Institute funds the research program which has a budget of app. one million USD.

The preliminary results of the research program are articles, speeches, VIP invitations and counselling: "Schumpeter's Method" published in *Levende Historie* no 6/2012, Oslo, "The Hunt goes on – in the world's Libraries" *Bok og Bibliotek*, no 1/2013, Oslo. "In Joseph Alois Julius Schumpeter's Footsteps", an article presented and

published at II International Schumpeters Forum of Economics "Joseph Alois Schumpeter's Scientific Heritage and Today: A View from the Past into the Future" at Yuriy Fedkovych Chernivtsi National University (Ukraine), where Fil. Dr. Jan-U. Sandal Institute also was co-arranger, and "In the footsteps of the early Joseph Alois Julius Schumpeter" at the 10<sup>th</sup> Economic-History meeting at Lund University (Sweden) on 4-5 October 2013, article "In Joseph Alois Julius Schumpeter's footsteps" published in *The Journal of the Economic Society of Finland*, No. 1/2014 and article "In the young Joseph Alois Julius Schumpeter's footsteps" published in *The Journal of the Economic Society of Finland*, No. 2/2014. Furthermore, VIP Expert invitations from Asian-Pacific CEO Association and Chinese government to The 3<sup>rd</sup> Global Economic Leaders' summit (GELS 2013), The 2<sup>nd</sup> International Culture Industry Summit (ICIS 2013) and the 2<sup>nd</sup> World Emerging Industries Summit (WEIS 2013) all in China in September and November 2013, The 3<sup>rd</sup> International Culture Industry Summit (ICIS 2014), in October 2014, The 3<sup>rd</sup> World Emerging Industries Summit (WEIS 2015), March 2015, and The 4<sup>th</sup> Global Economic Leaders' Summit (GELS 2015), august 2015, all in China, could be mentioned in this connection.

A significant highlight in the series of results that include the creation of Joseph A. Schumpeter Centre of Economic Research of Yuriy Fedkovych Chernivtsi National University, where I from March 20, 2015 is engaged as a professor of professorship comprising innovation and social entrepreneurship, could be mentioned as well [4].

**Methodology.** The article analyzes Joseph Alois Schumpeter's life with emphasis on the marriage with Anna Josephina Reisinger, the tragic event and the impact it has had partly of his own scientific activity, and partly how the incident may have affected the economic theoretical science in its entirety. Important preconditions for creating good science is the individual's creativity, ability to concentrate and independence. What consequences for Schumpeter's scientific process caused the tragic incident, concentration difficulties, the private economic situation, overseas trips and emigration to America? Second edition of *Theorie der wirtschaftlichen Entwicklung* was published

without the seventh chapter. To what extent have the students, lecturers and researchers been able to take part in the totality of Schumpeter's theory from 1912?

Source material in this article is, besides the traditional written references, to a significant degree based on site visits and in-depth interviews with relevant key personnel on site. The article consists of an analysis built over these factors and parts: introduction, family background, marriage and tragedy, Bonn today, the second edition of *Theorie der wirtschaftlichen Entwicklung*, travel, Japan today, emigration, *The Theory of Economic Development* and conclusion.

**Results.** Joseph Alois Schumpeter was born on 8 February 1883 in Triesch (now Trest in the Czech Republic). His mother, Johanna Schumpeter (born Grüner) came from a famous doctor family in the neighboring city Jihlava, and his father, Josef Alois Karel Schumpeter was the 12<sup>th</sup> generation after Vaclav Schumpeter from Mildov, who was for the first time in history mentioned when he settled in Trest [5] in 1523. Joseph was immediately baptized into the Roman Catholic religion and was named Joseph Aloisius Julius.

Through generations, the Schumpeter family had been successful businesspeople, undertaking production and trade with textiles, iron and salt. They contributed to the industrialization of the town, and both his grandfather and grand grandfather had been mayors in Trest. They all had good reputation of caring for their workers and they were even offered noble appointments, but every time they turned them down. The Schumpeter family owned two big mansion houses in the city and one large factory complex and they gave precious gifts to the church.

Anyhow, as we know, his social background from birth was drastically changed by an incident on 14 January 1887, which led to great consequences for his future life. His father died under special circumstances as result of a hunting accident. Soon after his mother and Joseph moved to Graz and later she married the recently retired lieutenant – field marshal Sigismund von Kéler and the family settled in Vienna. They moved to a flat on Doblhofgasse 3, an excellent address in Vienna situated only a few blocks from Theresianum, the famous preparatory school for the aristocracy, and here Joseph grew up.

The Reisinger family also lived on the same address. Reisinger was caretaker for the property, and the couple had a daughter, Anna ("Annie") Josefine Reisinger. Joseph got early a keen eye for Anna, something her parents did not mind. Already in her teens, Anna was in love with the 20-year older Joseph, and when she was at 17 years of age, they met regularly, first in secret and later with her parents' consent. Teen crush took nevertheless soon end, and it would be years before they resumed close relations with each other. Meanwhile, both Annie and Joseph had affairs with various partners in their respective hold, and Joseph had completed his first marriage with Gladys Ricarde Seaver, an English woman, the daughter of a high-ranking official in the Church of England, which he had contracted a marriage with during his stay in England 1906-1907. The marriage with Gladys had proved to be a mistake from the beginning, although the relationship had certainly begun with mutual love. Immediately after the First World War, the city of Vienna introduced a simplified divorce form where divorce request from only one party was sufficient. Schumpeter divorced without informing Gladys.

One day in May 1925, Joseph proposed to Anna, and on 5 November, the same year the wedding took place in a Lutheran church in Vienna. Both Anna and Joseph, both of which belonged to the Catholic faith, had converted. They had been separated a long time, but now they realized that they were deeply in love with each other. Joseph would

accede as professor in Bonn, which meant that they could afford to marry. Meanwhile Joseph wanted to put his experiences from Vienna behind and start again. Yet neither Anna's parents or Joseph's mother were present during the ceremony when they all opposed the marriage.

Joseph moved to Bonn and started his new job as professor and shortly afterwards Anna also came. They moved into the Koblenzer Strasse 39, one magnificent property on the shores of the Rhine. The couple Anna and Joseph Schumpeter was popular among their friends; they kept merry parties and were frequent guests in their social circles. After a short time, Anna got pregnant and Joseph rejoiced to become a father. It may seem as if Joseph had finally found happiness in a harmonious family life.

However, the joy was short-lived. His mother, whom he was very attached to, and which had been a strong role model and a very important person in Joseph's life, died on June 22, 1926. Immediately after, Anna should give birth to their firstborn, but she and the baby died unexpectedly in childbirth on August 3, the same year. They moved the child in a hurry to a nearby hospital in an attempt to save its life, but to no avail. The child was christened Joseph Schumpeter, but lived only 3 and ¼ hours. Already from the beginning, the pregnancy had been problematic, and in addition, the tone between Anna and Joseph had been rather tense lately. It was the problems with Gladys, who threatened to sue Joseph for bigamy, which had caused tensions.

Annie and the baby were buried in a cemetery nearby. Schumpeter was crushed by grief over the deaths in his family, and the upcoming time was terrible for him. He tried to drown his grief in work, but in vain. Every morning he went to the tomb, and in that period, he developed a distinctive cult with religious undertones where worship of both his mother and Annie as saints evolved. The saintly cult, where his mother and Anna practically were worshiped as saints, would persist throughout Schumpeter's life.

Schumpeter could not drop his mind at Annie's death, which led to his increasingly withdrawal to his work. Nevertheless, he had lost the glow and his old ability to concentration and creativity in scientific work. Meanwhile, he was pressured to undertake an increasing number of salaried lecture assignments for different groups of listeners outside university. The old debt should be repaid. During his stay in Cairo, Joseph Schumpeter had created his private fortune, which he could enjoy during the short time as finance minister until he was dismissed in October 1919. He had nevertheless lived beyond his means in this period, but at accession as chair of Biedermann Bank, he took the opportunity to borrow money from the bank to invest in enterprises in order to profit from the sale of shares. In 1924, he abruptly resigned from the bank and his private financial situation became critical. He got no income, but had a substantial debt to the bank, other creditors and a tax debt to the Austrian state. The financial situation deteriorated, however, in 1926 – 1927 when Biedermann Bank failed, and Schumpeter's debt increased. Schumpeter had until this time to a substantial level lived as an independent intellectual, followed his own interests and willingness on scientific matters. Now the situation was reversed, it was the clients who took the decisions, Schumpeter was compelled to write and speak for money.

The unhappy circumstances; deaths in the family, the social situation, lack of concentration, the financial situation and not least the involuntary approach to the scientific activities led to the fact that Schumpeter, and with him the main site for innovation science, moved to Harvard University.

Bonn University, like the city, was entirely rebuilt after the bombardment during World War II. It is thus not possible to find any authentic traces of buildings or physical

locations where Schumpeter stayed during the time he was linked to Bonn.

On the plot in Koblenzer Strasse 39, not far away from Koblenzer Tor, where the residence where Annie and Joseph lived in 1925 and 1926 stood, has now the new University and State Library in Bonn been built. After the Second World War, the address was changed to Adenauerallee 39 – 41.

Carmen Passera is subject specialist and head of the library for the political science seminar at the Universität und Landes Bibliothek der Rheinische Friedrich-Wilhelms-Universität of Bonn. She can inform that innovation and entrepreneurship as a subject has not yet received any firm foothold at the university. Prof. Dr. Urs Schweizer at the Department of Economics and Social Sciences, University of Bonn, is pleased to announce that here are taught by what's in the books, and that the scope of literature on innovation and entrepreneurship are not strikingly large. The creativity and scientific independence and enthusiasm that characterized Schumpeter's early work, and that he brought to Bonn the first time during his stay here, one cannot currently find any traces.

Before Schumpeter arrived Bonn University in 1925, he had already published two major works in economic theory, *Das Wesen und der Hauptinhalt der theoretischen Nationalökonomie*, 1908 and *Theorie der wirtschaftlichen Entwicklung*, 1911. *Das Wesen* he had written in his spare time and non-salaried during his stay in Cairo. The book was Schumpeter's habilitation work and qualified him for private docent (associate professor) with the right to teach at the university's all levels. *Theorie* was, as *Das Wesen* written in his spare time and non-salaried under Schumpeter's stay in Chernivtsi during the years 1909-1911.

Schumpeter had decided to write a third greater economic theoretical work on monetary theory. However, it turned out that it was not possible for him to carry out these plans. Given the difficult circumstances of life after Annie's death, and later the fact that John Maynard Keynes published his *A Treatise on Money*, 1930, which was considered to be a major work on monetary theory, and that Schumpeter perceived it as a death blow to his own attempt to author a similar theory, his commitment for life was characterized by an attitude of postponement and new attempts to complete his work.

Although *Das Wesen* had been well received and earned its role as habilitation work, Schumpeter was still not happy with the book. For the German academic community the content was new and opened up to the understanding of a number of issues, perspectives and content in pure economic theory, but internationally it was mostly already known. For that reason, no second edition was published, and Schumpeter decided not to take the book when he emigrated to America in 1932.

Nor was *Theorie der wirtschaftlichen Entwicklung* without problems. The book did not get the big reception when it became available in 1912. The First World War was a cause; most people were occupied by other thoughts than economic theory. Many thought that the main points of the book was outside the economic tradition that formed the basis for the common teaching of the subject, and particularly the book's interest theory was received with great skepticism. An early translation of the book into English naturally would have contributed to an increased proliferation of the book's readership, which did not occur.

Schumpeter was nevertheless pleased with *Theorie*, especially as it represented a new economic perspective where he introduced static and dynamic approach to the understanding of economic development. Nevertheless, *Theorie* was above all the result of an independent and

creative scientific process. It was the fruit of a young man's determination to pursue his own intellectual ideas. Schumpeter decided to publish the book again in 1926.

Second edition of *Theorie der wirtschaftlichen Entwicklung* differs from the first edition, with the exception of minor cosmetic changes, in that the seventh and final chapter in the book is omitted. The seventh chapter, the economy as a whole, is a very important chapter. Here Schumpeter ties the book's opening theme together and shows that the social process is an indivisible whole. Despite the chapter's importance, Schumpeter meant that it drew readers' attention away from the main theory, the attempt to introduce a new economic theory.

The relationship between economic theory and the entire socio-economic phenomena is explained in the seventh chapter of a number of circumstances where the entrepreneur as a social agent is the driving force in economic development. The entrepreneur is a pioneer and a key figure in both the micro and macro economy and in society as a whole. Many look up to the entrepreneur; he both impresses and fascinates, and thus takes his role as a community leader.

However, each community has a social culture which consists of relatively independent groups of individuals based on their membership in various spheres such as art, politics etc. where both the static and dynamic dimension exists. Similarly, Schumpeter claims in the seventh chapter, there is a static dimension in society culture, but also something that can be explained through an unforeseen development that is not solely based on society's total amount of knowledge.

Ultimately, society is a whole, as Schumpeter described in the opening of the book and concludes in the seventh chapter, and development takes place through the entrepreneurs' unforeseen and successful activities, a viewpoint that is not based on slogans or ad hoc analysis, but a result of a proven method.

Second edition of *The Theory* received the title *Theorie der wirtschaftlichen Entwicklung. Eine Untersuchung über Unternehmengewinn, Capital, Credit, Zins und den Konjunkturzyklus*.

The time after Annie's death was a challenge for Schumpeter. In connection with the appointment as a professor at Bonn University, he had become a German citizen. He used the coming years to travel apparently as much as possible to other countries and universities. Schumpeter seeking August 3, 1927 for leave from his duties as professor in Bonn to travel to Harvard University. He has been invited to lecture on economic theory. He spends the academic year 1927-28 at Harvard.

In 1930, he is again invited to Harvard. Meanwhile, The Econometric Society is founded on the initiative including by Ragnar Frisch. Schumpeter becomes member from the start and the honor of leading the association's foundation meeting in Cleveland, Ohio on December 29, 1930.

During his time as professor at the University of Bonn, Schumpeter had several Japanese students. Also one of his relatives, Hugo Schumpeter, had close ties to Japan as consul in the period 1913 – 1917. After the First World War the relationship between Germany and Japan was again strengthened, which Schumpeter could experience the fruits of during his visit to the country in 1931.

On his way back home to Bonn after his stay at Harvard University in autumn 1930, Schumpeter makes one stay in Japan. Wednesday January 28, 1931 Schumpeter gives his first lecture in Japan. He has been invited to the Tokyo University of Commerce (now Hitotsubashi University). During two hours that morning, he lectures at Kanematsu Auditorium on the theme "The crisis

in economics – fifty years ago." While he is in Tokyo, he gives two additional lectures. Tuesday January 29 in the Industry Club of Japan and on Friday January 30, at Tokyo Imperial University (now Tokyo University). He also visits the host university for his stay in Japan, Kobe University of Commerce (now Kobe University), where he gives three lectures. Thursday February 12, he gives a radio speech in Radio Osaka, and he has time to participate in several excursions and social events before leaving Japan on Friday February 13, 1931.

Wherever Schumpeter came during his stay in Japan, he was received with great enthusiasm, not only among colleagues and students, but also among business people, business executives and politicians. His stay in Japan must also clearly have had a positive social and cultural impact of Schumpeter's part, but the crossing by boat to Europe gave another opportunity for deeper reflections on life.

From the Japanese side Schumpeter's visit was also a great success. His presence was of great importance for the flourishing Japanese school of modern economy through the rising generation of Japanese economists. This trend can also be seen in the close ties that the relations between Japan and Germany had contributed to in the scientific and cultural context.

Back in Bonn, Schumpeter still felt a need to find a new foothold for his creative research work. He receives several offers from different universities, but it is particularly one suggestion he did not want to refuse, and that is the provision of economic faculty at Harvard University that for some time have wanted to recruit him. He accepts the offer and in 1932, Schumpeter leaves Bonn for good and emigrates to America.

Joseph Schumpeter's third wife, Elizabeth Boody Schumpeter, in her testament had favored Hitotsubashi University with a number of books and writings from Schumpeter's private collection. The formal procedure in connection with the completion of the donation was facilitated by the US embassy in Tokyo and took place February 28, 1955.

Natsuko Fukuda PhD, subject librarian at Hitotsubashi University Library informs that it has been an extensive work with conservation and cataloging of books and writings in the collection through various periods and that work is still ongoing.

Hiroko Suzuki, manager of Library Affairs Division, refers to the fact that the collection consists of 215 books, 500 periodicals and 1,000 pamphlets.

Hideaki Hirayama, head of research support and outreach division, indicates that so far they have found and identified 1708 inserts in the 215 books in addition to a large and not quantified number of clippings, offprints, bookmarks and blank pieces. Schumpeter had a habit already from young days writing down notes on small yellow and orange notes and stick them between the pages of the books for later use. He used Gabelsberger, the common shorthand in Germany and Austria at the time. It may seem as if Schumpeter began to collect these books and writings after he moved to Harvard in 1932. The collection is designated Schumpeter library.

During conversation with Professor Seiichiro Yonekura. Ph.D., Institute of Innovation Research, Hitotsubashi University, reveals that one does not have a tradition of teaching theories that are directly related to Schumpeter's theory, although subjects such as innovation and entrepreneurship are very central in both teaching and research in Japan. Professor Yonekura can inform that there has been no international research in Japan on Schumpeter's life and teachings earlier and he considers it

very important and desirable as scientific contributions to Japan's economic history.

Sachiro Morimoto, professor at Tokyo University's archives, can exhibit an interesting specimen of Taikoku Daigaku Shimbun No. 370 of 1931-02-02 (The Imperial University Newspaper) where Joseph Schumpeter's visit to Tokyo University are discussed and depicted. The image material and the caption states that he was intercepted by the professors Mitsutaro Araki, Eizo Yahagi, Eijiro Kawai, and Torao Nakanishi, Faculty of Economics and Seiichi Tobata, associate professor, Faculty of Agriculture. The article says that a lunch reception was held for Schumpeter before the lecture in University's guesthouse, Sanjo Kaikan, with university president as host. Morimoto stressed that Schumpeter probably must have felt that he was given a grand welcome from the entire university.

During conversation with Masaru Yarim, Ph.D, project associate professor at Tokyo University, is stated that teaching in economic theory based on Schumpeter's doctrine is not emphasized. Since 2001, Masaru Yarim is member of the International Joseph A. Schumpeter Society. Also at Kobe University a copy of the press and pictorial material from Schumpeter's visit here on February 6 and 9, 1931 have been taken care of. It is reproduced in Kobe Shodai Shimbun, February 15, 1931. Schumpeter's economic theory has no bearing on the teaching program at the university.

In 1932, Joseph A. Schumpeter emigrated to America. He left Bonn for good, but also the difficult period in his life from 1919 to 1932 he took a symbolic farewell to through the emigration to America. His personal financial situation had been troublesome for a long time, and after the failure of Bidermann Bank the financial situation of Schumpeter had deteriorated further. In order to pay off his huge debt, Schumpeter was in this period forced partly to produce articles, primarily in professional journals and general economic journals, in a number of 60 articles, and give speeches for compensation [6]. In the 1920s Schumpeter had, including his permanent professor salary and extra income, a yearly total income of 4-5000 USD and his debt was estimated at three times the annual income [7: 76] (a corresponding equivalent value in 2012 of 143.000 to 179.000 USD, author's own calculation).

In the theory of the entrepreneur, Schumpeter emphasizes that salary is one of the breaks in production [8: 153]. Wages are an element of price, thus preventing the creation of innovation. Salaried employee leaders in the industry fill according to Schumpeter not the role of entrepreneurs because they do not exert the necessary freedom that the innovation process requires. The debt burden Schumpeter had gained in Europe had the same effect on his scientific activity that wages have for managers in any industry in terms of innovation and creativity.

The existence at Harvard University offered Joseph Schumpeter what he needed of financial strength to be able to function as a creative scientist. Harvard University in Cambridge Massachusetts was founded September 8, 1636 and is named after John Harvard, an English immigrant priest who by his death donated half his fortune at £ 780 and holding of 320 scientific books to the creation of a college. In innovation and entrepreneurship scientific context, the university is of great importance, primarily because Joseph Alois Schumpeter was employed here in 1932 and was active as a professor until his death on January 8, 1950. Harvard University inherited in turn Schumpeter and has in its possession 139 archive boxes with documents by the world-renowned economist. During my research at Harvard University's archives in February 2013, I got full access to the unique clause coated and

very interesting historical material. Naturally, the university library has a very rich stock of science literature on innovation and entrepreneurship, but an interesting and important development, among others, as a result of my stay was the creation of a new track in HOLLIS, Entrepreneurship Scandinavia, that had not previously existed. When Schumpeter arrived at Harvard in the summer of 1932, he was invited to stay at FW Taussig, a senior professor and old acquaintance of Schumpeter, in his house on 2 Scott Street. He was living with Taussig until August 1937 when he married Elisabeth Boody. At the same time, Schumpeter demanded a significant salary to accept the offer from the university. The reason was that he still at the emigration time owed substantial amounts in Europe. Nevertheless, in 1935 he managed to erase all debts. Finally, he got rid of the creditors.

Joseph Schumpeter liked his new life at Harvard very much. On April 4, 1933, he applied for US citizenship, an action that further reinforces the notion that he wanted a new life and a new start in America. Marriage with Elisabeth Boody Schumpeter gave him the comfort that a family often is characterized by. They moved into 7 Acacia Street in Cambridge, Massachusetts, in walking distance to the university.

*Theorie der Wirtschaftlichen Entwicklung* was translated into English in 1934. It was the third edition, almost unchanged compared to the second edition of 1926 that formed the basis for translation. *Theorie* was translated by Dr. Redvers Opie, a good friend of Schumpeter, and originally published in Cambridge, Massachusetts: Harvard University Series Harvard Economic Studies, V.46, 1934. Before the English translation became available in 1934, anyone who wanted to acquire Schumpeter's theory of the entrepreneur was referred to read in German, which by natural causes was an obstacle to the spread of the theory. At the same time, the English-speaking readership was excluded from taking part in the seventh chapter. It was not until 2002 that "The Economy as a Whole", "The Seventh Chapter of The Theory of Economic Development" was translated into English by Ursula Backhaus [9] and made available to a wider readership.

The fact that Joseph Schumpeter chose to translate *Theorie* into English without the seventh chapter has had consequences, partly for the understanding of his entrepreneurial theory and partly for entrepreneurial research in full. It has been shown that in cases where *Theorie* has been translated into other languages, the translations was based on *The Theory of Economic Development*, without the seventh chapter. It is therefore reasonable to assume that a significant number of researchers and students over the past 90 years have been unaware of the contents of the 86 pages the seventh chapter covered in the first edition of 1912.

**Conclusion & Discussion.** *Theorie der wirtschaftlichen Entwicklung* is the result of a creative independent scientific process. Joseph Schumpeter wrote the book beside his employment, in his spare time and without compensation, be that from employer or market profit.

The great tragedy in Schumpeter's life led to his creative scientific process subsided and trivial monetary based activities were dominant for his life, a situation that also acted as a barrier to creative independent scientific expression.

The seventh chapter of *Theorie* was not translated into English in connection with the emigration to America. That fact has had consequences partly for lecturers and students and partly for the economic theoretical science in its entirety because translations of *Theorie* into other languages have not included the seventh chapter.

Joseph Schumpeter argued that the creative period in a person's life is the first three decades. In Schumpeter's case, this proves well. In his life the cause was primarily the private economic circumstances that lay as obstacle for independent scientific activity and barrier to personal liberty as creative creation both requires and presupposes.

#### Unpublished results

Carmen Passera, subject specialist and head of the library for the political science seminar at the Universität und Landes Bibliothek at Rheinische Friedrich-Wilhelms-Universität: 2013-05-08. Prof. Dr. Urs Schweizer, Department of Economics and Social Sciences, University of Bonn: 2013-05-08. Natsuko Fukuda PhD, subject librarian at Hitotsubashi University Library: Tokyo 2015-02-02. Hiroko Suzuki, manager of Library Affairs Division, Hitotsubashi University Library: Tokyo 2015-02-02. Hideaki Hirayama, head of research support and outreach division, Hitotsubashi University, Tokyo: 2015-02-02. Professor Seiichiro Yonekura. Ph.D., Institute of Innovation Research, Hitotsubashi University, Tokyo: 2015-02-02. Sachiro Morimoto, professor at Tokyo University's archives, Tokyo University: 2015-02-03. Masaru Yarim, Ph.D, project associate professor at Tokyo University: 2015-02-03. 2015-07-30 <https://www.econometricsociety.org/society/about>, 2015-08-03 <http://www.lib.kobe-u.ac.jp/bunsho/shinbun/12%281931.02.15%29s.pdf>, 2015-08-03 <http://www.dollartimes.com/inflation/inflation.php?>

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### СЛІДАМИ РАНЬОГО ПЕРІОДУ ЙОЗЕФА АЛОІЗА ЮЛІУСА ШУМПЕТЕРА: ШЛЮБ, ТРАГЕДІЯ, ЕМІГРАЦІЯ

У статті аналізуються важливі події з життя Й. Шумпетера та його науковий внесок у розвиток економічної теорії. "Теорія економічного розвитку" була вперше опублікована німецькою мовою в 1912 р. Після еміграції в Гарвард у 1934 році було перекладено на англійську мову третє видання і відкрито для широкої аудиторії читачів по всьому світу. Проте сьома глава була виключена з другого і третього видання, які були використані для перекладу на англійську мову. За фактом англійська версія 1934 року, у свою чергу, послужила основою для перекладу на багато інших мов. Насправді інноваційний і незалежний науковий внесок Й. Шумпетера зробив і в роки своєї молодості. Тому проаналізовано ранній етап наукової спадщини Й. Шумпетера. Автор статті відвідає місця, де відомий економіст жив і працював, поспілкувався з ключовими особами в тих місцях, щоб проаналізувати передумови історичного розвитку

економічної філософії науковця. У статті зроблено висновок, що особиста свобода, особливо у зв'язку з найманою працею та ринковим прибутком дуже вплинули на самостійну діяльність вченого.

Ключові слов: Йозеф А. Шумпетер, зарплата, інновація, борг, еміграція, економічний розвиток.

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### СЛЕДАМИ РАННЕГО ПЕРИОДА ЙОЗЕФА АЛОИЗА ЮЛИУСА ШУМПЕТЕРА: БРАК, ТРАГЕДИЯ, ЭМИГРАЦИЯ

В статье анализируются важные события из жизни Й. Шумпетера и его научный вклад в развитие экономической теории. "Теория экономического развития" была впервые опубликована на немецком языке в 1912 г. После эмиграции в Гарвард в 1934 году было переведено на английский язык третье издание и открыто для широкой аудитории читателей по всему миру. Однако седьмая глава была исключена из второго и третьего изданий, которые были использованы для перевода на английский язык. Фактически английская версия 1934 года, в свою очередь, послужила основой для перевода на много других языков. В действительности инновационный и независимый научный вклад Й. Шумпетера сделал в годы своей молодости. Поэтому проанализирован ранний этап научного наследия Й. Шумпетера. Автор статьи посетил места, где известный экономист жил и работал, пообщался с ключевыми лицами в тех местах, чтобы проанализировать предпосылки исторического развития экономической философии ученого. В статье сделан вывод, что личная свобода, особенно в связи с наемным трудом и рыночной прибылью очень повлияли на самостоятельную деятельность ученого.

Ключевые слова: Йозеф А. Шумпетер, зарплата, инновация, долг, эмиграция, экономическое развитие.

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### THE USE OF PROJECTS IN GENERATING CHANGE IN ORGANIZATIONS

The article above is part of a research conducted in order to evidence the role of leaders in generating change in organizations and to observe the methods and techniques used, knowing that projects and their management are tools for implementing change in organizations. Leaders, by their influence and not by force, can determine their team to initiate new projects, considered by specialists and practitioners also, real practices of generating change in organizations.

Keywords: project, change, leader, influence, employees.

**Introduction.** Academics and practitioners have noticed that people are daily involved in projects, from small to large ones, at personal level and organizational also, and these are a new way to determine change. No matter of source (from in or from out), specialists are attracted in organizational change process by implicating in different projects and so, step by step through analyzing, planning and organizing is influenced and determined change. Researchers showed that the real challenge when we speak about implementing projects that involves change are actions that are oriented to people because people are the ones that can resist change and even stop it.

According to Ogorean Claudia and Troanca Dumitru a project can be defined as several connected activities, done for a limited period of time and set to generate a unique result but clear defined (Ogorean, C., Troanca, D., 2001). This is why project and its management can be used as an instrument that can be used to accomplish any outcome which is distinctive, that can be well-defined and must be realized in a precise period of time.

All projects, no matter of their dimension, domain of implementation and complexity, have some common characteristics as: something that has to be changed, objectives to be achieved, a deadline, people that work in achieving objectives, cost determined by involved resources and expected results.

Throughout its existence, a project goes through several phases where volume, intensity and complexity of activities and information are very different, from simple to complex. Also, the need of resources is different during the project, each phase requiring a different volume.

Regardless of number of steps considered to explain the phases of a project, there are three common aspects to be considered as the project is passing from idea and the need of change to its materialization in practice and in the end to measuring the results obtained and comparing with the initial idea of change.

Leaders are responsible for ensuring that the project is well done, the objectives are achieved considering the restrictions about estimated time, estimated cost, results expected and using rational estimated resources.

Considering all these, it is important to determine the use of projects within Romanian organizations, and this is why there was conducted a research at national level. The research below is just a small part of the whole research.

**The research objectives and methodology.** In order to observe the use of projects in Romania there were interviewed employees from Romanian organizations through an online research to notice their opinion about operationalization and implementation of change in organizations where they work in.

The investigation was accomplished at national level with the aid and assistance of a market research company with national coverage and the inquiry form were filled using the Internet.

The research shows that of the 103 analyzed employees, more than half of those surveyed were female (70%) and in terms of age and it was found that most of them are aged between 20 and 25 years (47%). Most of the respondents are university graduates, faculty level (49%), followed by those with master degrees. Most of the companies to which the respondents belong, are active in service, followed by commerce, the two areas dominating the market with a total share of 55% and most of these companies had in 2011 a turnover of over 10 million lei.

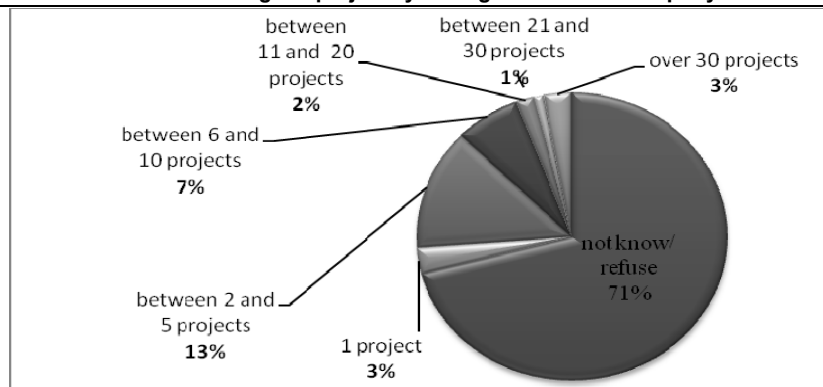
The results of the research. The present research gives the results after interviewing employees from Romanian organizations. To provide complete answers, in the survey was inserted an informative text: "A project is a sequence of connected activities, conducted in an organized manner, undertaken in a defined period of time and designed to generate a single result, well-defined (e.g., construction of a new production hall, the reorganization of a department within a company, a promotional campaign, etc.)". (Văcar, A., 2013).



It is important to identify the number of projects undertaken by Romanian organizations within one year in order to appreciate the actuality about the practice of projects and their management by managers, because this is one of

the important elements of operationalization and implementation change in organizations. The answers collected from employees are given below in Fig. 1.

**What is the average of projects your organization carried per year?**



**Fig. 1. The average of projects undertaken by organizations where these employees work in, within one year**

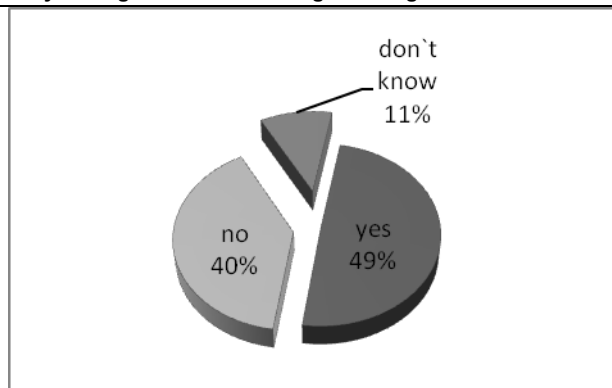
Source: authorial results

The majority, respective 71% of respondents, did not offer information about the number of projects realized within one year. There are several explanations as, either they don't know precise information on subject or they didn't want to provide this response or they didn't know the relevance of the question within the study. Analyzing the other remaining part, 13% of employees showed that in organizations where they work in are realized an average between 2 and 5 projects per year, 7% of respondents are involved in organizations that realize an average between

6 and 10 projects per year, followed by the 3% employees that are involved in organizations that realize an average 1 project per year (Figure 1).

In order to understand the realism within organizations, the majority of employees show that actions of organizing projects in organizations where they work in are adequate stimulated, with a share of 49%, but also is important not to neglect the share of employees which are not pleased, as 40 % of all (Fig. 2).

**Do you consider that your organization encourages enough the activities of organizing projects?**

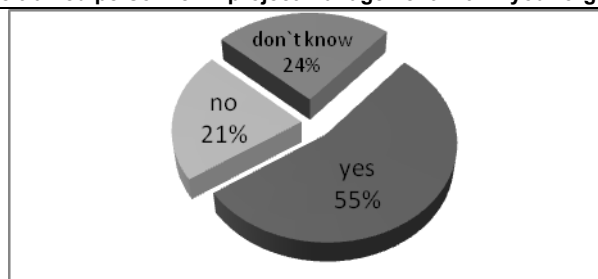


**Fig. 2. The encouragement of activities of organizing projects in terms of employees**

Source: authorial results

It is important to see the percentage of organization's personnel which are trained in project management and according to employees interviewed there is a major part of people in organizations, a rate of 55% (Fig. 3).

**There are trained personnel in project management within your organization?**



**Fig. 3. The share of trained staff in project management in terms of employees**

Source: authorial results

Between the employees of the present research, a share of 42% of them was implicated in at least one project, as a member of a project team in organizations where they work in (Fig. 4).

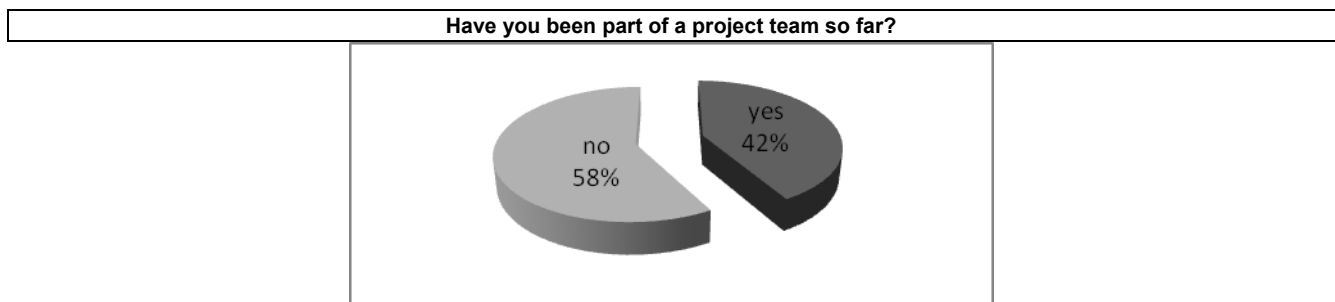


Fig. 4. Share of employees which were part of a project team

Source: authorial results

Because projects help to implement an idea, a plan or a strategy, the employees of this research showed that the principal motive that determined their rate in organizations is the necessity (46%), as the continuous requirement to adjust the organization to the frequently fluctuating environment in which it operates, not only to persist but to accomplish higher organizational goals with efficiency and effectiveness. Another reason that determined

projects manifestation in organizations is the opportunity (28%), as a positive conjuncture from the external environment of the organization that managers profit to reach certain. Another motive in the hierarchy of causes that produce projects in organizations is the management of the organization (17%) that brings ideas, plans and strategies for generating and realizing change (Fig. 5).

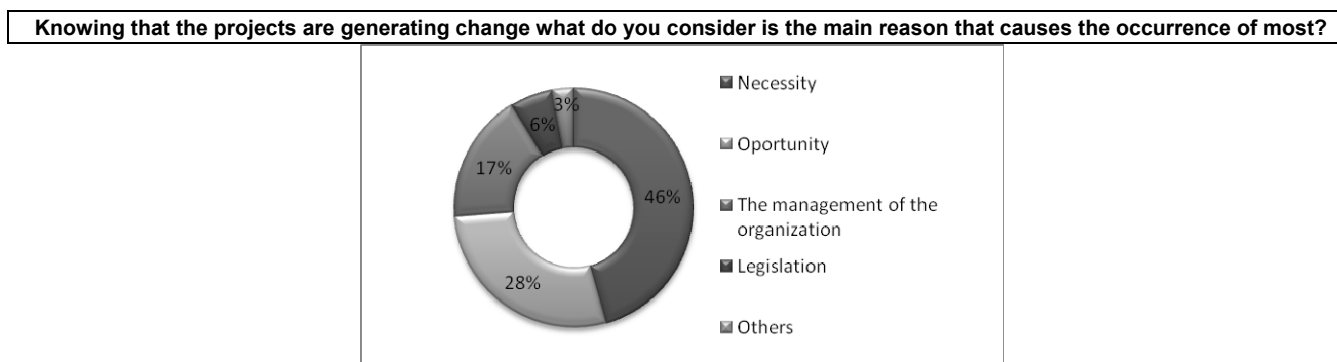


Fig. 5. Causes that are generating projects in organizations from the perspective of employees

Source: authorial results

From the specific methods and techniques of project management used in organizations, known as the application stages of a project, the majority of interviewed employ-

ees find indispensable at the start of a project the plan execution, known as the detailed planning of project activities before starting it (81%) (Fig. 7).

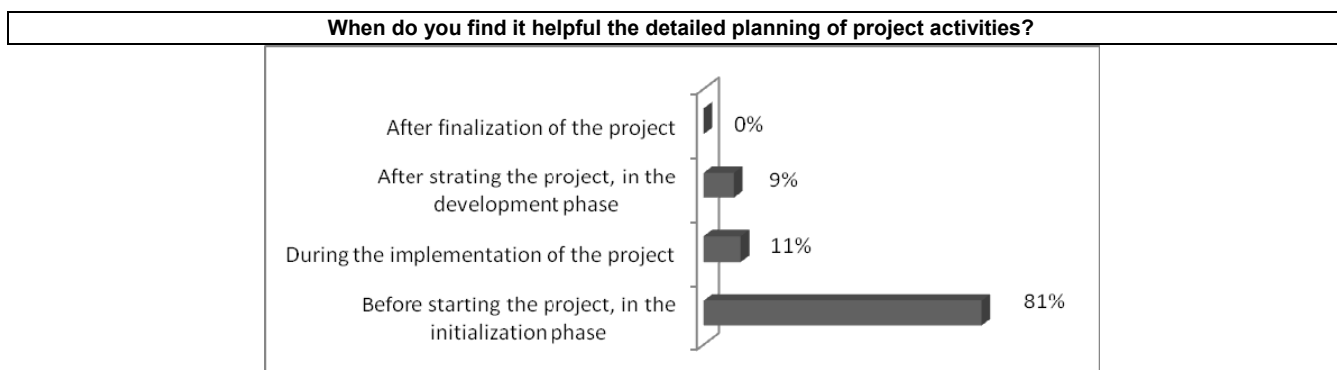


Fig. 6. The time needed for the project detailing activities from the perspective of employees

Source: authorial results

Among specific methods and techniques of project management, the frequently used by managers in Romanian organizations are as follows: provisional budget (45%), brainstorming technique (42%), cause-effect diagram (39%), SWOT analysis (25%), problem tree tech-

nique (23%) and Gantt chart (10%) (Fig. 8). This result indicated by employees interviewed proves that methods and techniques used in project management are known and used in Romanian organizations.

Choose from the following methods, techniques and tools used in planning, implementation and control of projects, those that are applied in your organization?

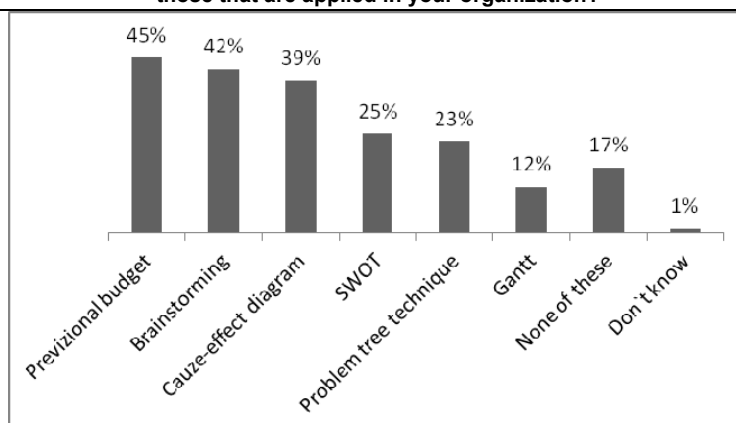


Fig. 7. Methods, techniques and tools used by managers to handle projects from the perspective of employees

Source: authorial results

Several reasons showed by employees that led to low or no use of specific methods of project management are: lack of long-term plans and strategies (43%), lack of interest expressed by employees (38%), lack of financial resources sufficient to encourage projects (33%), lack of

theoretical knowledge about project management (29%), lack of specialists on project management (25%) and lack of time for organizing projects because of few employees (19%) (Fig. 9).

Choose from the following list the main causes identified in your organization, causes that lead to low or no use of specific methods of project management in the process of change implementation:

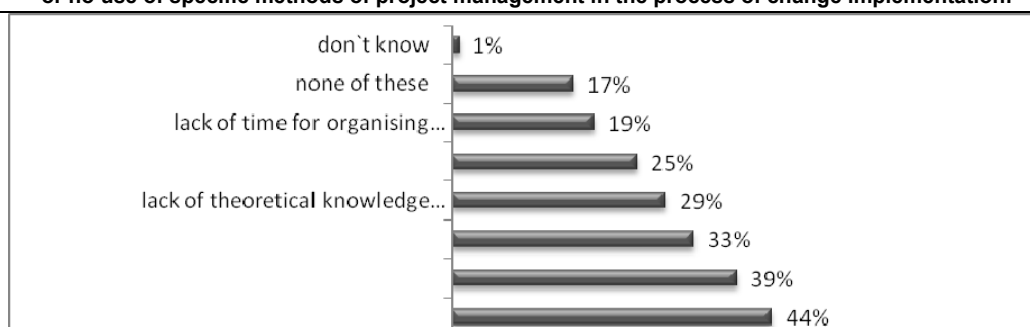


Fig. 8. The causes that led to low or no use of specific methods of project management in organizations from the perspective of employees

Source: authorial results

### Conclusion & Discussion

The purpose of the present article was to observe the use of projects in Romania and there were interviewed employees from Romanian organizations through an online research to notice their opinion about operationalization and implementation of change in organizations where they work in.

To this point we can note that the majority of interviewed employees from Romanian organizations showed that in organizations are developed between 2 and 5 projects per year and they said that they feel enough encouraged to involve in them. In organizations there is an important segment of employees that have been skilled and qualified for involving in projects and to manage them and 42% of questioned employees indicate that they were part of a project team as a project participant. In employee's opinion, the main cause that have determined projects in organizations are the necessity, then opportunity and after that, management of the organization through vision, plans and strategies used to generate change.

Although are known and used project management methods and techniques in Romanian organizations that main cause indicated by interviewed employees for low projects conducted are lack of long-term plans and strategies set by the management of the organizations. So, it is very important that managers understand not only their impor-

tance but their role also in organizations, to anticipate future actions in order to survive and have profitable organizations.

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### ВИКОРИСТАННЯ ПРОЕКТІВ ДЛЯ ГЕНЕРУВАННЯ ЗМІН В ОРГАНІЗАЦІЯХ

Ця стаття є частиною досліджень, що проводяться з метою доведення ролі лідерів у створенні зміни в організаціях і спостереженні за дотриманням методів і прийомів, знаючи, що проекти і їх управління є інструментами для реалізації зміни в організаціях. Лідери, завдяки своєму впливу, а не за допомогою сили, можуть стимулювати свою команду до розробки нових проектів, що розглянуті фахівцями і практиками, а також до реальних змін в організаціях.

Ключові слова: проект, зміна, лідер, вплив, співробітники.

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### ИСПОЛЬЗОВАНИЕ ПРОЕКТОВ В ГЕНЕРИРУЮЩАЯ ИЗМЕНЕНИИ В ОРГАНИЗАЦИЯХ

Эта статья является частью исследований, проводимых с целью доведения роли лидеров в создании изменений в организациях и наблюдении за соблюдением методов и приемов, зная, что проекты и их управления являются инструментами для реализации изменений в организациях. Лидеры, благодаря своему влиянию, а не с помощью силы, могут стимулировать свою команду к разработке новых проектов, рассмотренных специалистами и практиками, а также к реальным изменениям в организациях.

Ключевые слова: проект, изменение, лидер, влияние, сотрудников.

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### INNOVATIVE ERP APPLICATIONS IN THE PUBLIC SECTOR: A COMPARATIVE ANALYSIS OF NEW ZEALAND EXPERIENCE

**Annotation.** Contemporary economic science is looking for ways of research actualisation to resolve the challenges under the world financial crisis. Besides existing challenges in private de-regulated sector, one of the efficient innovations can be found in broadening ERP applications in the Public Sector. This paper approaches to the ERP applications mainly from the economical rather than from technical perspective. Comparative analysis of New Zealand public sector is supported by relevant international practical experience (implementations), and by core fundamental analysis of economical nature of business processes used by public entities. The key advantage (based on a historical timeline) comes from a full integration of financial scope and operational activities. Using the example of ERP (as one of the drivers of productivity & performance improvement), the paper is aiming to underline how to bring the best practice and technology (data management and logical architecture) from the private sector into the public sphere.

**Keywords:** ERP, Public Sector, optimisation, New Zealand, productivity, financial implementation, configuration.

**Introduction.** ERP BASICS. In 1990 (i.e. 25 years ago) the first commercial usage of ERP (enterprise resource planning) was recorded. ERP systems are now well developed and used in hundreds of integration applications. Despite the puzzling name, the ERP system could be applied to the entities of both the public and private sectors. With that perspective, the word "Enterprise" can be extended to the broader sense of "Entity".

The approaches to the data management and respective logical and physical architecture that are used in the private sector could equally be used in the public

environment (Fig. 1). The advantage of ERP over other data storage / data management systems is based on the fact that approaches for enterprise are:

- 1) Business driven (result-oriented, rather than process-oriented).
- 2) Have a solid background and a broader audience.
- 3) Were rapidly developed in order to fit changing business requirements.
- 4) Have an impact / reaction from specific customizations, add-ons and localizations.

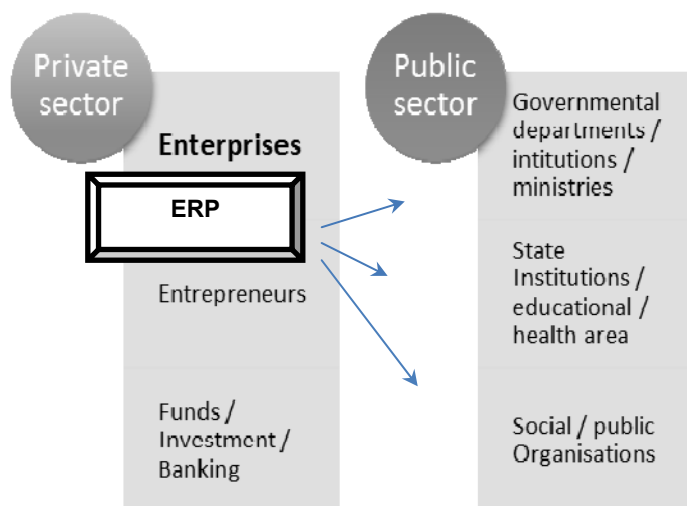


Fig. 1. Private vs. Public areas: ERP positioning

Source: own implementation research

With the existing cycles of world-wide financial crisis, it is becoming more important to focus on the public sector as it is less risky by nature, supported by national strategic initiatives and linked to its vital areas (health and education are gaining priority while commercial projects are in decline).

Since 2008, there is synergy between IT and Finance:

1) from IT: "though IT had become better aligned with the business, IT executives now had to make complex decisions based on rigorous analysis of return on investment..."

2) from finance: "today CFOs are required to develop and implement systems and processes for budgeting and performance metrics, tomorrow they'll also be required to provide the management team with real-time operational and financial data and analysis." [9]. ERP makes the operations and analysis more cost-effective and is, in itself, an anti-crisis measure. An academic approach to the dynamic ERP success modelling supports this in that there are: "...operational outcomes such as productivity improvements and improved decision making which, after all, are the reason for the investment in the new technology in the first place." [13]. For firms, productivity is a priority, while for the public sector, it is about improved decision-making and non-tangible benefits (process standardization and data visibility, enhanced regulatory compliance, institutional accountability, and reduced work load in different departments). [21].

There is a similarity in approach to the microeconomic tools and methods in the private sector which are applied on a macro-level in the public sector. The basic mathematical models and behavioural mechanisms are brought from individual practices to a group/community level. Business-process alignment and following the best practices becomes a crucial point in implementations. [24].

The top five contemporary ERP Systems [29], where solutions were designed for the private sector and later adapted to the objectives of government, are: Epicor (global presence, middle market and several strong industry solutions), Infor (American and German business philosophy, middle market leader, professional services automation, strong vertical industry solutions and manufacturing), Microsoft Dynamics (originally Danish business philosophy for Navision / NAV and Axapta products, range of potentially integrated software solutions, small business leaders, strong financials and costing modules), Oracle (American business philosophy, large scale market and strong CRM (Customer Relationship Management) with supply chain management solutions and deep functional flexibility), and SAP (German costing philosophy, large scale market leader with 22.4% market share in 2009 in business intelligence, analytics and performance management, 16.8% growth from 2009 in revenue; all-in-one enterprise solutions, deep accounting and distribution software suites along with tightly integrated financials, manufacturing, HR, payroll and CRM software systems). [18]. Today, the majority of the solutions are "on-premises" while the future market will be based on "cloud"-enabled (e.g. "Azure") vertical solutions (using software as a service).

As public sector entities are not demanding over-complicated technology, a middle range version can be chosen, provided the solution is compliant with the latest technological requirements that will be linked to other systems. Neither the range of model, nor the newest Application Platforms are crucial factors when choosing a system. However, a reliable solution based on vendor strength and large practice of implementations / broad customer base is still needed. Selection of the proper ERP also includes the availability of localisations (plus

customization capabilities) and convenience of support services (stable reseller channels – preferably local). Bureaucratic predispositions of the public sector in New Zealand are resulting in managerial bureaucracy and organisational superiority of administrative cost centres over income or profit centres. [1]. Therefore ERP and respective innovations are applied mainly to the cost-areas.

**Methodology.** SPECIFICS OF OPTIMISATION IN NEW ZEALAND PUBLIC SECTOR. Mathematical optimisation modelling (incl. dynamic optimisation) was mostly popular in 1980<sup>th</sup> – 90<sup>th</sup> mainly following the plan-driven economic indicators in both: socialist and post-industrial economic regimes. Now it became obvious that purification of optimisation modelling in management is insufficient. Real-life scenarios require adaptation mechanisms and flexibility in terms of resources planning, procurement and utilization.

Some of current research is still based on optimisation modelling in agriculture (please note that dairy industry is the key export line of New Zealand): "A nonlinear optimisation model of a NZ dairy farm, in which 10%-20% of feed is imported, is used to (1) access the implications of maximising Operating Profit. (2) evaluate the cost of maintaining a focus on producing high milk volumes, and (3) characterise general management practice that maximise Operating Profit". [6]. Analysis of production functions alongside the elements of costs at different rates of efficiency can be useful tool once the whole model is defined for multitude of input- and output prices, variable volumes and capacities.

New Zealand's traditional area of competition is in primarily structurally unattractive industries from the international return on investments point of view. This is where the profit potential is low (for resource based commodities, such as dairy, declining trend on export markets requires rapid business reaction, which is impossible in an inert government-administered style). There is a complexity in maintaining control over the economic environment (also under the vulnerability to exogenous shocks and natural disasters, specifically in agriculture). As indicated by G. Crocombe et al. already in 1991 (this period also coincides with the beginning of post-socialism era in Europe) "Improvements in production (measured in volume) that do not result in improvements in productivity (measured in value) do not increase national income, they merely keep it from falling". [7]. Non-optimal improvements restrain investments flow in those involved companies. Micro-economic level of planning and controlling becomes a main factor in the capital flow based on optimal enterprise resource planning and controlling applied to both: internal cost structure and elasticity to external / exogenous impact.

For New Zealand steady-state in production factors, where "agricultural productivity grew at the rate 1.4% from 1953 to 1985 and at the rate 1.8% from 1986 to 2001" [17], it is important to optimise the cost structure and attract innovations from both –international Research and Development (R&D) and domestic (where 80% of it is publicly funded). "Total R&D spending and business R&D spending in New Zealand are both below OECD averages, and by wide margins. Gross domestic expenditure on research and development (GERD) was 1.2% of GDP ... (2005), compared to an OECD average of 2.3%. New Zealand's GERD ratio has been at the low end of the ranking for some time and looks particularly deficient in relation to the United States (2.6%), as well as leading countries such as Sweden (3.7%), Finland (3.5%) and Japan (3.4%), or another small isolated country, Iceland

(2.8%)." [20]. R&D is not just an innovations in technical features of the product, it is also research in optimisation of technical processes and related cost efficiency. There could be several outcomes of supporting and subsidising innovative R&D (including enhancements in the ERP implementations) in enterprises. Ability to improve and support innovation process results in inevitable success in respect to the target of improving economic performance via economic and fiscal policy. [12].

Enterprise goals are defined by multiple factors incl. its core structure, fundamental split of ownership, internal and external motivation of Equity and Liability counterparties. Those goals also depend on the type and style of governance (subject to corporate governance regulations) and therefore are very specific for public sector. There are fewer incentive processes related to staff, while there are higher requirements regarding the social responsibilities, safety and transparency. It is acknowledged by New Zealand academic school that "New Zealand managers better trained for administration than creating new products, services and strategies". [8]. Therefore local firms traditionally follow cost-based strategies (instead of R&D, innovations) with minimal efforts at differentiation of products and services. Such differentiation would be based on optimisation models in terms of net profit function under budget and resource constraints. Analysis of the constraints correspondingly would require pro-active (instead of reactive) approach in enterprise resource planning, where ERP systems can be used not just to reflect financial and operational events in the past, but be leveraged in forecasting, cost/profit analysis and supply chain optimisation.

The main portions of core Crown expenses (in an example of 10 months ended 30 April 2015) is Social Security and Welfare (30% of total expenses), health (16%), education (15%), while Economic and industrial services account for 9%. [4].

The motivators for economic growth at micro-level are acknowledged by NZ own academic views: "New Zealand's small domestic market, high wages and distance from foreign markets shape the composition of New Zealand production. The small domestic market is ideal for small- and medium-sized enterprises without large-scale economies. New Zealand is designed for niches. ... Its firms must focus on scale or high value-added production processes and market niches in order to grow." [15]. The composition of cost elements suggests that high value-added processes require implementation of the innovative approaches and also optimisation modelling [based on cost structure optimisation and also on elasticity-driven analysis].

Ordinary theory of firm suggests company's primary aim to maximise shareholder's returns. Based on that it is normally trying to optimise its functions with mathematical precision and is reluctant to support non-monetary motivation. NZ visual innocence in business and industry organisation is maybe deceiving "... a company may behave in a socially responsible way by, for example, undertaking a public relations exercise such as sponsoring a 'Keep New Zealand Clean' activity.... The costs of these activities appear to be motivated by a desire to promote society's best interest, but are really incurred in the hope of generating benefits for the company that exceed those costs". [26]. Pretending to operate under environmental and social responsibility primary focus, such organisations are either:

Making an authentic effort to support altruistic activities [at the cost of end-payer, which is potentially aligned with approved budget-spending directions], or

Trying to hide the real inefficiency in managing resources and consumptions / running costs and lack of core business-motivational drive [hence potentially

deceiving shareholders incl. public, and sometimes puzzling themselves], or

Aiming to shift the marketing focus [introducing new campaigns as factors to bias certain demand functions – hence deceiving market segments].

In the situation a) – optimisation modelling should be targeting spending of the available budget across multiple product/services category with additional social / environmental constraints; in b) – real optimisation should be driven by public and targeting organisational structure and controlling of processes; in c) – optimisation should separate real functions and control over campaigns capitalised expense. Controlling functions can be also applied to the social sphere. [25].

In New Zealand the title position "Financial Controller" is very common in public and private sector, but overall controlling is more biased towards management accounting, taking more Accounting as reflection of events in the past instead of more Management as active support to the decision-making process. Therefore controlling with elements of optimisation modelling appears to be a rarity and it can be found at times in agriculture and other primary industries in the absence of decent manufacturing.

While the majority of medium- and large-scale enterprises use ERP software packages to support financial accounting and integrity with operational billing and inventory management, ERP behind the scenes also supports elements of optimal planning related to logistic and replenishment calculations based on lead-times and availability of raw materials required to fulfil the sales orders based on demand, as well as optimal cash-flow management based on available funds and projected liquidity gaps. Those represent linear basic modelling. In some cases enterprises use more complex calculation engines for cost calculation (such as labour costs allocation to the yield, or calculation of components for Bill-of-materials based on variable factors) which are integrated to ERP.

There are several approaches to calculate detailed figures in a budget: incremental (amending current period result by a factors / expected changes in volume, prices, efficiency, innovations, etc.), zero-based (with no initial assumptions) and targeted ("... calculate what performance is acceptable and stipulate the minimal income and the maximum cost allowable for each category. ... need to plan and commit specific cost reductions to remain within the allowed limits. The same applies in the upward direction for income targets"). [3]. These functions of Controller represent optimisation modelling. [22]. It can be used not just to define / suggest projections (in the rolling forecasts or budgets) based on models, but also to compare actual resource usage against optimal model (under specific scenarios). The following aims can be reached in each case:

For Projections – optimisation is mainly based on one sustainable model, but allows multiple variants (at the point of forecasting the future state is probable, but not defined). It effectively represents ability of controlling to impact the decisions;

For Comparison – optimisation is used as a proof (actual scenario is already known, but the deviation of the actual cost element from optimal to be calculated). It supports Control function.

New Zealand went through era of economic liberalisation since 1984 and then deregulation. "The combination of deregulation and trade liberalisation led to a wide-ranging restructuring of manufacturing sector. Firms and industries which had difficulty competing in the new environment were downsized or went out of business. ... the drive for increased efficiency in the non-market public

sector was accompanied by widespread job losses". [27]. Simple Control function (as mandatory directives, rules and regulations) from government is substituted by Controlling in the public sector which is applied to the purchase of services (from both: private microeconomic subjects and public organisations) and supply of services. Importance of controlling in the public area is recognised for all 3 elements: State-owned enterprises (e.g. New Zealand Post Limited, Trans power New Zealand Limited, etc.), Government Departments (e.g. Ministry of Justice, State Services Commission, etc.), Crown Entities (e.g. Earthquake Commission, Public Trust, etc.). Objectives are set by controlling to ensure sufficient revenue and expenses to meet the operating balance objectives. The selection of optimisation options in New Zealand is based not only on theory of free market behaviour, but also on subjective views. New Zealand cannot compete based on scale and therefore follows the exogenous shocks from international markets as one of the factors in its choice of optimal economic regulations or enterprise resource planning.

The structural shift from attempts to put a base technological industrial model into the economy based on primary industries (milk, meat) and tourism-related services happened in New Zealand in two waves – late 1960s and then mid-1970s. "This seems to have been the result of two things: the high visitor inflows that were associated with the Commonwealth games held in Christchurch, and an easing in the growth of goods' exports as the first oil shock began to affect international demand." [2]. As we can see, natural disasters – earthquakes in Christchurch

2011 and international negative shock on oil and milk in 2014 have further impact on construction industry and real estate, and on services share.

Future of the optimisation in managing Entities is relying on the success in methodological platform and tools rather than on the perspectives of idealistic optimization modelling. ERP is effectively a complex of tools with configurable parameters and suggestive mechanisms.

**Results. IMPLEMENTATION SPECIFICS FOR THE PUBLIC SECTOR.** The New Zealand experience is proving a successful adaptation of international implementation processes to an economy where public sector traditionally plays the leading role. The first steps in implementation would include goals and targets identification, ERP selection, project team and communication scheme selection (resourcing), risk assessment, implementation process planning (incl. configuration and development), design sessions etc. as each ERP has unique implementation principles, guidelines and approaches depending on a number of factors. Configuration activities include the user set-up (roles & permissions – i.e. defining the access to specific areas of the ERP), financial set-up (incl. Chart of Accounts, Dimensions and Posting Groups – i.e. defining General Ledger, GL) formation, and specific setup of Sub-Ledgers (Fig. 2). GL will serve as the assembly point for all aspects of information generated in the system (coming from different sub-ledgers [16]). The flow of information from the GL module to other modules is not significant (settings).

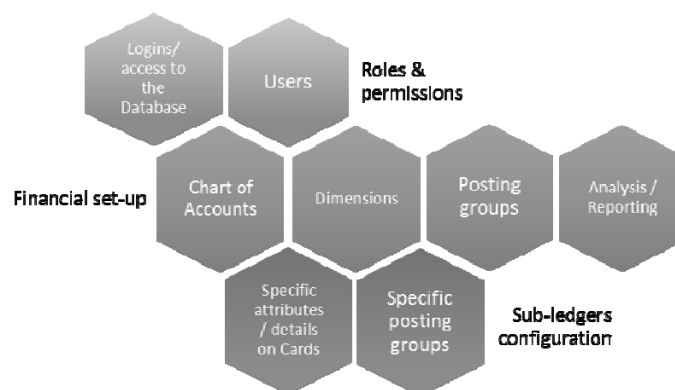


Fig. 2. Basic elements of ERP configuration for public sector

Source: own implementation research

The Users and Financial parts of the configuration are vitally needed for the System, even if some of the other sub-ledgers (such as Item Ledger [inventory handling] and Resource Ledger) are rarely used. Recently, the Job Ledger [job / task / project management] is starting to be used, though not always integrated with Sales, mainly with costs. Manufacturing and Warehousing are rarely used for organisations, as is Inventory planning and replenishment. Prior to the actual configuration activities there should be performed an assessment providing a baseline that any process can be measured against, and requirements gathering mapped to the target-operating model. There are specific techniques that help to identify configuration or business-process issues: 1) defect and incident management; 2) problem management (reactive or proactive); 3) change and configuration management; 4) testing; 5) audit [14].

Even if Responsibility Centres could be used by entities (as administrative centres, cost/profit centres), they are not linked to the multiple physical locations. Centre in this aspect will define the access to the documents handling for users. Organizations tend to have a centralized purchase/procurement & replenishment policy though not always automated. The integration with the primary – or secondary supply chain is out-of-scope. User roles and permissions are structured by the areas of application rather than by the stages of document handling. One line accountant is responsible for the expenses and FA posting, while another, for revenues and reconciliation of the Accounts Receivable, VAT/GST settlement etc. The whole financial team of a well-developed public entity is three to five persons (for small organisations it could be one or even an external super-user). The team is setting the rules / templates while detailed transactions can be handled by

operational departments, and the accounting team is focused on adjustments and reporting using the delegations.

ERP is perfect in terms of document processing as it allows transparent reflection of posted events in a real time. This happens simultaneously for all derivatives of the record across the system. No extra enquiries or data preparations are needed as they are immediately available either for reporting and analysis or for continuing the process flow.

Each transaction has a source code showing the specific process from which it was originated. Main source types are: Document, Journal and System processes. Source codes for organisations with a limited number of ERP granules, can be General Journal postings, Sales and Purchases (Documents), Purchase and Payment Journals, Entry Applications, Reversal Entries, VAT/GST settlements, FA GL Journals etc. Audit trails are supporting the navigation and transparency of data handling. When and by whom the transaction was created is handled by the Creation Date and User ID in the historical Registers (GL-, FA-, VAT Registers etc.).

Because of the limited analytics coming from sub-ledgers, the completeness of data for analysis is assured by using the extended Dimensional analytics (applied for both actual and budget data). Dimensions represent department, project, job code, cost-centre etc.

For the majority, possibly all GL accounts related to the Income Statement, it is mandatory to define the dimension value, relevant to the nature of the transaction, or the dimension value could be defaulted and limited to only one. In some cases it is reasonable to specify mandatory dimension codes for the entire table of entities (account types): GL accounts, Customers, Vendors etc. The matrix of GL Accounts and Dimensions means there are combinations analysed when one GL account total for the period could be split by figures showing different departments and, moreover, those sub-total figures could be split further by Projects. In theory this process could be extended to as many dimensions are technically available to the ERP system (for private sector it varies from 4 for Budget dimensions, to 8 actual dimensions, while for the public sector, it is 2 – 5, plus such dimensions as Time/Date and Location which are treated as extra attributes).

The public sector organizations rarely have one fixed budget for the whole year. There are sub-budgets and versions. The Sub-budgets represent budget by dimensions (expenses by departments, or for a specific project, expected revenues by a customer group etc.); i.e. a budget for the organization is consolidated from sections. Versions represent the Original Budget, Latest Estimate and Rolling Forecast; i.e. a budget is not static, but dynamic. The correct approach for ERP implementation assumes budgets across all the financial accounts, but in practice, only budgets for Expenses and, in some cases, for Revenue (funding) sections of the Income Statement, are used by the public sector organisations. Marginal analysis, profitability by product line and segmental analysis are out-of-scope. Revenues are linked to direct funding, or to projects financed from the State budget or from-external sources. Hence, Intercompany accounting and Group consolidations are simplified.

Standard ERP provides out-of-the box integration between different granules located in the system and integration of external tools (Office products, CRM, SharePoint, etc.). The under-utilisation of the system could compromise the basic objectives of leveraging information for competitive advantage. Organisations are trying to establish integration between external systems (for sub-ledgers) and limited core ERP components (GL level).

The end-of-month process for public organisations is less structured than is normally needed for the real sector of economy (with cost adjustments for inventory/reconciliations between received with expected costs and invoiced quantities). In the worst case, weakness in input controls and validation checks will not ensure completeness, reliability and integrity of data. Adjustments in this limited scope are used directly at GL level. The majority of entries are generated from the Invoices (not from Purchase- and Sales Orders and Quotes) and General Journals. If users are posting the transactions directly between two GL Accounts (skipping sub-ledger records), then the data is not transparent and navigation between logically linked granules is impossible.

The myth that ERP could resolve all problems itself has a negative impact on the data verification process for the public arena. In fact, there should be two stages of verifications: prior to posting (to make sure the document or journal line contains all needed attributes / requisites incl. dimensions, dates) and after the historical transactions are created. Examples of data integrity tests include: 1) Revenue accounts compared to the customer ledger entries (aged receivables), 2) Expense accounts compared to the vendor ledger entries (detailed trial balance), 3) VAT statement coming from VAT ledger entries compared by the calculation base to the totals based on sales to customers (purchases from vendors) etc. Business Intelligence could be limited by Accounts Schedules with associated Analysis Views (data cubes), which is taken from ERP, plus Reporting Services (to be used in queries from the report server). Analysis Services requiring the advanced technique of analytical cubes configuration are not broadly used. As the payment is just the final stage of the operation, the approval process is applied to the Invoice, not to payment.

Since the accounting department is mainly involved in setting the rules / accounts up and delegates the majority of posting routines to operational departments, the main efforts will be linked to the Configuration stage. Therefore, the Accounting process will pass three stages: 1) Configuration of the system (modules) – mainly outsourced to implementers, 2) Recording the transactions (this stage is mainly delegated to operations), 3) Analysis & reporting (might include consolidation). Access to the documents or the rights to read, insert and modify the specific type of document is defined for a Group of users.

**Conclusion & Discussion.** IMPLEMENTATION SUCCESS. ERP implementations for Public Sector depend on the state budget limitations and therefore usually take into consideration cost-analysis instead of the investment-based view. ERP Cost factors consist of: vendor- or supplier-related (ERP system itself as 3-tier configuration, License, Localisations / Customisations, Implementation incl. functional modules, integration, data migration, vendor project management, annual maintenance and support), hardware (server platforms, work stations, storage), software (operational systems, application server, etc.), equipment (incl. upgrading), business process re-engineering (planning, executing), change management, internal project management, HR costs (hiring, training, business engagement), quality assurance and external consulting. [10]. Controlling can provide the required support for each phase of implementations (incl. cost-analysis and optimisation of planning for the solution delivery) [23].

Based on the organisational structure and stable routine used by public sector entities, the implementation is a long process. The most complicated stages here are Analysis (Gap/Fit analysis, requirements) and Deployment (User Acceptance Testing and Training). The main issue is



the organisational readiness of a public entity to implement the new technology. As many international researches after 2003 confirm, "The success of ERP system implementation draws more on human and business issue than technical issue. Also, the communication among managers, end-users, ERP vendors and project team members becomes more important than before." [11]. It is a difficult task because ERP is trying to change the existing usual workflow and make a natural integration of disintegrated functions. Changes in processes are provoking a defensive position in end-users.

The main issues in the implementation aspect for public organisations are: 1) Motivation of end-users (they may not be profit or result oriented), 2) Redundancy of data input (many initially unsynchronised information flows), 3) Rather complicated approval/confirmation process, 4) Asymmetries in terms of requirements to the system and processed data, 5) Prevailing social interests over business needs, 6) Limited time dedicated by key-users to the project, 7) Limited availability of internal IT specialists so external IT support required, 8) Long period of implementation etc.

However, certain aspects of ERP implementation are easier in the public arena than in private enterprises: 1) Stability of decisions (once taken, decisions are not changed on a frequent basis); 2) Unbiased view of testing results (key-users are not depending on the results, but showing the transparent process), 3) Simplified security (access, roles, permissions), 4) Flexible deadlines, 5) High knowledge retention within organisation (low staff turnover rate), 6) Good standards of documentation and keeping of historical records.

Despite the insufficient and asymmetric information, and differences in methodology [19] and statistical deviations (spread of data is increasing in time), we can observe positive signals from the public environment (when Project Management Office is in place) insuring that ERP implementations are following a predictable path/route (form a stable trend in a historical perspective (Fig. 3)). The Public sector has been actively using ERP solutions focus for only the last 5 – 8 years.

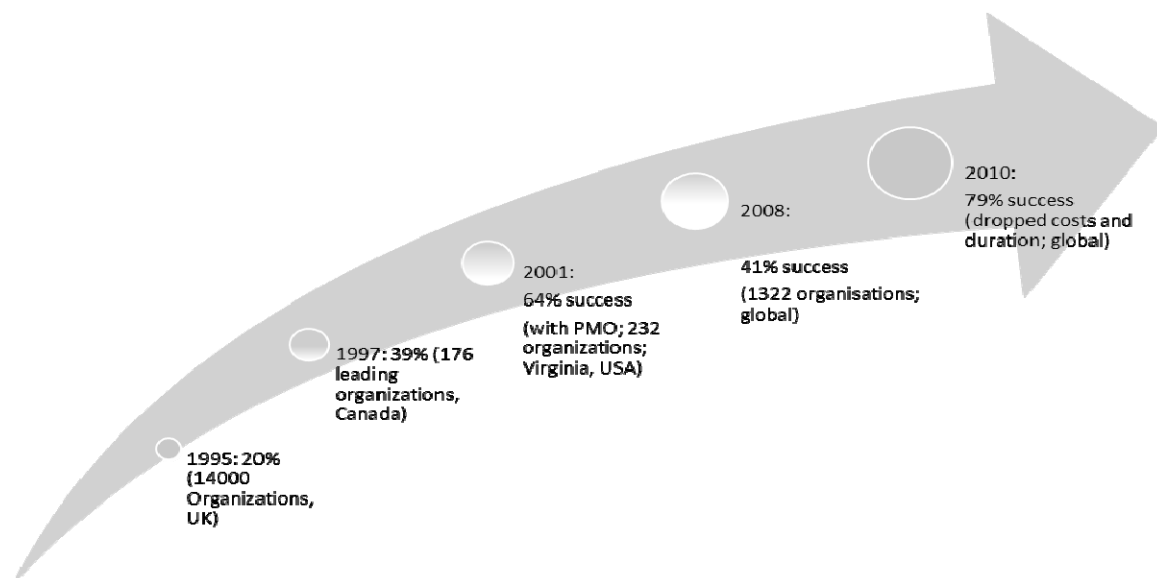


Fig. 3. Timeline of successful ERP implementations (selected surveys)

Source: 5, 19, 28, 30

The statistics shown above are based on a small pool of organizations with the main factors of time and budget. The Positive figure of 2001 is conditional [28], as well as for 2008 [5] (on costs basis) and 2010 data [30] (more than 30% anticipated business benefits). The future of ERP implementations should look even better in the Public Sector based on three major factors: 1) Current achievements in integration sphere allow seamless flow between multiple environments and solution components (therefore the limitation based on dependency on a single solution across multiple functional areas is not a constraint anymore), 2) Attempts to standardise the implementation approaches, templates, methods and technique (led by Microsoft "Sure Steps Methodology" in 2006, but actively used since 2010; Accelerated SAP implementation methodology by SAP), 3) Shift in expectations management: organizations became more realistic in their expectations and detailed in the business- and functional requirements (projects are structured by phases and supported by Project Management Office and transparent processes in public-sector organisations). The key factors of success for ERP implementations in the governmental

institutions is the reliability and convenience of the application (it should be easy to run and transparent to find specific data-sets), usability (intuitive search and navigation, visually supportive in terms of graphs and diagrams), simplicity of cross-functional integration with other systems and reliability of the solutions (trust to the implementation partner, customizations expertise, available onsite support, warranty period and user guides / manuals). These factors prevail over performance for data search, reports processing and posting.

On the one hand, the public sector of economy is more stable and sustainable in terms of operational process-flow and methodology of analysis despite the quick change of business conditions (economic cycles incl. recession stages). On the other hand, a requirement to be transparent and accountable is essential for organisations and governmental institutions. For the majority of public entities, General Ledger, sub-ledgers for Customer Ledger Entries and Vendor Ledger Entries are the main ledgers which are used. ERP system should be used as a basic platform to organise a simple workflow and record key financial information along with supplementary informational flows.

New Zealand represents a unique economic environment where the impact of the public sector is significant, but the economy is continuing its growth under the strengthening impact of globalization (this globalization has the private sector historically as its main focus). Using the example of ERP (as one of the key drivers of productivity & performance improvement in the contemporary world), it is crucial to bring the best practice and technology from the private sector into the public arena.

Conducted analysis lets us come to the following conclusions:

Economic approaches which can impact on the crisis resolution processes exist in a public sector economy under the conditions of operational and financial control improvements;

ERP applications should be looked at from the international perspective of collaboration in both Private and Public Sectors, as the combined experience in post-industrial economy brings a new wave of Innovations.

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### ІННОВАЦІЙНІ ERP ЗАСТОСУВАННЯ В ПУБЛІЧНОМУ СЕКТОРІ: ПОРІВНЯЛЬНИЙ АНАЛІЗ НОВОЗЕЛАНДСЬКОГО ДОСВІДУ

*Сучасна економічна наука шукає шляхи актуалізації розробок для подолання викликів за умов світової фінансової кризи. Попри існуючі проблеми в приватному де-регульованому секторі, одна з ефективних інновацій може бути знайдена в поширенні ERP застосувань на публічний сектор. Ця стаття підходить до ERP застосувань переважно з економічної ніж з технічної перспективи. Порівняльний аналіз Новозеландського публічного сектору підтримується відповідним міжнародним практичним досвідом (впровадженнями), та основним фундаментальним аналізом економічної сутності бізнес-процесів, що застосовуються публічними суб'єктами. Ключова перевага (в історичному ракурсі) приходить від повної інтеграції фінансової сфери застосувань з операційною діяльністю. Застосовуючи приклад ERP (як одного з рушіїв покращення продуктивності та ефективності), ця стаття спрямована підкреслити як довести кращу практику і технології (управління даними та логічної архітектури) з приватного сектору до публічної сфери.*

**Ключові слова:** ERP, публічний сектор, Нова Зеландія, продуктивність, фінансові впровадження, конфігурація.

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### ИННОВАЦИОННЫЕ ERP ПРИЛОЖЕНИЯ В ПУБЛИЧНОМ СЕКТОРЕ: СРАВНИТЕЛЬНЫЙ АНАЛИЗ НОВОЗЕЛАНДСКОГО ОПЫТА

*Современная экономическая наука ищет пути актуализации исследований для преодоления вызовов в условиях мирового финансового кризиса. Во время существующих проблем в частном де-регулированном секторе, одна из эффективных инноваций может быть найдена в расширении ERP приложений на публичный сектор. Эта статья подходит к ERP приложениям более с экономической чем с технической перспективы. Сравнительный анализ Новозеландского публичного сектора поддерживается соответствующим международным практическим опытом (внедрениями), и основным фундаментальным анализом экономической сути бизнес-процессов, применяемых публичными субъектами. Ключевое преимущество (в историческом ракурсе) приходит от полной интеграции финансовой сферы применений с операционной деятельностью. Используя пример ERP (как одного из двигателей улучшения производительности и эффективности), эта статья направлена подчеркнуть как привнесем лучшую практику и технологии (управления данными и логической архитектуры) из частного сектора в публичную сферу.*

**Ключевые слова:** ERP, публичный сектор, Новая Зеландия, продуктивность, финансовые внедрения, конфигурация.

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## ECOLOGICAL ECONOMICS VS ECONOMIC(AL) ECOLOGY

*Currently world faces the dilemma – ecological economy or economic(al) ecology. The researchers produce hundreds of surveys on the topic. However the analyses of recent most cited simulations had shown the diversity of results. Thus, for some states the Kuznets environmental curve has place, for others – no. Same could be said about different years for the same state. It provokes the necessity of drawing new group analyses to reveal the tendencies and relationships between economic and environmental factors. Most flexible and mirror factor of environmental sustainability is the volume of CO<sub>2</sub> emissions. The econometric analysis was used for detecting the economic impact on this indicator at the global level and in the spectra of group of states depending on their income. The hypothesis of the existence of environmental Kuznets curve for the analysed data is rejected. Real GDP per capita impact on carbon dioxide emissions is considered only at the global level. The impact of openness of the economy is weak. Rejection happened also to the hypothesis that for the developed countries there is a reverse dependence between the environmental pollution and economic openness. Indicator "energy consumption per capita" impacts on greenhouse gas emissions only in countries with high income. Whereby it should be noted that the more developed a country is, the more elastic is this influence. These results have a potential usage for environmental policy regulation and climate strategy.*

**Key words.** Ecological economy, econometric modeling, environment, income, CO<sub>2</sub> emission.

**Introduction.** The ecologization of the economy and social consciousness is not entirely new problem. Practical realization of the ecological economics is closely associated primarily with state regulation of natural resources. New to this issue is the equivalent exchange between the state, the nature and humanity based on legal, organizational and technical solutions. This problem has been generated over two centuries and has assumed its critical importance, as there is an objective need for government intervention in the natural and environmental protection in order to achieve a balanced state.

Appearance in the scientific world the concept of "greening the economy" / "ecologization of the economy" has led to a substantial restructuring of existing notions about the nature conservation. Peak of these transition changes came in the second half of the XX century, when radically new ideas about emerging environmental hazards have developed. According to the ideas, the essence of the economic aspect of the Nature conservation has undergone changes. The concept of the greening of all aspects of human life has appeared.

Greening the economy caused by technological progress and its results, accompanied by the movement of the center of economic analysis of costs and outcomes in intermediate outcomes of economic activity and further projected trends. The main object of the strategy implementation for the greening economy and the main structural units of the economy should be the eco-economic system.

The main components of the ecologization of the economy (Fig. 1) can be seen in:

- the inclusion of environmental conditions, factors and objects, including resources usage among economic categories as equal with other categories of wealth assessment;
- formation of international and domestic environmental values and environmental factors;
- transition to a new pricing system that takes into account environmental factors, losses and risks;
- substantial expansion and refinement of payment for the nature usage;
- submission to the economy of natural resources and economic production of environmental constraints and the principle of sustainable environmental management;

- shifting the production to quality growth strategy based on technological upgrading at the ecological and economic control;
- rejection of costly approach to the environment that includes environmental features directly into the economy of production;
- rejection of the dictates of supply and artificial stimulation of optional secondary needs;
- reducing of the excessive range of products with increasing environmental quality control;
- the change and the ecological – economic orientation of the needs structure and welfare standards.

Analyzing the nature and the meaning of the term "greening/ecologization of the economy" [1], one can come to the following conclusions:

1) the term "greening/ecologization" is a result of the conversion of the term "ecology". It is a single-rooted, but is used in different senses. As it is well known, the term "ecology" in science was coined by the German naturalist Ernest Haeckel in 1866. Since then, for a long time arguing about the environment – until the second half of XX century – there were talking about greening.

2) the modern term "greening/ecologization" demonstrates a significant turnaround in the outlook of human and mankind in general. If earlier, before the term, the world is knowable in the materialization, geographization, biological function, then the offensive ecological crisis appeared because of intense human impact on the nature and the impending inability to regenerate the biosphere. Thus, there grown up a need to develop a new approach, called "ecological approach".

3) the actual category of "greening/ecologization" arose due to the fact that the notion of the nature and its protection could no longer contribute to the protection needs of the entire biosphere (Fig. 2).

4) from the perspective of representatives of environmental science, greening of the economy, in principle, can be subjected to all human society: science, consciousness, and thinking. But in any way to the use of the category of "greening/ecologization", its essence is in the implementation of ecological approach to people's lives to conducive the formation of a new worldview, according to which a human (and humanity in general) must weight its activities to how its actions are harmonized with the laws of nature.

Consequently, the essence of ecologization of the economy is that humanity must understand that the age of mechanization of the nature should be replaced by the century of the greening of human activity [11]. Otherwise,

the human beings, as a species will not survive. Greening acquires the status of economic decision-making factor (example – environmental certification of products).

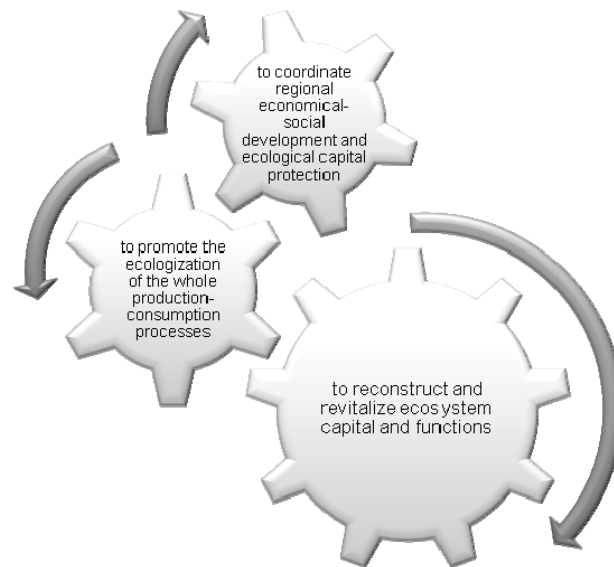


Fig. 1. Mechanisms of the ecological economization

Source: authors' compilation

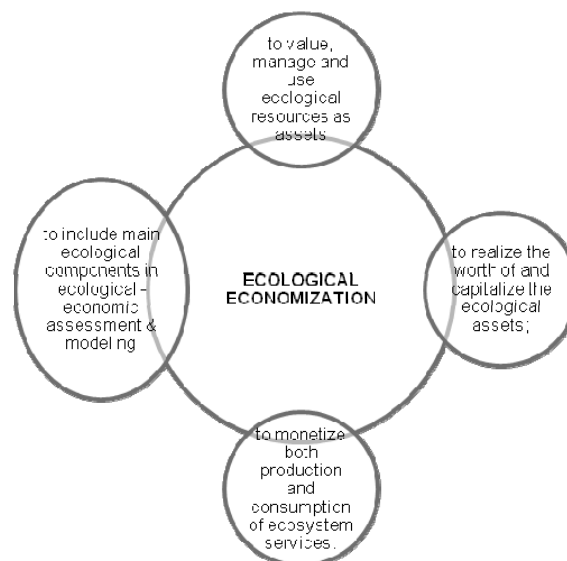


Fig. 2. The key components of ecological economization

Source: authors' compilation

### Methodology.

#### ECOLOGICAL ECONOMICS.

Current production and consumption systems are usually accompanying ecosystem losses. Facing increasingly acute contradictions between economic development and the degrading environment and

exhausted resources, most countries and regions are trying to explore new development ways.

Sustainable development provides mandatory coordination of economic, environmental and human development so that from generation to generation quality of life and the environment will not be deteriorating.

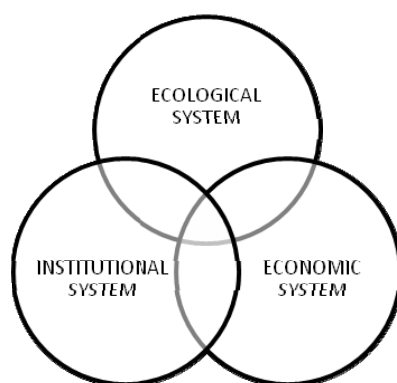


Fig. 3. The logic scheme of ecological economics

Source: authors' compilation

The complication of economic relations manifested in bringing environmental factors in economic management necessitates the identification of regulators and regulatory mechanisms to ensure the effective dynamics of a transforming economy in the face of environmental degradation and the increasing of the wear out production

impact on the nation's health and ability to work. Objectivity and continuity of interaction of the economic system and the environment, lack of substitute benefits for the natural environment requires the ordering of the parameters of the interaction between participants. That is understood as the institutionalization.

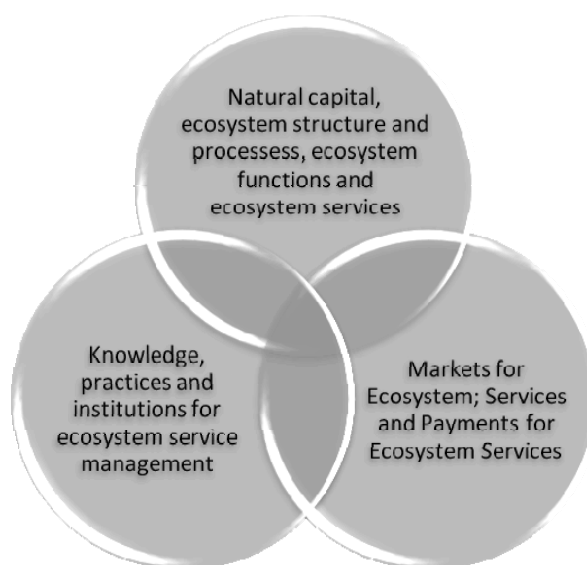


Fig. 4. The logic scheme of institutionalization of ecological economics

Source: authors' compilation

The development of a society is accompanied by increased anthropogenic pressure on the environment and the increasing of the priority of environmental factors. In this way, the environment implements backbone function in economic relations, because, on the one hand, contains non-interchangeable primary production resources, on the other – restricts its development. Sustainable economic development of the area (local, regional, global levels) is the strategy of managed, maintained, controlled development without destroying the natural environment, providing continuous social progress.

It always has been that the economy faced the economic interests of various social groups. Today face to face are environmental interests, mostly that of different countries. Reflecting an economic concept

appeared in the 90s of the XX century in the framework of reforming economy [2].

Modern critical ecological and economic realities indicate the need to change the existing type of technological development on a sustainable environmentally balanced type. Creation of a brand new eco-economic projects and programs in various sectors of the economy needs to develop the concept of greening economic development. This requires a significant change in priorities and objectives for the whole economy and its sectors and systems, a revision of the areas of structural and investment policy, scientific and technological progress, market regulators for such changes.

To face and support the ecologization the economic theory has radically to change the number of positions:

1

• To deploy the domestic economic theory to the problems of production, or rather - reproduction, but to its original sense, as a process of interaction with the environment - to "Nature usage". Economic theory can be turned to its most important subject - the production of surplus product, but taking into account the ecological limits of productive labor.

2

• Currently in determining the prices, socio-environmental impacts of biogeocenosis degradation are not taken into account (ecocide of small nations, ecological migration, the growth of antisocial behavior among immigrants, their psychological unease, nepolnotsennorozhdennyh growth, etc.)  
• The ecologization powers of ownership of natural resources should be considered as the most important economic institution regulation of this interface.

3

• Greening of the economic theory would require to accept the priority of "the common good" over the individual profit in all spheres.

4

• Greening of the economic theory suggests harmonization of relations not only among members of society (classes, business entities), but also between sectors, sub-sectors and regions. In economic theory, this will require a greater emphasis on macroeconomic issues.  
• This allows to establish a hierarchy in the sectoral structure of production, ensuring consistency of more deep processing of raw materials.

5

• Task of the economic theory - back to the state environmental regulatory functions, ecologizing its functions.

6

• Greening of the economic theory suggests harmonization nature of relations, not only domestically, but also between individual states.

To ensure a real assessment of environmental and economic phenomena and processes it is necessary to include an environmental factor in the system of basic socio-economic development indicators at the all state levels. The environmental factor must not only be taken into account, but also to comply with the equality of all factors: environmental, economic and social. It is necessary to establish the accounting and evaluation of the use of natural resources as an ecological factor, from the very beginning of the planning process of economic and business decisions, and not just as a complement to the analysis of the development of macroeconomic policies. Introduction of new advanced technologies and conservation measures into practice management areas depends precisely on the greening of economic management tools.

Unfortunately, nowhere in the world there is no adequate valuation of natural resources and the ecological and economic damage. Of course, one can estimate the value used for the year based on natural resources, such as market prices. However, the general case is under pricing of used natural resources, reduction of their prices. Thus, at the macro level the environmental capacity indicator turns deliberately understated.

#### ECONOMIC ECOLOGY vs ECONOMICAL ECOLOGY.

Economics cannot remain indifferent to the aggravation of environmental problems. Resulting there are new categories of theoretical and methodological nature, which include "economic ecology". Earlier scholars have noted "philosophization" of sciences; today it is possible to ascertain its ecologization.

To solve environmental problems in the economy it is necessary to use a macroeconomic approach focusing on outcomes. The traditional "narrow" environmental economics usually only considers natural resources and

produce more waste and pollution, not paying enough attention to the economy itself ("black box"). To implement macroeconomic approach it is advisable for each construction of a natural resource or group of resources of its natural-product vertical (chain) connecting the primary natural factors of production to final product. In connection with this approach substitutability and complementarities of production factors should be carefully analyzed (or different types of capital) in the economy from the standpoint of the final results, the possibility of saving natural resources while maintaining and increasing the final output. There is a wide range of possibilities of replacing natural capital with an artificial, but there is a critical natural capital stock to be stored for any economic development options.

An important indicator of the effectiveness of environmental management as a whole is the indicator of environmental capacity, defined as the ratio of volumes of natural resources used and the amount of pollution and final products.

There are two types (levels) indicators of the environmental capacity:

- the macro level, the level of the whole economy;
- grocery sector level.

The inverse of the coefficient is a measure of the natural environmental capacity impact of resources. Metrics of the environmental capacity in the dynamics may be one of the main criteria for the transition to sustainable development type. Reduction of these indicators at the macro level will be an important indication of the transition from man-made type to sustainable economic development type.

The economic environment/ecology is a relatively new discipline, approach. The subject of which is the study of the relationships and interdependencies between production and nonproduction spheres of activity and the

state of the natural environment, the quality and quantity of natural resources. The main task of economic ecology – justification on the basis of known economic and biological laws of the optimal interaction between society and nature, the development of forms and methods of management, conservation and restoration of natural resources and natural conditions of living environment.

There are two levels of economic ecology:

- general theoretical
- applied (environmental economics).

Economic ecology develops economic mechanisms of environmental management: the valuation of resources (water, wood, oil) and fines for their pollution.

Economic environment – part of a social ecology that develops methods of regulating the relationship between human and nature-based economic mechanisms that reduce pollution, resource conservation, energy conservation, protection of biodiversity and overcome consumer approach. As a result of the economic principles of ecology, non-ecological usage of the nature becomes uneconomical.

#### ECOLOGICAL – ECONOMIC MODELING

Both ecologists and economists use models to develop strategies for biodiversity management. However, the practical use of single discipline models can be limited because ecological models tend to ignore the socioeconomic dimension of biodiversity management, and economic models – the ecological dimension. Problems of preservation of the environment are mainly the topic for investigation for physicists, chemists, and biologists. But as one of the main parts of state safety and as a component of a nation's level of development, a country's environmental strategy should be developed also from the position of economic theory [7,8].

Given these shortcomings, there is a necessity to integrate ecological and economic knowledge in ecological-economic models. Modelling of economic effects on the ecology is divided on 2 stages:

- creating of dynamic and optimization models;
- creating of multifactor cross-section regression models.

As to dynamic and optimization models, there are 2 main directions in building of ecological – economic models:

- with account of ecological factor in economic-mathematical models;
- with account of anthropogenic impact in models of ecosystems.

Models of the first type have a traditional structure of economic-mathematical models; include additional variables and connections that characterize ecological subsystem.

At the basis of second type models is a model of mathematical ecology, and anthropogenic activity is considered as exogenous impact on ecosystem.

The classic representatives of both types of ecological – economic models are Leontiev-Ford Model and Monorussalimskiy Model, correspondently.

The character of ecological-economical models is controllability – the presence of vacant exogenic variables, that one can define some self. As usual, combinations of values of defined variables are combined in scenarios of regulations of ecological – economic systems.

The issue of ecological and economic interactions and study it by the economic-mathematical methods became especially important after the signing of the Kyoto Protocol (1997). The most well-known is the model that was developed in 2003 by scientists Ch. Bartz and D. Kelly [1].

This model includes the factor of labour and technological change factor, which reduces pollution.

The next stage of mathematical ecological-economic models that are directed to ensure environmental safety is the analysis of micro-level of countries, i.e. industries and their separate effects on the environment. In 2004, A. Levinson [10] and M. Taylor proposed a new model of ecological and economic interactions based on the fact that each sector includes some industries, consumers spend a constant part of the income on goods of every sector of the economy, and these costs are distributed evenly to all industry sector of the economy. The production of each economic sector uses two factors: labour and specific to the industry factor. Production leads to the pollution, but firms have access to technologies that can be used to reduce harmful emissions. Manufacturers may use a portion of its resources to reduce pollution. The main practical value of this model is that it allows ranking industries within each sector according to the degree of contamination.

The process of overcoming scientific and technical backwardness and unsustainable usage of natural resources requires the development of new methods and models of ecological-economic interaction, like Hryhorkiv V. [5] approach. He proposed the optimization model of diversified production structure in an environmentally sustainable economy, which is based on a dynamic model of inter-sectoral ecological-economic balance (a dynamic model of Leontiev-Ford [9]). The eco-economic system operates both as a producer and as a cleaner of the environment, and the dynamics of the system is actually limited only by economic resources. Thus, in mathematical form it was described the optimization model of the industrial structure of an ecological-economic system based on both economic and environmental constraints.

Further the optimization model was developed and supplemented by Skraschukom L. The scientist suggested that the objective function is independent of the discounting factor.

Such formulation of the problem is quite complex and cannot always be solved by exact methods, but provides single approach to building trajectories of ecological and economic dynamics. It should be noted that the complexity of this task is significantly affected by the dimension of the vector of primary production and the final products, destroyed and uncompensated pollutants, as well as technological matrix outputs, costs and capital intensity ratios of main and auxiliary industries. The dimension of the real problems depends on the level of aggregation and the adequacy of the problems reflected in reality. So it can vary from a few to hundreds of specific core and ancillary industries. This dimension should be consistent with the capabilities of modern mathematics, computer and information tools.

Thus, the mathematical modelling of ecological and economic production function as a model of dependence of the result of the manufacturing process on economic and environmental factors that contribute to it, based on the optimization approach theory, provides an ability to receive a maximum output production functions [6]. These economic and mathematical models demonstrate the importance of ensuring environmental safety for the sustainability of economic growth.

#### ECONOMETRIC MODELS: THE IMPACT OF SOCIO-ECONOMIC FACTORS ON THE ENVIRONMENT

Econometric techniques are widely used to study the relationship between the economic development and the environment. The latter can give quantitative answers to basic questions of researchers, such as the existence of the relationship, nature of such interdependence and what scale of impact each factor has on another. Conclusions of the econometric analysis could help

public and private bodies to adopt the correct policies to protect the environment.

R. Omay [12] in his research studied the relationship between the economic growth and environmental pollution. Emissions CO<sub>2</sub> per capita were used as an indicator of air pollution. GDP per capita was used as an indicator of economic growth. The aim of the study was to test the hypothesis of the existence of environmental Kuznets

curve: that evidences the increase in the level of pollution firstly with the increase of income, but reaching a certain level begins to decrease. The case of Turkey in the period from 1980 to 2007 was under the analysis. To investigate the effect of income on air pollution the author used cubic polynomial regression (1) resulted as Fig. 5 demonstrates:

$$CO_{2t} = a_0 + a_1GDP_t + a_2GDP_t^2 + a_3GDP_t^3 + \varepsilon_t, \quad (1)$$

Coefficients	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	-728.8645	349.0423	-2.088	0.0476	*
gdp	259.9108	127.6549	2.036	0.0529	.
gdp <sup>2</sup>	-30.8813	15.5562	-1.958	0.0587	.
gdp <sup>3</sup>	1.2221	0.6313	1.935	0.0649	.
Adjusted R-squared: 0.6906					
F-statistic: 21.09 on 3 and 24 DF, p-value: 6.513e-07					
D-W Statistic: 1.952181 p-value: 0.428					
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1					

Fig. 5. Modelling results

Source: [12]

The results (Fig. 5) indicated that the relationship between income and air quality can be described by the N-form (according to the signs of the coefficients), which rejects the existence of Kuznets curve in Turkey for the analysed period.

Next broadly cited work is the research of S. Hossain [4] who examines the causal link between CO<sub>2</sub> emissions, energy consumption, economic growth, foreign trade and urbanization in Japan for the period 1960-2009. He proved that energy and openness of the economy can affect carbon dioxide emissions. The survey results also proved the existence of a long-term relationship between the variables in the form of the following equation:

$$\ln CO_{2t} = a_0 + a_1 \ln EN_t + a_2 PGDP_t + a_3 \ln OPEN_t + a_4 \ln UR_t + \varepsilon_t, \quad (2)$$

where CO<sub>2</sub> – carbon dioxide emissions per capita, EN – energy consumption per capita, PGDP – real GDP per capita, OPEN – the level of openness of the economy (sum of exports and imports divided by GDP), %, UR – urbanization level, %.

The study revealed that the energy consumption growth per capita by 10% would increase carbon dioxide emissions by 9.7% in the long term. Accepting the fact that Japan is a developed country, the openness of the economy is inversely proportional to the environmental pollution: thus, increasing of economic openness by 100% causes the reduction of the greenhouse gas emissions by 13.6%. GDP per capita and the level of urbanization on the simulation results appeared to be insignificant. The simulation revealed that over the time the consumption of

energy could lead to an increase in carbon dioxide emissions resulting more polluted environment in Japan.

The author of other world-wide highly cited research – F. Halicioglu [3] studied the dynamic causal relationship between carbon dioxide emissions, energy consumption, income and foreign trade on the case of Turkey during 1960 to 2005. The results shown that there was a long-term relationship between the variables: carbon dioxide emissions are determined by energy consumption, income and foreign trade:

$$c_t = a_0 + a_1 e_t + a_2 y_t + a_3 y_t^2 + a_4 f_t + \varepsilon_t, \quad (3)$$

where c<sub>t</sub> – carbon dioxide emissions per capita, e<sub>t</sub> – energy usage per capita, y<sub>t</sub> – real per capita income, f<sub>t</sub> – a proxy variable for economic openness (the sum of exports and imports divided by GDP). All variables in the model were considered in natural logarithms.

Expected simulation results were as follows:

1) coefficient a<sub>1</sub>>0, because the growth of energy consumption leads to stimulating the economic activity and CO<sub>2</sub> emissions;

2) according to the environmental Kuznets curve: a<sub>2</sub>>0, a<sub>3</sub><0;

3) the sign a<sub>4</sub> depends on economic development. In the case of developed countries, the sign is expected to be negative because the country produces more environmentally friendly products. In the case of developing countries, it is expected that the coefficient is greater than zero, because production is more environmentally polluting with a large share of hazardous emissions (Fig. 6).

Regressors	Model Selection Criterion			
	$\bar{R}^2$	AIC	SBC	HQC
	ARDL	ARDL	ARDL	ARDL
	(1,1,0,0,0)	(1,1,0,0,0)	(0,0,0,0,0)	(1,1,0,0,0)
e	0.78 (3.07)*	0.78 (3.07)*	0.76 (3.97)*	0.78 (3.07)*
y	12.31 (5.83)*	12.31 (5.83)*	12.73 (8.04)*	12.31 (5.83)*
y <sup>2</sup>	-0.83 (6.04)*	-0.83 (6.04)*	-0.83 (8.30)	-0.83 (6.04)*
f	0.07 (1.97)*	0.07 (1.97)*	0.07 (2.56)	0.07 (1.97)*
Constant	-49.98 (7.31)*	-49.98 (7.31)*	-51.47 (10.06)*	-49.98 (7.31)*

Fig. 6. Modelling results

Source: [3]



Empirical research (Fig. 6) confirmed the assumption about signs of coefficients. The increase in energy consumption per capita by 10% would increase carbon dioxide emissions by 7.8%. Statistical significance of  $a_3$  factor and its negative sign confirmed the hypothesis of the existence of Kuznets curve for the case. The openness of the Turkish economy had little effect on the environment pollution: increased openness of the economy by 10% would increase the carbon dioxide emissions by only 0.7%. Thus, the results shown that the income is the most important variable in explaining the emissions in Turkey, followed by – energy consumption and foreign trade

Meanwhile other researchers [13] tried to explain pollution not only by economic development but also through financing, including a group of independent variables to economic, financial and energy indicators. The model was as follows:

$$CO_{2t} = a_0 + a_1GDP_t + a_2IS_t + a_3R \& D + a_4SMVA_t + a_5FDI_t + a_6DBA_t + a_7CAC_t + a_8FL_t + a_9FO_t + a_{10}EI_t + a_{11}OC_t + a_{12}EC_t + \varepsilon_t, \quad (4)$$

where  $CO_2$  – carbon dioxide emissions per capita, GDP – growth rate of real GDP per capita, IS – the share of industry in GDP, R&D – costs for research and development, % of GDP, SMVA – the total number of shares traded on the stock exchange, FDI – foreign direct investments in a country, DBA – the share of deposits of GDP, FL – a proxy variable of financial liberalization, FO – state financial openness, EI – imports of energy, OC – oil consumption, EC – energy consumption. Similarly, the researchers tested the existence of U-relationship between economic development and environmental pollution. The model is the following (Fig. 7):

$$CO_{2t} = a_0 + a_1GDP_t + a_2IS_t + a_3R \& D + a_4SMVA_t + a_5FDI_t + a_6DBA_t + a_7CAC_t + a_8FL_t + a_9FO_t + a_{10}EI_t + a_{11}OC_t + a_{12}EC_t + a_{13}GDP_t^2 + \varepsilon_t, \quad (5)$$

Variables	BRIC panel	
	Model-1	Model-2
Constant	1.106 (1.42)	0.343 (1.05)
<i>Economic development variables</i>		
Economic growth rate	0.010* (0.00)	0.009* (0.00)
Economic growth rate squared	– (0.00)	–0.001 (0.00)
Industry share in GDP	0.007* (0.00)	0.008* (0.00)
R&D expenditure	–0.037*** (0.08)	–0.009 (0.04)
<i>Financial development variables</i>		
Stock market value added	–0.001 (0.06)	–0.053* (0.02)
Log (FDI Stock)	–0.045* (0.01)	0.003** (0.00)
Deposit money bank assets/GDP	0.002** (0.00)	–0.030** (0.07)
Capital account convertibility	–0.030* (0.01)	–0.031* (0.01)
Financial liberalization	–0.025*** (0.06)	–0.025** (0.03)
Financial openness	0.001*** (0.00)	0.001 (0.00)
<i>Control variables</i>		
Net energy imports	6.21E-07* (1.55E-07)	5.50E-07* (1.10E-07)
Log (Oil consumption)	0.216* (0.07)	0.256* (0.08)
Log (Energy consumption)	0.180** (0.10)	0.148** (0.07)
Adjust. R <sup>2</sup>	0.9786	0.9780
F-statistic	2755.54	2516.03
Prob (F-statistic)	0.0000	0.0000
Total no. observations	52	52

Dependent variable: log (per capita CO<sub>2</sub> emissions).

White heteroskedasticity-consistent standard errors are reported in parenthesis.

\* Significant at 1% confidence level.

\*\* Significant at 5% confidence level.

\*\*\* Significant at 10% confidence level.

Fig. 7. Modelling results

Source: [13]

The assessment results (Fig. 7) supported environment Kuznets curve for the case, and conclude that the economic development as well as an industrial production leads to increased carbon dioxide emissions. Spending on R&D has potential to reduce environment pollution because it increases the proportion of "green" production. Almost all financial variables are in inverse dependence to greenhouse gas emissions. Thus, the development of the financial markets is a key factor in reducing environmental degradation, especially for developing countries. In fact, improving the financial performance of the country reduces CO<sub>2</sub> emissions, i.e. *financial market liberalization can improve the environment*. Energy factors, as hypothesized initially, are in direct proportion to the emissions of carbon dioxide.

Among the analyzed econometric models we can be divide two main types:

- models aimed at testing the hypothesis of environmental Kuznets curve existence;
- models assessing the impact of economic indicators on emissions of carbon dioxide.

However, the eco-economic development concepts analyzed only certain environmental conditions, leaving aside integral indicator of ecological safety. To address this issue we will consider the main approaches to calculating the integral index of environmental safety in the next section.

#### Results of econometric analysis of the impact of social and economic factors on the environment (global case).

Based on the latter, the dependent variable for the analysis is determined as the CO<sub>2</sub> emissions per capita. The following variables are chosen as factors: EN – energy consumption per capita, PGDP – real GDP per capita, OPEN – economic openness, UR – the level of urbanization, %, ALT – consumption of nuclear and alternative energy, % of total energy consumption. The following model is assessed:

$$\ln CO_{2t} = \beta_0 + \beta_1 \ln \Delta EN_t + \beta_2 \ln \Delta OPEN_t + \beta_3 \ln \Delta PGDP_t + \beta_4 \ln \Delta ALT_t + \beta_5 \ln \Delta UR_t + \varepsilon_t \quad (6)$$

Hypothesis & assumptions:

1) well known fact is that the increase in energy consumption leads to an increase of production, which in turn increases carbon dioxide emissions. So it is expected that  $\beta_1 > 0$ ;

2) the sign  $\beta_2$  depends on economic development. In the case of developed countries, it is expected to be less than zero, because the country is using more environmentally efficient methods of production and imports more environmentally friendly products. In the case of developing countries, it is expected that the ratio is greater than zero, because production is more environmentally polluting with a large share of greenhouse gas emissions.

3) improving in the economic situation leads to an increase in production and, in turn,  $\text{CO}_2$  emissions:  $\beta_3 > 0$ .

4) consumption of nuclear and renewable energy should be in opposite relationship to emissions, as in the production of energy there is no greenhouse gas emissions:  $\beta_4 < 0$ .

First of all we analyze the influence of socio-economic indicators at the global level, using aggregated indicators (annual World Bank official data from 1971 to 2010 [14]).

The test for Stationarity (Dickey-Fuller test), as the first step of econometric modelling technique, resulted that all variables, excepting UR, are integer in first order, so we should use them in the first differences. Since the variable UR is not integer in the first order and shows steady growth since 1973, we exclude it in the model. The estimated model (in logarithms) is as follows:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNEN	0.116005	0.134176	0.864571	0.3933
DLNOPEN	0.084011	0.050995	1.647441	0.1087
DLNPGDP	0.178987	0.061842	2.894279	0.0066
DLNALT	-0.126759	0.062746	-2.020198	0.0513
C	0.007511	0.003905	1.923133	0.0629
R-squared	0.494300	Mean dependent var		0.004664
Adjusted R-squared	0.434805	S.D. dependent var		0.021966
S.E. of regression	0.016514	Akaike info criterion		5.250015
Sum squared resid	0.009272	Schwarz criterion		5.036737
Log likelihood	107.3753	Hannan-Quinn criter.		5.173493
F-statistic	8.308369	Durbin-Watson stat		2.029757
Prob(F-statistic)	0.000087			

This model is adequate, no residual autocorrelation, but there is heteroscedasticity. On the level of reliability of 95% variables DLNEN, DLNOPEN, DLNALT and constant are

not significant. As the attempt to improve the model we exclude variable DLNEN and verify the results:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNALT	-0.148337	0.057361	-2.586029	0.0140
DLNOPEN	0.089550	0.050408	1.776510	0.0843
DLNPGDP	0.203403	0.054818	3.710508	0.0007
C	0.009291	0.003306	2.809903	0.0081
R-squared	0.483182	Mean dependent var		0.004664
Adjusted R-squared	0.438883	S.D. dependent var		0.021966
S.E. of regression	0.016454	Akaike info criterion		5.279550
Sum squared resid	0.009476	Schwarz criterion		5.108928
Log likelihood	106.9512	Hannan-Quinn criter.		5.218332
F-statistic	10.90736	Durbin-Watson stat		1.943368
Prob(F-statistic)	0.000033			

The model is adequate; it has neither heteroscedasticity nor autocorrelation. It should be noted that not including DLNEN variable just slightly decreased  $\text{adj-R}^2$ , that suggests the factor DLNEN as not significant indeed. With 10%

probability of error all variables are significant, but the 5% probability of error reveals DLNOPEN independent variable as not statistically significant. Elimination of DLNOPEN variable resulted in following:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNALT	-0.148648	0.059053	-2.517181	0.0164
DLNPGDP	0.223321	0.055243	4.042561	0.0003
C	0.011038	0.003250	3.396259	0.0017
R-squared	0.436580	Mean dependent var		0.004664
Adjusted R-squared	0.405279	S.D. dependent var		0.021966
S.E. of regression	0.016940	Akaike info criterion		5.244497
Sum squared resid	0.010330	Schwarz criterion		5.116531
Log likelihood	105.2677	Hannan-Quinn criter.		5.198584
F-statistic	13.94773	Durbin-Watson stat		2.073257
Prob(F-statistic)	0.000033			

The model

$$\ln CO_2 = 0.01 + 0.22 \cdot \ln \Delta PGPP_t - 0.15 \cdot \ln \Delta ALT_t \quad (7)$$

is appropriate with all significant factors, has neither heteroscedasticity nor autocorrelation. According to the model (7) the greatest impact on carbon dioxide emissions has GDP per capita. So, global GDP increase by 10% would increase greenhouse gas emissions by 2.2%. As expected, the relationship between the consumption of nuclear and alternative energy has the reverse relationship with CO<sub>2</sub> emissions. Growing usage of alternative fuels by 1% will reduce carbon dioxide emissions by 0.15%.

Another important issue that needs to be addressed is to compare the impact of socio-economic indicators on greenhouse gas emissions for countries with different income levels. This will test the hypothesis of the existence

of environmental Kuznets curve at the global level. The main question is *what level of income has the most negative impact on environment?* For the simulation we distinguish four groups of countries depending on the level of income:

- 1) Low income countries (LIC): GDP per capita less than 1045 USD;
- 2) Lower middle income (LMC): GDP per capita from 1046 to 4125 USD;
- 3) Upper middle income (UMC): GDP per capita from 4126 to 12745 USD;
- 4) High income (HIC): GDP per capita of 12746 USD.

For the richest countries in the world (HIC in our classification), 1960 – 2010 annual data [14] the assessed model is following:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNEN	0.958531	0.084336	11.36568	0.0000
DLNOPEN	0.042254	0.029915	1.412454	0.1669
DLNPGDP	0.027878	0.029811	0.935160	0.3563
DLNALT	-0.020885	0.030477	-0.685276	0.4978
C	-0.005387	0.002012	-2.677449	0.0113
R-squared	0.881292	Mean dependent var		0.000251
Adjusted R-squared	0.867326	S.D. dependent var		0.025545
S.E. of regression	0.009305	Akaike info criterion		6.397422
Sum squared resid	0.002944	Schwarz criterion		6.184144
Log likelihood	129.7497	Hannan-Quinn criter.		6.320900
F-statistic	63.10406	Durbin-Watson stat		2.438544
Prob(F-statistic)	0.000000			

This model is adequate; however there is autocorrelation. The results show that GDP growth and per capita consumption of energy from alternative sources has

no effect on CO<sub>2</sub> emissions for rich countries. Try to eliminate insignificant variables, considering only economic openness factor:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNEN	0.834923	0.071369	11.69860	0.0000
DLNOPEN	0.057528	0.042172	1.364146	0.1790
C	-0.002526	0.002179	-1.159075	0.2523
R-squared	0.767652	Mean dependent var		0.008162
Adjusted R-squared	0.757764	S.D. dependent var		0.028308
S.E. of regression	0.013933	Akaike info criterion		5.651056
Sum squared resid	0.009123	Schwarz criterion		5.536334
Log likelihood	144.2764	Hannan-Quinn criter.		5.607369
F-statistic	77.64118	Durbin-Watson stat		1.588599
Prob(F-statistic)	0.000000			

The model is adequate, however the Durbin-Watson criterion shows the uncertainty zone, which is closer to positive autocorrelation. The constant factor and economic

openness are insignificant factors. A graph of residuals must reveal the reasons of insignificance and autocorrelation (Fig. 8).

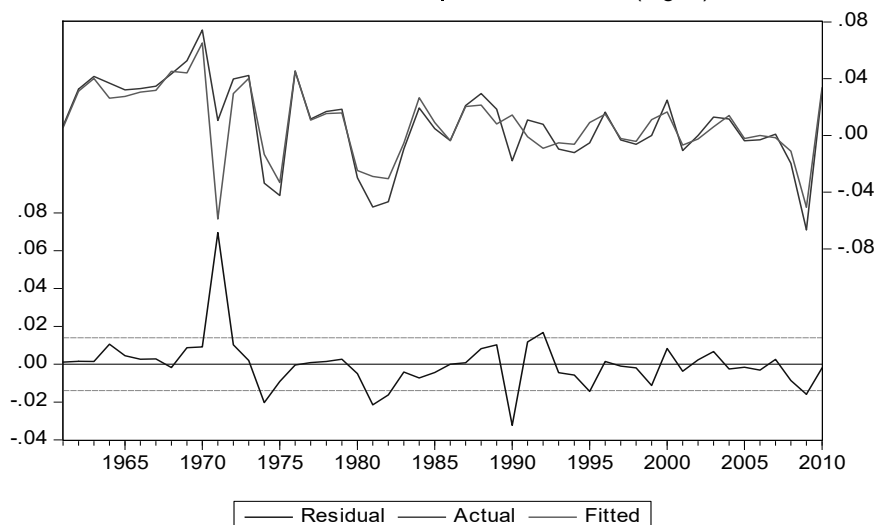


Fig. 8. Model results in graph

Source: own calculations

Fig. 8 shows a significant deviation of forecasted and actual values in 1971. This is due to the rapid drop in energy consumption that year. To accept this fact, we

add a dummy variable equal to 1 in the 1971<sup>st</sup> and 0 in all other years to the model. We estimate the model with dummy variable:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNEN	1.006775	0.046848	21.49043	0.0000
DLNOPEN	0.044027	0.025408	1.732789	0.0898
DUMMY_1971	0.084709	0.009247	9.160457	0.0000
C	-0.006026	0.001365	-4.413511	0.0001
R-squared	0.917730	Mean dependent var		0.008162
Adjusted R-squared	0.912365	S.D. dependent var		0.028308
S.E. of regression	0.008380	Akaike info criterion		6.649287
Sum squared resid	0.003230	Schwarz criterion		6.496325
Log likelihood	170.2322	Hannan-Quinn criter.		6.591038
F-statistic	171.0447	Durbin-Watson stat		2.277231
Prob(F-statistic)	0.000000			

The model is adequate, autocorrelation and heteroscedasticity are absent. Adding the dummy variable allowed to increase adj-R<sup>2</sup> up to 0.91. With 1% probability of error all our variables, except DLNOPEN, are significant. Factor of openness of the economy affects the CO<sub>2</sub> emissions only at the 90% level of reliability, but the effect of this indicator is rather small: with the 10% increasing of

economic openness factor the emissions will increase by 0.4%. This rejects our hypothesis that the openness of the economy and greenhouse gas emissions are in inverse dependence for developed countries.

As next specifying step we exclude DLNOPEN variable from the model, to consider all variables with 99% reliability level of significance.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNEN	1.026454	0.046408	22.11794	0.0000
DUMMY_1971	0.085638	0.009426	9.085065	0.0000
C	-0.005591	0.001370	-4.080017	0.0002
R-squared	0.912360	Mean dependent var		0.008162
Adjusted R-squared	0.908631	S.D. dependent var		0.028308
S.E. of regression	0.008557	Akaike info criterion		6.626056
Sum squared resid	0.003441	Schwarz criterion		6.511334
Log likelihood	168.6514	Hannan-Quinn criter.		6.582369
F-statistic	244.6422	Durbin-Watson stat		2.280761
Prob(F-statistic)	0.000000			

Model  
 $\ln CO2_t = -0.006 + 1.03 \cdot \ln \Delta EN_t + 0.09 \cdot DUMMY\_1971$  (8)  
 is adequate, heteroscedasticity and autocorrelation are missing. All regression coefficients are significant. With the

1% increasing of energy consumption the carbon dioxide emissions will increase by 1.03%.

Draw a similar simulation *for the poorest countries (LIC in our classification)* (annual data from 1979 to 2010 [14]):

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNALT	-0.062751	0.291287	-0.215425	0.8311
DLNEN	1.125693	1.981410	0.568127	0.5746
DLNOPEN	0.160103	0.477878	0.335030	0.7402
DLNPGDP	-0.205590	0.422797	-0.486263	0.6307
C	-0.025870	0.035711	-0.724422	0.4750
R-squared	0.017820	Mean dependent var		0.016023
Adjusted R-squared	0.127688	S.D. dependent var		0.140962
S.E. of regression	0.149691	Akaike info criterion		0.817886
Sum squared resid	0.605000	Schwarz criterion		0.588865
Log likelihood	18.08618	Hannan-Quinn criter.		0.741972
F-statistic	0.122466	Durbin-Watson stat		1.821640
Prob(F-statistic)	0.973198			

The evaluation model is fully not adequate. Consider graph of residuals to gain the reason – why tested model is not proper for LIC group (Fig. 9).

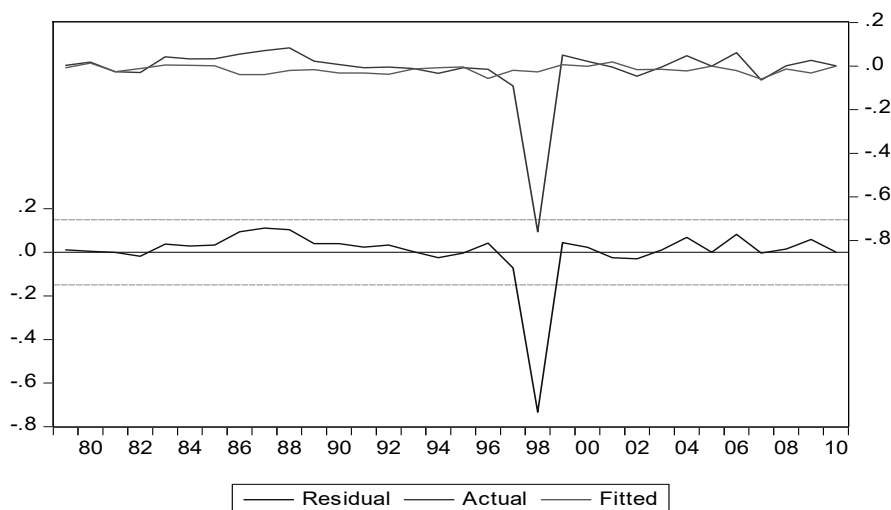


Fig. 9. Model results in graph

Source: own calculations

The problem is that in 1998 there was a significant reducing in emissions of carbon dioxide. We add to the model a dummy variable equal to 1 in 1998 and 0 in all other years. The following results are obtained:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNALT	0.074910	0.077542	0.966055	0.3429
DLNEN	0.718881	0.525577	1.367794	0.1831
DLNPGDP	-0.059671	0.112320	-0.531263	0.5997
DLNOPEN	-0.014901	0.126990	-0.117344	0.9075
DUMMY_1998	-0.769390	0.040642	-18.93106	0.0000
C	0.004771	0.009602	0.496900	0.6234
R-squared	0.933565	Mean dependent var		0.016023
Adjusted R-squared	0.920789	S.D. dependent var		0.140962
S.E. of regression	0.039673	Akaike info criterion		3.448935
Sum squared resid	0.040922	Schwarz criterion		3.174109
Log likelihood	61.18295	Hannan-Quinn criter.		3.357838
F-statistic	73.07181	Durbin-Watson stat		1.533887
Prob(F-statistic)	0.000000			

The model is adequate, but most variables are not significant. Step-wise exclusion of independent variables suggested that countries with the lowest income have no effect of the selected factors on CO<sub>2</sub> emissions.

Continue studies for the countries with below average income levels (*LMC* in our classification) (annual data from 1972 to 2010 [14]):

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNALT	-0.078239	0.090919	-0.860538	0.3955
DLNEN	0.103043	0.093392	1.103345	0.2776
DLNOPEN	-0.043770	0.067764	-0.645914	0.5227
DLNPGDP	0.086982	0.058445	1.488278	0.1459
C	0.028207	0.005620	5.019349	0.0000
R-squared	0.102944	Mean dependent var		0.024294
Adjusted R-squared	0.002592	S.D. dependent var		0.027995
S.E. of regression	0.028031	Akaike info criterion		4.191795
Sum squared resid	0.026715	Schwarz criterion		3.978518
Log likelihood	86.74000	Hannan-Quinn criter.		4.115273
F-statistic	0.975436	Durbin-Watson stat		1.822213
Prob(F-statistic)	0.433785			

Model is not adequate at all, and the graph of residuals (Fig. 10) shows a significant deviation of actual and forecast data in 1977. This is due to the rapid increase in CO<sub>2</sub> emissions that year.

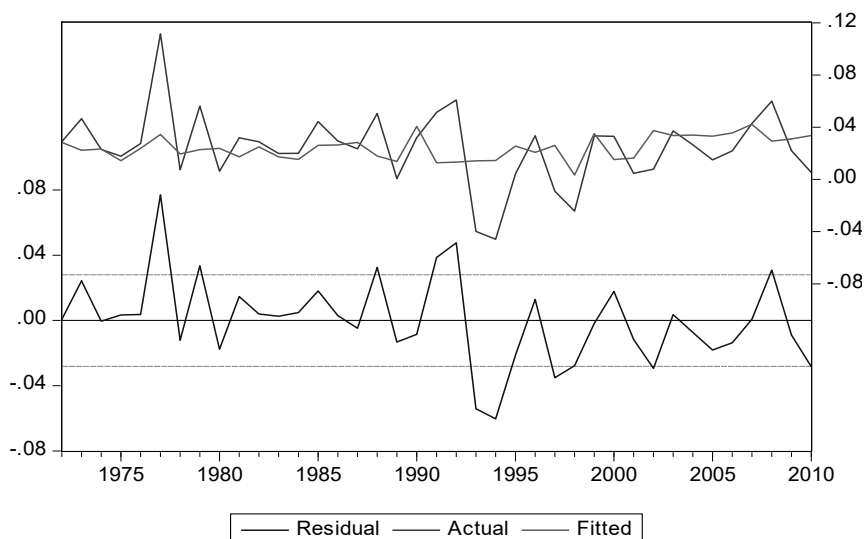


Fig. 10. Model results in graph

Source: own calculations

We add to the model a dummy variable equal to 1 in the 1977<sup>th</sup> and 0 in all other years with along exclusion of DLNALT and DLNOPEN:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNEN	0.054376	0.064298	0.845683	0.4035
DLNPGDP	0.059023	0.049290	1.197474	0.2392
DUMMY_1977	0.086221	0.024735	3.485843	0.0013
C	0.022492	0.004383	5.131518	0.0000
R-squared	0.307957	Mean dependent var		0.024294
Adjusted R-squared	0.248640	S.D. dependent var		0.027995
S.E. of regression	0.024266	Akaike info criterion		4.502548
Sum squared resid	0.020610	Schwarz criterion		4.331926
Log likelihood	91.79969	Hannan-Quinn criter.		4.441330
F-statistic	5.191641	Durbin-Watson stat		1.692999
Prob(F-statistic)	0.004509			

The model is adequate, no heteroscedasticity is detected, but there is autocorrelation. Consumption of energy and GDP per capita are not significant. Thus, we exclude DLNEN:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNPGDP	0.074755	0.049920	1.497509	0.1419
DUMMY_1977	0.084111	0.025899	3.247630	0.0023
C	0.025270	0.004023	6.281670	0.0000
R-squared	0.252331	Mean dependent var		0.025712
Adjusted R-squared	0.215860	S.D. dependent var		0.028783
S.E. of regression	0.025488	Akaike info criterion		4.435497
Sum squared resid	0.026634	Schwarz criterion		4.313848
Log likelihood	100.5809	Hannan-Quinn criter.		4.390384
F-statistic	6.918564	Durbin-Watson stat		1.867216
Prob(F-statistic)	0.002577			

This model is appropriate, as there is no heteroscedasticity, no autocorrelation, but GDP per capita is not significant (only with the 80% level of reliability). Consequently, we result that for the group of LMC as well as for the poorest countries in the lowest

income level group, none of the selected factors has any effect on CO<sub>2</sub> emissions.

Complete our survey with the simulation for *the countries with above-average income (UMC)* (annual data from 1972 to 2010 [14]):

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNEN	0.749893	0.278345	2.694113	0.0130
DLNOPEN	-0.067179	0.089851	-0.747665	0.4622
DLNPGDP	0.059750	0.092972	0.642671	0.5268
DLNALT	0.377649	0.185449	2.036403	0.0534
C	0.004261	0.011381	0.374404	0.7115
R-squared	0.429128	Mean dependent var		0.030724
Adjusted R-squared	0.329845	S.D. dependent var		0.031732
S.E. of regression	0.025977	Akaike info criterion		4.302800
Sum squared resid	0.015520	Schwarz criterion		4.064906
Log likelihood	65.23920	Hannan-Quinn criter.		4.230074
F-statistic	4.322303	Durbin-Watson stat		2.023278
Prob(F-statistic)	0.009411			

This model is adequate, no residual autocorrelation, but there is heteroscedasticity.

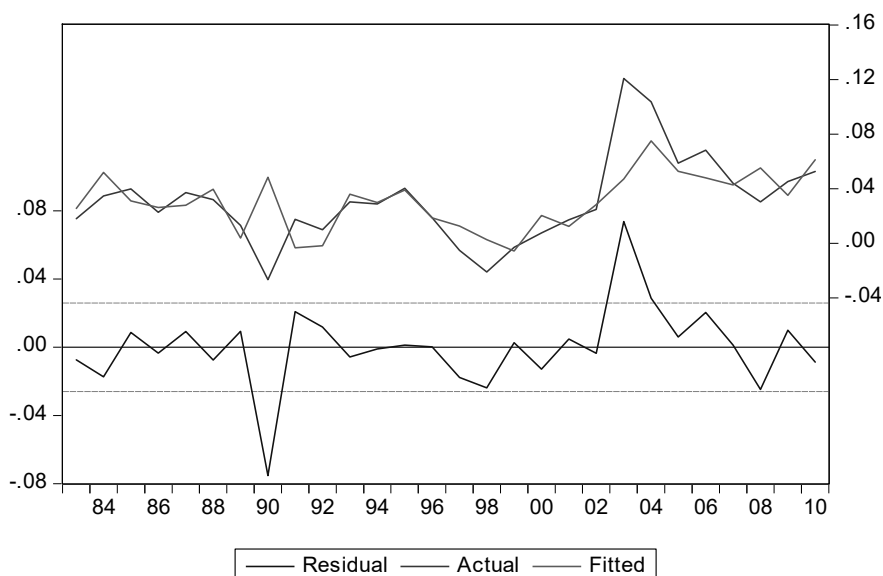


Fig. 11. Model results in graph

Graph (Fig 11) shows a significant deviation of forecasted and actual values in 1990 and 2003, which caused a rapid increase in carbon dioxide emissions

and new policy launching. Add two dummy variables to the model with consequent exclusion of DLNOPEN and DLNPGDP:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNALT	-0.017463	0.071340	-0.244785	0.8081
DLNEN	0.952562	0.103004	9.247799	0.0000
DUMMY_1990	-0.125286	0.016460	-7.611384	0.0000
DUMMY_2003	0.043753	0.015090	2.899420	0.0065
C	0.006570	0.004689	1.401374	0.1002
R-squared	0.820573	Mean dependent var		0.030381
Adjusted R-squared	0.799464	S.D. dependent var		0.030725
S.E. of regression	0.013759	Akaike info criterion		5.615036
Sum squared resid	0.006437	Schwarz criterion		5.401759
Log likelihood	114.4932	Hannan-Quinn criter.		5.538514
F-statistic	38.87294	Durbin-Watson stat		1.755821
Prob(F-statistic)	0.000000			

Variable DLNALT is not significant; this fact lets us to exclude it:

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNEN	0.959872	0.097247	9.870420	0.0000
DUMMY_1990	-0.123987	0.015372	-8.065940	0.0000
DUMMY_2003	0.044534	0.014550	3.060789	0.0042
C	0.005761	0.003279	1.756776	0.0377
R-squared	0.820256	Mean dependent var		0.030381
Adjusted R-squared	0.804850	S.D. dependent var		0.030725
S.E. of regression	0.013573	Akaike info criterion		5.664557
Sum squared resid	0.006448	Schwarz criterion		5.493936
Log likelihood	114.4589	Hannan-Quinn criter.		5.603340
F-statistic	53.24063	Durbin-Watson stat		1.776163
Prob(F-statistic)	0.000000			

Model

$$\ln CO_2_t = 0.006 + 0.96 \cdot \ln \Delta EN_t - 0.12 \cdot DUMMY\_1990 + 0.04 \cdot DUMMY\_2003 \quad (9)$$

is adequate, it has neither heteroscedasticity nor autocorrelation. All regression coefficients are significant. With the 1% increasing energy consumption the carbon dioxide emissions will increase by 0.96%. According to the empirical results evoked that all other factors do not affect the environment for the countries of UMC group.

**Conclusion & Discussion.** Compare the results for countries with different income levels (Table 1). Indicator "energy consumption per capita" impacts on greenhouse

gas emissions only in countries with high income. Whereby it should be noted that the more developed a country is, the more elastic is this influence. This can be explained by the fact that countries continue to use combustible fuels for energy production. Thus, for the countries with a level of GDP per capita 12746 USD and higher the 10% increase of energy production would stimulate 10.1% CO<sub>2</sub> emissions increase. The usage of alternative energy in the considered period has no effect on emissions for selected groups of countries, but this effect is observed globally. Growing usage of alternative and nuclear energy up to 10% has the potential to reduce air emissions by 1.5%

**Table 1. The comparison of empirical modeling results**

Group	EN	PGDP	OPEN	ALT
LIC	N/D	N/D	N/D	N/D
LMC	N/D	0.07****	N/D	N/D
UMC	0.96*	N/D	N/D	N/D
HIC	1.01*	N/D	0.05***	N/D
WORLD	N/D	0.20*	0.09***	-0.15**
The level of significance: *0.99; **0.95; ***0.9; ****0.8.				

Source: own calculations



The hypothesis of the existence of environmental Kuznets curve for these data is rejected. Real GDP per capita impact on carbon dioxide emissions is considered only at the global level (Fig. 12). The impact of openness of

the economy is weak. Rejection happened also to the hypothesis that for the developed countries there is a reverse dependence between the environmental pollution and economic openness.

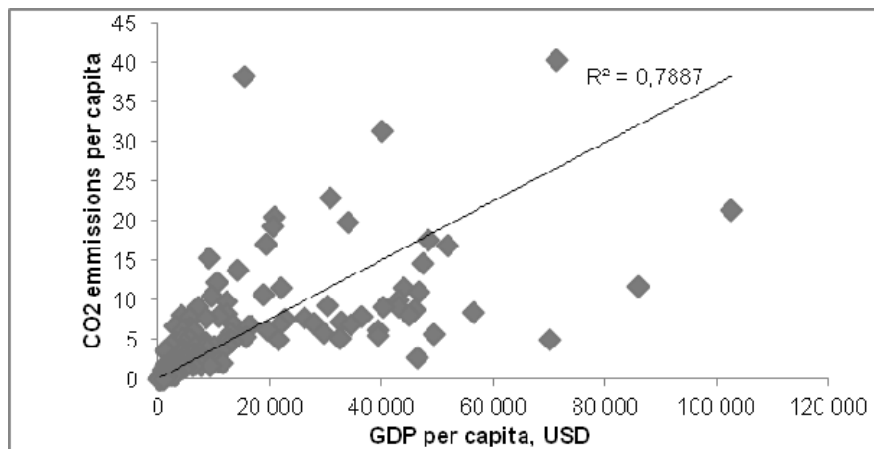


Fig. 12. Dependence of CO<sub>2</sub> emissions and GDP per capita

Source: own calculations on the data [14]

The trace of ecological economization and economical ecologization suggests: the government should actively promote the shift of the development to a mode of economical ecologization over developed areas with inadequate natural resources and ecosystem services, and to a mode of ecological economization over the undeveloped areas with abundant natural resources and ecosystem services. The global policy in the sphere of environmental sustainability can be unified for all states, but regional approaches and mechanisms should be developed according to specific income level and technological absorption ability of a state.

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### ЕКОЛОГІЧНА ЕКОНОМІКА ПРОТИ ЕКОНОМІЧНОЇ (ЕКОНОМНОЇ) ЕКОЛОГІЇ

В даний час світ стикається з дилемою – екологічна економіка чи економічна (існа) екологія. Дослідники навівробляти сотні обстежень по цій темі. Однак аналіз останніх найбільш цитованих публікацій ще більш підсилює різноманітність результатів. Так, для деяких держав екологічна крива Кузнеца має місце, для інших – ні. Те ж саме можна сказати і про різні роки для однієї і тієї ж країни. Це провокує необхідність вироблення нового групового аналізу виявлення тенденцій і взаємозв'язку між економічними та екологічними факторами. Найгучніший і найбільш відзеркалюючий фактор екологічної стійкості є обсяг викидів CO<sub>2</sub>. В цій статті ми використали економетричний аналіз для визначення економічного впливу на цей показник на глобальному рівні і в спектрах груп держав залежно від їхнього доходу. Гіпотеза про існування екологічної кривої Кузнеца для аналізованих даних була відхилена. Реальний ВВП на душу населення як впливова змінна на вплив викидів вуглекислого газу може розглядатися тільки на глобальному рівні. Вплив відкритості економіки є слабким. Було відхилено також припущення, що для розвинених країн є зворотна залежність між забрудненням навколишнього середовища та економічною відкритістю. Індикатор "споживання енергії на душу населення" впливає на викиди парнико-

вих газів лише в країнах з високим рівнем доходу. Причому слід зазначити, що чим більше розвинена країна, тим більш еластичним є цей вплив. Ці результати мають потенціал використання для регулювання екологічної політики і стратегії клімату.

**Ключові слова.** Екологічна економіка, економетричне моделювання, навколишнє середовище, дохід, викиди CO<sub>2</sub>.

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### ЭКОЛОГИЧЕСКАЯ ЭКОНОМИКА ПРОТИВ ЭКОНОМИЧЕСКОЙ (ЭКОНОМИЧЕСКОЙ) ЭКОЛОГИИ

В настоящее время мир сталкивается с дилеммой – экологическая экономика или экономная (ичная) экология. Исследователи работали сотни исследований по этой теме. Однако анализ последних наиболее цитируемых публикаций еще более усиливает разнообразие результатов. Так, для некоторых государств экологическая кривая Кузнеца имеет место, для других – нет. То же самое можно сказать и о различных годах для одной и той же страны. Это провоцирует необходимость выработки нового группового анализа выявления тенденций и взаимосвязи между экономическими и экологическими факторами. Гибкий и наиболее репрезентативный фактор экологической устойчивости является объем выбросов CO<sub>2</sub>. В этой статье мы использовали эконометрический анализ для определения экономического влияния на этот показатель на глобальном уровне и в спектрах групп государств в зависимости от их дохода. Гипотеза о существовании экологического кривой Кузнеца для анализируемых данных была отклонена. Реальный ВВП на душу населения как влиятельная переменная на влияние выбросов углекислого газа может рассматриваться только на глобальном уровне. Влияние открытости экономики является слабым. Было отклонено также предположение, что для развитых стран является обратная зависимость между загрязнением окружающей среды и экономической открытостью. Индикатор "потребление энергии на душу населения" влияет на выбросы парниковых газов только в странах с высоким уровнем дохода. Причем следует отметить, что чем более развита страна, тем более эластичным является это влияние. Эти результаты имеют потенциал использования для регулирования экологической политики и стратегии климата.

**Ключевые слова.** Экологическая экономика, эконометрического моделирования, окружающая среда, доход, выбросы CO<sub>2</sub>.

## ANNOTATION AND REFERENCES (IN LATIN): TRANSLATION / TRANSLITERATION / TRANSCRIPTION

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### INTELLECTUAL RENT AS AN ESSENTIAL FACTOR OF INNOVATIVE DEVELOPMENT OF ECONOMY

*The article is devoted to the analysis of the problems of formation, distribution and effective regulation of intellectual rent as an essential factor of innovative development of the Ukrainian economy. In the first sections of the article the authors reveal the nature, structure and conditions of formation of intellectual rent. In the further sections the article covers specific properties, structuring criteria and types of intellectual rent as well as its role in the modern market economy. A considerable attention is paid to the analysis of the problems of evaluation of intellectual rent, its distribution between the main economic actors and improvement of state regulation of this sphere of social relations. The authors analyze experience of developed countries in this area and highlight the possible ways of improvement of legislation on the protection and enforcement of intellectual property rights.*

*Relying on the materials of the Eurostat and the State Statistics Service of Ukraine the article reveals basic limitations of the expanded reproduction of intellectual rent in the national economy, which are caused by: high transaction costs of property rights, intellectual resources and products of intellectual activity; presence of information asymmetries between the parties of the respective contractual relations; imperfect competition; weak legal protection of innovators' intellectual property; lack of real instruments of accounting and stimulation of productive use of intellectual rent in the national economy. In the concluding sections of the article practical recommendations to improve state regulation of intellectual rent in Ukraine are provided.*

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## ECONOMIC CRISIS AND FOREIGN DIRECT INVESTMENTS IN ROMANIA

*Foreign direct investments represent an essential factor of economic development and growth at all levels: national, regional and local (county). The authors analyse the evolution of foreign direct investments in Romania over the last decade, taking into consideration the influence of the economic and financial crisis, different territorial levels, types of foreign investments, the economic activities and also the main countries of origin. The aim of the paper is to explain some of the reasons for the illustrated evolution of FDI and to reveal some policy implications for the future period.*

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## FOREIGN DIRECT INVESTMENTS AND INSTITUTIONAL PERFORMANCE: A ROMANIAN PERSPECTIVE

*Our paper uses statistical tools with the aim of empirically investigating the institutional determinants of foreign direct investments (FDI) in Romania. The analysis is focused on the public policies that are relevant from the FDI perspective between 2002 and 2012; more specifically, we direct our approach towards identifying the manner in which state controlled instruments can be employed in order to increase the country's performance in terms of attracting FDI. The variables we use are the inflows of FDI to Romania, on one hand, and the set of Worldwide Governance Indicators of the World Bank on the other hand.*

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### INSTITUTIONALISM AND CRISIS

*Contemporary scientific reunions and debates are focusing, for several years, on economic crisis. As a result, there are an unnumbered ways to analyse and to interpret the crisis. Our intention, in the present paper, is to analyze the economic crisis through another perspective: through the role played by institutions. Our scientific approach aims to examine whether public institutions play a role in the onset, progression or solve an economic crisis. For this we choose as representative public institution – the U.S. Federal Reserve System. To meet our purpose we focus only on Federal Reserve actions and their consequences, of any, by taking a short inside look to the Great Depression and 2007-2008 crisis. We tried to figure out which were FED's actions, were they suitable and effective? Could they be better, more appropriate to the specific situations? Those are questions that we try to answer in the present paper.*

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### GROWING A BUSINESS- MERGERS AND ACQUISITIONS

*The paper outlines the efforts investors undertake in order to overcome the negative impact of the crisis by finding new opportunities for recovery, expansion and progress through mergers and acquisitions. Also, the paper aims to highlight the importance of regulatory issues impact on business combinations with an upward stock quote evolution. Throughout the present paper specific activities of mergers and acquisitions are described, along with main goals, advantages and disadvantages, threats and opportunities.*

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### ANALYSIS MODELS OF PROFITABILITY IN AGRICULTURE

*In this article there is developed a synthetic theoretical framework regarding the profitability analysis through economic and financial rates of return using different models, and also it is made a case study on the similarities and differences between various models of rates of return analysis in agriculture. The motivation of choosing this theme is to determine the relationship between financial and economic profitability using Pearson correlation coefficient. The research conducted leads to two main categories of results; on the one hand there is made a qualitative theoretical synthesis on the rates of return analysis models, on the other hand it is determined the correlation between financial and economic profitability in the agriculture organizations.*

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### ANALYSIS OF BUDGET DEFICIT AND ITS PROBLEMS IN LITHUANIA

*Budget deficit is one of the most important parts of macroeconomics. Since 1990, the government of the Lithuanian Republic has been faced with problems in balancing the budget deficit; most of the years, the country's budget was deficit with the lack of incoming money flow. The budget deficit value in Lithuania has been a significant theme since 2004, when Lithuania became part of the European Union, and one of the liabilities was to insure the litas replacement with euro currency and the budget deficit was one of the Maastricht's criteria. Also it is very important to maintain effective management of public finances. The government is responsible for managing the country's budget in respect to various economical parameters, for example, GDP, inflation rate, unemployment rate, etc., in order to plan income level and distribute it to the relevant economic areas. Also, the budget deficit's problems are revealed in this article.*

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## RURAL TOURISM AND AGRITOURISM – FORMS OF SUSTAINABLE DEVELOPMENT IN MĂRGINIMEA SIBIULUI

*The delightful geographical framework, the purity of nature, the accessibility of places, the richness and diversity of cultural heritage, make Mărginimea Sibiului an area with great tourism potential. The area holds more than 30% of the total accommodation capacity available in Sibiu. Although it is a rural area, tourist offer is diverse (active tourism and recreation, traditional cuisine, cultural tourism and business segment coverage through specific facilities, all these in addition to the multitude of leisure), and the degree of comfort is increased. In Mărginimea Sibiului, agritourism and rural tourism creates opportunities for local and regional economic growth and help create new jobs through harnessing the specific cultural and natural heritage. Also, an important part of the new jobs created represents an opportunity for regional female employment. Hence the need to implement many projects, which bring to the forefront the stabilization of the active population in rural areas, the capitalization of natural and anthropic tourism potential in the context of eco-economy, and thus raising living standards.*

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### BETWEEN THE WEST AND THE EAST: UKRAINIAN ECONOMIC THOUGHT AS THE CROSSROADS

*Ukrainian economists, similarly to Ukrainian society, are in the middle of the process of turning from the East to the West. However, the visibility of their work remains low both in the East and the West. The analysis of their publication activity (using data from the Web of Science and eLibrary) confirms these assumptions. It is argued that the first step in this eventual transition consists in building the space for economic debates at the national level. Active and healthy debates at the national level will increase chances of Ukrainian economists to be heard internationally.*

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### THE IMPORTANCE OF INVESTING IN EDUCATION FOR SUSTAINABLE HUMAN DEVELOPMENT. THE CASE OF ROMANIA

*In this article, we expect to underscore the importance of investment in education for sustainable human development by analysing the degree of correlation and interdependence that exists in Romania, between the Human Development Index and two different factors: the public spending for education and the public and private investment in the form of R & D expenditure. Human Development Index (HDI) is a complex tool that measure the long term evolution of the average level of human development. It represents the synthesis of three basic dimensions: the chances of living a long healthy life, the exploitation of access to education and the accomplishment of a good way of life. Although achieving a high HDI implies a high level of income, it represents more a matter of social policy and public revenue guidance for the efficient development of the social sector.*

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#### IN THE EARLY JOSEPH ALOIS JULIUS SCHUMPETER'S FOOTSTEPS – MARRIAGE, TRAGEDY AND EMIGRATION

*At the age of 42 Joseph Alois Schumpeter married the 20 years younger Anna ("Annie") Josefina Reisinger. Joseph Schumpeter is looking forward to being a father, and the couple have a child, Joseph, but both Annie and the baby dies during confinement. The tragedy is a fact, and Schumpeter loses the joy of scientific creativity and concentration. His existence is concurrently burdened by private financial problems. He holds fast to his creative youth work, *Theorie der wirtschaftlichen Entwicklung*, which is a companion through life and the foundation stone of modern entrepreneurial research worldwide. The article analyzes the important events in Schumpeter's life and its importance to scientific development in economic theory.*

*The article analyzes the important events in Schumpeter's life and its importance to scientific development in economic theory. *Theorie der wirtschaftlichen Entwicklung* (English title: *The Theory of Economic Development*) was first published in 1912. After emigration to Harvard in 1934, the third edition was translated into English and opened up for a broader readership worldwide. However, the seventh chapter was omitted from the second and third edition, which formed the basis for the translation into English. It is a fact that the English version of 1934 in turn has served as the basis for translation to many other languages. How well known and understood was actually Schumpeter's innovative and independent scientific contribution from his early days, and what are the consequences of the Lost Chapter in economic theory? The author of the article walks in the early Schumpeter's footsteps by visiting places where the famous economist used to live and work, and thereby making interviews with key persons on sites to analyze the background for the historical development in economic philosophy. The article concludes that personal freedom, especially in connection with wage labor and market profit are preconditions for scientific independent activity.*

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### THE USE OF PROJECTS IN GENERATING CHANGE IN ORGANIZATIONS

*The article above is part of a research conducted in order to evidence the role of leaders in generating change in organizations and to observe the methods and techniques used, knowing that projects and their management are tools for implementing change in organizations. Leaders, by their influence and not by force, can determine their team to initiate new projects, considered by specialists and practitioners also, real practices of generating change in organizations.*

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### INNOVATIVE ERP APPLICATIONS IN THE PUBLIC SECTOR: A COMPARATIVE ANALYSIS OF NEW ZEALAND EXPERIENCE

*Contemporary economic science is looking for ways of research actualisation to resolve the challenges under the world financial crisis. Besides existing challenges in private de-regulated sector, one of the efficient innovations can be found in broadening ERP applications in the Public Sector. This paper approaches to the ERP applications mainly from the economical rather than from technical perspective. Comparative analysis of New Zealand public sector is supported by relevant international practical experience (implementations), and by core fundamental analysis of economical nature of business processes used by public entities. The key advantage (based on a historical timeline) comes from a full integration of financial scope and operational activities. Using the example of ERP (as one of the drivers of productivity & performance improvement), the paper is aiming to underline how to bring the best practice and technology (data management and logical architecture) from the private sector into the public sphere.*

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### ECOLOGICAL ECONOMICS VS ECONOMIC(AL) ECOLOGY

*Currently world faces the dilemma – ecological economy or economic(al) ecology. The researchers produce hundreds of surveys on the topic. However the analyses of recent most cited simulations had shown the diversity of results. Thus, for some states the Kuznets environmental curve has place, for others – no. Same could be said about different years for the same state. It provokes the necessity of drawing new group analyses to reveal the tendencies and relationships between economic and environmental factors. Most flexible and mirror factor of environmental sustainability is the volume of CO<sub>2</sub> emissions. The econometric analysis was used for detecting the economic impact on this indicator at the global level and in the spectra of group of states depending on their income. The hypothesis of the existence of environmental Kuznets curve for the analysed data is rejected. Real GDP per capita impact on carbon dioxide emissions is considered only at the global level. The impact of openness of the economy is weak. Rejection happened also to the hypothesis that for the developed countries there is a reverse dependence between the environmental pollution and economic openness. Indicator "energy consumption per capita" impacts on greenhouse gas emissions only in countries with high income. Whereby it should be noted that the more developed a country is, the more elastic is this influence. These results have a potential usage for environmental policy regulation and climate strategy.*

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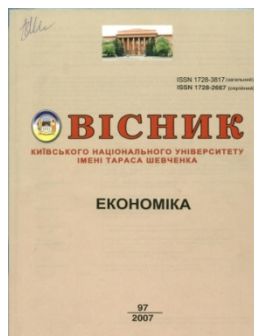
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