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ТРЕБОВАНИЯ К НАУЧНЫМ СТАТЬЯМ ДЛЯ ПУБЛИКАЦИИ В ЖУРНАЛЕ «ЭКОНОМИКА И СОЦИОЛОГИЯ», КАТЕГОРИЯ „B”...……..... 117

ECONOMY

INDICATORS SYSTEM FOR MONITORING INTELLECTUAL PROPERTY MANAGEMENT IN COMPANIES

Alexandru STRATAN[1], Correspondent Member of ASM, Professor, PhD,
National Institute for Economic Research, Republic of Moldova
Alexandra NOVAC[2], PhD, Associate Researcher,
National Institute for Economic Research, Republic of Moldova

Organizations and companies with a high level of competitiveness had developed intellectual property management systems that aim at assuring information and indicators for decision-making. Furthermore, the systematization and monitoring of information on intellectual property management contributes to the improvement, reliability, quality and efficiency of managerial efficiency, offering, in the end, to the company an image of its competitive advantages, generated by the intellectual property.

The purpose of this work is to identify a system of indicators (benchmarks) that can be used for monitoring through self-evaluation of the intellectual property management as part of a methodic approach on researching the intellectual property management system in companies.

The main results achieved following the investigations were the development of a set of indicators (benchmarks) for monitoring the management of intellectual property in companies. Also, being based on this group of indicators, an integrated indicator for assessing the effectiveness of the management system of intellectual property in companies had been developed.

Keywords: *intellectual property, intellectual property management, monitoring, intellectual property monitoring indicators, company.*

Organizațiile și întreprinderile cu un nivel înalt al competitivității au elaborat sisteme de gestiune a proprietății intelectuale care au drept scop asigurarea cu informații și indicatori pentru luarea deciziilor. O sistematizare și monitorizare a informației privind gestiunea proprietății intelectuale la întreprindere contribuie la îmbunătățirea, fiabilitatea, calitatea și eficiența deciziilor manageriale, oferind în final întreprinderii o imagine a avantajelor sale competitive generate de proprietatea intelectuală.

În articol sunt prezentate rezultatele studiului cu privire la identificarea unui sistem de indicatori (repere) ce poate fi utilizat pentru monitorizarea prin autoevaluarea activității de gestiune a proprietății intelectuale, ca parte a unei abordări metodice privind cercetarea sistemului de gestiune a proprietății intelectuale la întreprindere.

Principalele rezultate obținute în urma investigațiilor se referă la elaborarea unui set de indicatori (repere) de monitorizare a gestiunii proprietății intelectuale a întreprinderii, în baza cărora a fost elaborat un indicator integrat de apreciere a eficienţei sistemului de gestiune a proprietăţii intelectuale la întreprindere.

Cuvinte-cheie: *proprietate intelectuală, gestiune a proprietății intelectuale, monitorizare, indicatori ai monitorizării proprietății intelectuale, întreprindere.*

Организации и компании с высоким уровнем конкурентоспособности разработали системы управления интеллектуальной собственностью, направленные на предоставление информации и показателей для принятия управленческих решений. Систематизация и мониторинг информации по управлению интеллектуальной собственностью на предприятии способствуют повышению надежности, качества, эффективности управленческих решений, обеспечивая предприятию, в конечном счете, картину ее конкурентных преимуществ, связанных с интеллектуальной собственностью.

В статье представлены результаты исследования по определению системы показателей (ориентиров), которые могут быть использованы для мониторинга управления интеллектуальной собственностью, как часть методического подхода к исследованию системы управления интеллектуальной собственностью на предприятии.

[1] ***© Alexandru STRATAN, alex_stratan@yahoo.com***
[2] ***© Alexandra NOVAC, alecsandra_novac@yahoo.com***

На основе результатов исследования был разработан набор показателей (ориентиров) для мониторинга управления интеллектуальной собственностью на предприятии, а также интегральный показатель для оценки эффективности системы управления интеллектуальной собственностью на предприятии.

Ключевые слова: *интеллектуальная собственность, управление интеллектуальной собственности, мониторинг, показатели для мониторинга интеллектуальной собственности, предприятие.*

JEL Classification: L32, O30, O32, O34.
UDC: 005.336.4

In the process of the companies' operation, intellectual resources are both used and created. Once intellectual outputs are transferred into intellectual property objects, which can take the form of a new or considerably improved product/process, these can have a considerable impact on the company's competitiveness. At the same time, intellectual property objects (IPOs) can become the object of the purchase-sales relations, being an additional source of income.

To protect intellectual property (IP) assets, companies must manage the IP which they own, which would contribute to the increase of their competitive advantages on the market. This is valid, first of all, for innovative and industrial companies, since they are, largely, based on knowledge, and require, thus, to manage a wide range of IPOs: inventions, trademarks, industrial designs, copyright, etc.

However, according to certain studies [1, 7], at present stage, the companies of Moldova do not use the IPOs which they own, have no perspective vision of the advantages generated by the intellectual property which the company has and pay no appropriate attention to intellectual property management: identification of intellectual property, obtaining of protection, exploitation and monitoring of the intellectual property.

In spite of the fact that in the national literature of the last decade more attention is paid to the research of different aspects of intellectual property and its management, still, the aspect of intellectual property management in companies is insufficiently studied, which is reflected also through the limited number of methodic materials.

According to the researched literature [3, 6], there are a number of tasks which intellectual property management has: systematization and analysis of the use of the IPOs; determination of the forms of protection of the IPOs; determination of IPOs with dominant position; IPOs' registration; IPOs' commercialization; surveillance of the violation of exclusive rights.

According to Berman (1999), successful IP management can be performed through an IP management system [2]. We believe that an IP management system can act as an instrument of systematization, collection and consolidation of data on existing IP and how this is managed, offering, thus, useful information for managerial decision-making.

To effectively use the innovational process, it is necessary to appropriately organize the system of intellectual property management, which should be understood as the mechanism of the creation, identification of IPOs, protection and exploitation of IPOs, etc.

The purpose of an IP management system in companies is, first of all, to maintain the companies' competitiveness, their adaptation to the changes around. A system of IP management in companies is understood as a set of sub-systems, members of intellectual activity, as well as specific proceedings, forms and methods of management development, adoption and enacting management decisions on creating, using and developing intellectual activity.

In other words, the IP management system is being realized in the area of creation and exploitation of IPOs, which consist of functionally interdependent elements: financial, material, human, informational, organizational operational conditions, including formulating, approval and implementation of managerial decisions.

The approach proposed by the authors implies and aims at getting operational information on the condition and efficiency of the IP management system, existence of IPOs at the company, their exploitation, etc. This approach is presented as a procedure for researching the company's IP management system, which represents the monitoring of the intellectual property management activity, which would lead to the identification of the state of things in this area and would implicitly contribute to making more efficient decisions in the area of intellectual property management at the company. Thus, the authors have developed

a system of indicators (benchmarks), which would allow companies to monitor, through self-evaluation, the intellectual property management activity – identification, systematization of the intellectual property it owns and how it is exploiting, sources of information on IPOs' creation, the composition and characteristics of the human resources engaged in this area, etc.

According to [4], monitoring can be defined as a continuous function, whose main objective is to provide to the management and the stakeholders information on the progress or lack thereof, in achieving results in a certain area.

Many look at the function of monitoring as a form of control over the activities included in a project. Thus, from the projects' perspective, monitoring represents a systematic collection, analysis and use of information from projects and programs.

Applied to the intellectual property management, monitoring would allow for collecting and registering information, as well as analyzing it in relation to the intellection property management activity, as a basis for managerial decision-making. This would allow the entrepreneur to ask the following questions: which are the company's IPOs? Which IPOs should be renewed? Are these IPOs exploited? Are they counterfeit? etc.

In the light of the above, we suggest a set of benchmarks (indicators) of self-evaluation/monitoring of the IP management activity, which was divided, conventionally, into several blocks: Elements which characterize the innovational activity; Expenses which innovational activity and the development/ procurement of IPOs imply; The human potential engaged in this process; Legal protection of products/ services; Activity on the IPOs market; IP management structure; Indicators which characterize the impact of IP management.

Furthermore, a more detailed presentation of each bloc of indicators follows [7].

Block 1. ***Elements which characterize the innovational activity***

Goal: *allows understanding how the company creates new products and how creative activity is motivated.*

1.1. Ways of developing new products/services

- One's own developments,
- Procurement of licenses,
- Imitations,
- Cooperation with other companies, universities, research entities, etc.

1.2. Existence of a system of incentivizing creative activity

- Moral incentives,
- Financial,
- Mixed.

Block 2. ***Indicators which are specific to expenses incurred by the innovational activity and development/procurement of IPOs***

Goal: *Allows knowing the amount and structure of expenses for innovative activities, creation and/or purchase of IPOs.*

- Internal research-development expenses,
- Expenses for purchasing machinery and equipment,
- Expenses for purchasing hardware,
- Expenses for purchasing software,
- Expenses for staff training,
- Expenses for registering IPOs, etc.

Block 3. ***Sources of information in the area of IPOs creation***

Goal: *The company must be aware of the latest approaches in the area in which they operate. Therefore, it is necessary to identify basic sources of information on IPOs development.*

3.1. Internal sources:

- Research activities,
- Marketing,
- Manufacturing and distribution.

3.2. External sources:

- internet, clients, research entities, magazines, consultants, exhibitions, conferences, data bases, competitors, other companies, suppliers, etc.

Block 4. ***Human potential***

Goal: *Allows knowing the composition and the characteristics of the company's human resources and the trends in the area, with a view to personnel evolution and changes.*

4.1. The personnel composition as to their level of qualifications:

- the number of staff with general education, vocational schools, professional schools, university and post-university degrees,
- the number of staff with technical education, professionals in science (engineering, physics, chemistry, biology, etc.), other professionals.

4.2. Human resources engaged in innovational activities (IPOs creation)

- number of staff engaged in IPOs research, innovation, creation,
- qualification of the staff engaged in IPOs research, innovation, creation.

4.3. Staff training

- type of training (IT, technological process, administration, quality management, stimulation of creativity, training in innovation, intellectual property, marketing of new products, etc.),
- number of trained persons.

Block 5. ***Legal protection of products/services***

Goal: *Allows identifying and systematizing IPOs existing at the company, to what extent they are protected by intellectual property protection titles.*

5.1. Size and structure of the company's IPO portfolio:

5.1.1. Number of the company's intellectual property objects:

- Inventions,
- Industrial designs/models,
- Utility models,
- Trademarks (collective trademark, certification trademark, etc.),
- Appellation of origin,
- Geographical indications,
- Guaranteed traditional specialties,
- Plant varieties,
- Data bases,
- Know-how,
- Software,
- Scientific, literature or art works,
- Other outputs of intellectual activity.

5.1.2. Number of applications submitted to obtain protection titles over IPOs

- Domestically,
- In other countries.

5.1.3. Number of protection titles obtained

- Domestically,
- In other countries.

Block 6. ***Activity on the IPOs market***

Goal: *Allows seeing to what extent the intellectual property rights are exploit, as well as to identify violations of intellectual property rights and monitor the resolution of conflicts which involve violations of intellectual property rights.*

6.1. Number of concluded licensing agreements (cessation, pledge, etc.), of which:

6.1.1. Number of purchased licenses

6.1.2. Number of issued licenses

6.2. Number of intellectual property rights violations in companies

6.3. Number of trials concerning violations of intellectual property rights

6.4. Number of resolved conflicts in the area of intellectual property (pre-trial, after the trial)

Block 7. ***The structure of the intellectual property management***

Goal: *To pay the company's management's attention to the need to formalize business processes, given that one of the basic conditions for an efficient intellectual property management is a formalization of business processes – definition of tasks, responsibilities, the sequence of their execution, resources, as*

well as other parameters. Lack of formalized procedures of intellectual property management leads to various difficulties, such as: incompatibility between documents, doubling of functions of different departments, limited level of staff information, etc.

7.1. Existence of an intellectual property management sub-unit or a person in charge of this area

7.2. Existence of the internal rules of procedures at the company in relation to the intellectual property

7.3. Existence of the internal rules of procedures on the motivation of the personnel involved in activities related to the innovation and IPOs creation

Block 8. ***Indicators which characterize the impact of intellectual property management***

Goal: *Allows evaluating the effects of IPOs' exploitation on the company's performance*.

8.1. Revenues from the commercialization of rights over IPOs

- Licenses,
- Cessations,
- Franchises, etc.

8.2. Value of intangible assets (8.2.1. Inclusion of IPOs in the company's balance sheet)

8.3. Indicators' trends concerning intangible assets (growth indexes)

8.4. The share of intangible assets in total assets

Monitoring the intellectual property management can be started with the compilation of the information basis. An information basis for the analysis could also be the information from the balance sheets of the studied enterprises, statistic forms, such as: form 4-tn Submission, implementation and use of inventions and rationalization proposals, form no. 1 – science, etc.

The ideas concerning the IPOs creation can arise from the internal activity of the company: from research, marketing, manufacturing activities, as well as from external environment: research institutes, exhibitions, etc. (*block 3*). Also, the knowledge is acquired through learning, imitation and efficient and systematic training of the company's personnel, involved in innovative activities, in IPOs' creation, etc. *(block 4).*

The IPOs' protection stage implies a number of measures on assuring legal protection of the created intellectual outputs, which, besides patenting, can also include procedures on introducing the commercial secret regime. Also, to protect the copyright, it is possible to publish articles on technical solutions, which the company has no interest to patent. IPOs which are there in the company are identified by collecting and analyzing information on IPOs which exist in the company, the number of applications for IPOs' protection titles, as well as the number of protection titles owned (*block 5*). As a result, the company can create a log of intangible assets, which would contain details on the condition of existing IPOs, used IPOs, potential IPOs, not used IPOs.

At the stage of intellectual property commercialization, the owner of the intellectual property, using its right of monopoly over protected products, protects its rights both within the country and abroad, as well as receives additional financial benefits on the grounds of existing agreements. The IPOs which are transformed into products and services (or rights over them) are sold to make sales and revenues (*blocks 6; 8).* Also, *block 6* reflects the violations of intellectual property rights and monitors the state of the art in relation to the resolution of conflicts which imply violations of property rights.

Lack of formal proceedings of intellectual property management leads to various problems, such as: incompatibility between documents, doubling of the functions of different departments, a limited level of personnel information, etc. Thus, in order to draw the company's management attention to the need to formalize the business processes it is necessary to make an assessment of the organizational structure of the intellectual property management (*block 7*).

The systematization of the information on IP management in companies would improve the quality and efficiency of management decisions in this area. Being based on a set of indicators (benchmarks) which was described above, we wanted to develop an integrated indicator of the efficiency of the IP management system, which could be appreciated as a multitude of separate indicators, which describe various aspects of the system. Since indicators are part of different blocks and they are quantified differently (qualitative and quantitative), developing an integrated indicator would provide a totaling evaluation of the IP management system efficiency. An integrated indicator of the IP management system efficiency shall mean a synthesis of a multitude of characteristics of the intellectual property management, which allows describing the achievement of the objectives of its operation.

For an easier interpretation of the results of the integrated indicator, the Harrington's verbal-numerical scale can be used. In order to describe the results of the efficiency of the IP management system, the scale in the table below can be used. The scale is conventionally divided into an interval from 0 to 1 in sub-intervals: [0; 0.2], [0.2; 0.37], [0.37; 0.63], [0.63; 0.80] and [0.80; 1.00].

Table 1

Intervals according to the Harrington's verbal-numeric scale

Interval	Description of the characteristic
0.00-0.20	The IP management system is in a very poor condition
0.2-0.37	The IP management system is in a poor condition
0.37-0.63	The IP management system is in a satisfactory condition
0.63-0.80	The IP management system is in a good condition
0.80-1.00	The IP management system is in an excellent condition

Source: Based on [4].

We propose that the integrated indicator of the IP management system's efficiency is calculated based on the more important particular indicators. In this regard, the list of proposed indicators-benchmarks should be divided into 2 levels: quantitative and qualitative indicators. The group of quantitative and qualitative indicators, based on which the integrated indicator would be calculated, shall be calculated by granting to these indicators some values, between 0 and 1 (formula 1).

$$I_{ef} = \frac{\sum_{k=1}^{n} x_k}{n} \quad (1)$$

where,

I_{ef} – the integrated indicator of the IP management system's efficiency, $0 \leq I_{ef} \leq 1$.

x_n – quantitative and qualitative indicators which describe the IP management system.

n – number of indicators.

Table 2

Groups of indicators which are needed for calculating the integrated indicator for assessing the IP management system's efficiency

Quality indicators					
Ways of developing new products/services (x_1)					
Current ways	1	2	3	4	Missing
Values	0.25	0.5	0.75	1	0
Existence of a system of motivating creative activity (x_2)					
Current ways	1	2	Missing		
Values	0.5	1	0		
Sources of information in IPOs creation (x_3)					
Current sources	1	2	Missing		
Values	0.5	1	0		
Existence of an IP management sub-unit (x_4)					
Ways	Yes	Missing			
Values	1	0			
Existence of the internal rules of procedure within the company with reference to IP (x_5)					
Ways	Yes	Missing			
Values	1	0			
Existence of the internal rules of procedure on motivating the personnel involved in innovation and IPOs' creation (x_6)					
Ways	Yes	Missing			
Values	1	0			

Quantitative indicators

Share of personnel with higher education and post-graduate degrees (x_7)					
Share	1-25	25-50	50-75	Over 75	Missing
Values	0.25	0.5	0.75	1	0
Share of qualified personnel (x_8)					
Share	1-25	25-50	50-75	Over 75	Missing
Values	0.25	0.5	0.75	1	0
Share of personnel involved in innovational activities (IPOs creation) (x_9)					
Share	1-25	25-50	50-75	Over 75	Missing
Values	0.25	0.5	0.75	1	0
Share of trained personnel (x_{10})					
Share	1-25	25-50	50-75	Over 75	Missing
Values	0.25	0.5	0.75	1	0
Number of IPOs in the company (x_{11})					
Number	1-5	5-10	10-15	Over 15	Missing
Values	0.25	0.5	0.75	1	0
Number of submitted applications for the IPOs' protection titles (x_{12})					
Number	1-5	5-10	10-15	Over 15	Missing
Values	0.25	0.5	0.75	1	0
Number of purchased licenses (x_{13})					
Number	1-5	5-10	10-15	Over 15	Missing
Values	0.25	0.5	0.75	1	0
Number of granted licenses (x_{14})					
Number	1-5	5-10	10-15	Over 15	Missing
Values	0.25	0.5	0.75	1	0
Number of IP rights violations by the company					
Number	1-3	Over 3	Missing		
Values	0.5	0	1		
Number of resolved conflicts in IP PI (x_{15})					
Modalities	Resolved	Unresolved			
Values	1	0			
Revenues from the commercialization of IPOs rights (x_{16})					
Interval	Up to 10000 MDL	10000-40000 MDL	40000-80000 MDL	Over 80000 MDL	Missing
Values	0.25	0.5	0.75	1	0
Annual economic effects from IPOs' implementation (x_{17})					
Interval	Up to 100 thousand MDL	100-400 thousand MDL	400-800 thousand MDL	Over 800 thousand MDL	Missing
Values	0.25	0.5	0.75	1	0
Inclusion of IPOs in the company's balance sheet (x_{18})					
Modalities	Included in the balance sheet	Missing			
Values	1	0			
Share of non-material assets in the total assets (x_{19})					
Number	1-25	25-50	50-75	Over 75	Missing
Values	0.25	0.5	0.75	1	0

Source: Developed by the authors.

Conclusions

The systematization of information on intellectual property management at the company and its monitoring would improve reliability, quality and efficiency of management decisions in this area. This set of benchmarks can be obviously adjusted and completed depending on the specifics of the company (type of activity, size of the company, activity on the external market, innovational composition, etc.).

Thus, the monitoring of these indicators would allow solving such tasks as:

- improving the assurance of the intellectual property management system with different types of resources (human, informational, organizational, etc.);

- developing the intellectual property management strategy;
- formulating the intellectual property management structure;
- arguing for and improving the quality of the managerial decisions;
- decreasing the level of uncertainty concerning the operations with the results of the intellectual activity.

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ADVANTAGES AND CONSTRAINTS OF INNOVATIVE BUSINESS MODELS FOR FOOD SECURITY: CASE STUDY IN SMOLYAN DISTRICT, BULGARIA

Dimitre NIKOLOV[1], Professor, PhD,
Institute of Agricultural Economics, Sofia
Ivan BOEVSKY[2], Associate Professor, PhD,
Institute of Agricultural Economics, Sofia
Petar BORISSOV, Associate Professor, PhD,
Agricultural university, Plovdiv
Teodor RADEV, Associate Professor, PhD,
Institute of Agricultural Economics, Sofia
Agricultural university, Plovdiv

The market access has been often defined as a factor having the strongest impact on agricultural sector activity. Its importance is particularly critical for the small farms, which could not offer their production on the market through single and sporadic sales. They could overcome these weaknesses of their business through participation in cooperative marketing. This article goal is to establish the advantages and the constraints of cooperative business marketing model for food security in farms of Smolyan district, Bulgaria. Farmers expect some advantages from the participation in such cooperation form. Three are the main approved advantages: 1) better awareness of market requirements; 2) market access facilitation; 3) realization of higher profit from the activity. These advantages are expected as a result form the direct contact with the final consumers, without external mediators. The implementation of cooperative marketing has its challenges embarrassing its effective use. The main constraints are related to the efficiency of processes management and to the coordination of activities of different economic entities.

Keywords: *farm management, risk, cooperation, business models.*

Accesul pe piață deseori a fost definit ca un factor care a avut cel mai mare impact asupra activității din sectorul agricol. Importanța acestui factor este deosebit de critică pentru fermele mici, care nu și-au putut plasa producția pe piață prin vânzările unice și sporadice. Acestea puteau depăși slăbiciunile afacerii lor prin participarea la marketingul cooperativ. Scopul acestui studiu este de a stabili avantajele și constrângerile modelului de marketing cooperativ de afaceri pentru securitatea alimentară în fermele din regiunea Smolyan, Bulgaria. Agricultorii se așteaptă la unele avantaje în urma participării la o astfel de formă de cooperare. Principalele avantaje aprobate sunt: 1) o conștientizare mai bună a cerințelor pieței; 2) facilitarea accesului pe piață; 3) realizarea unui profit mai mare din activitate. Aceste avantaje sunt așteptate ca urmare a contactului direct cu consumatorii finali, fără mediatori externi. Implementarea marketingului cooperativ are provocările sale îngreunând utilizarea eficientă a acestuia. Principalele constrângeri se referă la eficiența gestionării proceselor și la coordonarea activităților diferitelor entități economice.

Cuvinte-cheie: *managementul fermelor, riscuri, cooperare, modele de afaceri.*

Доступ к рынку часто определяется как фактор, оказывающий наибольшее влияние на сельскохозяйственную деятельность. Это особенно важно для небольших ферм, которые не смогли разместить свою продукцию на рынке из-за единичных и спорадических продаж. Эти недостатки бизнеса можно преодолеть, участвуя в кооперативном маркетинге. Целью данного исследования является определение преимуществ и ограничений совместной модели бизнес-маркетинга для продовольственной безопасности на фермах в Смолянском районе Болгарии. Ожидаемые фермерами преимущества от участия в такой форме сотрудничества следующие: 1) лучшее понимание требований рынка; 2) облегчение доступа к рынку; 3) увеличение прибыли от деятельности. Эти преимущества ожидаются в результате прямого контакта с конечными потребителями без внешних посредников. Внедрение кооперативного маркетинга имеет свои

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[2] © ***Ivan BOEVSKY, Petar BORISSOV, Teodor RADEV***

проблемы, затрудняющие его эффективное использование. Основные ограничения связаны с эффективностью управления процессами и координацией деятельности различных экономических субъектов.

Ключевые слова: *фермерское управление, риски, сотрудничество, бизнес-модели.*

JEL Classification: M10, M11, M16, M19.
UDC 338.439.5(497.2)

Introduction. Farmers often have serious and complex problems, resulting from the dynamic marketing environment. Adopting management decisions is within conditions of risk and related to the output realization, which leads to decreasing efficiency of their activity. Knowledge of all marketing system functioning is necessary in order to improve not only the interaction between different marketing agents, but also the profitability of agricultural activity and the farms' viability [1].

The access to a market has been assessed as a main critical factor, determining the opportunity to develop agricultural activity. This is particularly valid for small farms, which have difficulties to insure market for their production and have insufficient market power [2]. Often they sell on lower prices than the big farms, which decrease their profitability within equal conditions and put their activity at risk. Farmers are subject to a necessity to search new ways of organizing their activity, in order to improve the results [3].

The concept of food security by Kotagama, H. et al. [7], from a national perspective, is based upon: availability (in adequate quantity, nutrionally balanced, of acceptable quality, culturally preferred and safe), accessibility (in terms of physical transport and economic affordability to purchase) to the nation's population. Food security also expects that food availability is reliable and resilient in such a way that food availability is assured at all times. Reliability of food supply although basically depends on weather and the biological character of food production, depends on market conditions in modern times, too.

There is also an emergence of thinking as reasoned by Rocha [8] that prevalence of negative externalities and public goods in the production and distribution of food as cause of food insecurity and justifies government intervention in the production and distribution of food to secure national food security. The negative externalities are such as over-exploitation and degradation of natural resources (water, soil, biodiversity, fish, and impact on climate change) and pollution due to the use of chemical materials etc. [8] explain further that although food itself is not a public good, as it is reasonably provided though markets given the possibility of excludability and the rivalry in consumption; 'food security' is a public good as every one in society enjoys without rivalry and exclusion the sense and benefit of food security. Food security provides public goods for a healthy, productive and harmonious society. It is linked to national security in the sense that in the event of extreme situations of war, assuring of food supplies becomes a critical issue. The acceptance of the paradigm that 'food security is a public good', justifies government intervention and support in the market to supply it.

Public goods have the characteristic of non-excludability and nonrivalry in consumption, which leads to market failure of production of such commodities. Private firms would produce staple foods and retain reserves of food only up to gaining private benefits and not to secure public benefits of food security as explained above. The theory of the second best suggests that when markets fail, government intervention could improve social welfare. However, the right form (least costly and most effective) of government intervention needs to be decided. The best intervention would be a policy that is targeted to the root cause of the market failure.

One of the major obstacles in enhancing food supplies in regions with predominant small farms structure is the lack of capacities of smallholder farmers. Farmers are often insufficiently integrated into the formal economy due to the limited access to infrastructure, information, capital, skills and technologies. Food farmers also increasingly compete for resources such as land, energy and water with emerging industries and biofuel production. At the same time, climate change and unsustainable production methods reduce land availability and productivity

There is a growing body of experience showing that "win-win" outcomes are possible through commercially innovative business models – ways of creating value within a market network of producers, suppliers and consumers – which involve small farmers and SMEs. These innovative business models for small farmers and SMEs must deliver essential services to producers and ensure reliable supply to buyers, while also addressing the high transaction costs and risks that buyers face when purchasing from large numbers of fragmented, cash-strapped small farmers and SMEs. This brief gives an overview of lessons learned about business models for including small farmers and SMEs in modernizing markets and agro-industries.

Methods and information

To study the public goods insurance, including the food security from agriculture, 30 farmers from Smolyan district have been interviewed. With reference to their food security, their production activity is concentrated in three typical for the region crops – beans, potatoes and sheep breeding. The mentioned production forms almost all the income from the agricultural activity and builds the image of the region. The appropriate conditions and the traditions of this production are popular among the local community and the consumers estimate these products as qualitative and natural. These productions have also strong impact on rural landscapes formation and for the insurance of public goods for the local population n and the visitors.

Food security in the area requires small farms unification on the base of cooperative marketing. Cooperative marketing is every contract for marketing activity cooperation that could be realized under different forms. Farmers can cooperate also for increasing their market power in purchasing production factors. Thus, they succeed to negotiate more profitable prices, because the request's volume is bigger [5].

The common use of the available resources is a popular example for cooperative work. Other opportunity of cooperative work is the use of the same internet sites designer from local producers, which will present their products and the region of production to the target clients, through online tools [4].

Other form of cooperative marketing is the cross promotion – one producer promotes a definite product to other producers from the region and this way there is a diversity of delivered products and a warranty for the clients about the origin and the qualities of offered goods. Participation in organized events as fairs and bazaars, as well as during sport events, professional meetings etc. are also good opportunities for the farmers to present their output and to attract and convince clients in their products' quality.

Cooperative marketing aims:

- Improvement of activity efficiency;
- Share of available resources;
- Improvement of products' popularity;
- Access to the market;
- Impact on consumers.

For small business, the cooperative marketing insures market power for participating producers and creates opportunities for business development. Farmers could search for various ways to realize the above-mentioned and this approach for business realization is accompanied by lots of advantages and constraints [6].

Analysis of survey results

Agriculture in the region is small and fragmented, which is typical for mountain areas. The small production puts farmers in unfavourable position towards providers and mediators. The presence of big number of small farms hinders their management. Within these conditions, the participation in cooperative forms could create an opportunity for optimal use of resources and activity facilitation, through mutual support and coordination. From the surveyed entity there are a small number of producers, which are members of agricultural association. Barely 7% (Figure 1) declare to be active cooperative members and look for a profit on the base of common interest and similar problems solution, as agricultural producers. The interest in participation in agricultural associations is very low and could be explained by the lack of recognition of cooperatives as an effective structure from the farmers' side.

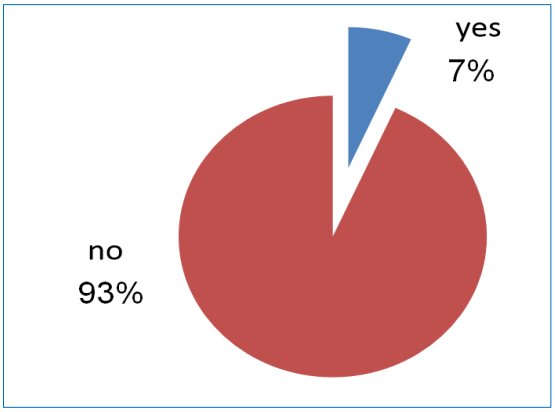

Figure 1. Share of members in agricultural associations

Source: Developed by the author.

Farmers use two main chains (more often combined) for their output realization – sell from the farm and retail sales (Figure 2). The wholesale markets are not a wanted form and there are not concluded contracts with processors, due to the small output volumes, therefore these forms of realization are inconvenient.

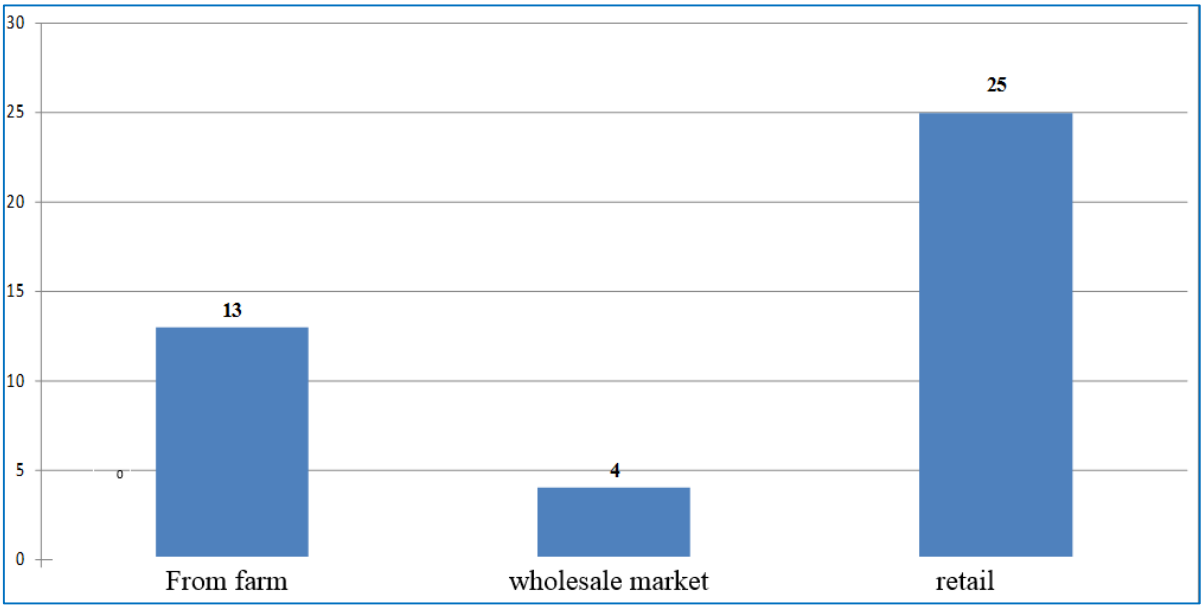

Figure 2. Output realization forms

Source: Developed by the author.

It was already mentioned that the region has convenient conditions for the development of certain productions – beans, potatoes and sheep breeding. Nevertheless, 1/3 of respondents approximately determine these products image as weak or insufficient (Figure 3), which is surprising in the background of the positive consumers opinion.

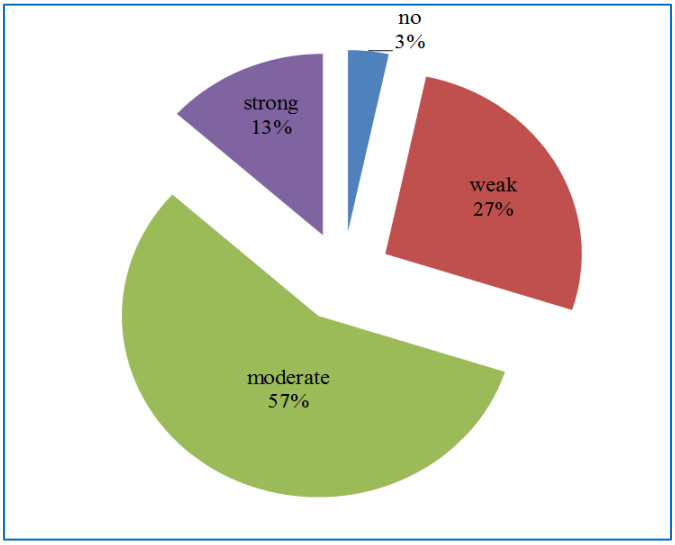

Figure 3. Local agricultural products image

Source: Developed by the author.

A considerable part of farmers assess the image of local products as high, which gives the opportunity to produce goods with clear identification of origin. This is proved also by the declared readiness from all respondents to participate in forms of cooperative marketing aiming the production and realization of products with registered origin (Figure 4).

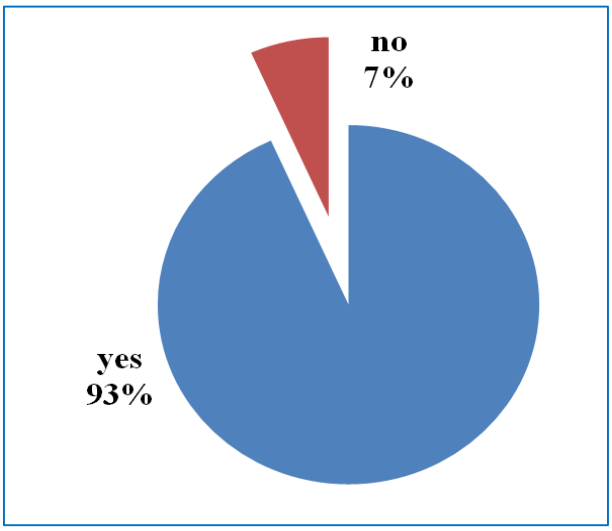

Figure 4. Willingness for participation in association for cooperative marketing
Source: Developed by the author.

The participation in association for cooperative marketing could lead to various profits for the farmers. These benefits could be grouped in two directions – farms integration improvement in the food chain and agricultural activity improvement.

Regarding to the improved integration (Figure 5), the farmers from the region expect from the cooperative marketing to insure the direct contact with the final consumers, without mediators. This will give them the possibility to be aware with consumers' requirements, on the one hand, and on the other hand they could offer their products with an emphasis on their specificity, thus presenting the advantages of their business and region. The way of realization is to offer local products with guaranteed origin. Interesting is the fact that most of respondents consider the cooperative marketing would not lead to increase of products' quality. Thus, the problems of local producers are related more to the guaranty for consumers than to the production quality. The clear products' identification will bring advantage especially in this area. The biggest part of interviewed persons does not conceive the opportunity of products' diversification as a result from the cooperative marketing. This is due to the specificity of natural climatic conditions of this area, which restricts the production opportunities to a small number. Nevertheless, the image of the region is built through these outputs and could be used for the enlargement of their marketing.

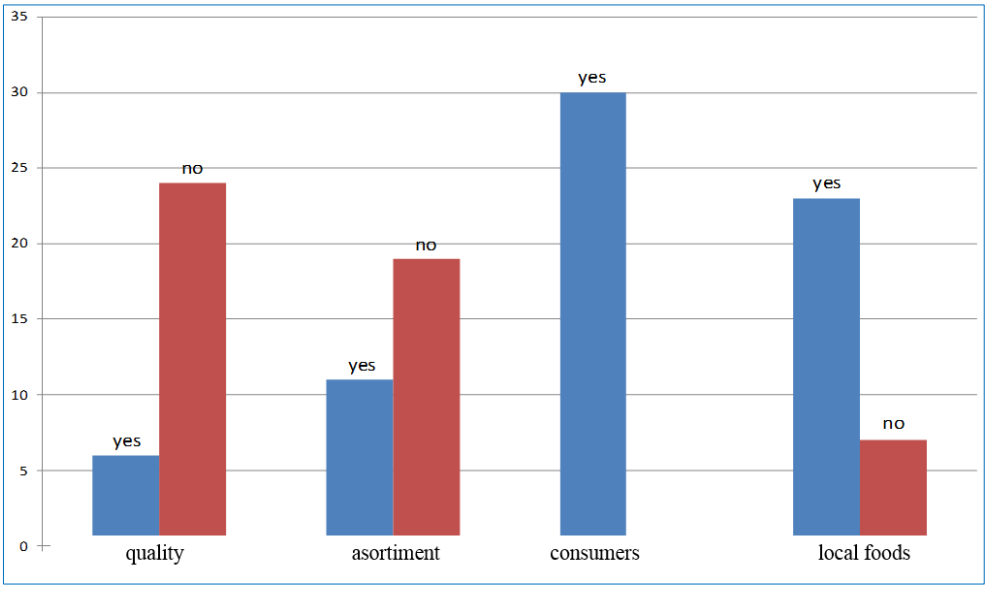

Figure 5. Impact of cooperative marketing on farms integration in the food chain
Source: Developed by the author.

The cooperative marketing can influence also the agricultural activity of farmers participating in this type of cooperation form. There are three basic benefits: 1) better awareness of market requirements; 2) market access facilitation; 3) realization of higher profit from the activity (Figure 6). A large part of respondents thinks that the cooperative marketing could insure opportunity to diversify their sources of income. This is realizable within the context of increasing the income share from agricultural activity in their total income, this share being insufficient until now. Respondents declare also that they do not expect any contribution of cooperative marketing regarding the more effective resource use and quality improvement of production activities.

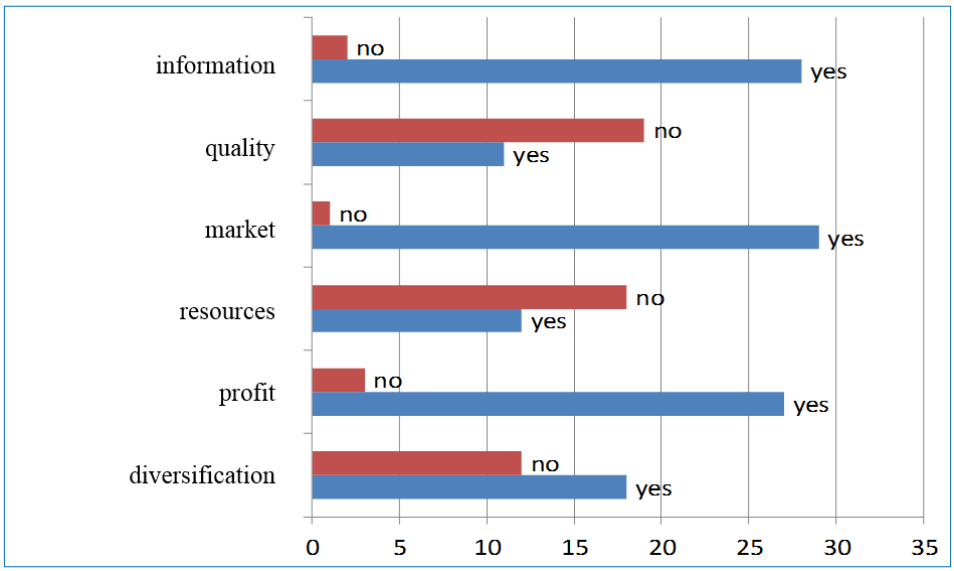

Figure 6. Cooperative marketing impact on agricultural activity
Source: Developed by the author.

The participation in association for cooperative marketing is possible only if some stimuli are available, which could motivate farmers to be part of such an union. Problems of agricultural producers are heterogeneous, but the most critical of them are related to the market [3]. This has been confirmed by the answers of interviewed persons, declaring that the main reasons to participate in the cooperative marketing are the facilitated market access, the more direct contact and communication with final consumers and the opportunity to resist to the competitive pressure (Figure 7). There is a probability for the expenses, connected to the production realization, to be diminished, due to the optimization process. It should be noted that farmers barely pay attention to benefits related to the easier access to financial funds. The reason for this fact is the small size of the business, hence the costs are covered by own funds. Often the main income of farmers is coming from other activity and is used for funding the agricultural activity.

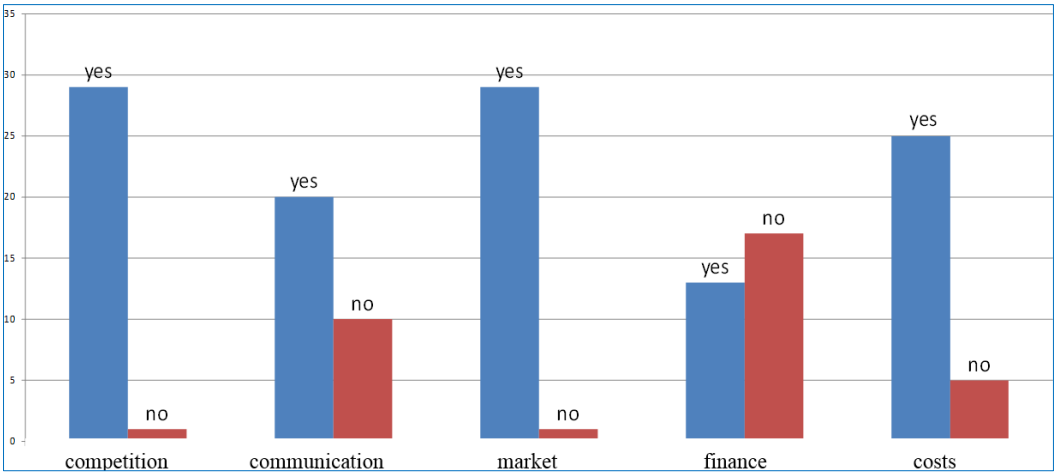

Figure 7. Which is the motivation for participation in cooperative marketing
Source: Developed by the author.

The participation in cooperative marketing has been embarrassed by some restrictions, putting under suspicion its successful functioning as a form of association. Respondents have mentioned 6 potential factors that would restrain their participation in cooperative marketing. The assessment was realized through a 4-degree scale, as the high mark means a stronger hindering role of a concrete factor. The amount of assessments from all respondents determines the overall evaluation for every factor, as the maximal value is 90 points. Six restrictions have been defined as potential stopping factors and the results show that each of them has extremely strong restraining impact (Figure 8). The most significant among these factors is the indisposition to cooperation because of the mutual lack of confidence. The reporting of such high marks for all the 6 factors shows that the probability to organize associations for cooperative marketing is very doubtful.

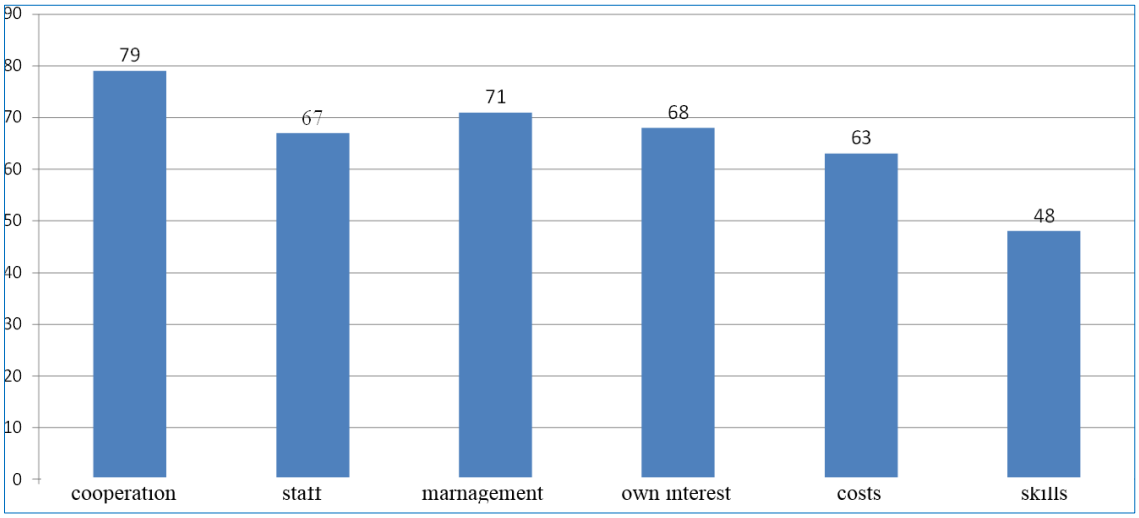

Figure 8. Which are the restraining factors to participate in cooperative marketing
Source: Developed by the author.

Conclusion

The carrying out of agricultural activity takes place within conditions of risk and insecurity, because the business environment factors have a dominant importance. This is in force especially for farmers from mountain areas, whose holdings have small sizes and are disadvantaged by unfavourable natural-climatic conditions. These factors create difficulties for the efficient farms' functioning, for their aims achievement and their vitality maintained in a long-term perspective. Farmers from these areas could barely be in competitive conditions with the producers of other regions, so the first ones are forced to look for new approaches in production management and agricultural products offering.

The cooperative marketing model is an opportunity for production activity organization and for products distribution through cooperation between farmers. The collaboration gives opportunities for better resource use and increase of activity efficiency. Agricultural producers could coordinate their actions related to the output and offer wider range of goods and bigger quantities on the market.

The associations for cooperative marketing could use the region advantages through offering products with clear identification of origin and guaranties. This will allow the positioning of products having unique qualities, differentiating them from other market goods. This way the massification of products could be overcome and concrete agricultural market segments will be covered, which do not manifest such price sensitivity as the mass consumer. The cooperative marketing implementation has its challenges, hindering its introduction and effective use. The main restrictions are related to the efficiency of processes management and the coordination of activities of different economic agents.

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THE INFLUENCE OF EARNING MANAGEMENT TO FIRM VALUE IN INDONESIA MANUFACTURING COMPANIES

Mitha FILANDARI*[1]*, Sarjana Ekonomi,
Faculty of Economic, Gunadarma University, Jakarta, Indonesia
Susy SUHENDRA*[2]*, Professor, PhD,
Faculty of Economic, Gunadarma University, Jakarta, Indonesia

Firm value is one of the indicators in determining whether the company is in health state and deserves to invest in it. This makes the manager to act appropriately by performing earnings management practices to increase the firm value but with the implementation of GCG it is expected to reduce the earnings management practices. This study aimed to examine the effect of GCG mechanisms (independent commissioner, managerial ownership, institutional ownership, and audit quality) as moderating variables in the relationship between earnings management and firm value. The object in this study is a manufacturing company listed in Indonesia Stock Exchange period in 2010-2014. This study uses purposive sampling method so that 31 companies were obtained as study sample. Data used in this study are secondary which are financial statement and annual report. Data analysis in this study uses multiple linear regression analysis and Moderated Regression Analysis with SPSS 21. The results show that GCG mechanisms which can be moderating variable between earnings management and firm value are independent commissioner and audit qualities whereas managerial ownership and institutional ownership cannot moderate the relationship between earnings management and firm value.

Keywords: *audit quality, earnings management, firm value, independent commissioner, institutional ownership, managerial ownership.*

Valoarea companiei reprezintă unul dintre indicatorii care demonstrează dacă compania se află într-o stare bună și se merită de a investi în aceasta. Acest fapt determină managerul să acționeze oportun prin efectuarea unor practici de gestionare a veniturilor pentru a crește valoarea firmelor, dar odată cu implementarea GCE este de așteptat să se reducă practicile de gestionare a veniturilor. Acest studiu are scopul de a examina efectul mecanismelor GCE (comisar independent, proprietate managerială, proprietate instituțională și calitatea auditului) ca variabile moderatoare în relația dintre managementul veniturilor și valoarea firmei. Obiectul cercetării este o companie de producție înregistrată la bursa de valori din Indonezia în perioada 2010-2014. Studiul dat se bazează pe metoda eșantionării, astfel încât au fost selectate 31 de companii în calitate de model de studiu. Printre datele utilizate sunt: situația financiară și raportul anual. Pentru analiza datelor au fost utilizate regresie liniară și analiza de regresie moderată în SPSS 21. Rezultatele arată că mecanismele GCE, ce pot acționa ca variabilă moderatoare între managementul veniturilor și valoarea firmei, prezintă calități de gestiune și audit independente, în timp ce proprietatea managerială și cea instituțională nu pot tempera relația dintre managementul veniturilor și valoarea companiei.

Cuvinte-cheie: *calitatea auditului, managementul veniturilor, valoarea firmei, comisar independent, proprietatea instituțională, proprietatea managerială.*

Значение компании является одним из показателей для определения того, находится ли компания в хорошем состоянии и стоит инвестировать в нее. Это приводит к тому, что менеджер действует своевременно, путем проведения практики управления доходами для увеличения стоимости компаний, но с внедрением ЭКУ ожидается сокращение практики управления доходами. Это исследование изучает влияние механизмов ЭКУ (независимый комиссар, управленческая собственность, институциональная собственность и качество аудита) как умеренные переменные между управлением доходами и стоимостью фирмы. Объектом данного исследования является производственная компания, зарегистрированная на индонезийской фондовой бирже в 2010-2014 гг. В этом исследовании используется целенаправленный метод

[1] © ***Mitha FILANDARI, mithafilandari@gmail.com***
[2] © ***Susy SUHENDRA, susysuhendra@gmail.com***

выборки, на основе которого были отобраны 31 компании в качестве объектов исследования. Для анализа были использованы вторичные данные, такие как финансовое положение и годовой отчет, а также множественная линейная регрессия и модерированный регрессионный анализ в SPSS 21. Результаты показывают, что механизмы ЭКУ как умеренные переменные между управлением доходами и стоимостью компании, являются независимыми качествами упраления и аудита, тогда как управленческая и институциональная собственность не могут умерить взаимосвязь между управлением доходами и стоимостью фирмы.

Ключевые слова: *качество аудита, управление доходами, стоимость компании, независимый комиссар, управленческая собственность, институциональная собственность.*

JEL Classification: G32, G34, G38.
UDC 658.155(594)

Introduction. Economic growth in a country can be seen from the point of view of the development of business, as does the industrial sector which is a major component of economic development in Indonesia and the manufacturing sector remains as the leading sector contributing most to the growth of the Indonesian economy. This is because manufacturing sectors in Indonesia have important role to the national Gross Domestic Product (GDP). Therefore, the economic cycle in Indonesia is inseparable from the dynamics of the manufacturing sector [1]. Data about the growth of Manufacturing Industry GDP from year to year and its contribution to national GDP is shown in Table 1.

To keep growing, company needs additional funds from external parties in order to thrive continuously and survive in business. This creates the competition between companies in attracting investors by showing them the performance of companies through increasing the firm value. This is because firm value is one of indicators in determining whether a company is a healthy one and deserves to be a place to invest [2]. Maximizing the firm value is very important because it means increasing shareholder wealth and this represents the main goal of the company. Firm value is reflected by stock price; the high stock price creates a high firm value and has an impact on market confidence in the current company performance and expectation in the future.

Table 1

The Growth of Manufacturing Industry GDP without Oil and Gas and the Contribution to National GDP at Constant Price (y-o-y)

Description	2011	2012	2013	2014
	(%)			
National GDP	6.17	6.03	5.58	5.02
Manufacturing Industry GDP	6.26	5.62	4.49	4.63
Manufacturing Industry Contributions	**21.76**	**21.45**	**20.98**	**21.02**

Source: The Catalog of Manufacturing Industry Productions Growth Index, 2015.

In the process of maximizing the firm value, a conflict of interest between the manager (agent) and shareholders (principal) may occur, because companies that already go public make separation of functions between the ownership functions and management functions. Agents prefer the personal interests which are in contradiction with the main purpose of the company and often ignore the interests of the principal. The difference of this interest is called agency conflict and this will triggered the problem of earnings management. Earnings management practice is conducted by managers because of the opportunities that arise from the information asymmetry where company's management has more valid information than the shareholders about the company.

Agency theory provides a view that earnings management practices that have an impact on the descent of firm value can be minimized by the presence of a supervisory or monitoring mechanism, namely through the implementation of corporate governance. Corporate governance is a concept aimed to improve corporate performance through monitoring the performance of management and ensure the accountability of management to stakeholders. If this concept is applied properly and becomes a culture for the company, it is expected that economic growth will continue to increase along with the transparency of the management of the company is getting better so as to increase the firm value.

Company should view corporate governance as an opportunity rather than an obligation and pure cost factor [3]. Corporate governance can moderate the relationship between earnings management and firm value through institutional ownership, managerial ownership, and the classification of the Public

Accounting Firm. Institutional ownership is able to provide feedback to improve the management of profits by the company and with the existence of managerial ownership can limit the opportunistic behavior of managers in the form of earnings management while the size of the public accountant firm prove that the Big 4 has more quality in detecting earnings management in a company [4].

Related with the description above, the following research problems can be formulated in this study i.e. "Does good corporate governance mechanism which consists of independent commissioner, managerial ownership, institutional ownership, and audit quality can moderate the relationship of earnings management on firm value?" Meanwhile, the objective of this study is to examine the effect of Good Corporate Governance (GCG) mechanisms, seen from independent commissioner, managerial ownership, institutional ownership, and audit quality to moderate the relationship of earnings management on the firm value.

Literature review

Firm value is one of the company's goals in addition to earn profit and going concern. The firm value becomes one of the determinant of a company and it determines which company is a healthy one and deserves to be a place to invest. Firm value can provide maximum shareholder wealth if the stock price increased. The higher the stock price is it will result in the increase of the shareholder's wealth. To reach the general firm value investors handed over their management to the professionals which are positioned as a manager or commissioner [5]. Therefore, managers try to find a way through the selection of accounting methods to increase the firm value in order to attract potential investors to invest. One of the ways is by doing earnings management practices.

Earnings management is the potential use of the accrual of management with the goal of personal gain [6] and it is regarded as the behavior of managers to tinkering with the discretionary accrual components to determine the size of profits by utilizing a variety of alternative methods in accounting standards [7]. Earnings management is an agency problem triggered by the differences of interest between principal and agent as well as the problem of information asymmetry between principal and agent. The agency relationship arises from the contract that is set amongst the two parties, namely the party who is delegating the work is referred to as the principal and the party who is receiving the delegating work is referred to as the agent. With the separation of ownership and management functions, it will be susceptible to an agency conflict between owners and managers. Conflicts of interest between the owner and the agent occur due to the possibility of agents that do not always act in accordance with the interests of the principal, thus triggering the agency costs [8].

In managing the company, managers have more internal information about the company and its future prospects than the shareholders. This can lead to asymmetry of information because of the condition of information asymmetry between managers of companies and shareholders. More information that is owned by managers can trigger the emergence of actions in accordance with the wishes and their interests in maximizing its utility. At the same time, for the owner of the company (shareholders) it will be difficult to effectively control the actions that are performed by manager because they only have a few information. Therefore, managers can create particular policies without the knowledge of the owner of the company [9]. Therefore, it is necessary the implementation of a good corporate governance in the company's management and control system to suppress the practice of earnings management performed by the manager.

Companies with GCG practices are likely to reduce earnings management [10]. GCG implementation is important in assessing a company. The implementation of GCG is the key to increasing the firm value even though not directly, but by implementation of GCG proves that it can reduce earnings management practices conducted by an accountant. Corporate governance is a system that regulates and controls the company that is expected to increase the firm value. Therefore, the implementation of corporate governance in the company will restrict earnings management due to the control in the company [11]. The implementation of GCG mechanisms in company can be done through independent commissioner, managerial ownership, institutional ownership, and audit quality.

Independent Commissioner

GCG mechanism through the independent commissioner has a negative effect on earnings management. This means that the companies that have a proportion of board members who come from outside the company or outside director could affect earnings management practices. If the commissioners from outside increase monitoring action, it will lead to increasingly lower earnings management practices [12]. Independent commissioners have an influence on performance management in order to maximize their performance with a more effective monitoring. Independent commissioner is also a mediator between management and shareholders so that the agency conflict that could reduce the firm value can be overcome. Independency owned creates an independent commissioner that

is not easily influenced by the business relationship or other relationship that could affect its ability to make decisions in the interests of the company [13].

Managerial Ownership. The difference of interests between managers and shareholders as owners can be harmonized if the managers also have part of ownership in the company in order to achieve the unification of interests. The interests of managers with external shareholders can be put together if shares ownership by managers are enlarged, so that the manager is not going to manipulate earnings to its interests [8]. Managerial ownership has a significant negative effect on earnings management [14]. Managerial ownership in the company will further reduce the occurrence of earnings management in the company. The previous study shows that managerial ownership is able to become a corporate governance mechanism that can reduce the unconformity between the interests of management with the owners or shareholders [12]. Managerial ownership is a moderating variable between earnings management and the firm value that became one of the mechanisms that can limit the opportunistic behavior of managers in the form of earnings management [4].

Institutional Ownership. Fraud action on the financial statements could be reduced in the presence of monitor or control function by investors; institutional investors are believed to be able to monitor the actions of managers better when compared to individual investors. High institutional ownership plays a role in reducing earnings management. This means the greater institutional ownership is, then the greater the power of the voice and the encouragement of financial institutions to oversee the management is. In other words, the greater the percentage of institutional ownership is, the smaller the earnings management actions undertaken by manager is, because managers feel that their performance is monitored by the institutions [15]. Institutional ownership can become a significant moderator variable. This shows that the feedback effect of institutional ownership can increase earnings management by the company [4]. The ownership of shares held by institutional parties can weaken the effect of earnings management on the firm value. Institutional parties can control the company more closely so that earning management actions performed by the manager can be reduced. The higher the level of institutional ownership is, the stronger degree of control is carried out by external parties to the company so that the agency cost which occurred in the company on the wane increase the firm value [16].

Audit Quality. The size of the accounting firm (Big 4) has a negative influence on the absolute discretionary accruals. The results also found that, although the firm has a level of economic dependence on the client, it can still maintain its reputation (reputation protection), as evidenced by the negative effects of economic dependence (client importance) to the absolute discretionary accruals [17]. The classification of public accounting firms as a moderating variable has significant effect so this indicates that the classification of public accounting firms can be a moderating variable in the relationship of earnings management and firm value. This proves that the Big 4 firms are more qualified in detecting earnings management in a company [4].

Conceptual Framework and Hypotheses Formulation

Based on the literature review and previous studies above, the conceptual framework in this study can be seen in Figure 1.

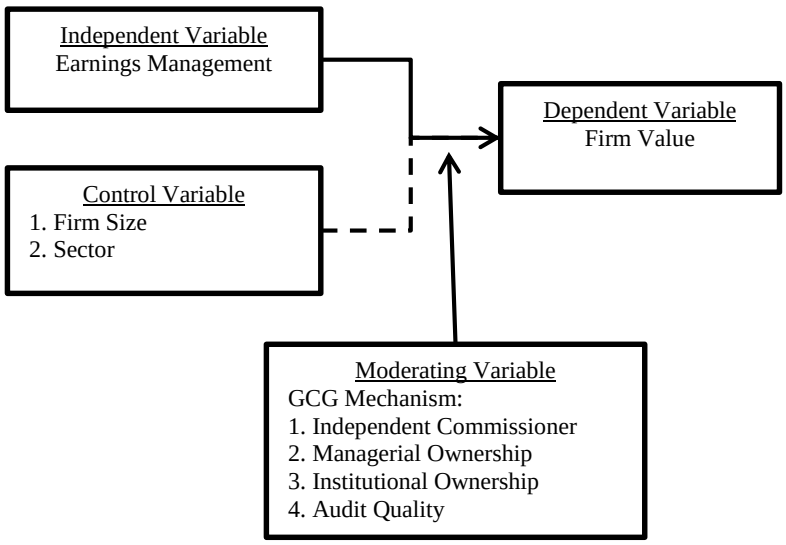

Figure 1. Conceptual Framework

Source: Developed by the author.

From the conceptual framework, the hypothesis in this study can be formulated as follows:

H_1: Independent commissioner can moderate the relationship between earnings management and firm value.

H_2: Managerial ownership can moderate the relationship between earnings management and firm value.

H_3: Institutional ownership can moderate the relationship between earnings management and firm value.

H_4: Audit quality can moderate the relationship between earnings management and firm value.

RESEARCH METHODOLOGY

Dependent Variable

The dependent variable in this study is firm value that is measured by Tobin's Q. The following equation represents the calculation formula of Tobin's Q:

$$Q = \frac{(EMV + D)}{(EBV + D)}$$

Description:

Q : Firm Value

EMV : Equity Market Value, obtained from multiplying the closing share price of the end of the year with the number of shares outstanding at the end of the year.

EBV : Equity Book Value, obtained from the difference between total assets and total liabilities of the company.

D : Book value of the total debt.

Dependent Variable

The independent variable in this study is Earnings Management (EM) which proxied by Discretionary Accruals using modified Jones model [18] with the following steps:

$$TACC_{it} = NI_{it} - CFO_{it} \quad (1)$$

$$TACC_{it}/TA_{i.t-1} = \beta_1 (1/TA_{i.t-1}) + \beta_2 ((\Delta REV_{it} - \Delta REC_{it})/TA_{i.t-1}) + \beta_3 (PPE_{it}/TA_{i.t-1}) \quad (2)$$

From the regression equation (2), Nondiscretionary Accruals (NDACC) can be calculated by reinserting the β coefficients.

$$NDACC_{it} = \beta_1 (1/TA_{i.t-1}) + \beta_2 ((\Delta REV_{it} - \Delta REC_{it})/TA_{i.t-1}) + \beta_3 (PPE_{it}/TA_{i.t-1}) \quad (3)$$

$$DACC_{it} = TACC_{it}/TA_{i.t-1} - NDACC_{it}$$

Description:

$DACC_{it}$:Discretionary Accruals of firms i in period t

$NDACC_{it}$: Nondiscretionary Accruals of firms i in period t

$TACC_{it}$:Total Accruals of firms i in period t

NI_{it} : Net Income of firms i in period t

CFO_{it} : Operating Cash Flow of firms i in period t

$TA_{i.t-1}$:Total Assets of firms i in period t-1

ΔREV_{it} : Revenue changes of firms i in period t minus revenue year t-1

ΔREC_{it} : Receivable change of firms i in period t minus account year t-1

PPE_{it} :The value of fixed assets of firms i in period t

$\beta_1, \beta_2, \beta_3$: Regression coefficient

Moderating Variables

Moderating variable is variable that has strong dependence influence (contingent effect) with the relationship between dependent variable and independent variable. The moderating variable in this study as follows:

1. Independent Commissioner (IC); calculated by the percentage of the total number of independent commissioner with the total board of commissioner member.
2. Managerial Ownership (MO); the percentage of shares held by the management of the entire amount of the outstanding capital stock.
3. Institutional Ownership (IO); the percentage of shares owned by the institutions of the total outstanding capital stock.

4. Audit Quality (AQ); measured by a dummy variable. If the companies have been audited by Big 4 Firm, then the value is 1 whereas if the companies have been audited by Non Big 4 Firm then the value is 0.

Control Variables

Control variable used in this study are the firm size and type of manufacturing company.

1. Firm size (SIZE); measured using the natural logarithm of the equity market value of the company at the end of the year that is the number of outstanding shares at the end of year multiplied by the stock market prices at the end of year.
2. Type of manufacturing company (SECTOR); measured by granting the code in the form of categories which is expressed in numbers. Basic Industry and Chemicals Sector = 1; Miscellaneous Industry Sector = 2; and Consumer Goods Industry Sector = 3.

Population and Sampling Method

This study used secondary data, namely annual report and financial statements obtained from Indonesia Stock Exchange website (www.idx.co.id). The population in this study is represented by manufacturing companies listed in Indonesia Stock Exchange period 2010-2014. The determination of the sample is conducted by the purposive sampling method, with the following criteria:

1. Manufacturing companies listed at Indonesia Stock Exchange in 2010, 2011, 2012, 2013, and 2014;
2. Manufacturing companies that publish annual reports, which ended on December 31, consistently during the study period in 2010, 2011, 2012, 2013, and 2014;
3. Manufacturing companies that present financial statements in Rupiah (IDR) consistently during the study period in 2010, 2011, 2012, 2013, and 2014;
4. Manufacturing companies that have data about the corporate governance mechanism and complete financial data related in this study during the study period in 2010, 2011, 2012, 2013, and 2014.

Based on these criteria, the sample in this study consisted of 31 companies with a five-year study period so that the total observations in this study accounted for 155.

Data Analysis Method

The used analysis method is multiple regression analysis and MRA (Moderated Regression Analysis) with SPSS 21 at significance level $\alpha = 0.05$. Based on the hypotheses development, the multiple regression models are the following:

$Q_{it} = \alpha_0 + \alpha_1 EM + \alpha_2 IC + \alpha_3 EM.IC + \alpha_4 SIZE + \alpha_5 SECTOR + e$.....Regression Model I

$Q_{it} = \alpha_0 + \alpha_1 EM + \alpha_2 MO + \alpha_3 EM.MO + \alpha_4 SIZE + \alpha_5 SECTOR + e$..... Regression Model II

$Q_{it} = \alpha_0 + \alpha_1 EM + \alpha_2 IO + \alpha_3 EM.IO + \alpha_4 SIZE + \alpha_5 SECTOR + e$.....Regression Model III

$Q_{it} = \alpha_0 + \alpha_1 EM + \alpha_2 AQ + \alpha_3 EM.AQ + \alpha_4 SIZE + \alpha_5 SECTOR + e$.....Regression Model IV

Discussion

The test results of multiple linear regressions in Table 2 show that the results that have met the classical assumptions test and data are normally distributed with number of samples that decreased to 121 observations. The simultaneous significance (F Test) results of four regression models shows that the four regression models have significance value less than 0.05. This means that the regression model can be used to predict the firm value or it can be said that the independent variables in the regression model together affect the firm value. Thus, the four regression models equation is fit or fit for use.

Meanwhile, the results of partial analysis by using t-test showed that the hypothesis 1 (H_1) in regression model I about the effect of independent commissioner to the relationship between earnings management and firm value is accepted, which means that the independent commissioner is a moderating variable between the relationship of earnings management and firm value. This can be seen from the independent commissioner who has a coefficient value of -1.903 with significance level of 0.018 ($p < 0.05$). It indicates that the independent commissioner can moderate the relationship between earnings management and firm value. In other words, independent commissioner could weaken the relationship between earnings management and firm value.

Table 2

Multiple Linear Regression Testing Results

Variables	Regression Model I		Regression Model II		Regression Model III		Regression Model IV	
	Unstandardized Coefficients	Sig.	Unstandardized Coefficients	Sig.	Unstandardized Coefficients	Sig.	Unstandardized Coefficients	Sig.
(Constant)	-4.081	0.000	-3.761	0.000	-3.874	0.000	-4.866	0.000
LnEM	-0.033	0.351	-0.052	0.112	-0.033	0.354	-0.036	0.275
LnIC	-0.236	0.101						
LnMO			0.004	0.721				
LnIO					0.031	0.776		
AQ							0.003	0.965
SIZE	0.149	0.000	0.141	0.000	0.148	0.000	0.185	0.000
SECTOR	-0.019	0.555	-0.014	0.673	-0.022	0.51	-0.033	0.295
EM.IC	-1.903	0.018						
EM.MO			-8.002	0.077				
EM.IO					-0.793	0.061		
EM.AQ							-1.958	0.001
N	121		121		121		121	
F	21.001		18.752		18.938		27.185	
Sig. F	0.000		0.000		0.000		0.000	
Adj R2	0.455		0.425		0.428		0.522	

Source: Secondary data processed, 2016.

This result is consistent with research conducted by [19] which states that earnings management can be minimized with the monitoring mechanism by an independent commissioner who can reconcile the differences of interests between the owners and the management. This shows that companies in the sample are using independent commissioner as a corporate governance mechanism in reducing earnings management that will have an impact on the increasing the firm value. With the existence of an independent commissioner on the board of commissioners will make managers be more careful in deciding policies that will be conducted by the company, because the manager feels being watched by an independent commissioner. The existence of a competent independent commissioner is able to perform its oversight functions more effectively in preventing the occurrence of any forms of deviation to the financial statements made by the manager. Thus, the deviation such as earnings management practices that are performed will be reduced, so that the quality of financial statements will be increased, thus it makes potential investors to be interested to invest and the firm value will be increased so that the welfare of the owners will also increase.

Hypothesis 2 (H_2) in regression model II about the effect of managerial ownership on the relationship between earnings management and firm value is rejected which means that the managerial ownership is not a moderating variable between the relationship of earnings management and firm value. This can be seen from the managerial ownership coefficient, which has a value of -8.002 with significance level of 0.077 ($p > 0.05$). It indicates that the managerial ownership could not moderate the relationship between earnings management and firm value. The results of this study are consistent with results of research conducted by [19]; [16]; [20] which prove that managerial ownership is not as the moderating variables. The role of managerial ownership is not yet significant in minimizing the management actions in manipulating earnings [19]. This shows that the companies in the study sample did not use the managerial ownership in an effort to reduce earnings management to increase the firm value. The absence of a significant effect of managerial ownership on firm value due to the number of managerial ownership in the company sample is still small so that the manager who owns shares in the company where he works does not feel he has or does not feell himself as the owner of the company yet, but just feels as the manager only so that the manager who owns shares in the company under

his management still acts like a pure manager (who does not own shares) and has his own interests like as a manager of the company.

This is also possible due to their orientation only to the incentive not to the firm value so that managers who own shares in the company that under their management still perform earnings management practice as done by a manager who does not own shares in the companies they manage. Managerial ownership is less contributed in controlling the action of earnings management that managerial ownership is not capable of being a corporate governance mechanism that can reduce the difference of interest conflict between the management and the owners [21]. Hypothesis 3 (H_3) in regression model III about the effect of institutional ownership to the relationship between earnings management and firm value is rejected which means that the institutional ownership is not a moderating variable between the relationship of earnings management and firm value. It can be seen from the coefficient of institutional ownership that has a value of -0.793 with significance level of 0.061 ($p > 0.05$). It indicates that the institutional ownership could not moderate the relationship between earnings management and firm value.

This result is consistent with research conducted by [20] which did not gave significant results in the interactions variable between earnings management and institutional ownership so it cannot be said that institutional ownership can moderate the relationship between earnings management and firm value. This shows that companies in the study sample did not use institutional ownership in an effort to reduce earnings management which will have an impact on the increasing the firm value. This is possible due to investors from institutions that have not been able to effectively oversee management performance. Level control conducted by institutional investors against the company is still low so it has not been able to improve the internal control of the company. This indicates that the persistence of earnings management practices is conducted by managers, although the institutional ownership is quite large.

Hypothesis 4 (H_4) in regression model IV about the effect of audit quality to the relationship between earnings management and firm value is accepted which means that the audit quality is a moderating variable between the relationship of earnings management and firm value. It can be seen from the coefficient of audit quality that has a value of -1.958 with significance level of 0.001 ($p < 0.05$).

This indicates that the audit quality can moderate the relationship between earnings management and firm value. The results of this study support the research conducted by [19] and [4] which states that audit quality is a moderating variable. The classification of accounting firm that is included in Big 4 firms more qualified in detecting earnings management in a company [4]. This shows that companies in the sample using audit quality in an effort to reduce earnings management will have an impact on the increasing firm value. Accounting firm that is included in the Big 4 firm will be maintaining the credibility and image as a qualified auditor so that the investigation on a company will be more accurate and conscientious. In addition, auditors play a role in providing opinions and assurances as to the truth of those numbers that was presented in the financial statements by management. Thus, the external auditors can minimize the possibility of earnings management actions that performed by the manager so that the firm value will increase.

Conclusion. Implementation of Good Corporate Governance in company is important for monitoring the performance of management and to ensure the accountability of management to stakeholders. The objective of this study was to examine whether there is significant effect of GCG mechanisms, which consist of independent commissioner, managerial ownership, institutional ownership, and audit quality to the relationship between earnings management and firm value in manufacturing companies of Indonesian Stock Exchange. The results in this study showed that Good Corporate Governance mechanisms can moderate the relationship between earnings management and firm value through the independent commissioner and audit quality. This indicates the presence of independent commissioner and audit quality of the use of Big 4 Firm as the company's external auditor may reduce earnings management actions performed by manager of company that will have an impact on the increased firm value.

Independent commissioner is able to perform its oversight functions more effectively while audit quality is able to investigate company accurately and provide assurances to the company’s financial statements. Meanwhile, managerial ownership and institutional ownership are not moderating variables between the relationship of earnings management and firm value. This proves that the role of managerial ownership and institutional ownership as GCG mechanisms has not been significant in minimizing earnings management actions performed by the management.

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COMPETITIVENESS BENCHMARKING OF THE BALKAN COUNTRIES

Eugenia FEURAS[1], Professor, PhD,
Academy of Economic Studies of Moldova

The opportunities offered by the signing of the EU-Moldova Association Agreement can be capitalized only in the case of increasing the competitiveness of the national economy. The purpose of the investigation consists in reorienting Moldova's attention to the Balkan countries, which have become active actors in the EU enlargement process, their economies being more competitive than Moldova (except Bosnia-Herzegovina). For this end, by applying the benchmarking method, there has been made an attempt to identify the best practices of Balkan countries (Montenegro, Macedonia, Albania, Serbia, Bosnia-Herzegovina). The Global Competitiveness Report 2016-2017, the sub-index "Basic Conditions" has served as the base-information source given that the Republic of Moldova is ranked in the factor-driven economy category. The research results indicate that the Republic of Moldova might find useful the experience of Balkan countries in such fields as the quality of institutions and infrastructure, in macroeconomic stability, and the development of health and primary education.

Keywords: *benchmarking, competitiveness, the Global Competitiveness Report, competitiveness performance, best practices, enlargement of the EU.*

Oportunitățile oferite prin semnarea Acordului de Asociere UE-RM vor putea fi valorificate doar în cazul creșterii competitivității economiei naționale. Scopul investigației efectuate este de a reorienta atenția Republicii Moldova spre țările balcanice, care au devenit actori activi în procesul de extindere a UE, economiile lor fiind mai competitive decât cea a Republicii Moldova (cu excepția Bosniei-Herțegovinei). În acest scop, prin aplicarea metodei benchmarking-ului a fost realizată analiza bunelor practici în țările balcanice (Muntenegru, Macedonia, Albania, Serbia, Bosnia-Herzegovina). Baza informațională a cercetării o constituie Raportul Global de Competitivitate 2016-2017, sub-indicele „Condiții de bază", dat fiind faptul că Republica Moldova este clasată în categoria „economie bazată pe factori de producție". Rezultatele cercetării denotă că pentru Republica Moldova poate fi utilă experiența țărilor balcanice în domeniul calității instituțiilor și a infrastructurii, în asigurarea stabilității macroeconomice și dezvoltarea sectorului sănătății și educației primare.

Cuvinte-cheie: *benchmarking, competitivitate, Raport Global al Competitivității, performanță competitivă, bunele practici, extinderea UE.*

Возможности, открываемые подписанием Соглашения об Ассоциации ЕС-РМ, могут быть реализованы только в случае повышения конкурентоспособности национальной экономики. Цель исследования заключается в переориентации внимания Молдовы на балканские страны, которые стали активными участниками процесса расширения ЕС, а их экономики стали более конкурентоспособными по сравнению с экономикой Молдовы (за исключением Боснии-Герцеговины). На основе метода бенчмаркинга, была предпринята попытка определить лучшие практики Балканских стран (Черногория, Македония, Албания, Сербия, Босния-Герцеговина). Базовым источником информации послужил Доклад о Глобальной Конкурентоспособности 2016-2017 гг., раздел «Основные условия», исходя из того, что Республика Молдова включена в категорию стран с «экономикой, основанной на факторах производства». Результаты исследовании показывают, что для Республики Молдова может быть полезен опыт Балканских стран в области качества институтов и инфраструктуры, макроэкономической стабильности, развития здравоохранения и начального образования.

Ключевые слова: *бенчмаркинг, конкурентоспособность, Доклад о Глобальной Конкурентоспособности, конкурентоспособное преимущество, лучшие практики, расширение ЕС.*

JEL Classification: M12, M1, M13, L26.
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Introduction

In order to know the strengths and weaknesses of the national economy, it is necessary to compare the indicators from different fields with those in the most quoted countries, the comparison tool used being called benchmarking. Choosing for comparison the performances of countries who have achieved outstanding results in a certain field and comparing them with their own, decision-makers have the opportunity to find the most suitable successful practices available to them and, hence, raise their own performance. The importance of this research tool has been growing as the European Union has been promoting the concept of benchmarking since 1996 "not as a new policy initiative but as a tool to promote better implementation of measures in key areas for competitiveness by focusing on factors and conditions that determine superior performance and exchange of information on best practices" [3, p.1].

Method and content

In fact, benchmarking was initially applied as a corporate management tool, enabling it to reduce its costs and raise its technical and economic performance, its action 'fields' being product benchmarking, process benchmarking, competitive benchmarking, performance benchmarking and strategic benchmarking [5]. However, over time, its use has gone beyond a single case of a company, extending to an economic branch and national economy, which enabled governments to identify where the most efficient development conditions are available that can allow for high economic, technological, and social results.

The fundamental questions to be asked when applying benchmarking can be synthesized as follows [3, p.16]:

• What are the key areas that need to be benchmarked?
• What are the appropriate criteria on which to evaluate that area?
• What are the best practices world-wide?
• How those results have been achieved?

The idea behind benchmarking is not about copying successful practices from one country to another, but about using the successful practices in discovering new ways of improvement and onsets for their implementation in specific national situations.

The case study that we are going to analyse concerns the application of benchmarking in the field of state competitiveness, reflected in the Global Competitiveness Report 2016-2017, the comparison basis being the economy of the Balkan states and the Republic of Moldova. The reason for choosing the Balkan states stems from a series of arguments related to the EU enlargement process, comprising three groups of countries:

1. Countries that are given the ***prospect*** of EU membership.
2. Countries that have become official ***candidates*** for accession.
3. Countries that are starting formal ***accession negotiations***.

The current enlargement agenda targets the Western Balkan states and Turkey, but at a different pace.

- Turkey's accession negotiation process started in 2005, but the progress achieved is slow and the latest policies are contradictory.
- Montenegro and Serbia launched the accession negotiations in 2012 and 2014 accordingly.
- The EU accession process of FRY Macedonia remains in deadlock, although it was granted the candidate status in 2005.
- Albania was granted the candidate status in 2014 and is making substantial efforts to get the right to start accession negotiations.
- Qualified in 2003 as a potential candidate for EU membership, Bosnia-Herzegovina obtained the acceptance of membership in September 2016.

As we can see, **the Republic of Moldova has remained outside the enlargement process not only in the short or medium term, but also in the long term, and it is not included in the list of potential candidates. The only chance to start the first stage is to create the necessary conditions by increasing the competitiveness of its economy.**

Except Turkey, all these Balkan states are small in size and have low export capacities, making them, to a certain extent, comparable with the Republic of Moldova. Starting from this reflection, in our future analysis we will solely refer to them.

An overview of the Balkan countries included in the EU enlargement process is presented in Table 1.

Table 1

Key indicators that characterize the Balkan states in the process of EU accession, 2014

Indicators	Montenegro	Macedonia	Albania	Serbia	Bosnia-Herzegov.	EU-28
Population						
Total population, thousand people	621, 5	2065,8	2895,9	7149,2	3827,3	506881
Gross natural growth rate of the population (per 1 000 inhabitants)	2,4	1,9	5,2	-4,9	-1,5	0,3
Life expectancy at birth, men, years	73,9	73,2	76,4	72,6	73,7	77,8
GDP						
GDP, current prices (Euro billion)	3,4	8,5	10,0	33,1	13,9	13920
GDP per capita (euro)	5436	4127	3440	4635	3641	27300
GDP per capita PPP (euro)	10600	10000	-	9500	7800	27300
GDP per capita PPP vs. EU average level (EU 28 = 100)	39	36	29	35	28	-
Real GDP growth rate,%	3,0	3,8	2,1	-1,8	1,1	1,3
Public finance, in relation to GDP						
Budget surplus / deficit,%	-3,1	-4,2	-5,1	-6,7	-2,0	-2,9
Government debt, %	56,7	38,2	71,8	68,9	-	86,8
Economic activity, employment, unemployment						
Economic activity rate,%	67,6	70,8	68,6	66,2	59,2	76,9
Employment rate, %	55,6	51,3	56,6	53,5	43,2	69,2
Unemployment rate,%	18,0	28,0	17,5	18,9	27,6	10,2
Unemployment rate among young people,%	35,8	53,1	39,0	47,1	62,7	22,2
Employment by economic sectors						
Agriculture, forestry, fishing,%	5,7	18,0	42,7	21,1	17,1	4,7
Industry,%	11,1	23,5	11,0	20,0	22,1	17,3
Construction,%	6,5	7,0	6,4	4,4	7,9	6,8
Services,%	76,7	51,4	39,4	54,5	52,7	70,5
The monetary market						
CPI inflation rate,%	-0,7	-0,3	0,7	2,9	-0,2	0,6
Annual average rate on credits,%	9,22	3,75	7,66	10,50	6,64	-
Average annual deposit rate,%	1,86	0,50	1,92	5,50	0,10	-
Investments						
Net foreign direct investment,% of GDP	9,7	3,3	8,0	3,7	3,0	-0,14
International trade						
Imports,% of GDP	62,0	65,1	49,0	54,3	49,8	40,2
The share of EU imports 28 in the total value of imports,%	45,8	63,5	61,1	57,1	58,9	
Exports,% of GDP	41,8	47,9	29,9	44,3	30,0	43,0
The share of exports to the EU 28 in the total value of exports,%	35,8	76,6	77,4	65,7	72,1	

Source: Commission Europeenne. La strategie d'elargissement de l'UE. Bruxelles, 2015, COM (2015) 611 final, pp. 48-52.

As it can be noticed in the table 1, the most populated country is Serbia. The number of inhabitants in the Republic of Moldova is closest to that of Albania and Macedonia. The population is growing at a fast pace in Albania (a country with a significant proportion of the Muslim population) and is decreasing in Serbia and Bosnia-Herzegovina. There are no significant disparities in life expectancy between the Balkan states and the EU 28, the shortest life expectancy being characteristic for Serbia.

The highest GDP volume was recorded in Serbia: 10 times higher than in Montenegro, 4 and 3 times higher than in Macedonia and Albania and 2.5 times higher than in Bosnia-Herzegovina, but the per capita situation is different: the highest is recorded in Montenegro, followed by Serbia, and the lowest in Albania. According to this indicator, the gaps between the Balkan states and the EU 28 are huge, ranging from 29% in Albania to 39% in Montenegro. Most Balkan states, with except Serbia, registered positive real GDP growth rates in 2014, higher than the average rates in the EU28.

In the Balkan countries, the leading economic sector is the service sector, except Albania, where the agriculture share stands at 42.7% compared to 4.7% in the EU28. Montenegro and Albania are characterized by a small share (11% of GDP), Macedonia being more industrialized (23.5%).

Compared to the Republic of Moldova, the activity and employment rates are higher but substantially lower than in the EU-28. The worst situation was in Bosnia-Herzegovina: 59.2% for the activity rate and 43.2% for the employment rate. The unemployment rate is double or triple compared to that in the EU, and the most dramatic situation is with regard to the youth: in Bosnia-Herzegovina about 2/3, and in Macedonia and Serbia about ½ of young people aged 15-24 did not have a job, which represents a major threat to further development.

As regards public finances, the budget deficit, except in Bosnia-Herzegovina, is higher than in the EU, exceeding it almost double in Macedonia and Albania. Substantial disparities can be seen in the share of government debt in GDP: it is higher in Albania and Serbia (although lower than average in the EU28) and substantially lower in Montenegro and Macedonia.

In three countries out of five (Montenegro, Macedonia and Bosnia-Herzegovina), the economy was in deflation, with the highest level of inflation (about 3%) being characteristic for Serbia. Interest rates on credits are lower than in the Republic of Moldova, ranging between 3% in Macedonia and 10.5% in Serbia, the deposit rates being very low or sometimes symbolic. Most net foreign direct investments in 2014 were made in Montenegro and Albania, almost triple compared to the other Balkan states.

Most Balkan states are open economies with close trade links with the EU28. Excluding Montenegro, exports to the EU make up between 2/3 and 3/4 of all exports, and the share of imports from the EU is about 60%.

As to competitiveness, the Balkan states stand far behind from the EU28 average. According to the 2014-2020 Europe 2020 Competitiveness Report, the gap can be represented as follows (Table 2).

Table 2

Europe 2020 Competitiveness Index Scores

Montenegro	4.07
Macedonia	3.62
Serbia	3.46
Average EU 28	**4.56**

Source: The Europe 2020 Competitiveness Report 2014 Edition, p.13.

The general overview of the competitiveness gap between the Balkan states and the EU average can be represented in Figure 1.

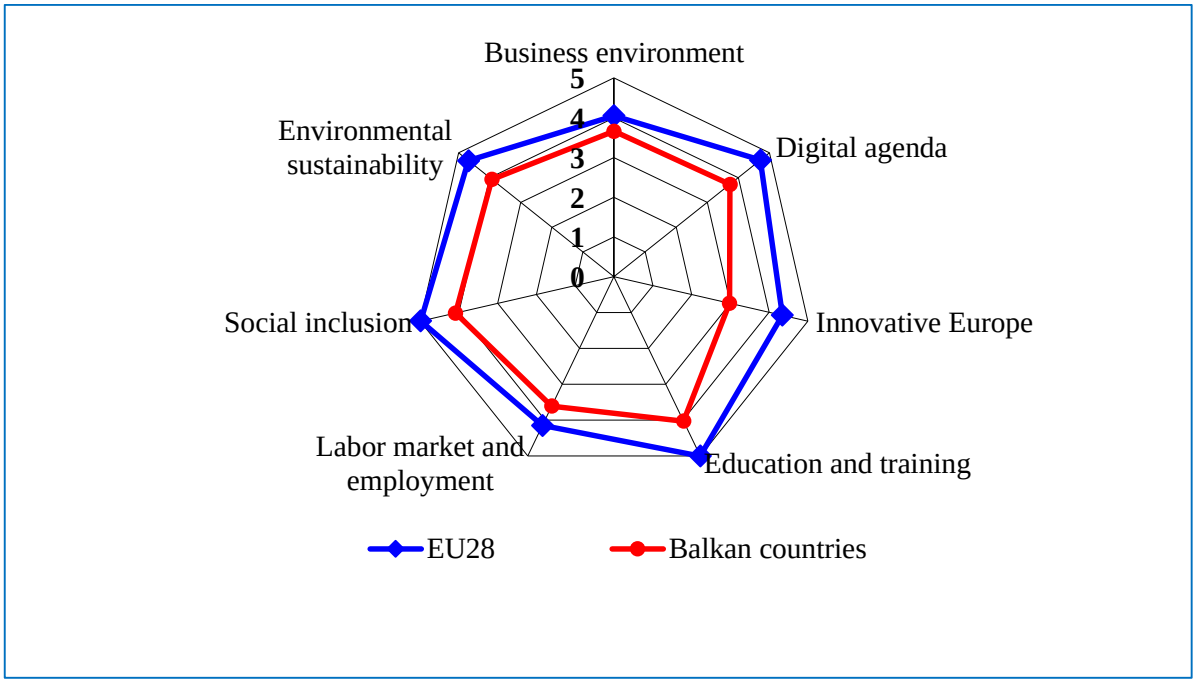

Figure 1. Competitive performance of the EU-28 compared to the Balkan states

Sourse: The Europe Competitiveness Report, p.14.

The difficulties related to the accession of Romania and Bulgaria to the EU in 2007 led to the desertion from the "advance accession" tactics, i.e. of the candidate countries in full non-compliance conditions with the community EU acquis. As a result, the examination of the new candidate countries for compliance will be tougher, which will determine them to implement radical reforms within relatively short deadlines. This makes their experience of internal reforms very interesting for the states at a similar or lower level of development, as well as for the Republic of Moldova.

An analysis of the general and pillar level of national competitiveness is presented below, which will allow us identifying the partners of the benchmarking exercise, their performance and the standard country for the implementation of "best practices" in the field of competitiveness.

Table 3

General competitiveness level

Countries	Albania	Bosnia-Herzegovina	Macedonia	Montenegro	Serbia	Republic of Moldova
Rank in the GCR (1-138)	80	107	68	82	90	100
Score (1-7)	4,1	3,8	4,2	4,1	4,0	3,9

Source: Based on data from Global Competitiveness Report (GCR) 2016-2017, p.94-95, 122-123, 244-245, 266-267, 314-315, 262-263.

According to the table 3, in terms of competitiveness, Macedonia has by far overpassed the Republic of Moldova (68th place vs 100th). However, it is not succeeding in all the pillars, the performance per pillar highlighting different groups of countries that can later be studied in order to borrow good experiences. Instead, Moldova has a better position in the ranking than Bosnia-Herzegovina (100th position vs 107th). However, the gap between the analysed countries is not huge, especially in the scoring, ranging from +0.3 points to -0.1 points compared to the score of the Republic of Moldova, which allows us to make comparisons within the selected group of countries.

Starting from the fact that in the Global Competitiveess Report 2016-2017 the Republic of Moldova is placed in the factor-driven economies category, the following analysis includes only the first pillar of competitiveness - "Basic conditions".

Table 4

Pillars of the sub-index "Basic Conditions" (place in the ranking and score)

Pillars	Albania	Bosnia-Herzegovina	Macedonia	Montenegro	Serbia	Republic of Moldova
Basic conditions, including:	74/4,5	94/4,2	66/4,6	86/4,3	87/4,3	101/4,1
Institutions	76/3,8	126/3,1	67/4,0	80/3,8	115/3,3	128/3,1
Infrastructure	91/3,5	105/3,2	80/3,8	76/3,9	74/3,9	86/3,6
Macroeconomic environment	93/4,3	76/4,5	44/5,2	119/3,7	103/4,1	100/4,1
Health and Primary Education	33/6,3	50/6,0	92/5,4	60/5,9	53/6,0	95/5,4

Source: Based on data from GCR 2016-2017, p.94-95, 122-123, 244-245, 266-267, 314-315, 262-263.

According to the data in the table 4, referring to the basic conditions, the Republic of Moldova has the lowest score, primarily due to the inadequate condition of its state institutions (128th place out of 138 countries). In this aspect, good examples to follow are Macedonia and Albania. As to the infrastructure, Montenegro and Serbia are more advanced. The quality of the macroeconomic environment is showing a very huge gap between the Republic of Moldova (100th place) and Macedonia (44th position) and relatively high compared to Bosnia-Herzegovina (76th place). Albania (33rd place), Bosnia-Herzegovina (50th place) and Serbia (53rd place) are more advanced in the health and primary education sectors, the Republic of Moldova standing on 95th place in this pillar.

In order to identify the best practices in the pillars, we will analyse the intra-pillar indicators for the better performing Balkan countries (Table 5).

Table 5

Performance in Institutional Development

Countries of reference	Macedonia RFY	Albania	Republic of Moldova
TOTAL	**67/4.0**	**76/3.8**	**128/3.1**
1.01.Property rights	88/4.1	119/3.5	129/3.1
1.02.Intellectual property protection	80/3.9	118/3.3	114/3.4
1.03.Diversion of public funds	61/3.7	84/3.2	130/2.2
1.04.Public trust in politicians	70/3.0	81/2.8	119/1.9
1.05.Irregular payments and bribes	38/4.9	66/4.0	116/3.0
1.06.Juditial independence	106/3.1	125/2.6	133/2.0
1.07.Favoritism in decisions of government officials	63/3.2	72/3.0	130/2.0
1.08.Wastefulness of government spending	31/3.8	64/3.3	97/2.6
1.09.Burden of government regulation	49/3.7	11/4.6	112/2.8
1.10.Efficiency of legal framework in settling disputes	80/3.4	120/2.8	135/2.2
1.11.Efficiency of the legal framework in changing regulations	92/3.1	109/2.8	134/2.1
1.12.Transparency of government policymaking	57/4.3	45/4.5	106/3,7
1.13.Costs of terrorism	93/4.8	56/5.4	50/5.5
1.14.Costs of crime and violence	77/4.4	66/4.8	61/4.8
1.15.Organized crime	96/4.3	94/4.3	91/4.3
1.16.Reliability of police services	47/5.0	45/5.0	117/3.2
1.17.Ethical behaviour of firms	54/4.0	43/4.3	122/3.1
1.18.Strength of auditing and reporting standards	79/4.4	95/4.2	128/3.5
1.19. Efficacy of corporate boards	66/4.9	82/4.7	108/4.4
1.20.Protection of minority shareholders' interests	76/4.0	57/4.2	133/3.0
1.21.Strength of investor protection (1-10)	14/7.2	8/7.3	36/6.3

Source: Based on data from GCR 2016-2017, p.94-95, 122-123, 244-245, 266-267, 314-315, 262-263.

The Republic of Moldova excels Macedonia and Albania only on the positions related to the terrorism costs, organized crime and violence, former military conflicts in the area, related to territorial disintegration and the migration crisis in the southern European regions, negatively influencing the situation in this area. However, as best practices can be taken as follows:

- Measures taken by Macedonia to improve the quality of governance (related to the reduction of diversion of funds and exorbitant government spending, corruption and favouritism in decision-making).
- Measures taken by Albania to increase governance efficiency (based on significant cuts in regulations and decision-making transparency) and private agents (thanks to the firms' ethical behaviour and the protection of minority shareholders and investors).

Table 6

Performance in infrastructure development

Countries of reference	Serbia	Montenegro	Republic of Moldova
TOTAL	**74/3.9**	**76/3.9**	**86/3.6**
2.01.Quality of overall infrastructure	107/3.2	96/3.4	110/3.1
2.02.Quality of roads	115/2.9	102/3.2	132/2.5
2.03.Quality of railroad infrastructure	86/2.1	60/2.9	70/2.7
2.04.Quality of port infrastructure	118/2.7	69/4.0	127/2.2
2.05.Quality of air transport infrastructure	93/3.9	81/4.1	94/3.9
2.06.Available airline seat, mill./week	87/87.4	123/20.9	114/29.3
2.07.Quality of electricity supply	71/4.8	93/4.0	87/4.3
2.08.Mobile-cellular telephone subscriptions / 100 pop.	61/120.5	11/162.2	86/108
2.09.Fixed-telephone lines / 100 pop.	27/36.5	41/24.8	30/35

Source: Based on data from GCR 2016-2017, p.94-95, 122-123, 244-245, 266-267, 314-315, 262-263/.

In terms of infrastructure advancement (Table 6), the Republic of Moldova exceeds Montenegro in 2 positions: the quality of electricity supplied and fixed-telephone lines per 100 inhabitants. However, it remains far behind in the provision of mobile phone subscriptions (86th place vs. 11th place) and the quality of port infrastructure (127th place versus 69th place). Serbia excels especially in the field of air transport services and the quality of the electricity supplied. A common problem for the Republic of Moldova and the Balkan countries remains the quality of the roads.

Table 7

Quality of the macroeconomic environment

Countries of reference	Macedonia	Bosnia-Herzegovina	Republic of Moldova
TOTAL	**44/5.2**	**76/4.5**	**100/4.1**
3.01.Budget deficit, % GDP	81/-3.7	29/-1.4	47/-2.3
3.02.Gross national savings, % GDP	23/30.0	123/10.4	112/12.9
3.03. Annual inflation rate, % change	67/-0,2	90/-1.0	127/9.6
3.04.Government debt, % GDP	48/38.6	64/45.5	57/42
3.05.Country credit rating, 0-100	78	107	118

Source: Based on data from GCR 2016-2017, p.94-95, 122-123, 244-245, 266-267, 314-315, 262-263.

As for the quality of the macroeconomic environment (table 7), Macedonia is facing a relatively high budget deficit, although the share of government debt in GDP is lower than in the Republic of Moldova. However, thanks to the high share of national economies in GDP and the quality of the business environment, Macedonia's credit rating is 78 points compared to 107 for Bosnia-Herzegovina and 118 for Moldova. In Bosnia and Herzegovina, the situation was reverse: although the share of government debt in GDP was higher than that in the Republic of Moldova, although according to the weight of the state budget deficit, this country ranked quite well, the 29th place in the world, indicating that the country has recently promoted budget austerity measures. A significant macroeconomic particularity is that while the Balkan countries are going through a slight deflation, the Moldovan economy is facing inflation, which is generating the promotion of a restrictive credit-monetary policy, leading to a reduction in crediting the national economy.

Table 8

Performance in health and primary education

Countries of reference	Albania	Bosnia-Herzegov.	Serbia	Republic of Moldova
TOTAL	**33/6.3**	**50/6.0**	**53/6.0**	**95/5.4**
4.01.Malaria incidence, cases/ 100,000 pop.	n/a	n/a	n/a	n/a
4.02.Economic impact of malaria	n/a	n/a	n/a	n/a
4.03.Tuberculosis incidence, cases / 100 thousand pop.	44/19	63/42	53/24	104/153
4.04.Economic impact of tuberculosis	40/6.2	7/6.8	31/6.4	88/5.1
4.05. HIV prevalence, % adult pop.	1/<0.1	1/<0.1	1/<0.1	92/0.6
4.06. Economic Impact of HIV / AIDS	28/6.3	2/6.9	15/6.5	53/5.9
4.07.Infant mortality, deaths in 1,000 live births	69/12.5	37/5.1	43/5.9	77/13.6
4.08.Life expectancy, years	38/77.8	49/76.4	57/75.5	91/71.5
4.09.Quality of primary education	22/5.1	80/3.8	77/3.9	74/4.0
4.10.Primary education net enrolment rate	63/95.5	35/97.5	55/96.2	113/87.1

Source: Based on data from GCR 2016-2017, p.94-95, 122-123, 244-245, 266-267, 314-315, 262-263/.

To the chapter "Performance in health and primary education" (Table 8), the Republic of Moldova is significantly lagging behind the Balkan countries. There is a huge gap in tuberculosis incidence (104 in Moldova, 44 in Albania and 53 in Serbia) and HIV (92 in Moldova and 1 in the examined countries). Infant mortality indicators are the smallest in Bosnia and Herzegovina and Serbia, and life expectancy is the longest in Albania (38th place vs. 91 in Moldova). As far as primary education is concerned, its quality is clearly high in Albania (22nd place versus 74th) and the grades of primary school pupils are higher in Bosnia-Herzegovina and Serbia (places 35 and 55 vs 113 in the Republic of Moldova).

Conclusions

1. Benchmarking represents a comparative assessment of performance, excellence or gaps in some areas of activity that point out the need to promote organizational and structural changes that will rectify failures. Establishing a benchmark that we should have as a sample and setting a "target" becomes an essential point in the development and implementation of economic policies.

2. The Republic of Moldova might find useful the experience of Albania and Macedonia in the field of quality of institutions, Montenegro and Serbia in the infrastructure quality, Bosnia-Herzegovina and Macedonia in ensuring macroeconomic stability, and Albania, Bosnia-Herzegovina and Serbia in the field of health and primary education.

3. The most vulnerable places of the Republic of Moldova compared to the studied group of the Balkan countries are the diversion of public funds, corruption and favouritism, the no transparency of government policy making and implementation process, strength of investor protection, incidence of tuberculosis and HIV among the population, little life expectancy and the insufficient pupils' enrolment in primary schools.

4. The objective for the Republic of Moldova, outlined in the *Roadmap to improve the competitiveness of the R. of Moldova*, is the process of transition of the national economy to the investment-driven economy [4, p.2]. This stage is based on the willingness and capacity of the country and its companies to invest heavily not only in reducing production costs but also in improving product quality, modernizing production processes, creating production and social infrastructure that will contribute to an increase in production efficiency. As far as benchmarking is concerned, of much interest are the best practices of Albania in tertiary education and training (42nd place versus 91st in the R. of Moldova), Macedonia in the efficiency of the goods market (34th place versus 107th), Montenegro and Macedonia in the field of the financial market development (places 54 and 57 instead of 129 in Moldova).

5. Starting from the fact that the Balkan countries can become, for the Republic of Moldova, reference countries in the process of approaching the EU, their experience in the selected areas should be taken into account in the elaboration of the national and sectorial policy measures.

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TRANSACTION COSTS WITHIN THE INDIVIDUAL AND COOPERATIVE APPLE PRODUCERS IN PRESPA REGION, THE REPUBLIC OF MACEDONIA

Aleksandra ANGELOSKA[1], PhD Student,
Szent Istvan University, Hungary
Nikola M. TRENDOV[2], PhD Student,
Szent Istvan University, Hungary
Dumitru STRATAN[3], PhD Student,
Szent Istvan University, Hungary

Apple production in the Republic of Macedonia is an important sector that highly contributes to the economy in terms of employment and income, especially for the small farmers in Prespa Region. Despite cooperatives' efforts and governmental support to attract members through the provision of inputs, technical advices and other incentives to farmers, membership adherence is low and slow. The Transaction Cost Economics Theory (TCE) provided the basis for this study where the choice is conditioned by relative comparative advantage in terms of lower transaction costs.

Based on the research, following conclusions are underlined: a. from the perspective of farmers and the cooperatives there are factors that positively influence the choice of cooperative membership; b. from the cooperative's side, some of the positive influences are its regular flow of price information, constant technical advices and secured market; c) for farmers who aim at increasing production and improving their incomes, membership to cooperative signifies security of accessing cheaper inputs especially chemical fertiliser, security of market for the produced apples and higher frequency of transaction cost. Farmers' choices are not exclusive to one type of structure or the other. Farmers can transact with the cooperative and trader at the same time, influenced by the differences in the price among the "Idared" and "varieties". Both of them, members and non-members are limited connected to the "middlemen" in choice of transactions.

Keywords: *transaction cost economic theory, apples, cooperative, farmers, Republic of Macedonia.*

Producerea merelor în Republica Macedonia este un sector important care contribuie esenţial la economie din perspectiva angajării în câmpul muncii şi a asigurării veniturilor, în special pentru fermierii mici din Regiunea Prespa. În pofida eforturilor cooperativelor şi suportului oferit de guvern pentru atragerea membrilor de cooperativă prin acordarea de resurse, asistenţă tehnică şi alte facilităţi pentru fermieri, aderarea la cooperative este scăzută şi se realizează lent. Teoria economică a costurilor de tranzacţionare (TCE) a furnizat baza pentru acest studiu, în care alegerea este condiționată de un avantaj comparativ relativ în ceea ce privește costurile de tranzacționare mai mici.

În baza cercetării realizate au fost identificate următoarele aspecte: a) din perspectiva agricultorilor și a cooperativelor există factori care influențează pozitiv alegerea calității de membru de cooperative; b) din punctul de vedere al cooperativelor, unele dintre influențele pozitive sunt reprezentate de fluxul regulat de informații despre prețuri, asistență tehnică constantă și piața de desfacere sigură; c) pentru fermierii care urmăresc creșterea producției și îmbunătățirea veniturilor, calitatea de membru al cooperativei acordă siguranță la accesarea resurselor mai ieftine, în special îngrășămintele chimice, siguranța pieței de desfacere pentru merele produse și frecvența mai mare a costurilor de tranzacționare. Alegerile agricultorilor nu sunt exclusiv pentru un tip de structură sau pentru celălalt. Fermierii pot tranzacționa împreună cu cooperativele și comercianții, influențați de diferențele de preț dintre „Idared" și „alte soiuri". Atât membrii de cooperativă, cât și cei care nu sunt membri de cooperativă sunt limitat conectați cu „intermediarii" în alegerea tranzacțiilor.

Cuvinte-cheie*: teoria economică a costului de tranzacţionare, mere, cooperative, fermieri, Republica Macedonia.*

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[1] ***© Aleksandra ANGELOSKA, angeloska1@live.com***
[2] ***© Nikola M. TRENDOV, trendov.nikola@gmail.com***
[3] ***© Dumitru STRATAN, dumitru.stratan@gmail.com***

Производство яблок в Республике Македония является важным сектором, который вносит большой вклад в экономику с точки зрения занятости и доходов, особенно для малых фермеров в Регионе Преспа. Несмотря на усилия кооперативов и правительственную поддержку для привлечения членов кооперативов путем предоставления ресурсов, технического консультирования и других стимулов для фермеров, вступление в кооперативное членство является низким и медленным. Экономическая теория транзакционных расходов (TCE) послужила основой для этого исследования, согласно которой выбор обусловлен относительным сравнительным преимуществом более низких транзакционных издержек.

С точки зрения фермеров и кооперативов есть факторы, которые положительно влияют на выбор кооперативного членства. Со стороны кооператива некоторые из положительных влияний – это регулярный поток информации о ценах, постоянные технические консультации и обеспеченный рынок сбыта. Для фермеров, которые стремятся увеличить производство и улучшать свои доходы, членство в кооперативе означает гарантию доступа к более дешевым ресурсам, особенно химическим удобрениям, безопасность рынка сбыта для производимых яблок и более высокую частоту транзакционных издержек. Выбор фермеров не относится исключительно к одному типу структуры или другому. Фермеры могут одновременно взаимодействовать с кооперативом и торговцем, под влиянием различий в цене между «Айдаред» и «других сортов». Как члены кооператива, так и те, которые не являются ими, имеют ограниченный доступ к «посредниками» в выборе транзакций.

***Ключевые слова**: экономическая теория транзакционных расходов, яблоки, кооперативы, фермеры, Республика Македония.*

JEL Classification: A13, L14, L22, P13, Q13, D23.
UDC 631.162:657.471.65+631.11.8](497.17)

Introduction

Nowadays, the Government of Macedonia (GoM) encourages farmers to join cooperatives, increase their competitive, and export power. However, still their products are mostly sold at local green markets or exported through local „middlemen”. Currently, in Macedonia there are only 20 cooperatives and 80 associations. Only dozen are working properly but far away from the level of similar organizations in EU Member States. In case of apple production, cooperatives are still not defined models of organization. Because of this, farmers cannot recognize their benefits yet. For instance, in the Region of Prespa, which is cradle of apple production, nowadays, there is only one cooperative “Res-group” facing many difficulties, driven by internal and external factors.

The emergence of cooperatives was associated with many expectations with regard to improve the sector performance. However, these expectations have not been fulfilled due to inability to attract members or solve market chain problems. Becoming a member of the cooperative or not is a decision that affects the choice whether apples should be sold through the cooperative or directly to traders. In addition, it also affects the choice of input channel, whether it should be through cooperative or third party. Although cooperative would greatly reduce the burden of farmers in post-harvest processing, not all the farmers are willing to transact with them. And/or no one provide unique products which can be sold in overall through the cooperative.

Over the last decade, influenced by globalization processes in food production, trade and consumption have changed and improved the role in vertical coordination of agri-food value chains. Nowadays, coordination is driven by gathering and processing information, making decisions and communicating these decisions. Thus, this vertical coordination in the value chain requires flowing of the information exchange in both ways, upstream and downstream among the participants of the chain. In generally, cost of information exchange and decision-making are coordination costs, which together with transactional risks make up transaction costs [2]. Transaction cost theory is basis of the agricultural cooperatives in vertical coordination in agri-food value chains.

The hypothesis of TCE according to [6] is that economic organizations are an efforts to „align transactions, which differ in their attributes, with governance structures, which differ in their costs and competencies, in a discriminating (mainly, transaction cost economizing) way”. Five attributes of transactions have been distinguished that affect the size of transaction costs [4]: asset specificity, environmental uncertainty and complexity, frequency, behavioral uncertainty, and connectedness to other transactions. Concerning the environmental characteristics on which this thesis focuses on, [5] distinguished

three aspects of a transaction that influence the size and nature of transaction costs. These are asset specificity, uncertainty and frequency (connectedness). These costs differ depending on the transaction partner. Therefore, a decision on the transaction structure also affects the variety of apple produced. Traders dealing with farmers are more than spot-market-buying and buying-selling-arrangements, they are also playing a key role in inputs providing and money lending as well. There are several traders in Prespa Region, which make market distortion and dictate purchasing price.

Cooperative „Res-group" provides more stable marketing channel and secure access to inputs and frequently flow of price`s information. Lack of storage capacity and processing technology make them powerless in bargaining and market orienting. Therefore, the ultimate choice is weighed against these relationships or 'commitment factors' associated with any membership status. Question remains how farmers differently evaluate these different choices. In this study case, transaction costs of the apple production are with lower frequency, hierarchically limited market and uncertainty. Therefore, it would be crucial to understand its chain supply and the whole process in general.

Material and methods

For this paper researchers have used several techniques to get the required data such as literature research, discussion with key informants, deep interview survey and observation of the participants as well as administrative authority specialized in this sector.

Discussions with key informants were useful to collect as much as possible information about the research area, apple sector and the cooperatives as well. Informants were the staff from the regional office of the National Extension Agency (APRZ), specialized in field of apple production, Associated Professors dealing with Development and Organizational Management studies from Faculty of Agriculture Science and Food-Skopje, regional apple producers, the manager of cooperative ZZ „Res-group", Local Authority bodies, traders, retailers, and fruit exporters. In Prespa Region, 60 farmers were interviewed with a formal questionnaire structured on close-ended and open-closed questions.

Selection of the cooperative and individual farmers was performed in a multi-stage sampling process. First stage was an in-depth study with purposely-selected cooperative ZZ „Res-Group". The cooperative is centralized and independent, member of the Macedonian Cooperatives Alliance, which play role of cooperative`s umbrella in the Republic of Macedonia. Second stage covers selection of 20 farmers with more than 3 hectares under apple production and 20 farmers with less than 3 hectares (both group are non-members). On the other hand, researchers select 20 farmers who are members of the cooperative „Res-group".

Cross-tabulation analysis are used to compare categorical variables or group of them, and strengthens and existing of the relationship between them. Moreover, it can be used to test hypotheses using one of the non-parametric techniques called „Chi-square test". This test is used to compare the proportion of cases from a sample with hypothesized values or those obtained previously from a comparison population.

- Compared variables are categorical (nominal or ordinal);
- Adequate sample size is large (N>=60); and
- Adequate cell frequency is less than 5.

In this paper, researchers explain their explored data within the relationship between two or more categorical variables based on a cross-tabulation table, with cases classified according to the categories in each variable. In correlation with the above pattern of research approach, we formulated the following hypotheses:

1) Transaction costs and retail partnership differ according to the membership status;
2) Beside transaction costs, the choice of transaction partner depends on the membership status towards the cooperative; and
3) Transaction costs are lower within the cooperative than individuals.

Results and main findings

Varieties of apple. Prespa Region is a recognized apple producer on the European and Middle East market. Prespa is characteristic for several types of apple varieties, but most recognized are Idared, Gold and Red Delicious, Chadel and Mutsu. Commonly for farmers is to divide apple varieties on "Idared" (as a main dominant variety on the farms, less price and easily maintenance) and rest of them so called "varieties" (Red and Gold Delicious, Mutsu, Chadel and Granny Smith) which are produced on a smaller rank (than Idared), with bigger purchasing price but less favorable for maintenance of production process.

As can be seen (Figure 1) bellow, most of nonmembers are producing varieties with expensive

maintenance costs and takeover a higher risk than members. On the other hand, members tend to produce more productive varieties as well as nonmembers, but their financial power, lack of processing technology and more effective maintenance equipment make them limited and base on less costs varieties growing, thus, reducing the potential losses. Main differences within membership status exist in the varieties of "Red Delicious" and "Granny Smith". Their seedling was sensation during the 90`s when farmers look at them as alternative of "Idared", thus low cost of maintenance and high income.

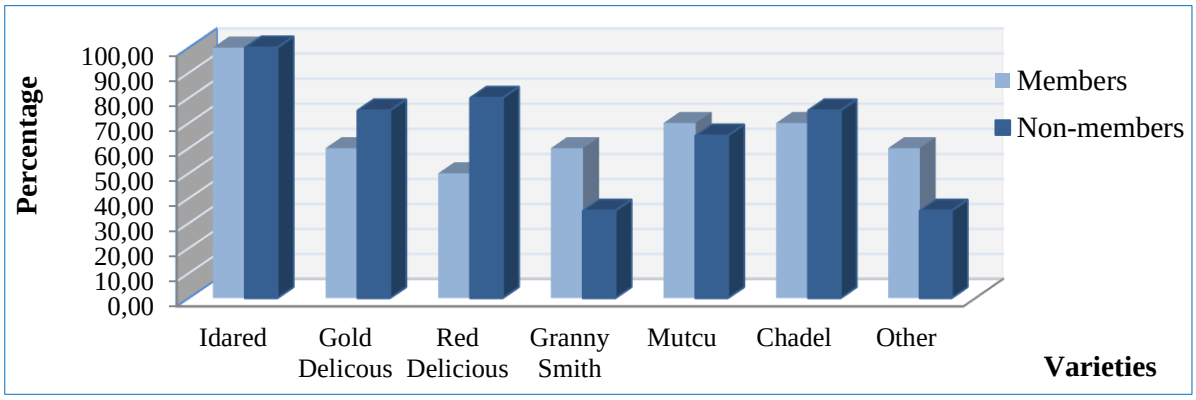

Figure 1. Produced varieties of apple within membership status (2013)

Source: Authors' based on primary data, 2014.

In general, farmers are using to sell their apples classed as an „Extra class" for consumption and „First class" or so-called „Industrial apple" for processing factories producing: juice, powder, jam or cakes. No one of the farmers hold calibrating system or cooler storage nor processing capacity for adding value on their products. Traders and wholesale retailers own mainly those technologies.

Apples sale. Common biggest problem for apple producers is market oriented synergy, as well as quantity and quality offer facing market`s demand. Price per kilogram fluctuates during the whole season. From the beginning of harvesting season, when speculations are driven by traders as called „middleman" and external wholesale buyers from consuming demand countries, till the end in the spring when the apple reduce its weight and quality influenced by lack of modern storage capacity. In the table below is shown amount and income from the sold varieties of apple within membership categories.

Table 1

Yield and income from both varieties within membership status (2013)

	N	Member	St. dev.	Non-Member	St. dev.
Quantity of „Idared" (Kg)	0	64,100	33,368.15	73,400	35,771.73
Income from „Idared" (MKD)	0	684,400	422,895.68	765,750	443,816.80
Quantity of „varieties" (Kg)	0	16,900	9,677.59	16,950	11,138.95
Income from „varieties" (MKD)	0	289,000	182,642.33	264,175	172,858.57

Source: Author`s based on primary data, 2014.

From the results above, quantity of sold „Idared" is higher among nonmembers influenced by the yield. Price is non-factor that influence the income, as we can see that income is similar comparing with the amount. Differences are occurs only in the produced amount among farmers driven by their land size. In the case of the varieties members have higher income than non-members, with main reason that price of selling through the cooperative is higher even the total of produced amount is almost equal with non-members. However, differences occur only in income.

A sale of apples is doing few months per year with possibility to increase that period through investment in cooler-storage capacities. Amount of produced apple mainly depend on weather conditions and fertiliser`s quality. Price is influenced by local wholesale exporters or so-called "middle-man", and mainly by the regional market price and production season among EU.

Cooperative members are trying to get quality and quantity as well and carefully chose their transaction partner with placed emphasis on payment date. Characteristic for non-members are that they

tend to quantity with less investment and zero days delay in payment. Nevertheless, common for both categories is that they are not powerful in bargaining price at all. Traders are collecting their fruits from each farmer`s storage place in most cases in their households.

In average both membership categories earn less or more the same amount for „Idared", but not in the cases of the varieties where member`s income is higher than non-member for the same amount of products, because varieties were sold through the cooperative.

Breakeven price. Taking into account all costs involved such as described above, farmers felt that minimum price were lower than costs occurred in the apple production. Therefore, they suggested breakeven price that can proxy all costs per kilogram of apple independently of „varieties" or „Idared". For the apples, such a breakeven price would include costs on trees maintenance, fertiliser and added labour in harvesting process. For both, "Idared" and rest of the varieties in this research the breakeven price found to be 17 MKD on average in general. Members were asked for price of 18 MKD per kilogram or lower than nonmembers, where they are asking for 16 MKD. Reason for this differences in the price within membership categories is influenced by input`s price and maintenance costs within membership status.

TCE perspective within membership status. A comparison of „Res-group" cooperative and traders provides more explanation on their relationship within apple producers. Following the Transaction Cost Economics Theory, the cooperative can be described as hybrid, while traders as spot market key players. Choice of farmers to transact with any structure depends on their comparative advantages analysed through transaction costs. Farmers and traders present themselves as totally different governance structures in which "Res-group" choose to operate as an entity, similar to the structure of trader`s companies. Main principle in choosing "most favorable" transaction structure is that, transaction cost should be lower thereby offering a comparative advantage. This analysis is therefore an attempt to compare and distinct the main elements of these cost, consequently bringing out differences that could help in explaining farmers' choices.

Asset specificity are durable investments that are undertaken in support like a part of transaction or opportunity cost, which investment is much lower in best alternative uses. It refers to the degree of which the asset has little or no value outside that relationship. In context of the apple production, elements of asset specificity are especially physical assets, dedicated assets and less or more brand assets.

Elements of physical asset specificity observed in this paper are size and number of plots under apple production and perishability of them after harvesting. Degree of specificity is different according to transaction structures. High asset specificity is assumed associated with the cooperative, as access to membership that involves in principle the ownership of minimal number of apple trees. Limited land utilization, valuable and price of the land, patriarchal family partition and unsolved property rights are factors that influence both groups according to the number of plots. The Pearson Chi-square shown weak Sig. level= 0.592*[1] (See Appendix A) because all factor mentioned above are common matters within membership status.

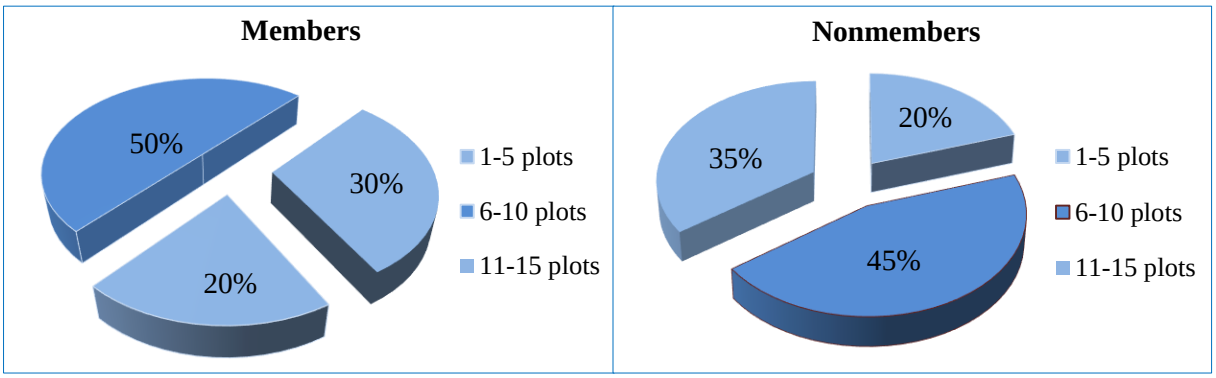

Figure 2. Number of plots within membership status

Source: Authors' based on primary data, 2014.

** Relationship is significant at the 0.05 level (2-tailed)*

The way and quality of fertilising play a key role in shelf-time of their products. This situation increases the asset specificity that is associated within transaction cost. There are big differences in using fertilisers between membership categories according to Pearson Chi-Square, where a Sig. level= 0.199* (See Appendix B.) researchers were found[1]. In general, perishability affects members and nonmembers as a week point of their limited possibilities in qualitative products and used growing technologies.

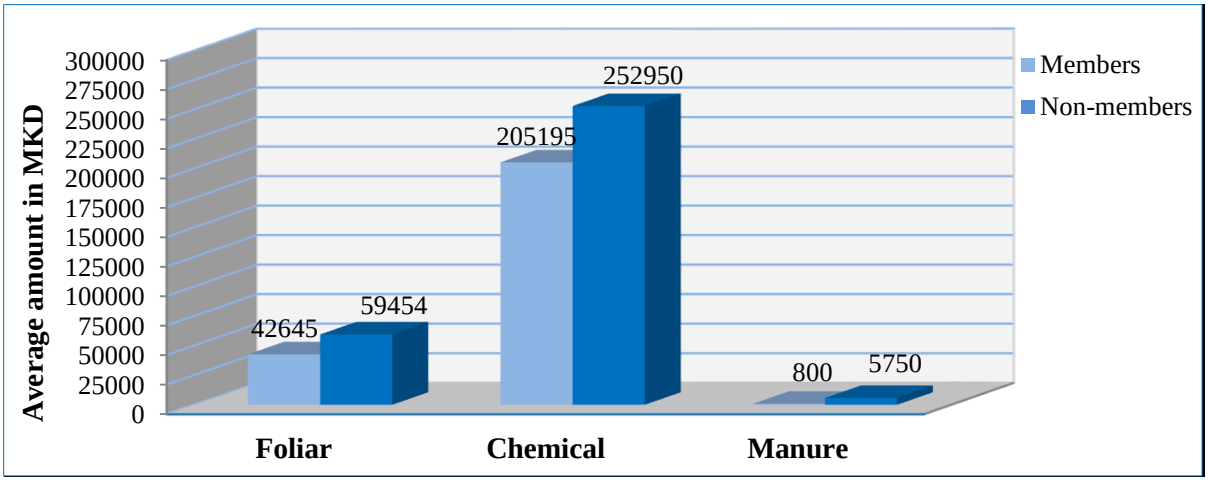

Figure 3. Amount of MKD used for ferilisers within membership status (2013)
Source: Author`s based on primary data, 2014.

Main difficult for cooperative is to regulate and uniqueness the using and quality of fertilisers. Monopoly of fertilizing`s market determined by local agricultural pharmacies lead to high price of fertilisers. Even fertilisers are accessible their quality is suspicious. Low educational level, monopoly on fertilser`s market and undefined governmental regulation for pest management lead to using of low quality and inefficient fertilisers for unreasonable price. Hence, influencing high transaction costs and fluctuates on farmer`s income and yield.

As they are selling as a unique entity, their products should follow the same quality, where among the members this case is matter of problem. On the other hand, if apples are stored and fertilized by using high technology and uniqueness, than the risk of perishability is lower and farmers can take their time to manipulate on the market, especially with traders. In case of Prespa`s apple farmers are lack of brand name as it was in the past when "Prespa`s Idared" was market recognized and in demand. Farmers' tendencies led to investing in new varieties and more commercial than convention production.

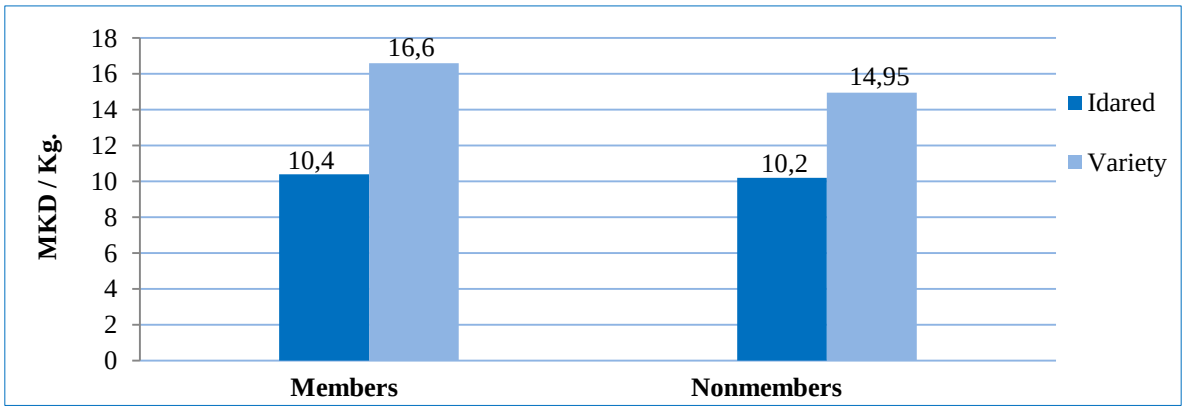

Figure 4. Average price per type of apple within membership status (2013)
Source: Author`s based on primary data, 2014.

** Relationship is significant at the 0.05 level (2-tailed)*

Uncertainty. Forms of uncertainty do not be left as a mentioned and described here are price variations while selling their products and delays in payment. Apple transactions are faced with high uncertainty due to price fluctuations. Even the price is fixed by larger traders for „Idared" and „varieties", from farmers' perspective there is still uncertainty regarding the amount of money that they will ultimately receive after selling. The level of uncertainty is lower for „varieties" since cooperative found export market to other countries. However, with the „Idared", traders have habit of changing prices for no particular reason, just by speculating on farmers' ignorance: farmers are told that their apples are with bad quality, market segmentation, lower demand on regional markets, etc.

Occasionally, there are small variations around the price of „Idared" for non-members and less or more variation for members mainly reason is the achieved contractual export agreement, which also influence stable price for „varieties" as well. However, for the „varieties", large variations are observed for nonmembers, because of the high demand and frequently market speculations made by globe market and high uncertainty associated with traders.

Farmers sell their products with the expectations of satisfying the many household consumption requirements and making savings for the future contingencies that may include investments in new varieties or mixed fruit plots.

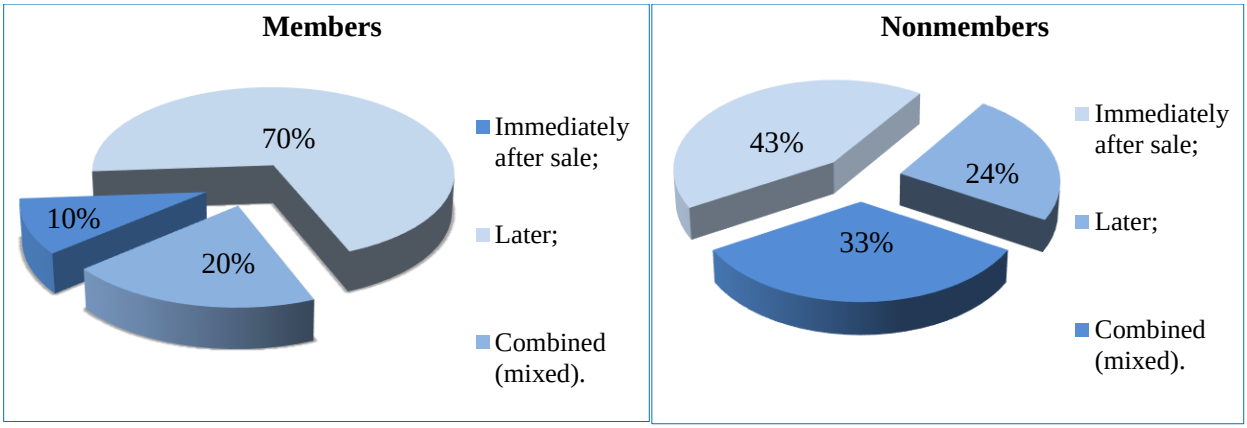

Figure 5. Delay in payment within membership status (2013)
Source: Author`s based on primary data, 2014.

The payment options offered to farmers depend on their transaction partner. As researchers finding of Pearson Chi-Square, shown Sig. level= 0.053*[1] (See Appendix C) between both groups is very week. With traders, payment is straightforward made immediately after sale and high cash fluctuation occur. They are trying to avoid taxation and prefer cash transactions. There are also cases when traders give you no other choice then to delay your payment, usually within few weeks. There is no exception when delay is over few months as well, thus farmers face problems two-sided problems. First, they cannot approve their transaction, because it was cash money without bill. Second, they become in unfavorable position in front of the Law and Court, in case when they are sue the other party. However, with „Res-group" payments are not made immediately after the transaction, mainly due buyers sell their products on third party. Quantity of apples supplied and payments are indicated on paper and transaction is going through the bank. Cases where cash money is paid immediately are not exception as well, mostly in case of First Class transaction made.

Farmers usually receive information for price, policy and other information related to their daily activities from their friends, mass and social media. Usually worldwide price is not same as the price in Prespa Region. Traders are those who have information for demand and supply chain in apple consumption sector. Farmers are based on their information and their price. Prespa Region suffers of such kind of consortiums, organisations and marketing companies. Cooperative`s members are more informed about demand and price. Information flow is more frequently among the membership, and have more reliability and validity on the database connected with apple production.

** Relationship is significant at the 0.05 level (2-tailed)*

Frequency. Indicates the intensity which transactions are handled. With low frequency, costs per transaction are relatively high. With an increase in number of transactions, costs per transaction will decline. Frequency of transactions in the apple sector is related to seasonal characteristics of production. These transactions are recurring every year, followed by high intensity of frequency within each structure of transaction. The level of intensity is different between traders and farmers. Within the cooperative, transactions are not only based on buying-and-selling. Hence, all this indicates that there are many occasions of interface between the cooperative and farmers. Majority of members said that semi-secured market, less input price and stable purchasing price are reasons why they made transactions through the cooperative. On the other hand, non-members do not have choices as the cooperative, all of their transaction opportunities are based on traders' willingness, or a small-scale local retail market.

To assess the fully intensity of frequency, there is need for an assessment of what a particular intervention either by the members/non-members/traders means to a particular farmer in a particular period of the season, how fast is the intervention made and how effective it responds to the need. Characteristics of the transactions associated with members, non-members or traders are summarized in Table 2. Their relative degrees are presented as high (++) or low (+) depending on description made above.

Table 2

Summary of transaction cost characteristics

		Cooperative Members	Non-members	Traders
Assets specificity	Apple growing plots	++	++	+
	Perishability	+	+	++
	Limited fertilising quality	+	+	+
	Well-known brand name	+	+	++
Uncertainty	Price variation	++	++	+
	Delay in payment	+	++	+
	Information flow	++	+	++
Frequency	Transactions	++	++	+

Source: Author`s based on primary data, 2014.

Conclusion

Classical TCE solution for reducing transaction costs usually is to choose a governance structure that is more hierarchical in principle, thus, shifting from market to contracting, or from contracting to foci on vertical integration, according to [1]. Tendencies of „Res-group" to be more market oriented easily can increase their transaction costs in case of assets specificity. Their hybrid position transforming in hierarchical mechanism can reduce this costs through strong vertical coordination and contract farming. However, asset specificity is higher for all farmers, but not for the traders. Exception of their market mechanism characteristics through hybrid tools can slightly reduce asset specificity, both farmers and cooperative.

Uncertainty in the apple sector of Prespa Region occurs usually in correlation with the complexity. In general, the value supply chain is one complex system in which many external factors lead to uncertainty among the farmers and the cooperative as well. The burden of the cooperative is lower in case of this study, mainly because of lower price variation and fixed delay in the payment. On the other hand, the rest of the farmers are influenced by unsecured breakeven price, unlimited delay and in addition, weather conditions, than uncertainty have gotten into climax. Therefore, the more complex the transaction is, the harder it will be to anticipate and describe fully and accurately the responsibilities of each party in the contract [3] in the literature review above. Reducing uncertainty can be provided through unified products, set quality and size standards among the membership, and organising in vertical coordination. Matters of problems that occur are organic products, „middlemen", setting-up standards and declarations. Do not be left as mentioned that will occur, as a problem in near future is the protected designation of origin as a protected apple varieties in the case of Prespa Region and protected geographical indication in general as well.

An apple production has seasonal character and reflects low frequency in transaction costs. Because of the market hierarchy and hybrid mechanism of the cooperative, members enjoy higher frequency rather than rest of the farmers. The most important thing that should not be overlooked is that, the manager of the cooperative has incentives to minimize transaction costs, thus, in a way to develop contractual relationships with traders and exclude „middlemen" from the supply chain. Nonmembers are facing low frequency and high costs influenced by traders. The market limited opportunity and choice of transaction partner makes them loss of the synergy and frequency as well.

From all discussed above „Res-group" lead complex mechanism strategy, influenced by high uncertainty in price variation and delay in payment. High asset specificity and low frequency, force the management to adopt model of organization that minimizes the transaction costs and on the other hand to make a stabile position in the apple supply chain. In case of non-members they are facing lower frequency and higher uncertainty than members. On the other hand, they face lower asset specificity and maladaptation of synergy losses. Moreover, non-members are facing stronger market hierarchy and conditions, thus their bargaining power is in an unfavorable position than the cooperative one.

Appendices

Appendix A: Relationship between numbers of plots within membership status

Chi-Square Tests			
	Value	**df**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	10.275[a]	12	.592
Likelihood Ratio	12.732	12	.389
Linear-by-Linear Association	.273	1	.601
N of Valid Cases	60		

Source: Author`s calculation based on primary data, 2014.

Appendix B: Relationship between types of used fertilisers within membership status Chi-Square Tests

	Value	**df**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	4.650[a]	3	.199
Likelihood Ratio	5.864	3	.118
Linear-by-Linear Association	.967	1	.326
N of Valid Cases	60		

Source: Author`s calculation based on primary data, 2014.

Appendix C: Relationship between delays in payment within membership status

Chi-Square Tests			
	Value	**df**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	5.875[a]	2	.053
Likelihood Ratio	6.077	2	.048
Linear-by-Linear Association	.242	1	.623
N of Valid Cases	60		

Source: Author`s calculation based on primary data, 2014.

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BASIS FOR THE DEVELOPMENT OF THE LIQUIDITY OF THE GOVERNMENT SECURITIES MARKET IN THE REPUBLIC OF MOLDOVA

Victoria COCIUG[1], Associate Professor, PhD,
National Institute for Economic Research, Republic of Moldova
Olga TIMOFEI[2], PhD, Senior Researcher,
National Institute for Economic Research, Republic of Moldova

The unilateral structure of the domestic financial market, monopolized by banking institutions, requires a major reconfiguration by returning to representative positions of the capital market. This restructuring can be initiated by increasing investors' interest in the government securities market, giving it some quality elements, but also by creating a trading system that would increase the liquidity of all securities on the capital market. Increasing the quality of the GS market would allow the government on the one hand, to diversify its funding sources and manage its most important market risks more effectively, and on the other hand the financial sector would create opportunities for it to correlate and synchronize the development of the GS market with other segments of the capital market. In order to identify prerequisites for the development of the GS market in the RM, using the methods of research analysis, synthesis and deduction, we initially sought to identify the characteristics that define a market of government securities as a qualitative one. A comparative analysis of the historical evolution of government securities markets, which can be considered representative for the Republic of Moldova, can provide the necessary experience for the improvement of the liquidity level of the domestic government securities market. The results of this research have identified several possible actions, the implementation of which could lead to an increase in the quality of the domestic GS market.

Keywords: *government securities, government securities market, liquidity level of government securities market.*

Structura unilaterală a pieței financiare autohtone, monopolizată de instituțiile bancare, necesită o reconfigurare majoră prin readucerea în poziții reprezentative a pieței de capital. Această restructurare poate fi inițiată prin intermediul sporirii interesului investitorilor față de segmentul pieței valorilor mobiliare de stat prin formarea unui sistem de tranzacționare, ce ar spori lichiditatea tuturor titlurilor pe piața de capital. Creșterea calității pieței VMS ar permite pe de o parte, guvernului să-și diversifice sursele de finanțare și să-și gestioneze mai eficient cele mai importante riscuri pe piață, iar pe de altă parte, sectorului financiar i-ar crea posibilități să coreleze și sincronizeze dezvoltarea pieței VMS cu celelalte segmente ale pieței de capital. În vederea determinării unor premise pentru dezvoltarea pieței VMS în RM, în acest articol au fost identificate caracteristicele ce definesc o piață a valorilor mobiliare de stat drept una calitativă, aceste caracteristici fiind pliate pe piețele valorilor mobiliare de stat ale unor țări, care pot fi considerate reprezentative pentru RM și pot furniza experiența necesară îmbunătățirii nivelului de lichiditate a pieței valorilor mobiliare de stat autohtone. Rezultatele cercetării au permis identificarea unor posibile acțiuni, implementarea cărora ar putea duce la creșterea calității pieței VMS autohtone.

Cuvinte-cheie: *valori mobiliare de stat, piața valorilor mobiliare de stat, lichiditatea pieței valorilor mobiliare de stat.*

Однокомпонентная структура внутреннего финансового рынка, монополизированная банковскими учреждениями, требует значительной реконфигурации путем консолидации позиции рынка капитала. Эта реструктуризация может быть инициирована за счет увеличения интереса инвесторов к рынку посредством создания торговой инфраструктуры, обеспечивающей ему высокую ликвидность, взяв за основу рынок государственных ценных бумаг. Повышение качества рынка ГЦБ позволит правительству диверсифицировать источники финансирования и более эффективно управлять рыночными рисками, а также создаст новые возможности для

[1] ***© Victoria COCIUG, v_cociug@mail.ru***
[2] ***© Olga TIMOFEI, o_timofei@yahoo.com***

финансового сектора, его корреляции и синхронизации с развитием рынка ГЦБ и другими сегментами рынка капитала. Для выявления предпосылок развития рынка ГЦБ в РМ, были определены факторы, составляющие качество рынка государственных ценных бумаг и произведен сравнительный анализ рынков ГЦБ некоторых стран, опыт которых представляется наиболее существенным для Республики Молдовы, исходя из данных параметров качества. Результаты исследования позволили разработать ряд рекомендаций по повышению качества внутреннего рынка ГЦБ.

***Ключевые слова**: государственные ценные бумаги, рынок государственных ценных бумаг, ликвидность внутреннего рынка государственных ценных бумаг.*

JEL Classification: G12, G23, H6, R30, R39, D40.
UDC 336.76(478)

Introduction. A steady macroeconomic environment, in particular a credible monetary policy, together with a sustainable fiscal and economic policy, has proven to be the basic premise for the development of the bond market. Similarly, the development of the securities market contributes to increasing the efficiency of monetary management and the stability of the financial system. A developed securities market also contributes to the improvement of the efficiency of global economic governance by expanding the range of opportunities available to finance large-scale projects, contributing to better capital allocation, providing a non-inflationary source of government financing and facilitating debt management and contributes to promoting sustainable economic growth.

A mature and liquid government securities market can improve the allocation of resources by guiding efficiently the local and foreign economies into domestic investment, as well as by diversifying retail and institutional investment channels.

The government securities market in the Republic of Moldova is neither mature nor liquid, but tends to improve these parameters. Thus, we considered it appropriately to study the experience of other countries in the field of improving the quality of the government securities market in view of its application to Moldova.

The need to develop a market of qualitative government securities. The role of the government securities market for the development of a mature monetary market is indisputable. The problem faced by a state concerns not its existence, as an attribute of a developed economy, but especially to the quality of this market and the instruments traded on it. Thus, when in the specialised literature is emphasized the importance of the market of state financial instruments, it also refers to the minimum level of credit risk, the high liquidity of the market and the wide range of maturities. These are features that distinguish government titles from any other financial instruments [1]. M.S. Mohanti in his paper described the benefits of a liquid government securities market in emerging economies and highlighted the idea that all of these benefits did not reduce the financing of the low-cost budget deficit but also imply the creation of investment instruments for other participants of the financial market [7]. Treated as an important segment of the financial market, the government securities market must always be in the hands of governments to promote its liquidity. The economists Luengnaruemitchai and Ong also emphasize the critical role played by the benchmarks offered by government credit instruments in any domestic bond market [6].

The existence of state movable assets as a non-inflationary instrument of state debt financing, but also as an investment vehicle, is an insufficient condition for determining the quality of the credit market. Due to the importance to the entire economy of these markets, governments need to support the process of developing bond markets by creating and strengthening an internal market for government bonds, and also by providing a framework and an appropriate model for the development of corporate bond markets. In this regard, several studies have proven that the domestic bond market constitutes the ground on which domestic bond markets are built [2]. At the same time, the same study pointed out that the higher the internal market of the domestic securities market and the higher the level of quality are, the less the country needs to finance itself on the international markets, which usually propose capital at higher costs and can lead in this way to regional financial crises.

At the same time, the development of the government securities market usually serves as a basis for the evolution of the capital market [5], which becomes one of the means of promoting economic development, being considered as an essential tool for economic growth A steady domestic capital market reduces interest rate risks by lowering volatility and increasing their diversity, setting a longer-term horizon for investment. The money market usually constitutes the first step in the development of a steady market

of government bonds then of the domestic bond market, followed by the corporate bond market and ultimately by the derivatives market. This logical sequence has not always been pursued, as certain factors, such as the level of competition, the degree of macroeconomic stability or investor base may change it. However, these four markets have a close relationship because one contributes to building or improving the other: the money market helps to provide liquidity for the development of the government bond market; in addition, supports in the short term the process of building the yield curve and reduces financing costs through government securities. On the other hand, the government bond market offers, in the short term, long-term bonds and standardized money market issuances, providing instrumental supply to maintain an adequate liquidity level. Both the money market and the government bond market contribute to the construction of the private sector debt market as it provides infrastructure, price discovery tools and risk hedging mechanisms. The corporate bonds market extends investor choices and leads to a more balanced internal financial structure, strengthening the development of the entire bond market. Finally, the derivatives market arises from the fact that participants have to counter their risks and lead to low interest rates, but also to better financial management practices. The links between these markets show not only their crucial role as an instrument of economic development but also the importance that governments take into account when developing economic policies. Thus, this article will focus on the experience of several countries, which follow the development of capital markets by giving the quality of government securities, some of which are useful for the development of the domestic government securities market.

Liquidity – the main criterion for the quality of the government securities market. The Government Securities Market, which acts as an important source of domestic government loans, is an integral part of the financial systems of all developed economies. By attracting funds, the state pursues a wide range of goals, such as financing the current budget deficit, refinancing previous loans, conducting open market operations, financing state programs. In addition, an efficient government securities market provides participants with the opportunity to invest in ultra-reliable instruments and ensures the formation of a common risk-free benchmark for both the corporate bond market and other segments of the financial market, and economy as a whole.

The efficient operation of the government securities market depends to a large extent on its liquidity level. If the market is not liquid enough, it increases the risk of price volatility, which can negatively affect interest rates and increase the cost of new loans, as well as it can have an impact on promoted monetary policy.

The concept of *liquidity on the market* is complex, with an all-encompassing definition difficult to formulate. In several sources, a liquid market is considered the market where large transactions are quick and without substantial loss of value. The following indicators can be used for market quantification: market penetration, tightness, and resiliency.

Market depth measures the size of the market, reflected by the possible volume of order that the market is willing to absorb at one time. Its level is estimated either by the total turnover or by the total volume of the sales / purchase orders negotiated within a certain time frame. If market penetration is estimated on the basis of the volume of sales / purchase orders, it also reflects the potential capacity of transactions made by market participants and can be perceived as an infrastructure quality indicator. The assessment of market penetration can also be estimated by the total turnover index, which reflects the actual demand and supply of government securities. The higher the value of this index, the more liquid the market will be. At the same time, market penetration is correlated with the risk indicator as it can estimate the level of market vulnerability to the size of transactions by identifying the critical limit of the volume of traded securities that can be achieved without leading to a substantial change in the price state-owned securities.

Density characterizes the level of transaction costs and is represented by the deviation of transaction prices from the average market price. The density is usually characterized by the difference between bid and ask spreads. The lower the value of this parameter, the more liquid the market is.

Elasticity reflects the time it takes for the market to return to its normal state after a particular transaction and its size is directly proportional to the degree of liquidity of the market in question. Depending on the purpose of the analysis, the market can also be characterized by the speed of executing the sale/purchase orders.

In the context of the need to quantify the quality of the government securities market, it is necessary to develop its previously defined liquidity definition. Thus, *the liquidity of a static securities market is a characteristic, derived from market penetration, its elasticity and its density, which in common ensures the rapidity of capital movements with minimal value losses*. This definition already contains not only the effect but also the method of measuring liquidity (if not all, then at least some aspects of it), all of these indicators

in the complex giving it a better picture of the real market liquidity.

However, it should be noted, that there is no a single indicator of depth, density, elasticity and volatility that would characterize the level of liquidity of the government securities market and establish criteria of comparability between different markets. This is due to the specificity of the national markets, which do not allow the unification of the factors leading to the development of the liquidity level of the market, but also because of the different formulas for each liquidity indicator, and this diversity results from the imperfection of each of these indicators. In this context, we will further analyze the quality of government securities markets that can be considered representative for the Republic of Moldova and can provide the necessary experience to improve the liquidity level of the domestic government securities market.

Organization of the internal market of Government securities (GS), international experience and good practices.

The internal market for public debt in Armenia is characterized by a moderate liquidity level, but is on an upward trend in development. The Government Securities are issued by the Ministry of Finance of the Republic of Armenia from 1995 with the purpose of financing the state deficit and are provided by the entire property of the country. Their diversity is reduced to 4 types of government securities:

- Treasury bills / treasury bills (T-bill) (1-2 weeks, 3-12 weeks, 13, 26, 39, 52 weeks);
- Medium-term government bonds (3, 5 years);
- Long-term government bonds (10, 20 years);
- Debt securities for savings (0.5, 1, 2, 3 years).

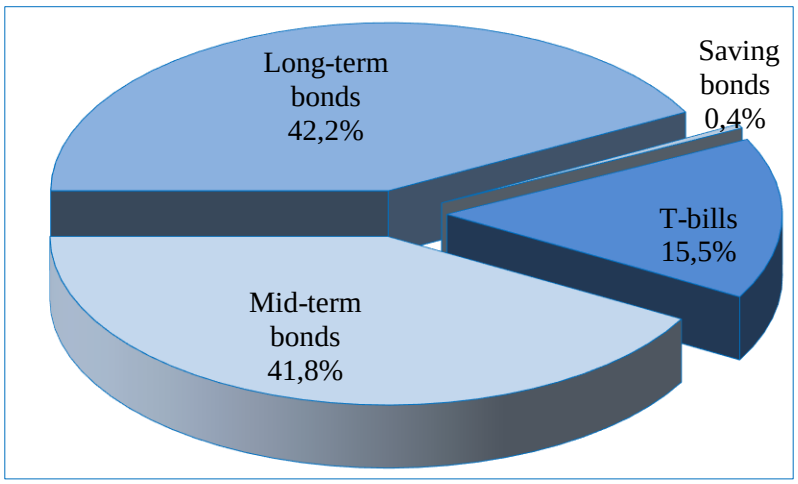

Figure 1. Structure of the SS market in Armenia according to the titles issued
Source: http://minfin.am/en/

Each of these titles has its segment of investors, still the most demanded are state bonds with a long and medium maturity, with a major share of the volume of GS in circulation on the Armenian market (figure 1).

Due to the fact that the only public institution of the GS in Armenia is the Ministry of Finance this structure has been slowly developed and implemented. Initially two entities were involved in this process: the Ministry of Finance and the Central Bank, but in 2008 they signed an agreement under which the BCA pledged to stop the issuance of its own debt instruments and the MF was obliged to issue, treasure bills with 3, 6, 9 and 12 months at least once every two months. This created a prerequisite for the use of GSs issued for government debt financing as open-market monetary policy instruments, with BCS being provided with the necessary tools. This avoids the doubling of volumes of GS on the market in situations of growth of money, and the function of maintaining market liquidity lies exclusively with a body – the Ministry of Finance, which simplifies the control mechanism and intervention when necessary.

Since 1995, the volume of government securities issued is steadily increasing and, starting with 2008, Armenia has also begun to provide investors with benchmark bonds (bonds with more than 7 billion AMD) with a view to relaunching and activating the secondary market. Bonds are issued with a maturity of 3, 5, 10 and 20 years and aim to refinance older, low-volume issues by increasing emissions. This has led to the possibility of increasing the volume of GS delivered on the market at a reasonable rate (figure 2) and, thus, to increasing penetration of the market by developing the offer of securities without appreciably affecting borrowing costs for the budget.

Reference bonds are placed on stock exchange on a daily basis by primary dealers. This allows the formation of the price and the identification of the fair value with minimum costs (based on quotations), a criterion attributed to market density.

At the same time, access to bargaining only for primary dealers makes the entry costs of the end-investors higher, so we can consider the liquidity level of the Armenian GS market, estimated on the basis of the density criterion as moderate.

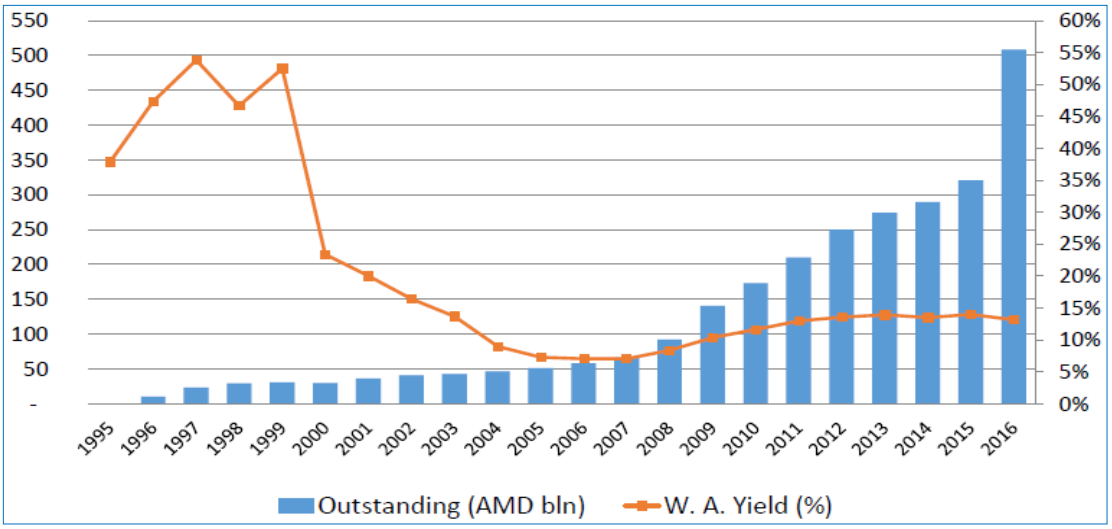

Figure 2. Outstanding GS value and weighted average yield

Source: http://minfin.am/en/

The main investors in the domestic debt market in Armenia are the banks, together with the Central Bank representing 84.3% of the investors. Otherwise, non-bank residents and non-resident investors participate as investors in the GS market as individual investors in the retail market.

Government securities are allotted through auctions, with the participation of major mayor dealers, formerly elected on the basis of clear criteria stipulated by the Ministry of Finance. The retail market was founded in May 1999 and operates through a direct Treasury Direct sales system managed by the Ministry of Finance. At the end of 2016, the retail market accounts for 0.8% of the total GS and is characterized by low liquidity.

The sale of GS takes place through 5 service centers located in the banks of different capitals. Savings bonds with 6-month, 1, 2, 3-year and 10% treasury bills are allocated via Treasury Direct. Savings bonds are sold exclusively to individuals and treasury bills – to non-banking legal entities. The interest earned by individuals in the GS is not subject to taxation (Figure 3).

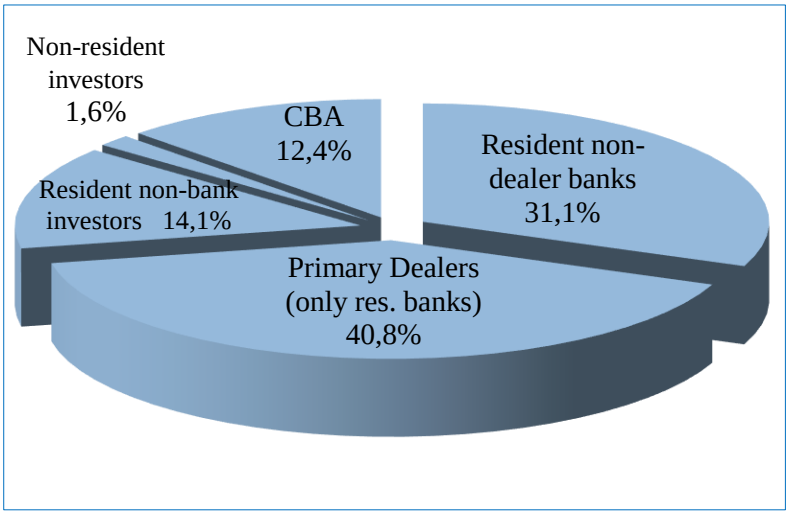

Figure 3. Structure of the SS market by type of investor, end of 2016

Source: http://minfin.am/en/

The analysis of the evolution of the GS volume, the dynamics of the maturity terms and their efficiency allow to observe a tendency in the increase of the maturity terms of GS (which currently weighted average is 6 years) and a decrease their efficiency compared to the first years of issuance. The GS price is formed on the market in the auctions, without setting an initial minimum price, and in case it is considered unfavourable, the auction will be cancelled (Figure 4).

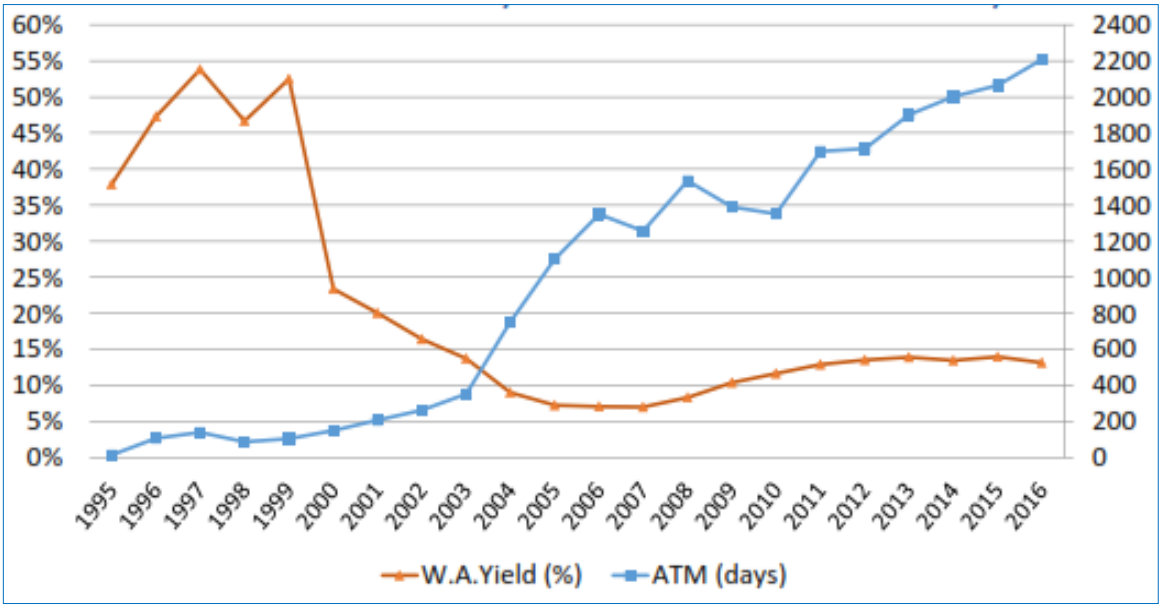

Figure 4. Government securities efficiency and the evolution of maturity terms in Armenia
Source: http://minfin.am/en/

Respectively, in the management of the quality of the government securities market in Armenia, over the past few years there have been accomplishments in several directions:

- extending the maturity curve of traded instruments on the GS market;
- the issue of debt instruments by the Central Bank is limited and as a result the non-use of the GS issuance act as monetary policy instruments respectively;

These efforts have led to the increase of the liquidity of the GS market and can be taken as good practices for implementation in the Republic of Moldova. Although in both Armenia and Moldova the GS market was founded in 1995, Armenia has stepped up more quickly to form a market with sufficient quality to handle state borrowing issues.

The government securities market in Serbia can be characterized by moderate liquidity, the country being interested especially in state debt financing rather than in the development of the capital market's investment capacity. The structure of the securities market depends on the main purpose of public debt management and includes the following financing instruments:

• Treasury bills (T-bills) with a maturity of 3, 6 months and 53 weeks,

• Treasury bonds (T-bonds) with a maturity of 2, 3, 5, 7, 10 and 15 years emitted in RSD (up to 10 years maturity) and EUR.

The fragmented composition and the plurality of state-owned securities after maturity give flexibility to the major budget to debt financing but create multiple problems in managing the market and maintaining its liquidity as it requires additional efforts in the issuance and formation of active asset offerings.

The main characteristics of Serbia's securities market are:

- GS are issued by the Ministry of Finance and their primary sale is organized by the Public Debt Management Service through auctions;
- The efficiency curve is described over a period of up to 10 years for GS in RSD and up to 15 years for those in EUR;
- The secondary market is made up of the Belgrade stock market, a market characterized by limited activity and limited liquidity and OTC market (off-market trading);
- In the absence of a system of primary dealers, the main market investors are local banks and external institutional investors that submit bids via authorized brokers at the national level and approved in advance by the Public Debt Management Service (currently 31 brokers);

- Limitation of bids per investor (minimum 50000 RSD or 5000 EUR, maximum 50% of the auction volume);
- Non-residents are not allowed to invest in short-term securities (issued with a maturity of ≤ 1 year);
- Investments in the GS are exempt from tax obligations.

Thus, the penetration of the market is limited by the maximum possible volume to buy by an investor and the restrictions on the participants in this market. Market density is dictated by the extreme segmentation of securities and the additional cost of entry for investors due to the lack of primary dealers, to which they can call for smaller volume transactions.

At the same time, the offer of maturity bonds is also conditioned by the reference currency, but also by the specificity of the bonds and the possibility of their quota on the international market. The benchmark bonds are the most insured investment instruments, which began to be issued in 2015, and up to date there have been 5 issues with maturities of 3 years and 7 years in national currency. For the future, it is planned to develop secondary market transactions and include Serbia's government bonds in the global index (Figure 5).

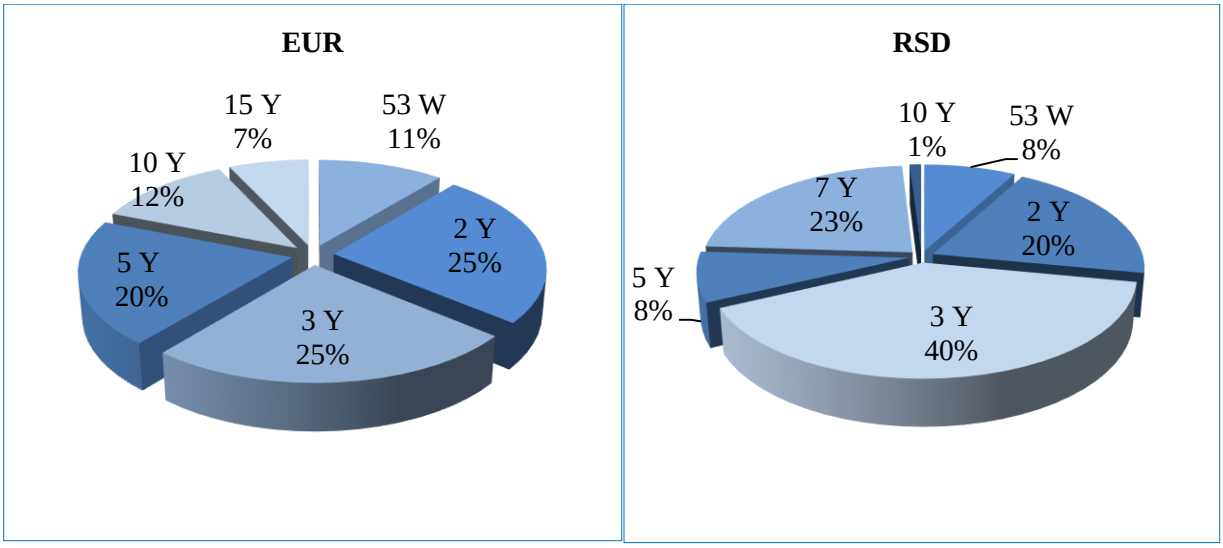

Figure 5. Distribution of GS issued in RSD and EUR according to maturity date (end 2016)
Source: http://www.mfin.gov.rs/

In recent years, considerable efforts have been made in Serbia to change the frequent but low-volume emission practice by gradually reducing the number of auctions and increasing emission volumes / values, introducing benchmark bonds, eliminating the 12-month treasury bills, the replacement of the treasury bills with maturity of 18 and 24 months with two-year treasury bonds. It is also intended to meet the investors' needs in the process of creating value instruments, by issuing securities denominated in EUR and introducing indexed bonds, and those with damping (Figure 6).

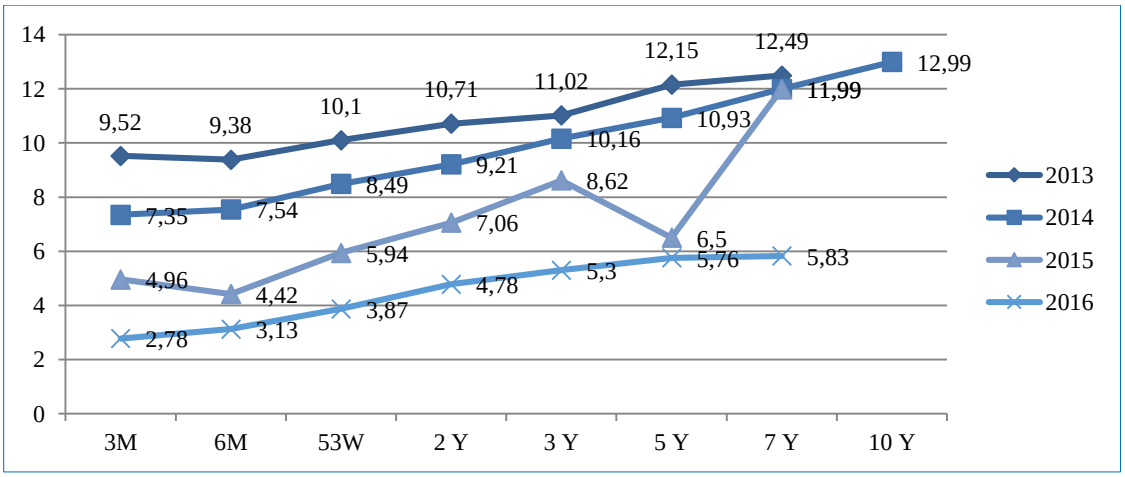

Figure 6. Weighted average rate accepted in RDS for primary auctions (%) in Serbia
Source: http://www.mfin.gov.rs/

At the same time, it was intended to increase the transparency and liquidity of the GS market through a series of actions adopted by the Government in this respect:

• publishing the auction calendar,

• drawing up a draft annual auction program,

• on time display of auction results and statistical data,

• establishing clear reporting requirements for secondary market transactions,

• creating an informational website for the Public Debt Management Service (PAD), where investors can obtain information about the planned volume of issues, the type and maturity of the securities.

All of these actions reduce the probability of discrepancies between government financing needs and investment plans of potential buyers, contributing to the quality of the GS market.

The main problems that still persist in Serbia's GS market are more of potential investors; which are little diversified and consist mainly of local banks and non-resident institutional investors. Thus, other non-bank local investors (pension funds, investment funds, insurance companies) are very poorly involved in the GS market and the local retail segment is inactive.

In this respect, some actions have already been adopted at Government level, such as introducing an equal tax treatment for all (e.g. cessation of coupon tax in 2011), removing barriers to capital flows, stimulating long-term savings by offering tax incentives, market promotion and investors' professional development (conferences for investors, market assessments, meetings, investors' guides, etc.), increased transparency on the secondary market, but these have not yet resulted in an expected outcome. However, these actions, as well as those listed above, are not costly but sufficiently effective to form an opinion on the attractiveness of the GS market and its liquidity and may be recommended for implementation in the Republic of Moldova.

The Government Securities Market in Romania. The Romanian Government Securities Market has had two major development stages – even after the country's accession to the EU, in this context, the experience of organizing the primary and secondary market segments of the GS market in the neighboring country is relevant for the Republic of Moldova, whose strategy are geared towards building an economy harmonized with EU requirements and prepared for integration into the economic and also common financial space.

The main features of the Romanian GS market are:

- The Ministry of Public Finance is the main issuer on the primary market, acting through the treasury and public debt directorate, and the National Bank of Romania is the MPF agent for primary market auctions, with only primary dealers acting on their own account or customer names.

- The auction platform is a fully electronic platform launched in 2014. In this respect, all the offers are presented electronically via XML files and confirmed by scanned documents handwritten by authorized persons;

- In order to maintain market liquidity and penetration, the primary segment of the GS is operated by primary dealers, which have to meet a minimum of requirements, such as:

• Purchase (in its own name and / or its customers) of at least 3% of the total value allocated during the year;

• The amount allocated in its own name is at least 2% of the total weighted value of issued government securities;

• The value traded in its own name is at least 3% of the total weighted value of government securities traded on the secondary market in the last 12 months.

• The secondary market is open to both primary and secondary dealers – 15 active banks on the Romanian market. Its structure is complex and consists of an over-the-counter (OTC) interbank market supervised and regulated by the NBR, which operates through different channels (platforms) – Bloomberg (EBND, ALLQ), Reuters etc., a separate segment of the Bucharest Stock Exchange, launched in July 2008 only for bonds and retail instruments. On the BVB platform, however, trading is very limited due to high costs, inconvenience due to time limits and disclosure requirements, etc. in this respect, we can see that the density of the official stock market in which all willing investors can participate, is very small;

• The Romanian GS market has a high volatility, with interest rates on government securities being set every working day, with the presence of at least 8 participants invited by the organizer (NBR with the support of ACI Romania – Romanian Financial Markets Association) (Figure 7);

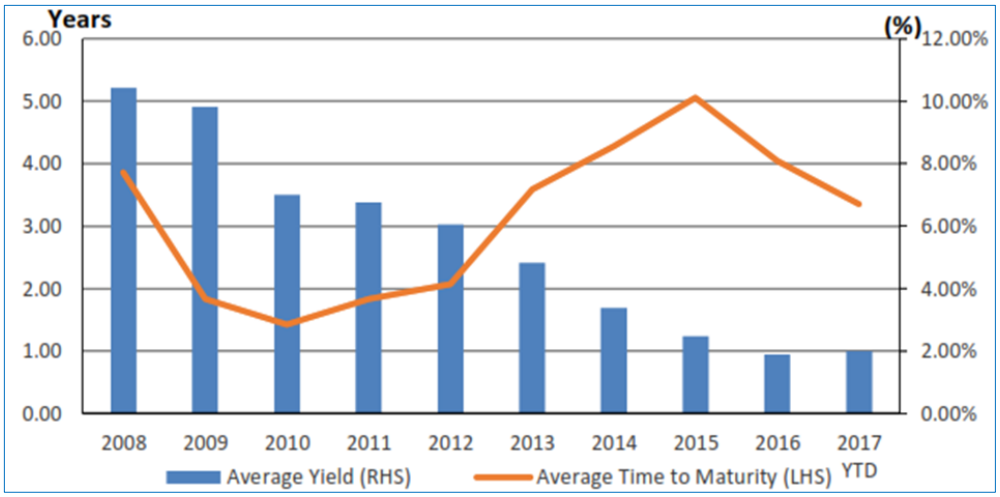

Figure 7. Average Yield and Average Remaining Time to Maturity (Auctions)
Source: http://www.mfinante.ro/

• The structure of securities after maturity denotes a medium-term investment trend, the weight of GS for up to 1 year and over 10 years is 21.74% and 7.14%, respectively. This is due to efforts to extend the maturity curve of domestic debt financing and refinancing instruments. Thus, there is an increase in the volume of government securities maturing at 2, 3 and 5 years and an issue of government securities maturing at 7, 10 and 15 years. By refinancing the short-term domestic public debt by long-term government bonds and the reduction of interest rates on government securities, the domestic public debt service diminished (Figure 8).

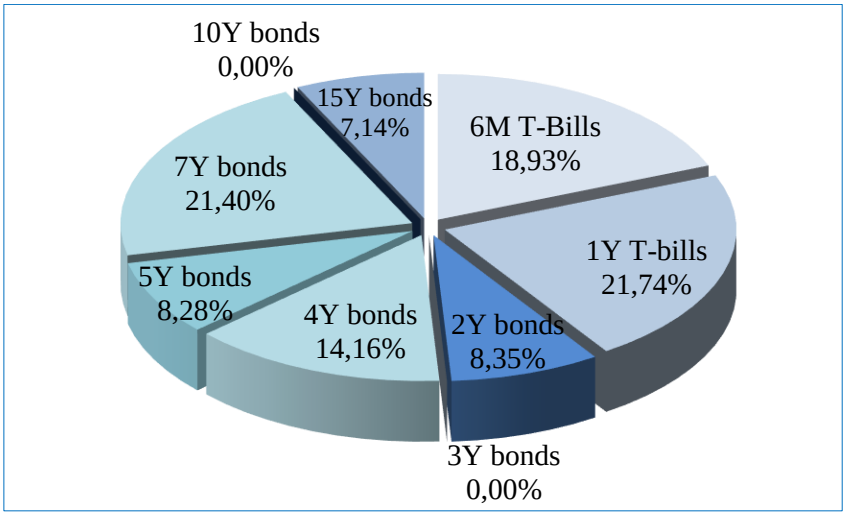

Figure 8. Romania Government securities issued between January 1st – February 28th, 2017 (initial maturity)
Source: http://www.mfinante.ro/

Investors in the GS are mainly banks and private pension funds. The banking system currently holds approx. 47.1% of government securities issued on the domestic market, and pension funds – 13.8%. At the same time, there is also an obvious interest of non-residents, who, although higher in 2013, is maintaining the last years to an acceptable level (Figure 9).

Building an efficiency curve for the government securities market is a public good as it forms reference prices for all issuers in the money market and corporate credit. At the same time, this curve is informative for many fund managers that aim to use GS to hedge against credit risks and / or maintain the liquidity of the investment portfolio. The internal market of GS in Romania also has a major function, being the main source of funding for the public budget. In case of external shocks, the availability of a solid and diversified investor base on the local market is important to meet the financial needs of the state.

An important step was the inclusion of Romania in international indexes (J.P.Morgan and Barclay's)

starting in 2013, raising an increasing interest from external participants, which was demonstrated by the increase of the share of non-residents from less than 5% up to about 25% of government securities holdings in a very short period of time.

The regulatory framework for the primary and secondary market of the GS was improved by creating incentives for trading – market formation in order to increase liquidity and price display, improve communication and dialogue with market participants by organizing official monthly meetings with fund managers and Primary Dealers.

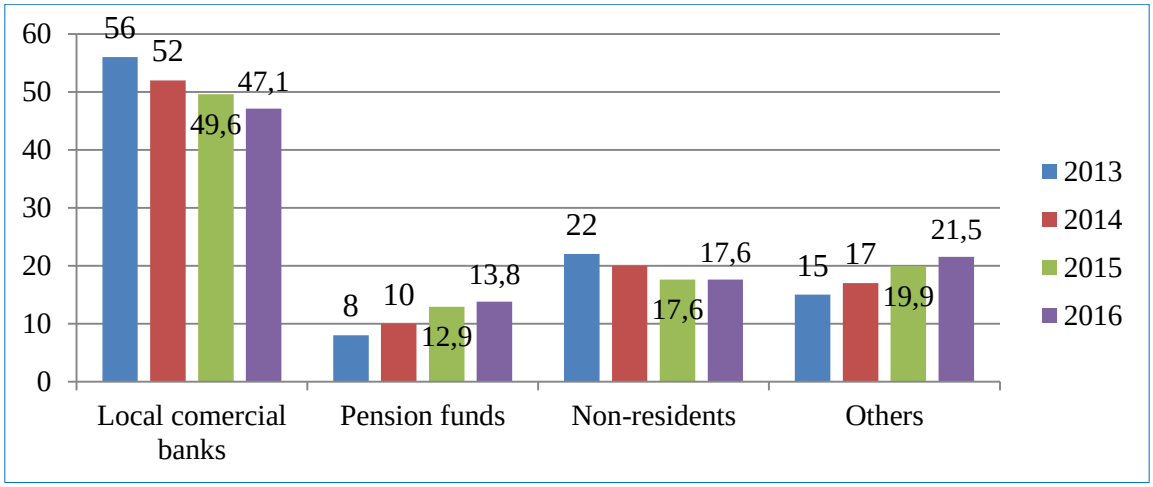

Figure 9. Distribution by investor type (end of December 2016)
Source: http://www.mfinante.ro/

The improvement of the government securities market infrastructure has finally resulted in the achievement of the sovereign wealth good for investments, stable and solid macroeconomic framework and financial stability. In this context, we can conclude that the level of liquidity of the Romanian GS market is acceptable, being clearly superior to that of the Armenian or Serbian market. At the same time, it is worth mentioning that this result has been achieved in rather small terms, transforming a market of government securities quite passive into an interesting one for foreign investors. In our opinion, Romania's experience in the formation and consolidation of a quality and liquid GS market, is a good example for the Republic of Moldova to follow.

The Internal Market of Government Securities in the Republic of Moldova, the current situation. The development of the domestic market of government securities for the Republic of Moldova is of major importance, especially in the context of macroeconomic indicators development in recent years. This would allow on one hand the government to diversify its funding sources and manage its most important market risks more effectively and, on the other hand, the financial sector would enable it to correlate and synchronize the development of the GS market with the other segments of the capital market.

The issue of the need to increase the liquidity of the national government securities market has been discussed at various levels many times, from national strategies to analyses and reports at international level. However, despite some successes in this chapter, the low market capacity, the low number of effective market participants and the "prudent" policy of state debt do not allow this market to have a consistent impact on the macroeconomic situation and to meet its role in macroeconomic regulation. The devaluation of the domestic banking system and its economic consequences led to the decrease of the tax revenues, respectively, the issuance of state securities became an important source of financing of the budget deficit, and the issue of increasing the liquidity on the government securities market became of particular importance.

In the Republic of Moldova, GS are issued by the Ministry of Finance and the National Bank of Moldova (NBM), as a tax agent, manages the primary market and the interbank secondary market of government securities issued in the form of internal accounts.

A lot of effective measures have been taken in the field of GS market development since the issuing of treasury bills in March 1995 and during the entire period of operation of the GS market. In cooperation with the Ministry of Finance, the NBM has established and applies the regulation of the activities and

operations on the primary market of the GS, it has developed a series of measures aimed at creating the necessary conditions for the development of a regular GS market and the transparency of the issues, maintaining a suitable liquidity level.

There are two types of GS that are issued on the domestic market of Moldova (figure 10):

• Treasury bills – securities with different circulation times of up to one year (91, 182, 364 days);

• Government bonds – securities with a maturity of more than one year (2,3 years).

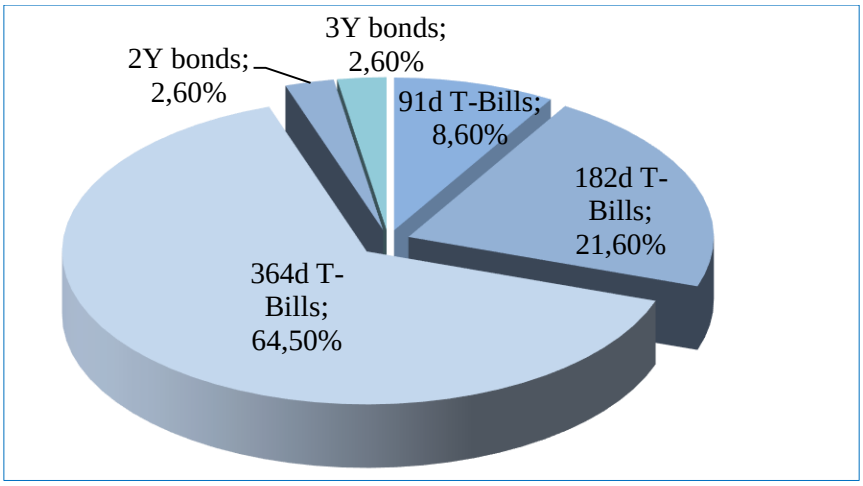

Figure 10. Government bonds – securities issued on the primary market, 31.01.2017
Source: Monthly Bulletin of the Ministry of Finance, January 2017.

The essential features of the Government securities market of the Republic of Moldova are:

- Short-term and ultra-short titles.
- Government securities are mainly associated with foreign exchange risk and refinancing risk in the Internal Market (e.g. first semester 2015 / first semester 2016);
- The secondary market is non-liquid and the active repo market is missing;
- Large number of outstanding GS lines / arrears (over 150 at any time);
- The non-diversified investor base is largely represented by local banks.
- In general, the existence of a limited capital market.

The development of the domestic securities market is hampered by the difficulty of contracting long-term fixed rate loans in national currency, even on the domestic market. This is due in large part to the lack of an efficient market infrastructure, but also to other specific factors, including the narrow regulatory framework of the GS and the lack of a private pension system that would provide other participants on the secondary market. To overcome this problem, it is necessary initially to create the conditions for market development, a favourable macro-economic and political environment. Changing the issuance policy of the GS that needs to be adapted to market preferences through efficient collaboration between the issuer and market participants could address the issue of the inactive secondary segment by providing investors with the securities they requested but not those issued by the Ministry Finance.

The liquidity analysis of the domestic government securities market highlights some of its specific features:

- lack of penetration, the secondary market activity and the number of transactions are characterized by a permanent decline. In fact, the transactions that take place are located only between primary dealers and the NBM;

- low density, due to high transaction costs and a lack of frequent bargaining, which would set up the up-to-date prices of supply and demand correlation;

- low volatility, due to the lack of daily auctions, which condition the price change. This explains the low market risk, which is associated with the investments in GS in the Republic of Moldova.

In our opinion, the low liquidity of the government securities market may be caused by several factors, but the investors' structure is obviously the main. In order to increase significantly market liquidity it is necessary to enhance the diversity of participants with different capacities and investment goals and facilitate their access to the market.

Volatility is an essential component of market liquidity, because it attracts investors interested in the possibility of obtaining revenues, especially from price differences. In the Republic of Moldova, however, these prices are negotiated at the primary auction and do not change over the GS maturity period, rather than only in the resale on the secondary market, by applying a fee charged by the primary dealership.

Factors of influence on the formation of prices to government securities may be objective and subjective in nature. On the whole, price formation for securities is influenced by:

- the market relations degree of development;
- the ratio between demand and supply.
- measures to coordinate and regulate prices to the state
- the tax system;
- degree of monopolization of the market;
- the primary and secondary market trading technology;
- the deposit and settlement system;
- set of derivatives of government securities traded on the market;
- the cost of the services of the organizers of transactions, depositories, financial agents, management companies;
- the availability of similar financial instruments, their substitutability, etc.

In practice, there is a big variety of factors that should be taken into consideration for price formation, which can be classified into three groups: demand and supply, costs and competition. Under the supply and demand law, the price level of government securities depends on the ratio between demand and supply. The factors that determine demand are: the volume of potential investments, the tastes and habits of investors, their income, the presence of similar securities on the market and the price for them, the value of other financial instruments.

Unfortunately, in the Republic of Moldova, all the listed factors are underdeveloped. The poor state of the GS market is conditioned by the lack of investors' interest.

The price of securities is also influenced by competition between financial market segments, as the state budget, the credit market and the securities market not only complement each other, but also compete with each other for attracting financial resources. The determining factors of competition are: the number and variety of issuers, the presence of similar securities to the state as maturity and profitability, the price level of the competitors.

In the case of GS, prices are predetermined from the stage of developing and adopting the terms of issue of the mobile values, the choice of the market segment for their distribution. If this segment is very limited, the price is determined by the initial bid price and the redemption price. In this case, the price is related to the date of the sale of government securities in relation to the business cycle period. If the financial flows are directed to the real sector, the GS offer will not find sufficient demand and the issue price will increase. Unfortunately, nowadays, situations where the volume of securities offered is not contracted are much more frequent than those in which demand exceeds the offer. In particular, this phenomenon is valid for GS with a maturity of more than 1 year, which increases the costs of financing the state debt [9, p.3].

Even though there are securities issued regularly over a long period of time, securities with a maturity of more than 3 years are missing in the Republic of Moldova, so that neither the profitability curve of GS can be traced. This greatly hinders investors from shaping options for future profits. Although Moldova's country rating revised by Moody's in November 2017 is stable at B3, indicating a moderate risk, investors are not willing to buy GS in the amount desired by the state [8].

Conclusions and recommendations

The development of a government securities market is a complex action, depending on the evolution of the financial and market system of each country. For the Republic of Moldova this involves huge challenges caused by problems that inhibit the development of the market, but also those that are deeply under the economy. Nowadays, the GS market in the Republic of Moldova is based on the few domestic banks for funding, which makes the competition low and the transaction costs remain high. The absence of a healthy market infrastructure leads to a liquidity shortage, and the absence of institutional investors, low domestic savings rates and lack of interest from international companies result in a small, very homogeneous group of titles, contrary to the heterogeneity needed for an efficient market. In addition, economic instability, often conditioned by high fiscal deficits, rapid money supply growth and sharpening of trade, damages investor confidence and may increase the risks associated with the lack of liquidity of a government bond market.

The need to develop the government securities market in the Republic of Moldova derives from the desire to boost the development of the capital market and the national financial system as a whole. The development of the capital market, as we have identified earlier, can be greatly driven by the optimization of the GS market and offering it a higher degree of liquidity, which can serve as a viable alternative for securing the financing needs of the Government and the creation of financial resources term of maturity. At present, the current market placement and trading mechanism of the GS does not fully ensure the need to finance projects with a long term realization and no optimal cost relative to the reduced risk assumed in the investment process. At the same time, the capital market cannot cover the deficiencies generated by the banking sector over the mediation process, its liquidity is reduced and the access to it is limited.

Market development is not possible without close coordination between the institutions responsible for fiscal-budgetary and monetary policy. The reference rate, inflation, exchange rate, dollarization level of the economy, all have an impact on the success of the issuance policy and the interest rates on the GS. Increasing the quality of the GS market involves a series of actions aimed to facilitate investors' access, increasing competition on the financial market and accelerating the movement of capital, among which are:

1. The existence of a clear and transparent strategy on public debt management will guide the investor in his decision to buy GS over a longer period of time.

2. The possibility of shaping an extended return curve represents the necessary conditions for conferring the GS market liquidity.

3. When introducing new value instruments, it is necessary to take into account the needs of potential investors.

4. It is necessary to avoid frequent small-scale emissions, where possible, in order not to fragment the market (e.g. with a maturity of 18 and 24 months, and 2 years).

5. The objective is to develop a solid and diversified investor base. In addition to measures to attract local and non-resident banks, it is important to mobilize the potential of non-bank local investors (insurance companies, pension and investment funds, retail investors).

6. Creating an infrastructure (possibly an electronic platform) that would allow any investor to access the GS market when purchasing, negotiating or tracking price developments. In this case, in order to increase market density, it would be desirable that the cost of accessing the trading platform to be close to zero.

7. In a small-sized economy to ensure compliance with the competition principles and a sufficient number of participants, all GS must be traded on the same platform so that the private investor can access any title and engage in transactions on an integrated or quasi-integrated platform.

8. Implementation of market-maker-type conditions for primary dealers and exclusion of banks that do not meet such conditions from auctions to issue. Thus, the market will be able to maintain liquidity, and the demand-supply side of the GS is constantly present.

9. In order to stimulate the development of the GS market, it is crucial that primary auctions have access only to entities that are interested in the secondary market liquidity intermediation and supply process. Given the excess liquidity situation in the financial sector, banks are naturally not interested in fulfilling the role of intermediary, preferring to invest liquidity in secure interest-generating instruments, such as GS, to the detriment of private sector lending and retention to maturity a subsequent reinvestment of income in the same instruments. Thus, trading on the secondary market occurs only when a customer does not want to keep the GS until maturity. To counteract this phenomenon, it is important to extend the list of primary dealers to include entities whose primary purpose is financial intermediation.

10. Increasing the level of financial education of the population will lead to the expansion of the categories of investors that would intensify the competition on the GS market.

The objective of developing the internal market of the GS and expanding its maturity has been and remains one of the priority actions of the Ministry of Finance. In order to achieve this objective it is necessary to settle concrete actions.

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QUANTITATIVE INDICATORS OF THE SECURITIZATION OF ASSETS

Denis VOSTRICOV[1], Associate Professor, PhD,
Academy of Economic Studies of Moldova

Securitization is instrumental in return on capital increment through the withdrawal from the balance of lending activities being accompanied by off-balance incomes flow from fees, which are less capital-intensive. The purpose of this paper is to analyze the quantitative indicators characterizing the securitization of assets. For drafting this article, the method of analysis, synthesis method, logic and dialectic method, normative method, the study of statistical sampling and time series of expert evaluations (Standard and Poor's), personal observations, and monographic studies have been used. The main difference between the securitization of assets from traditional ways of financing is related to the achievement of a plenty of secondary goals in attracting financial resources, which can play a significant role in choosing to favour the securitization of assets or other types of financing. In particular, it gives a possibility to write off the assets from the balance sheet along with the relevant obligations under the securities, to expand the range of potential investors accompanied by the reducing of credit risk, interest rate and liquidity risk, as well as to improve the management quality of assets, liabilities and risks. All of these secondary effects are achieved by the isolation of selected assets from the total credit risk of the enterprise, raising its funds, which forms the pivotal actuality and significance of asset securitization. The article contains demonstrations of quantitative and qualitative indicators characterizing the securitization of assets.

Keywords: *securitization, assets securitization, structured finance, quantitative indicators, collateralized debt instruments, pool of assets, securities.*

Securitizarea are un rol esențial în creșterea rentabilității capitalului prin retragerea din bilanț a activităților de creditare, fiind însoțită de obținerea veniturilor din afara bilanțului din comisioane, care sunt mai puțin intensive din punctul de vedere al capitalului. Scopul acestui studiu constă în analiza indicatorilor cantitativi care caracterizează securitizarea activelor. Pentru perfectarea acestui articol au fost folosite metoda analizei, sintezei, metoda logică și dialectică, normativă, studiul seriilor statistice și seriilor de timp a evaluărilor experților (Standard and Poor's), observațiile personale și studiile monografice. Principala diferență dintre securitizarea activelor de celelalte modalități tradiționale de finanțare este legată de atingerea unui număr mare de obiective secundare în atragerea de resurse financiare care pot juca un rol semnificativ la alegerea în favoarea securitizării activelor sau a altor tipuri de finanțare. În special, aceasta oferă posibilitatea de a anula activele din bilanț împreună cu obligațiile relevante prin transformarea acestora în valori mobiliare, de a extinde gama potențialilor investitori, însoțită de reducerea riscului de credit, de rată a dobânzii și a riscului de lichiditate, precum și de a îmbunătăți calitatea managementului activelor, pasivelor și riscurilor. Toate aceste efecte secundare sunt atinse prin izolarea activelor selectate de la riscul total de credit al întreprinderii, majorarea fondurilor sale, care reprezintă actualitatea și importanța cheie a securitizării activelor. Articolul conține demonstrări ale indicatorilor cantitativi și calitativi care caracterizează securitizarea activelor.

Cuvinte-cheie: *securitizare, securitizarea activelor, titlurizare, indicatori cantitativi, titluri colaterale de creanță, pool de active, valori mobiliare.*

Секьюритизация играет существенную роль в увеличении возврата капитала за счет выхода за баланс кредитной деятельности, сопровождающегося получением внебалансовых доходов от сборов, что является менее капиталоемким. Целью настоящей статьи является анализ количественных показателей, характеризующих секьюритизацию активов. Для подготовки данной статьи были использованы: метод анализа, синтеза, логический и диалектический метод, нормативный метод, изучение статистической выборки и временных рядов экспертных оценок (Standard and Poor's), личные наблюдения и монографические исследования. Основное различие между секьюритизацией активов от традиционных способов финансирования связано с достижением множества вторичных целей в привлечении финансовых ресурсов,

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которые могут играть значительную роль при выборе в пользу секьюритизации активов или других видов финансирования. В частности, она дает возможность списывать активы с баланса вместе с соответствующими обязательствами под ценные бумаги, расширять круг потенциальных инвесторов, сопровождающийся снижением кредитного риска, риска процентной ставки и риска ликвидности, а также разрешений для улучшения качества управления активами, пассивами и рисками. Все эти вторичные эффекты достигаются за счет выделения выбранных активов из общего кредитного риска предприятия, увеличения его средств, что составляет основную актуальность и значимость, а также секьюритизацию активов. В статье представлены демонстрации количественных и качественных показателей, характеризующих секьюритизацию активов.

Ключевые слова: *секьюритизация, секьюритизация активов, структурированное финансирование, количественные показатели, залоговые долговые инструменты, пул активов, ценные бумаги.*

JEL Classification: G23.
UDC 336.766

The actuality and relevance of the researched topic is explained by the fact, that, currently, securitization is on the way to international recognition as an innovative financing technique. Despite the fact that the first mention of securitization, as an innovation on the financial market, has appeared in the 18th century, even now its capacity is not fully disclosed, securitization appearing as a revolutionized method of borrowing between companies and their customers.

The growing international importance of assets securitization stimulates intense increase of importance of this phenomenon on a national scale. Because of the novelty and complexity of this funding technology in banking and financial environments it is revealed not only a lack of practical experience, but also the lack of theoretical concepts of securitization. In order to estimate correctly the efficiency, the paper sets and describes the quantitative indicators characterizing the securitization of assets.

In order to demonstrate the fundamental relationship between the mechanisms of improving the reliability and ratings, the technique of determining the amount of additional collateral required for obtaining the desired rating is presented below. The scientific novelty of this particular research article lays down in the examination and adaptation of indicators reflecting the quantitative characteristics of the securitization.

Having examined the case study, it will be clearly demonstrated how various scenarios are simulated and possible losses are calculated, by analyzing individual group of risks related to the securitization of assets. Simulation using the Monte Carlo method makes possible to calculate the expected loss. It is based on certain governing laws of distributing the probability of default in time, losses and changes in the cost of housing.

Addressing science referenced on securitization is to mention that these are carried out by the works of foreign authors such as Jeremy Carter, Rick Watson, Andrew Davidson, Janet Tavakoli, Moorad Choudhry, Alper Kara, Steven Ongena, Maia Melnikas, Ekaterina Demiushkina, Mihail Makovetski etc. The fact that Moldovan scientist' works do not deeply cover the topic of securitization was an additional predetermination for choosing this subject for research.

While elaborating this paper, the primary and secondary legislative framework of the National Bank of Moldova, the National Commission on Financial Markets and other relevant national and international authorities were analysed. Togehter with the legislation, official statistics and reference materials were used.

Before proceeding to the calculations, we note that many of the considerations set out below are based on a common philosophy of the two rating agencies Moody's Investors Service and Standard and Poor's concerning securities rating provided by a pool of residential mortgages. Generally, the requirements for the volume of the collateral, which is considered necessary in order to obtain a certain rating depends on the asset class.

In order to determine the value of expected losses on loans included in the pool of assets, it is used an approach based on the theory of probability. In this case two indicators (factors) are studied firstly:

- The probability of default of the asset from the pool:

$$p\ (d1, \ldots\ldots, n)$$

- Ratio of loss given default

$$s\ (d1, \ldots\ldots, n)$$

The first indicator expresses the probability of default of certain loans. The second value shows the size of the expected losses if borrower defaults. It expresses the total losses as a percentage of the size of the granted loan. The probability of loss issued by credit funds depends primarily on the ratio of the loan and collateral amount, the borrower's age and the specific conditions of the real estate collateral agreement. In essence, the loss coefficient is determined by the time, which would be required by the forced sale of assets and the time related to collateral commercialization, as well as the costs associated with this process. In addition, there are taken into account features related to the legal field and the loan agreement conditions, which directly affect the value of the losses.

Rating should ensure international comparability of reliability (credit quality) of debt. This means, that an investor who invests in different securities with the same rating, has the right to account on the same probability of default during the entire investment period. However, he cannot ignore the type of securities he has to do. This implies that the probability of default on the securities issued as a result of the securitization of assets and relying on assignment of the AAA/Aaa rating, should be equal to the probability of default on corporate bonds with the same rating or probability of default of a certain reference pool of asset (for a given rating level) which is calculated based on the accumulated statistics.

The reference pool is a well-structured, including country-specific pool of assets.

In calculating the expected loss of the reference pool for each rating value, its probability of default is taken. The higher the rating, the higher the value of this indicator.

For example, assume the following values: the probability of default for the AAA rating is 12%, for the rating of AA - 9%, for the rating A – 7%, and for the BBB rating – 5%. As well as the loss factor – 37.6%, 32.3%, 28.3% and 22.9% respectively.

Table 1

The calculation of the expected loss of the reference pool

	Probability of default (%)		Loss Factor (%)		Expected losses (%)
AAA Rating	12	x	37,6	=	4,5
AA Rating	9	x	32,3	=	2,9
A Rating	7	x	28,3	=	2,0
BBB Rating	5	x	22,9	=	1,1

Source: Elaborated by the author based on the Standrad & Poors data. [online][accesed on 20.02.2017] Available: http://www.spratings.com/en_US/understanding-ratings

The increase in the probability of default with increasing values ranking brings to this model element of the additional load. Securitization of assets with a higher rating must withstand higher levels of expected losses. The values adopted for the probability of default, can be changed depending on the composition of the test portfolio. Here we apply the so-called varying magnitude, which allows to take into account in the calculation of the estimated quality difference and the reference pool assets.

Calculation of the collateral value is usually based on the following assumptions and simplifications: the calculation of the collateral volume required first is the case of one or two assets (loans). In other words, in the first step of the transaction, consisting of a single asset. In the second step, the calculations are made for a pool consisting of two assets. Asset quality is taken accordingly as speculative rating BB+. Assume that the default probability is 30%, and the loss factor for both asset is 70%. Probability of default by the reference pool is assumed to be 5% and the loss factor – 70%. In these initial data, the volume of collateral is calculated as follows:

$$\boldsymbol{E(L1) = p(d1) x\, s(d1) = 30\%\, x\, 70\% = 21\%} \quad \textbf{(1)}$$

where: E(L1) – expected loss 1
p(d1) – probability of default 1
s(d1) – coefficient of losses 1

$$\boldsymbol{E(LBM) = p(dBM) x\, s(dBM) = 5\%\, x\, 70\% = 3,5\%} \quad \textbf{(2)}$$

where: E(LBM) – expected loss AAA – reference pool
p(d1) – probability of default AAA – reference pool
s(d1) – coefficient of losses AAA – reference pool

As follows from 1, it shows that the amount of expected losses in this operation is 21%.

Calculations made for the reference pool of AAA-rated given the magnitude of losses equal to 3.5% of the portfolio. It is possible to calculate the amount of collateral required to expected losses, which are on the speculative rating level, down to an average of losses, which is a reference pool of AAA-rated. Due to the fact that the financial instrument has received the AAA rating, the rate of expected loss on the transaction should be reduced from 21% to 3.5%. In other words, you must provide the backup media, the presence of which would make it possible to reduce the size of expected losses to the level of the reference pool. This provision should ensure that the expected loss on the transaction under any circumstances will not exceed the value of the reference pool losses. Thus, we get the following equation:

$$\boldsymbol{E(L1\ with\ CE) = p(d1)x\,[s(d1) - CE] => 3.5\% = 30\%\,x\,[70\% - CE]} \quad \textbf{(3)}$$

where: E(L1 with CE) – expected losses 1 with compensation
p(d1) – probability of default 1
CE – necessary compensation of losses by asset 1

Resolving the equation with unknown CE, we receive:

$$\mathrm{CE} = \mathbf{70\% - 3,5\%/30\% = 58,3\%} \quad \textbf{(4)}$$

In the case of a structure with a single asset (credit) of the originator, it is required to provide additional security, covering 58.3% of the transaction amount. Only under this condition, quantitative finance options allow to assign AAA rating.

If we look at the pool, consisting of several assets (loans), it takes into account the presence of the diversification effect – just as in the case for the stock portfolio. Due to this effect the amount of collateral required can decline. The degree of manifestation of the diversification effect depends, in particular, on the probability distribution and coefficient covariance probability of defaults on both assets included in the pool. Using the above formula, we can also calculate the amount of collateral required to obtain the desired rating pool, consisting of two assets:

$$\boldsymbol{E(LPool\ with\ CE) = p(d1\ or\ d2)x\,[sPool(d1\ or\ d1) - CE] + p(d1\ and\ d2)x\,[sPool(d1\ and\ d1) - CE]} \quad \textbf{(5)}$$

where: E(LPool with CE) – expected losses (compensation is taken into consideration)
p(d1 or d2) – probability of default
sPool(d1 or d2) – coefficient of losses in case of default for each asset
p(d1 and d2) – probability of default of both assets
sPool(d1 and d2) – coefficient of losses in case of default for both assets

Substituting the values and solving the equation for the unknown CE, we get the following result:

$$\mathbf{3,5\%} = (\mathbf{2}\text{ x }\mathbf{30\%}\text{ x }\mathbf{70\%})\text{x }(\mathbf{35\%} - \mathrm{CE}) + (\mathbf{30\%}\text{ x }\mathbf{30\%})\text{x }(\mathbf{70\%} - \mathrm{CE}) => \mathrm{CE} = \mathbf{34,5\%} \quad \textbf{(6)}$$

Calculations show that the inclusion of the second asset in the pool can reduce the required amount of collateral from 58.5% to 34.5%. Reducing the amount of collateral required is the result of reducing the variance of expected losses. Having a pool consisting of a single asset (loan), you can only talk about two possible perspectives – default or avoiding default. If you have multiple assets (loans), the number of possible options is increasing. In general, there is the following rule: the greater the number of assets included in the pool, the less deviation from the expected performance of the resulting averages.

Quintessence of presented approach can be summarized as follows: a quantitative analysis of the cash flows generated by the asset is reduced to its testing resistance in stressful situations and to check how the

various factors affect the solvency of the issuer's securities. Development for this model is based on methods used in mathematical statistics. They allow you to cover a wide range of economic phenomena and calculate their impact on the solvency of the assets included in the pool. To determine the amount of interim measures for the pool, consisting of a large number of assets, it is sufficient to determine the value of the following four factors necessary to obtain the desired rating:

- rating a pool of assets, expressed in the form of probability of default of its constituent assets;
- data loss rate and their distribution;
- correlation of losses in a diversified and non-diversified pool, which in the first stage are taken into account through the assumption of a higher probability of default, and then refined with the help of the so-called variable parameters or "weighing risks";
- the desired value of the securities rating, expressed in terms of the maximum size of the expected loss on the transaction.

With the use of these values is calculated the expected size of losses on loans, which is part of the pool. This value is compared with the expected loss of the reference pool, their difference gives the amount of additional security (protection against credit risk) required for this transaction. During the assignment procedure of the final rankings, along with the above quantitative indicators take into account the results of the qualitative analysis.

Conclusions and recommendations

Calculations of indicators, performed in this paper work, provide a quantitative characteristic of asset securitization. They allow assessing the capital structure subject of securitization, the amount and direction of the cash flows issued from a securitization result, as well as the rate of capital adequacy, which is a necessary factor in the securitization of assets.

Identification and calculation of these quantitative indicators are urgently needed during the securitization process, which allows evaluating the possibility of securitization, and as a result, allows investors to take the right decision.

In addition, in this paper work it is suggested to use the multiplier coefficient, in order to increase the efficiency of the process of asset securitization. The essence of securitization lies in the capitalization of assets through borrowing money. The result of multiplier application allows with certainty to predict future cash flows generated by securitization. Moreover, this forecast can be done taking into account the time lag and, as a consequence, the effects of inflation. Thus, the application of a multiplier in the securitization process makes it more predictable, manageable and therefore safer for all involved.

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THE SWOT ANALYSIS IN BUSINESS ACTIVITY PLANNING OF THE TOURISM ENTERPRISE

Nicolae PLATON[1], Associate Professor, PhD,
Information and Promotion Center in the Field of Tourism from the Republic of Moldova

SWOT analysis is one of the most well-known strategic management tools and is used in practice by tourism enterprises to guide the strategic decision in choosing an option that matches a rational framework. Before managers define their effective strategy to gain a competitive advantage, they need to carefully look at the situation of the tourism enterprise's competitiveness, which involves assessing the environmental and organizational factors which influence the company's ability to compete. Thus, the tourism enterprise's offer must be perceived by the consumer tourists as the most attractive from the point of view of the quality and price policy. Through this article, the author argues the need to use the SWOT analysis in the strategic planning activity of the tourism enterprise to ensure competitiveness in relation to the competitive environment.

Keywords: *SWOT analysis, tourism, tourism enterprise, internal environment, external environment, strengths, weaknesses, opportunities, threats.*

Analiza SWOT este unul din principalele instrumente ale managementului strategic, aplicat în practica întreprinderilor turistice în luarea deciziei strategice importante. Înainte ca managerii să definească strategia efectivă pentru a obține un avantaj competitiv, este necesar ca ei să analizeze cu atenție competitivitatea întreprinderii turistice, care include o evaluare a factorilor organizaționali interni și externi, ce influențează abilitatea întreprinderii de a concura. În acest caz, propunerile întreprinderii turistice ar trebui să fie percepute de către consumatorii turiști ca fiind cele mai atractive din punct de vedere al calității și al politicii prețurilor. În articolul dat, autorul argumentează necesitatea utilizării analizei SWOT în planificarea strategică a activității întreprinderii turistice, pentru asigurarea competitivității companiei în raport cu mediul concurențial.

Cuvinte-cheie: *analiza SWOT, turism, întreprindere turistică, mediu intern, mediu extern, puncte forte și puncte slabe, oportunități, amenințări.*

SWOT-анализ является один из основных инструментов стратегического менеджмента, который используется в практике туристских предприятий для принятия важного стратегического решения. Прежде чем руководители определят стратегию эффективного действия, для получения конкурентного преимущества перед конкурентами, им необходимо внимательно изучить конкурентоспособность туристского предприятия, которая включает в себя оценку внутренних и внешних организационных факторов, влияющих на способность компании конкурировать. В этом случае, предложения со стороны туристского предприятия должны быть восприняты туристами как самые привлекательные в плане качества и ценовой политике. В этой статье, автор подтверждает необходимость использования SWOT-анализа в стратегическом планировании деятельности туристического предприятия для обеспечения конкурентоспособности компании по отношению к конкурентной среды.

Ключевые слова: *SWOT-анализ, туризм, туристское предприятие, внутренняя среда, внешняя среда, сильные и слабые стороны, возможности, угрозы.*

JEL Classifications: L32, L83, L86, M1, M3, O2.
UDC 338.486.5

The actuality of the subject

Increase in the sales volume on the international tourism market makes the world's tourism industry to become a more attractive sector for the business environment. World Tourism Organization statistics show an increase in tourist traffic in 2016 by 32% more than in 2010. Under these conditions, competition among tourism market players is becoming harder [12].

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The problem currently facing the business environment is to find strategic solutions for survival. Thus, entrepreneurs in order to develop a business in the tourism field must strike a balance between the opportunities of the tourism market and their own abilities and means, harmonizing their resources, capacities and objectives in accordance with the external environment.

Under these circumstances, the SWOT analysis as a tool of strategic management can guide the tourism company in choosing a direction that corresponds to a rational activity framework, thus facing the competitive environment. All of these argue the actuality of the research theme.

The purpose of the research is to study and analyze the problems related to the use of the SWOT analysis in the planning of tourism business activities. The area of research is covered by the specificities and dimensions of the world tourism industry, which require an in-depth approach to its specific concepts.

The theoretical and methodological support of the investigated theme is provided by the work of the scientists who have researched in this field and have demonstrated the effectiveness of using the SWOT analysis in the strategic planning related to the activity of commercial enterprises in general and of tourism enterprises in particular.

Applied methods

When writing this article, the author used 3 research methods as follow:

Fundamental research has allowed the elucidation of current trends in strategic planning, reflecting the prerequisites for proven change in the field of research, thanks to the implementation and use of the SWOT analysis. Fundamental research included investigations in the form of theoretical studies which led to the formulation of some scientifically substantiated conclusions.

Research for development aimed to use those processes and devices which can directly influence the practical work of the tourism industry. In order to address the diversity of issues that the tourism industry has encountered, a wealth of specialized literature and general interest has been used, a variety of comparative research and analysis tools that highlight the complexity of the SWOT analysis as a generator of benefits in the tourism business.

Applicative research was tasked with providing data for directing practical work to increase methodical work. This provides practical support in the knowledge of the functioning of the tourism enterprise as a subject of the national and international tourism market.

Relevance of the article. The research and development of this theme gave the author the opportunity to generalize certain conclusions on this topic and, consequently, to propose the tourism business environment through the lectures organized at the Higher Tourism and Hospitality School within the AESM, the need to use the SWOT analysis in the planning of the strategies activity.

Results and discussions

In order to define the strengths and weaknesses of an enterprise as an actor of the tourism business environment, we can use the SWOT analysis. SWOT analysis is a technique that a tourism enterprise can use to assess its internal environment in detail, identifying its strengths and weaknesses as well as the external environment, identifying opportunities and threats from the outside in its business process.

The acronym SWOT comes from English and means: STRENGHTS, WEAKNESSES, OPPORTUNITIES and THREATS. Strengths and weaknesses come from inside, while opportunities and threats – from outside.

The limitations of the SWOT method result from the internal-external opposition and the good antithesis. The analysis is based on the net distinction between the internal environment, usually identified as managed in a hierarchical manner and the external environment, with which the realities of the enterprise are of tourist market segmentation. This distinction does not allow accurate capture of the management of the internal space, which knows other regulations than the hierarchical ones, nor the management of the external space, which is much wider than the tourism enterprise market [1].

The first steps in making a SWOT analysis consist in defining the objectives pursued. The objectives should be as explicit as possible and accepted by all decision-makers. Once the objectives have been identified, the SWOT analysis can also be carried out with a view to identify correctly the components:

- strong points => attributes from inside the tourism enterprise that participate in the achievement of the established objectives;
- weak points => attributes within the tourism enterprise that hinder the achievement of the proposed objectives;
- opportunities => external factors ensuring the achievement of the established objectives;
- threats => external factors that prevent the achievement of the proposed objectives.

Strengths and weaknesses are the internal factors of the tourism enterprise, over which the company has a certain control and influence. The internal environment of the tourism enterprise refers to all elements that are firm and controllable. An enterprise's internal business analysis seeks to identify strengths and weaknesses compared to its competitive environment. Strengths are the basics for which the tourism business proves its absolute and relative superiority to competition in terms of service quality, practiced prices, ancillary services, location, skilled and experienced staff, technological superiority, aggressive promotion. Weaknesses are the weak points of competitors.

Analysis of strengths and weaknesses is done at the level of the tourism enterprise by analyzing the commercial, financial, productive and organizational capacities, each element being considered to be a major or a minor force, a major or a minor weakness.

It is important for each tourist company to periodically assess its strengths and weaknesses. This can be accomplished by completing a form that will include the elements relating to the commercial, financial, productive and organizational capacity of the enterprise. The tourism company must constantly seek to maximize strengths and minimize the influence of weaknesses on its activity.

Even if it is assumed that there is a separation of the internal environment, fixed on the SW axis – strengths and weaknesses, from the external one, fixed on the OT axis – opportunities and threats, when assessing forces and weaknesses, respectively, of opportunities and threats, the appreciation implies a comparison with the significant elements in the external environment or, respectively, a reference to a particular model of the internal environment or a course of action desired by the decision-makers. In addition, modern organizational approaches assume that the touristic enterprise is an open system, so the exclusion of mutual reporting of the internal and external environment may prove counterproductive for the analytical purposes of the discussed instrument.

If internal and external factors are divided into two distinct groups, then they can be combined in four ways. Here are four categories of strategies with the following features [2]:

1. SO strategies use tourist enterprise forces to take advantage of tourism market opportunities. Strategies are aggressive and aim to create an edge over competitors.
2. ST strategies use the tourism enterprise's forces to reduce the threat of unfavourable situations. Threats and risks that may have a negative impact on the enterprise's activity are diminished or even avoided by using diversification strategies. The problem is to choose the right direction for diversification or the optimal alternative for the enterprise.
3. WO strategies use opportunities to improve their internal characteristics or avoid weaknesses. These are reorientation strategies and are characterized by redirecting human, financial and informational resources to create new tourist products imposed by the tourism market.
4. WT strategies aim to avoid the threats of the external environment in the conditions where the tourism enterprise's weaknesses are predominant. When the enterprise's position on the tourist services' market is unfavourable, it approves a defensive strategy in order to survive and mitigate losses.

Because most tourism businesses have characteristics that can generate combinations in all four ways, it will result that strategies from all the combinations mentioned above need to be sustained.

The understanding of the way necessary to build the combination must be based on the idea that the tourism company will approve a strategy adapted to the external environment or adjusted to the essential elements of the internal environment to those of the outside environment. According to this, a good strategy is that exploiting forces and opportunities, neutralizing weaknesses and avoiding threats. The "good" rating means that the result is materialized in optimizing economic performance. The "match" between the tourism market and the resources needed by the enterprise implies maximizing profitability as the only competitive advantage available.

The Russian author V. Cvartalinov, while analyzing the activity of tourism enterprises, highlighted a multitude of strengths and weaknesses that may appear within them, on the one hand, and a variety of opportunities and threats specific to their environment, on the other. In his opinion, we need to highlight the following [10]:

- ✓ Potential internal strengths – distinctive skills, adequate financial resources, high level of staff qualification, well-designed functional strategies, technology ownership, cost advantage, organizational flexibility, product innovation capability, etc.
- ✓ Potential internal weaknesses – unclear strategic direction, lack of key competences, poor distribution network, inability to self-finance, relatively high unit costs to competitors, etc.

✓ Potential external opportunities – meeting the needs of additional customer groups, entering new markets/ segments, vertical integration, removing trade barriers, rapid market growth, etc.

✓ Potential external threats – the entry of some transnational tourist enterprises on the tourist market of the Republic of Moldova, able to operate at lower prices for tourism products and services, the slow growth of tourist markets, changing the consumers 'tourists' preferences, imperfect tourism legislation.

The literature has numerous models of analysis that are claimed, at least by label, to be S.W.O.T. The seven steps that embody a complete strategy-building process in Heinz Weichrich's view, presented in his paper „Administration: A Global Perspective of Empiricalism", are as follow [3]:

1. company identity: geographical area, competitive situation, management orientation;
2. identifying and evaluating environmental factors;
3. preparing a forecast and assessing the future;
4. carrying out an audit of possibilities in a functional approach of the enterprise;
5. enunciating strategic solutions or options;
6. choice of strategies;
7. preparation of application plans.

At the start of a S.W.O.T. analysis, it is assumed that several preparatory steps were taken, according to Heinz Weichrich's model, as a result of which the following requirements were set:

- the enterprise's mission should be described as detailed as possible, explaining the strategic vision at the time of the analysis;
- the defining elements of the company's internal environment must be grouped into functional areas such as production, marketing, personnel, etc.
- the defining elements of the enterprise's external environment should be grouped as follows: the overall situation of the branch, the competitive environment, the product diversity, the consumer's absorption capacity.

Separation of elements of the internal environment into strengths and weaknesses, as well as the external environment in opportunities and threats is extremely necessary, even if they will later suffer certain changes of forms under the pressure of the conjuncture of the tourist services market.

All particular forms of S.W.O.T. are based on the qualitative or quantitative form of the model. The qualitative form consists in making lists of elements with certain characteristics. In the first phase we will analyze the interesting elements of the internal and external environment, chosen as significant for the tourism field, then list the strategic suggestions resulting from each element combination of the internal and external environment [5].

The analysis of the existing situation is the starting point in establishing the tourism business activity strategy. Tourism businesses that want to make fundamental decisions on specific topics, use the SWOT analysis in the following cases:

- in strategic forecasting;
- in annual planning;
- when faced major difficulties to be solved;
- when he wants a radical change in his work.

According to the famous American specialist Philip Kotler, the following **general considerations** are taken into account in the overall internal analysis [11]:

- ***financial capacity***, incorporating capital availability, cash flow and financial stability;
- ***productive capacity***, including production means and qualified workforce;
- ***organizational capacity***, which includes planning, organizing and coordinating the activity, motivating the employees, controlling the results;
- ***commercial capacity***, which is highly dependent on marketing potential and actions.

Managers should be aware of the fact that in the day-to-day activity of the tourism businesses an important role lies with external factors, that is, macro-environment.

Macro-environment refers to the general environment in which the tourism enterprise operates and is attributed to the following categories of factors: socio-cultural, economic, political, legal, natural and technological [4].

Due to the fact that the external environment changes are usually uncontrollable and can affect the activity of the tourism enterprise, this analysis must be the starting point of any activity planning. Thus, by analyzing the external environment, it is possible to identify those elements, which may constitute threats and must be foreseen and avoided by the tourist enterprise.

The threat or constraint may be a hindrance as a result of an unfavourable trend or development of the environment in which the tourism enterprise operates, and the absence of defensive market action would result in a deterioration of sightings or profits. Many tourist business executives carry out analyzes of their own activities, but they often do not distinguish and do not separately treat items that come from outside the firm. Threats and constraints must be related to the weaknesses of the firm.

At the same time, the external environment is also characteristic of the elements that represent opportunities or favourable opportunities to be followed by the enterprise.

The opportunities on the tourist market exist when there are unsatisfied needs or desires, and the tourist enterprise has the interest and the ability to satisfy them. Favourable opportunities may exist on the market according to: size, economic climate, demographic growth, increased purchasing power, competitors' weaknesses. Tour operators who have made use of these opportunities and have made it worthwhile have been able to benefit from them and become leaders in the tourist services market.

The first condition to success is to analyze continually the competition environment in which you operate. Under these circumstances, in order to evaluate our competitors' offer of products and services we need to know them very well. It is useful to establish an identity card of the competing tourism enterprise. Identity card is a document that allows the synthesis of a large number of information about a company. It can be an important mean of analysis and comparison of the own tourism enterprise with competing companies. This could include the following elements:

a) Identity elements:
- geographic location;
- legal status;
- historic;
- trademark;
- tourism destinations operated.

b) Position held on the tourism market:
- the market share and its evolution;
- the relative market share (which measures the distance from the main competitor);
- the image of the enterprise on the tourism market;
- customer loyalty to the enterprise.

c) Adopted strategy:
- short and long-term goals;
- target destinations;
- market segments addressed to them;
- positioning on the market.

d) Specific elements:
- assortment diversity of tourism products and services;
- practiced prices;
- qualities of tourism products/services;
- additional offered services;
- promotional actions taken.

e) Potential:
- human resources;
- financial resources;
- material resources;
- technological resources;
- information resources;
- logistics resources.

If we are to analyze the competitive environment of a tourism enterprise, we must take into account the market share in relation to the main competitors. The market share allows the expression of the stake held by a particular tourism enterprise, on a particular tourism product or destination with which it operates. The calculation formula which can be used to determine the market share is as follows:

$$CPi = \frac{Vi}{V} x100 = \frac{CAi}{CA} x100$$

Cpi = market share;
V = volume of sales of products for the "x" tourism destination on the market;
Vi = sales volume of the analyzed tourism enterprise;
CA = total turnover on the "x" product market of the respective tourism destination;
CAi = turnover of the analyzed tourism enterprise.

Conclusions

The SWOT analysis is particularly useful in the current context, being one of the main managerial tools that can contribute to enhancing the competitiveness of the national and international tourism business, thus facing the competitive environment in which it operates.

The widespread mentality of entrepreneurs is that it is not necessary to do the SWOT analysis because it is perceived that all the problems are related to the tourism industry, which is a wrong idea. Regularly performing the SWOT with all subtleties can have a beneficial effect on the systematisation of ideas and, as a consequence, increases the performance of the tourism enterprise. The model of the SWOT analysis for the planning of tourism business activities, in the author's opinion, can be presented as follows: ***Annex 1.***

Under these circumstances, making a SWOT analysis should be the starting point for formulating objectives appropriate to the situation of the tourism enterprise and its relations with the external environment. The objectives and strategies set for the planning horizon will aim at developing the strengths of the tourism enterprise, removing or correcting weaknesses, exploiting favorable opportunities and avoiding or diminishing threats to the external environment.

The need for SWOT analysis should not only occur when things start to go wrong in the tourism business. SWOT analysis should be done on a regular basis, thus gaining a good understanding of the tourism enterprise, market trends, competition environment, all of which are the starting point for establishing the company's future strategies.

For an efficient use of SWOT it is necessary to know its limitations both theoretically and practically. SWOT analysis is not a universal panacea or an element to match any discussion on a strategic management topic. Even if at the end of a critical analysis it is considered that its use also has acceptable aspects, the warning signal indicates that it should be used with caution [6].

The quality of the SWOT analysis is questionable if we take into account the different points of view of the tourism experts:

- the method allows to identify some questions that would otherwise not have been asked and is an irreplaceable starting point in substantiating the strategy;
- the method risks limiting the assessment of the real situation in which the enterprise is located, as practice has shown that the "essential" is often not included in the plans or situations developed by the managers;
- the method is just a model of analysis used to give some form of analyzes that are frequently made by managers of tourism enterprises.

When we want to appreciate the usefulness of the SWOT method and the reasons for its success for a tourism enterprise, we need to consider at least two trends:

- managers collect information from inside the enterprise rather than from its environment;
- managers often fail to take into account potential risks, or remove „unpleasant" information.

In spite of what has been said, the SWOT analysis, however, provides an initial orientation on the range of strategies that offer the most reasonable outlook.

Proposals and recommendations

In order to determine which strengths and weaknesses of the tourism business should be paid a special attention for their development or correction, assessment levels may be used. Each strength will be analyzed both in terms of its intensity and importance for the success of the tourism business. Thus, in our opinion, it is necessary to assess the strengths and weaknesses of the tourism enterprise in the following ways:

- ✓ Intensification of strengths needs to be measured with a five-level differential scale, from 1 – very low to level 5 – very high. Also, the importance will be measured through a three-tier scale: high importance, medium importance and low importance.
- ✓ The utility of analyzing the strengths and weaknesses of the tourism enterprise increases in comparison with the core competitors. By using such a comparative analysis, the basic strengths of own tourism enterprise can be highlighted. These competences refer to the strengths over which the tourism company overcomes its competitors and need to be developed, as well as the weaknesses

which have to be mitigated or removed.

- ✓ In order to determine the extent to which the strengths are basic, distinctive in relation to competitors and to determine their strategic importance, the tourism enterprise have to be analyzed, from the perspective of the following criteria, the core competencies identified:

• ***Property.*** Professional knowledge and skills belong to individuals who are the member of the staff of the tourism enterprise. They are not the property of the firm. Basic skills due to human resources can be lost by taking over from specialists by competitors.

• ***Durability.*** Consumers-tourists' preferences are constantly changing. If the tourism enterprise is not flexible enough to modify the situation on the tourism market and does not have the capacity to adapt to the changes generated by its external environment, then it loses its competitive advantage.

• ***Portability.*** Certain tangible resources of the travel business can be acquired by its competitors, as is the case of fixed assets (office, transport, etc.). Other resources, especially intangible (brand image, company reputation, etc.) cannot be easily transferred.

• ***Imitability.*** Structure of tourism products through basic components can be often copied by competitors.

At the same time, we must note that the attractiveness of the tourism enterprise's involvement on a tourism destination is determined by the relationship between opportunities and threats of the external environment. The ideal situation is when there are more opportunities than threats.

Under these circumstances, the analysis of opportunities and threats in the external environment implies their classification according to the impact they have on the tourism enterprise.

Thus, development of the matrix of opportunities should involve the following steps:

- ✓ Identification of opportunities the tourism company offers to the external environment;
- ✓ Measuring the profitability of showing each favorable occasion in the planning horizon, using a differential scale with nine levels, from 1 – very low profitability to 9 – very high profitability;
- ✓ Location of each identified opportunity, in the corresponding dial of the matrix, according to the two coordinates considered.

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Annex 1

SWOT analysis evaluation scheme for the tourism enterprise

The strengths of the tourist enterprise:
1. Availability of necessary human, financial, material and informational resources;
2. Statute of a leading tourist enterprise;
3. Trademark recognized in the tourism services market;
4. Excellent location of the office;
5. Exploitation of technological and informational innovations;
6. Using modern marketing techniques and tactics;
7. Permanent assurance of quality standards;
8. Cost advantages over competitors;
9. Effective advertising;
10. Long-term experience in tourism;
11. Organizational Performance Management;
12. Functional organizational culture;
13. Consumer outlet;
14. High productivity;
15. Availability of tourist products and services requested on the tourism market;
16. Good supply management.

The weaknesses of the tourism enterprise:
1. Insufficient or lack of human, financial, material and informational resources;
2. The absence of a known trademark;
3. Lack of a concrete strategy of activity;
4. Incorrect location of the office;
5. Lack of permanent tourism service providers;
6. Low profitability;
7. Inefficient organizational management;
8. Lack of professionalism among the employees of the company;
9. Contradictory corporate elements of the various subdivisions of the tourism enterprise;
10. Reduced range of tourism products and services;
11. Unfavourable picture on the market;
12. Narrow distribution network;
13. Inefficient advertising;
14. High production costs compared to competitors;
15. Insufficient technical equipment.

Opportunities for the tourist business:
1. Liberalization of the visa regime for the citizens of the Republic of Moldova in relation to the EU member states.
2. Possibilities for capitalizing on the new tourist destinations;
3. Diversifying the range of tourism products and services;
4. Eliminating trade barriers in attractive foreign tourism markets;
5. The emergence of new air operators on the tourist market and Law-cost routes;
6. Tourism legislation adequate to the requirements of the tourist market;
7. Availability of low-cost tourism products through specialized sites;
8. Value Added Tax Facilities;
9. Increased rhythm of tourist market growth.

Constraints / Threats for the tourist enterprise:
1. Market penetration of strong competitors from the outside;
2. Increased sales of substitute tourism products;
3. Enhance on-line reservations by consumer-tourists and organize holidays on their own;
4. Declining market growth rate;
5. The unfavorable impact of the exchange rate;
6. Economic stagnation;
7. Decrease in purchasing power of national currency;
8. Changing consumer-tourist preferences towards traditional tourist destinations;
9. State introduction of conditions that require additional financial effort.
10. Imperfect tourist legislation.

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SOGIOLOGY

AGEING AND SILVER ECONOMY – CHALLENGES AND OPPORTUNITIES FOR SOCIAL POLICY IN POLAND

Martyna KAWIŃSKA*[1]*, Assistant Professor, PhD,
Institute of Sociology, Faculty of Historical and Social Sciences
Cardinal Stefan Wyszynski University in Warsaw Poland

In the reflection on old age and ageing a question arises whether we are able today to predict precisely changes which they bring to an individual and to the whole society. It seems, however, that it is extremely difficult, since the whole human life, agedness included, is changeable in time and space. Old age tends to be surprising, therefore it is worth preparing to it properly, and go through it so that it could constitute a significant value added to life. Predictability and preparation to old age are an essential area of activities of senior policy which is responsible for reducing negative and promoting positive aspects of living in old age. It seems that today a chance for "better" old age lies in the development of the silver economy which assumedly should response to seniors' needs more precisely, via sensitising the market of goods and services to the changing needs of this consumer group.
Keywords: *population, ageing, senior, consumer, silver economy.*

În reflecția asupra vârstei înaintate și a îmbătrânirii se ivește întrebarea dacă astăzi putem anticipa cu exactitate schimbările pe care acestea le provoacă unui individ și întregii societăți. Se pare, totuși, că este extrem de dificil, deoarece întreaga viață umană, inclusiv vârsta, este schimbătoare în timp și spațiu. Vârsta înaintată tinde să fie surprinzătoare, de aceea merită o abordare corectă, pentru a trece prin ea astfel, încât să constituie o valoare semnificativă adăugată vieții. Predictibilitatea vârstei înaintate și pregătirea pentru ea reprezintă un domeniu esențial al politicii de vârf, care este responsabilă de reducerea urmărilor negative și promovarea aspectelor pozitive ale vieții la o vârstă înaintată. Se pare că, astăzi, șansa pentru o bătrânețe „mai bună" constă în dezvoltarea economiei argintii, care se presupune că ar trebui să răspundă mai precis nevoilor persoanelor în vârstă, prin sensibilizarea pieței bunurilor și serviciilor în raport cu nevoile în schimbare ale acestui grup de consumatori.
Cuvinte-cheie: *populație, îmbătrânire, persoană în vârstă, consumator, economie argintie.*

В размышлении о преклонном возрасте и старении возникает вопрос, можем ли мы сегодня с точностью предвидеть изменения, которые они приносят человеку и всему обществу. Однако, кажется, что это чрезвычайно сложно, потому что вся человеческая жизнь, включая возраст, изменчива во времени и в пространстве. Старость имеет тенденцию удивлять, поэтому стоит подходить к ней должным образом и проходить через нее так, чтобы она могла стать добавленной стоимостью жизни. Предсказуемость старости и подготовка к старости являются важной областью деятельности политики, которая несет ответственность за снижение негативных последствий и продвижение позитивных аспектов жизни в пожилом возрасте. Похоже, что сегодня шанс на «лучшую» старость заключается в развитии серебряной экономики, которая, как предполагается, должна более точно отвечать потребностям пожилых людей, посредством сенсибилизации рынка товаров и услуг к меняющимся потребностям этой группы потребителей.
Ключевые слова: *население, старение, пожилой человек, потребитель, серебряная экономика.*

JEL Classification: J10, J14, J19, I39.
UDC 316.346.32-053.9(438)

Introduction. The Polish society is currently experiencing significant challenges arising from dynamic changes in the demographic structure of the population, and two fundamental phenomena are considered to be responsible for these changes, namely low fertility accompanied by a simultaneous increase

[1] ***©Martyna KAWIŃSKA, m.kawinska@uksw.edu.pl***

in the number of elderly people in the whole population. Total Fertility Rate (TFR) in Poland has been declining for almost 20 years and oscillates around 1.2[1], while this rate should be 2.2 to enable the replacement rate. At the same time, in the coming years, systemic growth of the percentage of people aged 60+ is forecasted. According to the Central Statistical Office forecast, it is predicted to be 30% in 2035, and in cities it will be a little higher (31%) than in the country (28.6%).

The growing percentage of seniors in the society forces public policy to develop senior policy which will favour the satisfaction of the needs of this group and shape positive relations between the older and the younger generation. A number of activities are regarded important, including almost all areas of life, in relation to the demographic, economic, family, health situation, the availability and the level of services (also care-providing ones), as well as social and professional activity of seniors.

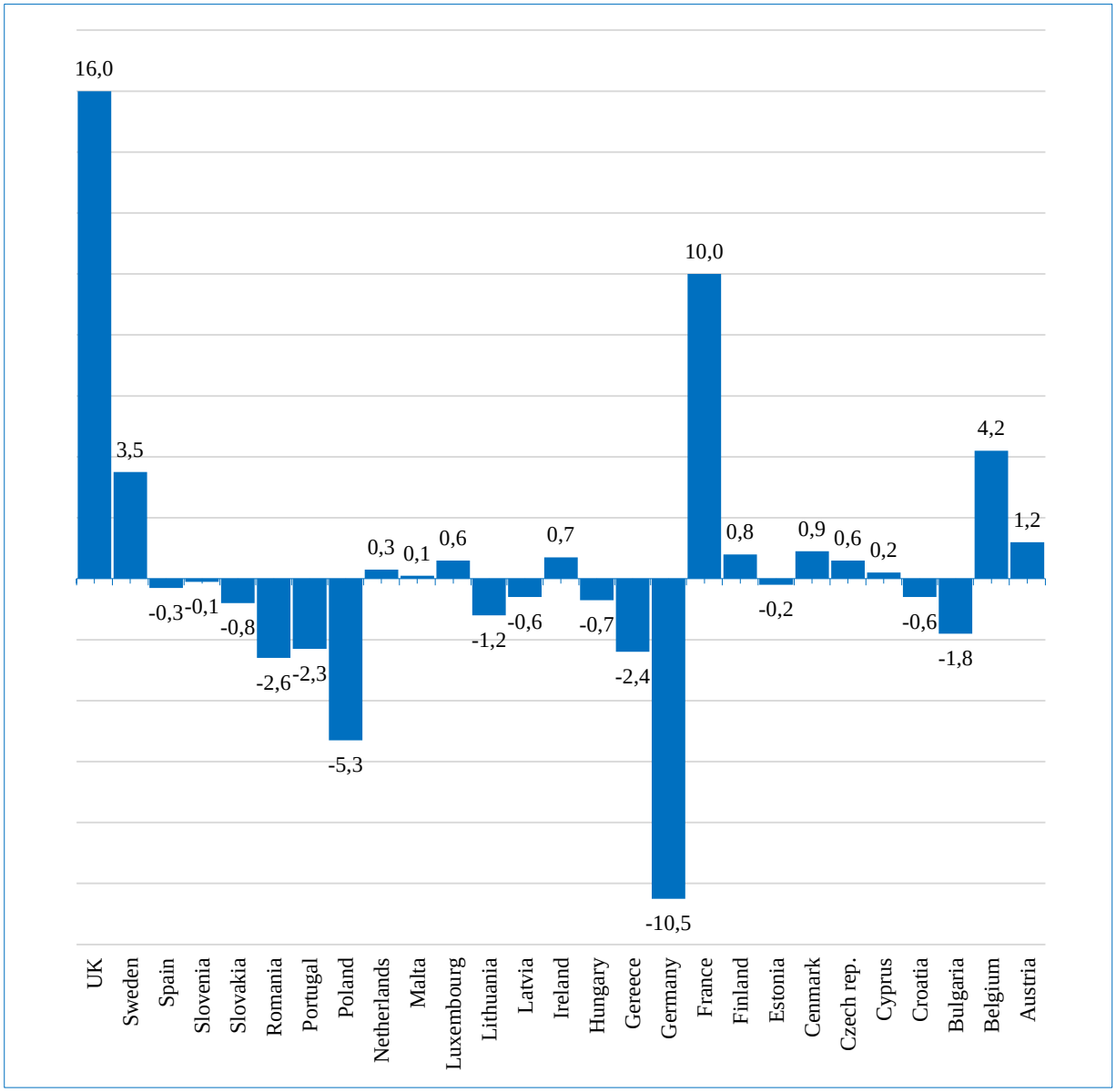

Figure 1. Changes in the size of the EU countries population in 2060 in comparison with 2013 (in mil.)

Source: Own summary based on: The 2015 Ageing report, Economic and budgetary projection for the 28UE Member States (2013-2060), European Economy 3/2015, p. 21.

[1] *According to the Central Statistical Office data, the Total Fertility Rate in 2015 was 1.289.*

Old age and ageing as a challenge

Ageing is a natural stage in human life, but the exact recognition of old age is still the object of interest of researchers from various scientific environments. What seems important is the continuous exploration of changes and undertaking wide-ranging discussions on the experiences related to accepting and experiencing old age. The final stage in human life is the stage of old age which begins with achieving a specific threshold of old age. The stage is characterised by typical biological, mental changes, developmental tasks, critical life events and typical social roles. For statistical analyses demographic age, which is the number of the years lived, settled for everyone in order to unequivocally determine the size of seniors' population, is particularly important. The old age threshold is most often considered to be the 60th or 65th year of living for both sexes. Due to the prolongation of average further life expectancy, contemporary demographers also propose higher old age thresholds assuming that longer life prolongs the stage of late maturity and therefore the old age phase moves. The World Health Organisation (WHO) distinguishes elderly age from 65 to 75, old age from 75 to 90 years old and very old age above 90 years old. The literature also distinguishes the stage of earlier old age, so called "third age", and the stage of advanced old age as the "fourth" age[1].

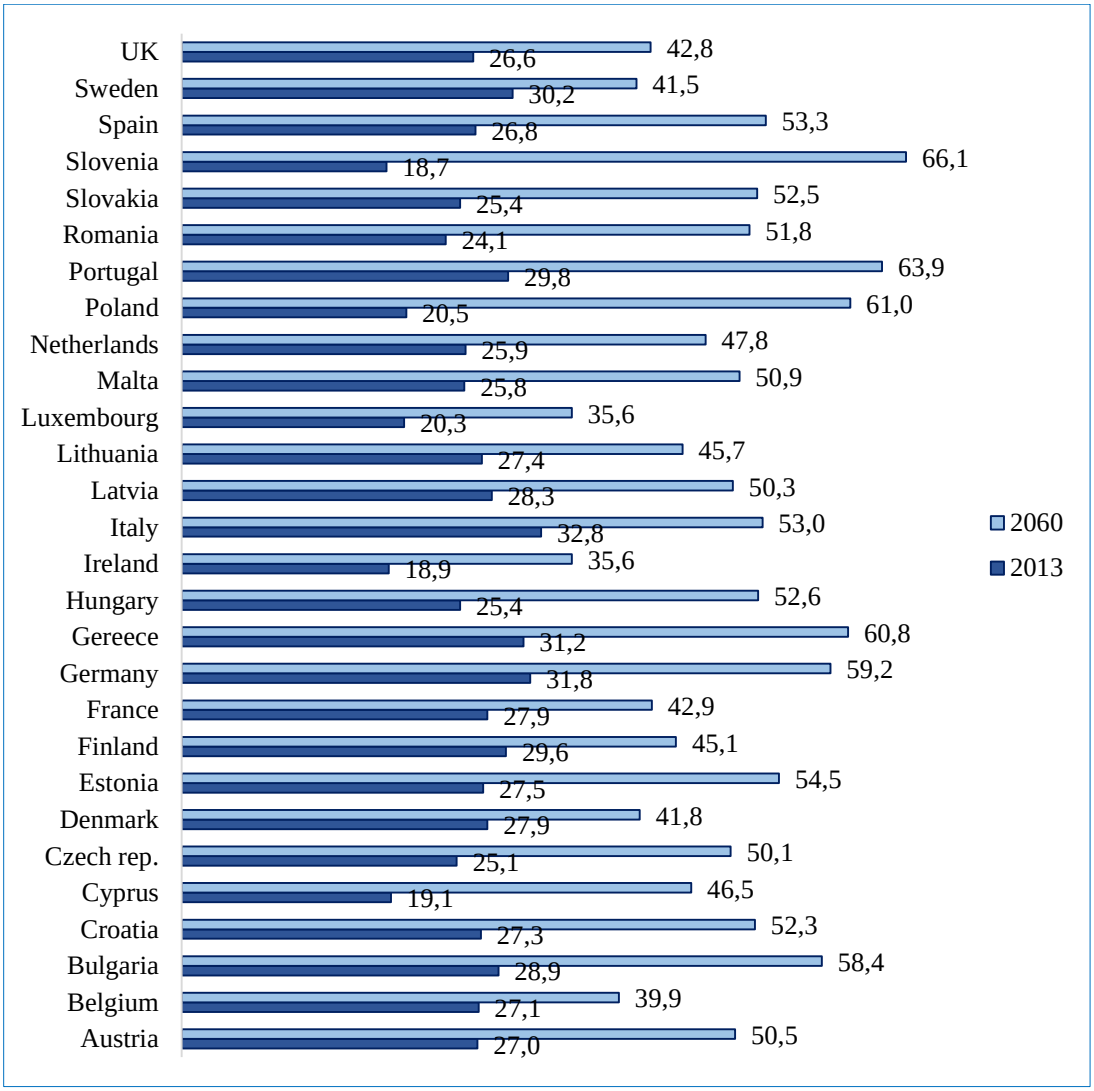

Figure 2. Changes in the level of age dependency ratio in EU countries in 2060 compared with 2013 (in %)

Source: Own summary based on: The 2015 Ageing report, Economic and budgetary projection for the 28UE Member States (2013-2060), European Economy 3/2015, pp. 47.

[1] *Szatur – Jaworska B. Błędowski P., Dzięgielewska M., Podstawy gerontologii społecznej, Warszawa 2006, p. 35-45.*

The problem of ageing population occurs in most European countries but we can observe differences in the dynamics and directions of changes. Although a 5% increase in the European population is expected in 2060 in comparison with 2013, the measure of the population regression is a decrease in the selected European populations. Poland is among the countries in which a significant drop in the population will take place. The countries of the former Eastern bloc, which are characterised by less wealth and a poor economic level, are threatened most by depopulation, more than the countries of Western and Northern Europe.

Changes in the population size are also related to the prolongation of the average further life expectancy. In 2060, a statistical European male should live to be 84 years old on average, and a European female – to be 89.1 years old, in Poland 83 and 88 years old, respectively[1]. It is predicted that in the EU countries in 2060 the number of people aged 65 and above will go up by 6%, and then it will constitute almost 30% of the whole population. Such a pessimistic forecast is valid also for Poland, where the growing number of elderly people in the population, accompanied by the decreasing birth rate will ultimately bring about a decrease in the number of people in the working age from the present 4 to 2 in 2060, falling on people in the retirement age. In the case of young population, high percentage of people in the age of professional activity is the basis of the tax system which is responsible for financing social benefits, pension scheme in this case. Expenditure on securing retirement benefits is a serious burden for the state budget, which translates into the economic situation. Therefore, in the interest of every economy is to maintain high percentage of professionally active people, being the foundation of public finance.

In 2012, the EU27 public expenditure on social protection amounted to around 20% of GDP[2]. Age-related spending (including expenditure of the first pillar pension schemes as well as expenditure on elderly care) is predominant and represents 8% or more of GDP or at least 40% of the total government expenditure on social security. This is projected to increase by 4.1 percentage points of GDP by 2060[3]. The growing percentage of elderly people will influence the growth of the age dependency ratio which we define as the quotient of the number of people in the retirement age 65+ to the number of people in the working age 15-64. It will cause specific economic and social consequences which will be manifested in changes in the level of consumption, demand for specific services, as well as an increase in expenditure on securing the needs of the growing retirement group. Social consequences of ageing are also new tasks for the health care system, as with age the probability of the deterioration of health, the occurrence of disability and the loss of independence is growing. The demand for medical services will be increasing, and their availability will depend both on the economic situation of the country and the scale of demand for specific services. It is projected that expenditure on health care in the EU27 countries will go up from 7.1% of GDP to 8.3% in 2060, and the expenditure on long-term care in that period will double, from 1.8% of GDP to 3.4%[4].

New behaviour of the elderly on the market of goods and services

The size and structure of the senior population right now significantly determine the demand for specific goods and services, but we must remember that seniors are consumers with specific expectations, suitable for the age, health, level of independence or affluence, and the contemporary image of a senior considerably diverges from the stereotype of a poor and ill old man. It is worth paying attention to the fact that not long ago the senior consumer was not defined. At present, this segment is developing before our very eyes, and these are representatives of *baby boomers generation*, that is the generation of the after-war population boom, who are responsible for this development. The people live much longer than their ancestors, they are better educated, more active, have regular income. In addition, they do not have any credit facilities any more, and since their adult children have already moved out, the income spreads on a

[1] *The 2015 Ageing report, Economic and budgetary projection for the 28UE Member States (2013-2060), European Economy 3/2015, pp. 15.*

[2] *General government expenditure on economic function, Eurostat Statistics in focus 8/2014; Eurostat table code: gov_a_exp.*

[3] *The 2012 Ageing Report; Economic and budgetary projections for the 27 EU Member States (2010-2060); European Economy 2|2012 [Joint Report prepared by the European Commission (DG ECFIN) and the Economic Policy Committee (AWG)]*

[4] *Ibidem*

smaller number of household members[1]. Representatives of this consumer group know their rights and expect specific goods and services which will secure their specific needs[2].

A senior consumer is becoming a more and more financially attractive market area. The segment of these consumers is characterised by rich market experience, regular income, knowledge about products or services wanted and more time. After finishing professional activity, seniors often pursue their "postponed" passions, discover new and interesting areas to travel to, so they report their demand for new kinds of products and services. Contrary to stereotypes, pensioners as a social group are not poor – the income of their households often exceeds the country's average, and, what is more important, the income obtained is regular, countable and paid out monthly. According to the Social Insurance Office (Polish: Zakład Ubezpieczeń Społecznych – ZUS) data, an average pension paid out by ZUS in March 2013 was PLN 1,954.20, but for the male population PLN 2,394.84, and for the female population – PLN 1,653.03. On the other hand, the pension obtained by the largest number of recipients amounted to PLN 1,513,06[3]. For comparison, the average monthly disposable income per capita in 2014 was at the level of PLN 1,340[4].

A contemporary senior, interested in the active participation in various aspects of life, is becoming an important consumer group, which, owing to the growing purchasing power, should be more and more attractive for producers. Contrary to common myths, consumer activity of seniors will be developing dynamically and today it does not differ significantly from other purchasing groups. According to Polish analyses of TGI Millward Brown in 2014, consumers aged 50+ much more often used the Internet, went on holiday and spent time in restaurants than their peers in 2000[5].

The silver economy

The new view of the position of the elderly in society is reflected in the growth of interest in the silver economy understood as an economic model focused on the use of elderly people's potential by considering their needs. The *silver economy* concept was formulated in 1970s, and the roots of its emergence should be looked for in Japan, where the bases of the economic system taking into account the needs of elderly people was created for the first time[6]. The basis of the discussed phenomenon is the scientific and research stream called gerontechnology, comprising issues of interdisciplinary character concerning technology and the ageing process, and the superior goal of any activities is the improvement of everyday life of the elderly[7].

The European outline of the *silver economy* concept appears mainly in the documents of the European Commission[8] which pays special attention to the necessity of a change in the attitude of the ageing population and perceiving a chance for economy in it, and not only a threat. In such an approach, the ageing society creates new opportunities of development for innovative firms through demand for new goods and services securing the needs of elderly people. The adaptation of the goods offered on the market to the expectations of seniors is called the *silver market* or *silver industries*. With time, the approach took broader meaning and in addition to activities increasing the utility of goods and services dedicated to seniors, also

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[1] *Omar M., Tjandra N.C., Ensor J., Retailing to the „grey pound": understanding the food shopping habits and preferences of consumers over 50 in Scotland, in: Journal of Retailing and Consumer Services, 2014, Vol. 21, pp. 753-763.*

[2] *Bondos I., Dlaczego seniorzy stanowią wyzwanie dla marketingu? in: Marketing i Rynek, 2013, nr 3, pp. 31-36.*

[3] *Zakład Ubezpieczeń Społecznych Struktura wysokości emerytur i rent wypłacanych przez ZUS po waloryzacji w marcu 2014 roku, Departament Statystyki i Prognoz Aktuarialnych, Warszawa 2015, pp. 15.*

[4] *GUS 2015, Sytuacja gospodarstw domowych w 2014 r. w świetle wyników badania budżetów gospodarstw domowych, http://stat.gov.pl/obszary-tematyczne/warunki-zycia/ dochody-wydatki-i-warunki-zycia-ludnosci/sytuacja-gospodarstw-domowych-w-2014-r-w-swietle-wynikow-badan-budzetow-gospodarstw-domowych,3,14.html [24.07.2017]*

[5] *Żurawski T., Jak mówić – bo warto! – do 50+, in: Marketing w Praktyce, 2015, nr 2, pp. 6-8.*

[6] *Klimczuk A., Transfer technologii w kształtowaniu srebrnej gospodarki, in: Grzybowski M.(eds.), Transfer wiedzy w ekonomii i zarządzaniu, Wydawnictwo Uczelniane Akademii Morskiej w Gdyni, Gdynia 2011, pp. 57-75.*

[7] *Graafmans J., Taipale V., Charness N. (eds.) Gerontechnology A sustainable investment in the future, IOS Press, Amsterdam 1998, pp. 3.*

[8] *e.g. the Communication of the European Commission "The demographic future of Europe - from challenge to opportunity" of 2006, or publishing Green Paper "Confronting demographic change: a new solidarity between the generations in 2005".*

the necessity of so-called universal designing has started to be noticed. It concerns primarily the creation of such an offer which will respond to the needs more universal than only the needs of the elderly. Moreover, the necessity to pass from an individualised and singular customer towards group, structural or institutional customers being in any relation with the elderly has been noticed. This more holistic approach to the consequences of ageing takes also into consideration the economic aspect of necessary transformations[1]. Poland does not have any wide experience in creating the *silver economy* yet, however, it is a significant area of interest of scientists, politicians and entrepreneurs. Taking into account the dynamic process of the ageing of the Polish society, it seems that it is a proper place to implement appropriate actions.

On the one hand, the *silver economy* is a means to satisfy the needs of the elderly, and on the other hand, it is the beneficiary of changes dictated by the modifications in supply. Propagators of the silver economy report the necessity to reorient numerous activities in the area of the labour market, the market of goods and services or the financial market to be able to adopt undertaken actions to projected directions of changes related to the growing population of elderly people. Such an approach creates an opportunity for the development of business for numerous firms and at the same time serves better satisfaction of specific needs of seniors.

When analysing the significance of the silver economy, we can isolate the basic zones of its impact, namely:

1. the development and sales of products and services directed exclusively to elderly people – so called *unique solutions*.

2. the adaptation of products and services particularly to the needs of elderly people – so called *extended solutions.*

3. the development of products and services of timeless character, neutral in terms of age, which are attractive both for older and young people, at the same time favouring the inter-generational integration of consumers – so called *universal solutions*[2].

Such an approach to the demand for goods and services to meet varied needs of seniors enabled to isolate specific segments of the *silver economy*, which can consider, among others, the following areas of life and activity of the elderly:

- the use of information technology (IT) to create home systems of medical assistance and telemetric care, in in-patient and outpatient health care;
- architectonic activities related to the adaptation of housing conditions to the capabilities of elderly people with the use of information technologies (monitoring);
- promotion of independent living with the use of IT (mobile phones adopted to the abilities of operation by elderly people);
- the development of education, touristic, health-promoting and other services;
- promoting independence and safety;
- the development of services aiming at the growth of social contacts and propagating healthy lifestyle;
- robotics of services combined with the promotion of independent lifestyle in the case of elderly people with serious diseases;
- forms of communication adjusted to the needs of the elderly;
- the development of food products market for people with specific diseases;
- the development of the market of dietary supplements supporting ailments typical for elderly people;
- production of clothes and footwear addressed to seniors;
- financial services, especially in the area of securing the capital, maintaining the wealth and

[1] *Niewiadomska A., Sobolewska-Poniedziałek E., Srebrna gospodarka – nowy paradygmat rozwoju starzejącej się Europy, in: Ekonomia XXI wieku, 3(7) 2015, Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu, Wrocław 2015, pp. 74.*

[2] *Kohlbacher F., Herstatt C., Sweisfurth T., Product Development for The Silver Market in: Kohlbacher F., Herstatt C. (eds.), The Silver Market Phenomenon. Marketing and Innovation in the Aging Society, Second Edition, Springer Verlag, Heidelberg 2011, pp. 4-5.*

preventing the loss of savings[1].

An important factor defining the level of advancement of the *silver economy* is also the policy of the state focused on the improvement of the situation on the labour market of people from the generation 50+ which takes into account three basic areas: activities in the area of the pension and social scheme reforms, counteracting discrimination and the promotion of hiring mature people, including activities for an increase in the capacity for work of the elderly[2]. The growth of the employment rate of people aged 50 and above is an important challenge for the contemporary economy. An important factor supporting the development of the silver economy is the age management policy. It consists in the fuller use of the human resources potential through the adaptation of the conditions of work to the age and abilities of the employed and the facilitation of cooperation among employees of different generations. What is considered particularly important is recruitment, education and life-long learning, career planning and development, flexible working hours and forms of employment, health protection and promotion, retraining and changing a workstand or a comprehensive approach[3].

Nowadays, a few major areas of the development of the *silver economy* are distinguished, consisting in ensuring the longest possible professional activity and the longest possible independence, managing seniors' time, taking care of their health and image, ensuring inter-generational integration, providing financial services matching the consumers' age[4]. Of course, the development of the *silver economy* is related to costs which may be a potential source of threat and barriers to its development. Entrepreneurs employing older workers have to take into account the costs of the adaptation of workstands to their abilities. An increasing number of the elderly will be reporting greater demand for caring and nursing, institutional services or health care, and this will contribute to an increase in public expenditure. The costs of purchasing some products and services will be financed directly by private consumers, but not by all of them. The strength of the silver economy is certainly the awareness of changes and the needs of the elderly arising from them, whereas its weakness seems to be the lack of unambiguous indication of the sources of financing and the possibilities to estimate the risk related to investment[5]. Moreover, the entrepreneurship sector and the ways of stimulating it are too poorly stressed, through the promotion of innovative enterprises securing the needs of seniors.

Conclusions

The European society is rapidly getting old. There are more and more elderly people in the population and this state will not change in the nearest future, it is true about Poland and most of the European countries. The structure of the labour market will change, the age dependency rate will go up, the expenditure on health care or retirement benefits will increase. The process of the population ageing will have a considerable impact on economy as a result of the volume of labour supply, the emergence of new sales markets, the growing social expenditure primarily on pension and annuity purposes.

The *silver economy* concept assumes that both economic and social variables will contribute to achieving benefits from its introduction, important both to consumers and to producers. The new sector are new products and services, new jobs, and, what follows, bigger revenues to the state budget. Contrary to the common opinion which assigns only problems to the ageing of societies, the development of the silver economy is a chance for the development of economy. It requires some outlays, which in the perspective of a few years have a chance to achieve success and bring specific profits, both to individuals (seniors) and to the whole society.

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[4] *Szukalski P., 2012, Trzy kolory: srebrny. Co to takiego silver economy?, in: Polityka Społeczna, nr 5-6, Warszawa 2012, pp. 8.*

[5] *Ibidem*

At the same time we must remember that with entering the old age period by subsequent generations, their consumer requirements will be changing. Accustomed to taking advantage of numerous facilities from the period of professional activity, they will want to make use of them also after the activity has stopped. It should be expected that new market segments will be discovered, and the existing ones will be modified, in accordance with the binding trends set by seniors. A detailed analysis of needs and the situation of the elderly, which is the starting point in defining the strategy of actions for solutions beneficial for seniors, will be needed for that. It is a challenge the Polish economy is facing today, supported by the responsible senior policy.

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LIFE EXPECTANCY DYNAMICS IN POST-SOVIET COUNTRIES FROM EUROPEAN REGION: CONVERGENCES AND DIVERGENCES

Irina PAHOMII[1], scientific researcher,
National Institute for Economic Research of ASM
Olga GAGAUZ[2], PhD in sociology, Associate Professor
National Institute for Economic Research of ASM
Cristina AVRAM[3], PhD Student,
University Charles, Prague, Czech Republic

This article presents the results of the comparative study on the mortality and life expectancy at birth dynamics in Moldova and six other post-Soviet countries in the European region – Belarus, Russia, Ukraine, Estonia, Latvia, Lithuania. The aim of the research is to highlight the convergences and divergences, as well as the causes which lead Moldova to lag behind in this field.

The study is based on Human Mortality Database (HMD) and Human Causes-of-Death Database (HCD) data. For Moldova, mortality tables for the resident population were used (with the exclusion of migrants who have been absent from the country for more than 12 months).

Despite the similar trends in the dynamics of life expectancy at birth in the selected countries since the mid-1990s, there is an increasing divergence in this respect. The Baltic countries, especially Estonia, have succeeded in achieving significant progress in reducing mortality and increasing life expectancy at birth, while Belarus, Russia, Ukraine and Moldova remain outliers. Decomposition of mortality by causes of death demonstrates that the reduction in mortality by cardiovascular diseases has had a major impact on the development of the gap in life expectancy at birth observed between Estonia and Moldova.

Keywords: *mortality, life expectancy at birth, ex-Soviet countries.*

În articol sunt prezentate rezultatele studiului comparativ cu privire la dinamica mortalității și speranței de viață la naștere în Moldova și alte șase țări ex-sovietice din regiunea europeană – Belarus, Rusia, Ucraina, Estonia, Letonia, Lituania. Scopul cercetării constă în evidențierea convergențelor și divergențelor, precum și a cauzelor ce determină rămânerea în urmă a Moldovei în acest domeniu.

Studiul se bazează pe datele din Human Mortality Database (HMD), Human Cause-of-Death Database (HCD). Pentru Republica Moldova au fost utilizate tabelele de mortalitate pentru populația rezidentă (cu excluderea migranților care au lipsit din țară mai mult de 12 luni).

În pofida tendințelor similare în dinamica speranței de viață la naștere, în țările analizate, de la mijlocul anilor `90 ai secolului trecut, se observă o divergență tot mai pronunțată în acest aspect. Țările Baltice, în special Estonia, au reușit să obțină un progres important în reducerea mortalității și creșterea speranței de viață la naștere, pe când Belarus, Rusia, Ucraina și Moldova rămân outsideri la acest capitol. Decompoziția mortalității după cauze de deces demonstrează că reducerea mortalității prin bolile sistemului cardiovascular a avut un impact major în formarea decalajului în speranța de viață la naștere observat între Estonia și Moldova.

Cuvinte-cheie: *mortalitate, speranța de viață la naștere, țările ex-sovietice.*

В статье представлены результаты сравнительного исследования динамики смертности и ожидаемой продолжительности жизни в Республике Молдова и других экс-советских странах европейского региона – Беларуси, России, Украине, Эстонии, Латвии и Литве. Цель исследования − определение конвергенций и дивергенций, а также причин отставания Молдовы в этой области.

Исследование основано на данных Human Mortality Database (HMD), базы данных Human Causes-of-Death Database (HCD). Для Республики Молдова использовались таблицы смертности для постоянного населения (исключая мигрантов, отсутствующих в стране более 12 месяцев).

[1] ***© Irina PAHOMII, bragairina92@mail.ru***
[2] ***© Olga GAGAUZ, gagauzo@inbox.ru***
[3] ***© Cristina AVRAM, avaramcr@gmail.com***

Несмотря на схожие тенденции в динамике ожидаемой продолжительности жизни в данных странах, с середины 1990-х годов различия становятся все более существенными. Странам Балтики, особенно Эстонии, удалось добиться значительного прогресса в сокращении смертности и увеличении ожидаемой продолжительности жизни, в то время как Беларусь, Россия, Украина и Республика Молдова значительно отстают в этом плане. Декомпозиция смертности по причинам смерти показывает, что снижение смертности от сердечно-сосудистых заболеваний оказало наибольшее влияние на увеличение разрыва в ожидаемой продолжительности жизни между Эстонией и Республикой Молдова.

JEL Classification: I1, J11, J13, N3.
UDC 314.14(478)

Introduction

Significant reduction in mortality has led to significant changes in population distribution by life expectancy at birth in the world. Over the last 60 years, the proportion of the world's population with life expectancy at birth over 70 increased from 1% to 57% [20]. Life expectancy at birth in EU countries increases at a rapid pace. The estimation for this indicator in 2014 was 80.9 years, and the increase in the last decade accounted for 3.2 years [5].

Despite the positive trends in the evolution of life expectancy in the post-Soviet countries, they lag far behind the economically developed European countries [3, 66, 16]. Most of the post-Soviet countries have failed to achieve a steady increase in life expectancy at birth. However, Western countries, since the 1970s have witnessed positive dynamics in life expectancy due to the shift of mortality by various pathologies, especially of cardiovascular origin, to older ages, which led to a significant gap in life expectancy at birth [1, p. 69]. These structural changes in mortality are described by the theory of epidemiological transition presented by A. Omran in 1971 [8]. Omran's proposed theory describes the evolution of mortality in three stages. The final stage is characterized by the degenerative diseases specific to the elderly. Subsequently, several authors noted that a new stage is emerging in the evolution of mortality, namely *the cardiovascular revolution* [7,10,12]. This stage is characterized by higher life expectancy due to "postponing" of deaths by cardiovascular diseases and cancers until advanced ages. It should be noted that various countries have gone through different stages of the epidemiological transition, the main differences being highlighted in the final stage. This is why the increases in the life expectancy of different countries or regions are most often analyzed in the light of their success in completing the stages of the epidemiological transition. In this respect, the analysis of the evolution of mortality in the post-Soviet countries is one of the most eloquent examples of success or failure in the epidemiological transition.

The evolution of mortality in post-Soviet countries is a subject of interest for many authors. There are a lot of researches, which analyze various aspects of the evolution of mortality in the post-Soviet countries. The evolution of mortality in the former Soviet countries has been studied both by authors originating from this region and by authors from European countries. Thus, in his work "Mortality in Eastern Europe and the Soviet Union: Long-term Trends and Recent Upturns" [3] F. Meslé presented mortality trends in several countries in the region for the period 1960-1990. E. Andreev in his article "Life Expectancy and Causes of Death in the USSR" [1] analyzes the evolution of mortality in the ex-Soviet countries in terms of the epidemiological transition. Another aspect addressed in E. Andreev's work is the comparison of mortality in the ex-Soviet countries and the European countries with lower mortality. This approach allowed the author to highlight the main causes that led to a higher mortality in the selected countries. The evolution of mortality in the Republic of Moldova was analyzed by O. Penina. Thus, in the papers published by O. Penina, not only the overall mortality is analyzed and stages of its evolution are proposed [19], but also the mortality structure is analyzed, emphasizing the main causes of death in the general population [19] and in the adult population, which is the most affected by high mortality [18].

The analysis of the literature showed that over the course of several decades, the dynamics of life expectancy at birth in the post-Soviet countries from the European region – Belarus, Russia, Ukraine, Estonia, Latvia, Lithuania, and Moldova - despite variations from one country to another, had similar trends. However, since the mid-1990s, this similarity has ended, and over the last two decades, we have noticed that divergences in the dynamics of life expectancy at birth are becoming more pronounced [15]. The Baltic countries, especially Estonia, have succeeded in achieving significant progress in reducing mortality and increasing life expectancy at birth, while Belarus, Russia, Ukraine and Moldova remain outliers in this respect. Moldova, which takes the last place in this group of countries, with the lowest

female life expectancy at birth, continues to face high mortality, especially among the working-age population [18, 19]. This leads to significant loss of human potential, which at its turn hampers the growth of life expectancy at birth.

This article presents the results of the comparative study on dynamics of mortality and life expectancy at birth in Moldova and six other post-Soviet countries in the European region - Belarus, Russia, Ukraine, Estonia, Latvia, Lithuania. The aim of the article is to highlight the convergences and divergences, as well the causes of lagging behind of Moldova in this field by estimating the contribution of different causes of death to the gap in life expectancy at birth between Moldova and Estonia.

Data and methods. The study was based on Human Mortality Database (HMD) life tables. Data on life expectancy at birth refers to the period 1965-2013 for the Baltic States and Ukraine, and 1965-2014 for Belarus and Russia.

For Moldova the life tables elaborated by O. Penina, D. Jdanov and P. Grigoriev [8] were used for the period 1970-2014 and were calculated based on the resident population (with the exclusion of the migrants who were absent from the country for more than 12 months).

Data on causes of death for Moldova and Estonia were selected from The Human Causes-of-Death Database (HCD), which are recoded according to the latest ICD-10 (International Classification of Diseases) classification of causes of death. The comparative analysis was based on data for the last available years: for Moldova – 2014, and for Estonia – 2012.

E. Andreev's method of components was used to estimate the contribution of different causes of death to the gap in life expectancy at birth between Moldova and Estonia [14].

Main results

In the 1960's, the dynamics of life expectancy at birth in Belarus, Russia, Ukraine, Estonia, Latvia, Lithuania and Moldova had similar trends [3, 15]. The life expectancy values at birth have oscillated for males within the range of 64 and 69 years, and for females within 71 and 76 years. The highest values of life expectancy at birth were for Belarus, for both men and women, and the lowest for Russia (for men) and Moldova (for women).

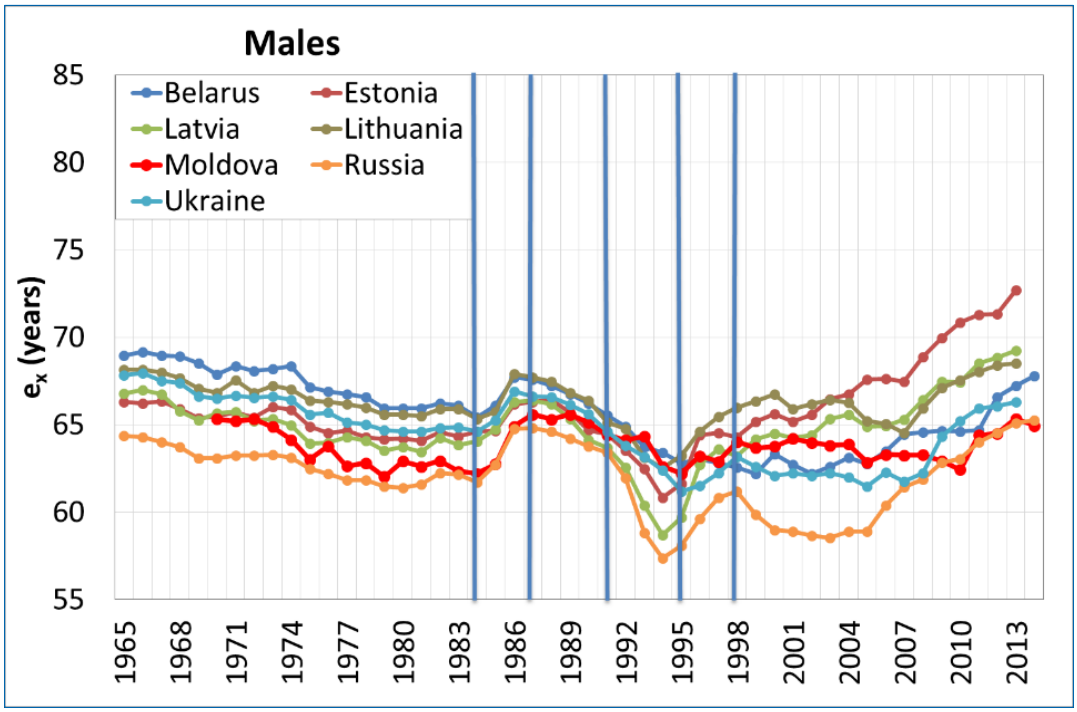
At present, the life expectancy at birth in these countries for men is 65-66 years, and for women 73-77 years. For comparison, in Belarus for both men and women, the trend is very similar, but the life expectancy at birth exceeds the life expectancy in Moldova, Russia and Ukraine, this being specific to the entire analyzed period. Thus, life expectancy at birth in Belarus for men accounts for 68 years, and for women – 78 years.

The dynamics of men's life expectancy at birth in the selected countries is synchronous until the mid-1990s, but after this period, its trajectory in each country was quite different, although, all countries followed the same upward trend. In general, most of the selected countries have reached the level of life expectancy from the mid-1960s – the early 1970s in 2013-2014. This was mainly due to the rather intense fluctuations of the life expectancy for males during this period. Life expectancy at birth for females rose with fewer fluctuations.

After 1995, in all the countries there was an increase trend in life expectancy at birth, but with a different intensity. The Baltic countries made significant progress in the dynamics of life expectancy at birth, especially during the last two decades, Estonia taking the first place with the values of this indicator of 72.7 years for men and 81.3 years for women in 2013 *(Figure 1 and 2).*

Estonia has recorded a faster growth of life expectancy at birth compared to other countries since 2004, which allowed it to differentiate itself in this respect. Estonia has not only reached the level of the life expectancy at birth similar to 1965, but also surpassed it.

The gap in life expectancy at birth between women and men has increased over time. Thus, in the second half of the 1960s the gap accounted for 6-9 years, and now the difference is 9-11 years. Between the life expectancy of men and women is recorded the most significant gap, which accounts for 11.2 years in Russia, followed by 10.9 years in Lithuania, and 10.7 years in Belarus. The smallest gap for this indicator is for Estonia - 8.6 years. In Moldova, the difference between life expectancy for men and women is about 9 years.



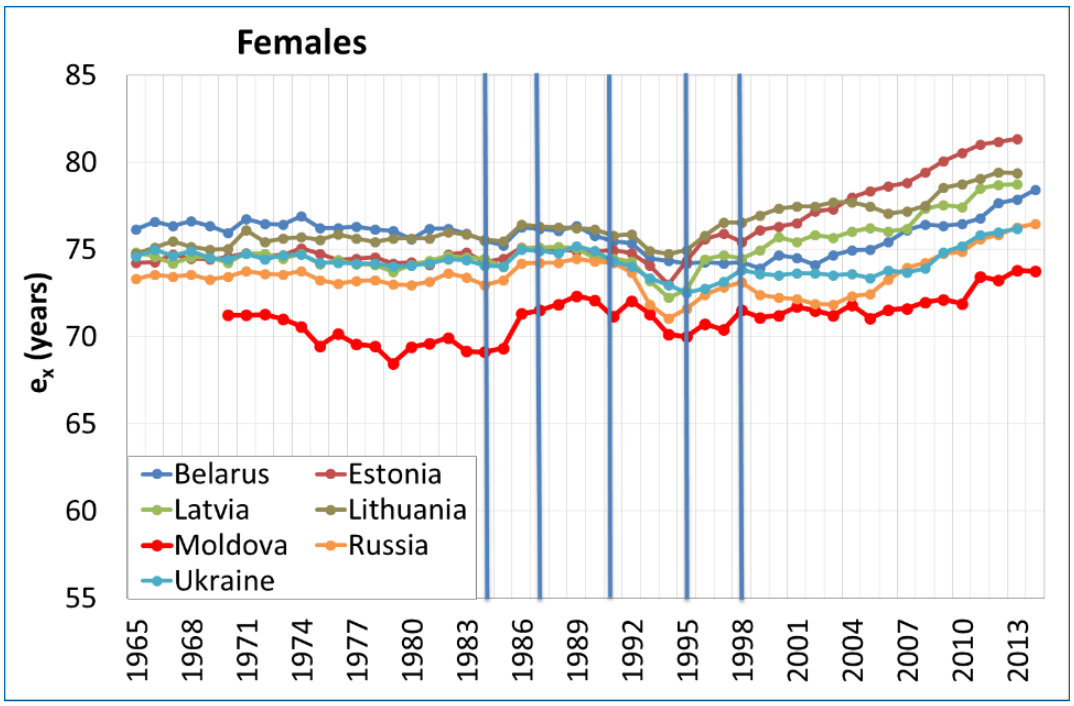


Figure 1 and 2. Life expectancy at birth in the post-Soviet countries by sex, 1965-2014
Source: For Belarus, Estonia, Latvia, Lithuania, Russia and Ukraine - www.mortality.org; for Moldova [8].

The analyzed period was divided into several stages *(Table 1)* in order to clearly outline the evolution of life expectancy at birth. Other researchers [15, 19] proposed similar stages of the change in life expectancy at birth. We can highlight six distinct stages:

1965-1984 – period of mortality increase;
1985-1987 – anti-alcohol campaign promoted by M. Gorbachev;
1988-1991 – mitigation of effects of anti-alcohol campaign;
1992-1995 – economic crisis;
1996-1998 – exit from the economic crisis;
1999-2014 – period of decrease in mortality.

A reduction in life expectancy at birth, which was more obvious for males than for females *(Table 1)* characterized the period of mortality increase (1965-1984). Several researchers have mentioned that this is the first case of sustained reversal of mortality trends observed in the 20th century [11, 16]. Thus, for men at this time, life expectancy at birth decreased on average by -0.09 years per year in Estonia and by -0.22 years per year in Moldova. In the case of women, stagnation characterized this period, and only in Moldova the decrease was more evident, therefore, the life expectancy at birth decreased on average by -0.11 years per year. The increase in mortality in the USSR was registered especially at the age of 50 and over, which was explained by some researchers as the "echo of the war". In the early 70s, the generations that had survived the difficult years of the World War II entered their 50s, at the same time it should be mentioned the poor health of generations born during the war [13].

The next stage (1985-1987) or the period of M. Gorbachev's anti-alcohol campaign promoted simultaneously in all the republics of the USSR is characterized by an impressive reduction in alcohol consumption due to restrictive rules on the sale of alcohol. From the population's health perspective, a reduction in mortality triggered by the excessive consumption of alcohol characterized this period. Thus, in all the selected countries, life expectancy has registered substantial increases, the increase being higher for men than for women. On average, life expectancy increased by 1.13 years per year for men in Moldova and only by 0.56 years per year for men in Estonia. Similarly, in Russia a significant increase of 1.04 years per year was registered. Moldova registered the highest increase for women by 0.8 years per year, while for Belarus and Latvia the life expectancy of women increased on average by 0.22 years per year.

However, the major losses to the state budget due to reduction of alcohol sales abolished the positive effects of this campaign during 1987-1988.

Table 1

Average change in life expectancy at birth in selected countries by sex, 1965-2014

Years	Belarus	Estonia**	Latvia**	Lithuania**	Moldova*	Russia	Ukraine**
Males (years per year)							
1965-1984	-0.19	-0.09	-0.14	-0.15	-0.22	-0.14	-0.17
1985-1987	0.73	0.56	0.77	0.80	1.13	1.04	0.68
1988-1991	-0.44	-0.34	-0.52	-0.56	-0.09	-0.27	-0.45
1992-1995	-0.68	-0.71	-0.99	-0.47	-0.55	-1.33	-0.85
1996-1998	-0.08	0.89	1.16	0.91	0.61	1.03	0.65
1999-2014	0.33	0.56	0.40	0.17	0.06	0.25	0.21
Females (years per year)							
1965-1984	-0.04	0.00	-0.02	0.04	-0.11	-0.02	-0.03
1985-1987	0.22	0.26	0.22	0.26	0.80	0.43	0.27
1988-1991	-0.17	-0.03	-0.12	-0.12	-0.03	0.00	-0.14
1992-1995	-0.31	-0.15	-0.45	-0.21	-0.29	-0.66	-0.45
1996-1998	0.03	0.36	0.59	0.53	0.51	0.51	0.44
1999-2014	0.26	0.39	0.28	0.19	0.15	0.21	0.16

Source: Author's calculations based on HMD data.
*Note: *Data for Moldova is available since 1970. ** Data is only available until 2013.*

During 1988-1991, the reduction of the restrictive rules on the sale and consumption of alcohol mitigated the effects of the anti-alcohol campaign. Due to the very drastic measures of the previous period, such as the clearing of large areas of vineyards (which, after all, also continued later), the consumption of counterfeit alcohol and surrogate alcohols increased. Several authors who analyzed the evolution of mortality during this period [16, 17] highlighted this fact. During this period, the increase in mortality for both sexes was less significant, especially for women. Lithuania and Latvia registered the highest mortality for men, this causing a reduction in life expectancy by -0.56 and -0.52 years respectively. The level of male mortality in Moldova during this period is stagnating.

The next stage in the evolution of mortality (1992-1995) is dominated by the economic crisis caused by the collapse of the USSR that in fact caused a much more significant decrease in life expectancy at birth, a situation that is equally valid for both men and women [4]. During this period, life expectancy at birth had decreased by -1.33 years per year for males in Russia and by -0.47 years per year in Lithuania. For females,

the largest average decrease was registered in Russia (-0.66 years per year), and the lowest in Estonia (-0.15 years per year).

A general decrease in mortality and increased life expectancy at birth characterized the last two stages (1996-1998, 1999-2014). In 1996-1998, there was a more intense increase in life expectancy at birth, largely due to the exit from the socio-economic crisis and the improvement of the economic situation. However, the selected countries registered different dynamics. Thus, men's life expectancy at birth in Latvia increased by 1.16 years per year, in Lithuania by 0.91, in Estonia by 0.89, in Russia by 1.03, in Ukraine by 0.65, and in the Republic Moldova by 0.6. Only Belarus recorded a decrease in men's life expectancy by -0.08 years per year.

The increase in women's life expectancy during this period was lower and oscillated within 0.03 (in Belarus) and 0.59 in Latvia.

During 1999-2014, we observed a trend of increasing life expectancy in all the selected countries. Compared with other countries, the increase in life expectancy in Moldova was very slow for both males (0.06 years per year), and females (0.15 years per year). Estonia and Latvia recorded the highest growth of life expectancy for both sexes *(Table 1)*. Thus for men the increase accounted for 0.56 and 0.4 years per year respectively, and for women - 0.39 and 0.28, which led to an increase in the gap in life expectancy between the Baltic countries, especially Estonia and other ex-Soviet countries – Belarus, Russia, Ukraine and Moldova.

The analysis of the absolute differences in life expectancy at birth recorded during the observed periods showed an eloquent picture of life expectancy at birth both for each period and as a total value. The increase in life expectancy at birth for men during 1999-2014 was 7.56 years for Estonia, and only 1.25 years for Moldova, and for women - 5.22 years for Estonia and 2.43 years and 2.65 years, respectively, for Lithuania and Moldova *(Table 2)*.

Table 2

Absolute differences in the life expectancy at birth in the selected countries, by sex, years 1965-2014

Years	Belarus	Estonia**	Latvia**	Lithuania**	Moldova*	Russia	Ukraine**
Males (years)							
1965-1984	-3.55	-1.69	-2.73	-2.83	-3.11	-2.66	-3.22
1985-1987	1.49	1.63	1.64	1.98	2.85	2.11	1.38
1988-1991	-1.72	-1.97	-2.52	-2.32	-0.89	-1.20	-1.96
1992-1995	-2.10	-1.90	-2.86	-1.55	-1.92	-3.85	-2.60
1996-1998	-0.47	-0.14	0.47	1.36	0.82	1.58	1.65
1999-2014	5.63	7.56	5.08	2.19	1.25	5.40	3.69
1965-2014	-1.15	6.43	2.47	0.36	-0.39	0.89	-1.51
Females (years)							
1965-1984	-0.62	0.04	-0.39	0.81	-2.13	-0.37	-0.51
1985-1987	0.93	0.57	1.12	0.86	2.17	1.02	0.88
1988-1991	-0.63	-0.04	-0.65	-0.45	-0.71	-0.03	-0.46
1992-1995	-1.14	-0.42	-1.62	-0.91	-2.06	-2.10	-1.52
1996-1998	0.00	-0.15	0.04	0.78	0.78	0.71	1.05
1999-2014	4.51	5.22	3.78	2.43	2.65	4.06	2.60
1965-2014	2.29	7.09	3.88	4.62	2.50	3.15	1.61

Source: Author's calculations based on HMD data, for Moldova based on data [8].
*Note: *Data for Moldova is available since 1970. **Data is only available until 2013.*

The analysis of absolute data points out much more clearly, the periods of convergence and divergence of mortality especially for men. Thus, a general increase in mortality, observed in all the selected countries characterized the period 1965-1984. This stage is followed by three other stages – 1985-1987, 1988-1991 and 1992-1995, which being generalized define a long period of mortality fluctuations. Within them, there are periods of mortality reduction followed by new increases, but all these changes had a synchronous aspect. Since 1996, however, we observed a new stage in the evolution of the overall mortality, prompting the emergence of the first discrepancies between the selected countries. Thus, in the period 1996-1998 a reduction in overall mortality was recorded in Belarus, a stagnation in Estonia, while in other countries the decrease in mortality was observed. After 1999, in all countries a reduction in mortality was

observed, but despite a common trend, the intensity of changes was different in the selected countries. If compared to Estonia, we can say that mortality in Moldova was stagnating rather than significantly decreasing.

The analysis of changes in life expectancy at birth offers a general view. For a clearer picture, it is necessary to analyze in more detail the changes in mortality, especially the causes of death. The comparative analysis of the causes of death for Moldova was performed by using the Estonian standard, which achieved the greatest success in reducing mortality and increasing life expectancy at birth for both men and women compared to other countries included in the analysis. Moldova in this respect represented the other extreme with the lowest values of life expectancy at birth towards the end of the analyzed period *(Figures 1 and 2)*.

In order to perform this comparative analysis, decomposition method of components proposed by Andreev [14] was applied, and the last available years were selected: 2014 for Moldova and 2012 for Estonia.

The life expectancy at birth gap for males between Moldova and Estonia was -6.4 years *(Figure 3)*. This difference was mostly due to the higher mortality rate of the adult and elderly population. Higher mortality among men in Moldova by cardiovascular diseases, digestive system diseases and neoplasms significantly determined the gap in mortality of working-age males. These were the main three causes of death, which determined the highest mortality in the 15-64 age group (over 70% of the cumulative value of -3.8 years). The mortality due to respiratory system diseases had a lower impact, causing just over 10% of the difference from the overall mortality difference in this age group.

Elderly mortality analysis revealed that the highest mortality for elderly people in Moldova, as compared to Estonia, was mostly due to the cardiovascular diseases. Thus, it accounted for more than 90% of the observed difference in mortality for this age group. Moreover, for the first age groups in the 65+ age category, higher mortality was also observed due to digestive system diseases. This, however, was only representative up to the age group 75-79 years, for the other age groups this being insignificant. At the same time, in Estonia starting with the age group of 70-74 years, there was a higher mortality due to neoplasms compared to Moldova. However, the lower mortality among men was not due to neoplasms, but rather Estonia and Moldova have different structure of causes of death, being at different stages of the epidemiological transition. Estonia has successfully completed the final phase of the epidemiological transition and successfully passed to the cardiovascular revolution stage. For this stage, a higher mortality due to degenerative diseases (diseases of the cardiovascular system, neoplasms) was specific, and their postponement to the most advanced ages [3, 12]. However, Moldova is lagging behind, and not yet completing the transition process [148, 19]. For Moldova, deaths due to cardiovascular diseases and cancers are characteristic for earlier ages. This is the reason why mortality due to cancers is higher in older ages in Estonia.

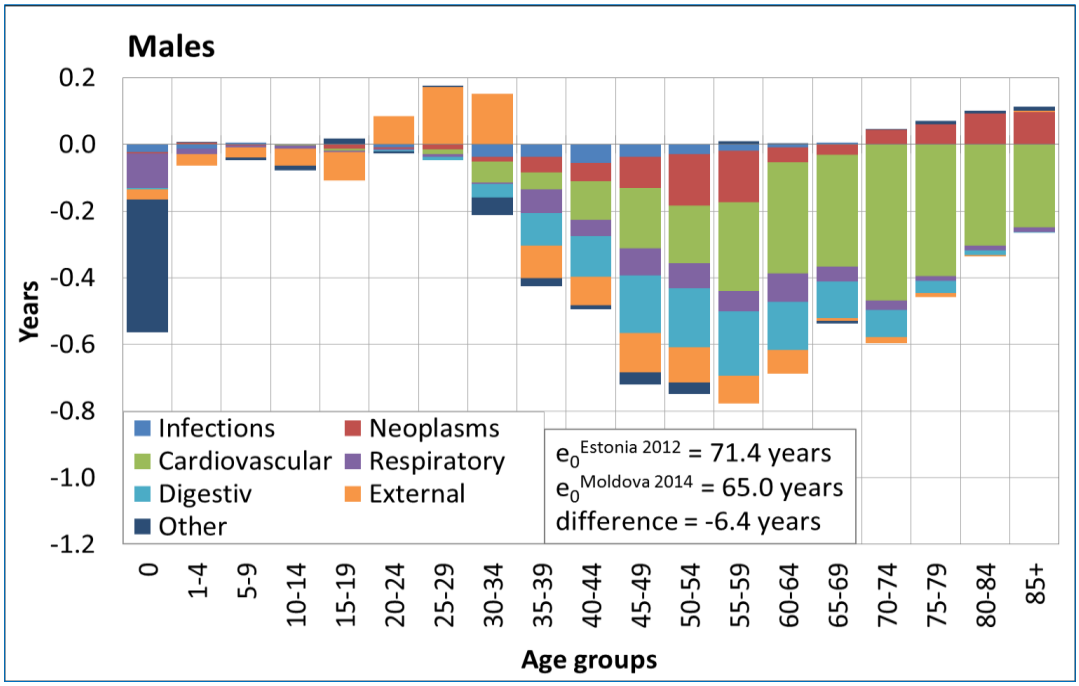


Figure 3. Contribution of the main causes of death to differences in life expectancy at birth, by age groups, between Moldova and Estonia

Source: Author's calculations based on HCD data.

Male infant mortality in Moldova was as high as that observed in Estonia. This brings a contribution of approximately -0.6 years out of the total -6.4 years in the gap of life expectancy among the selected countries. The analysis of causes of death of infant mortality showed that 70% of this increase was due to other causes of death, and about 20% due to respiratory system diseases. Such a high proportion of *other causes of death* revealed the existence of multiple causes of death with less impact, but which all together might have a more substantial impact than the major causes of death.

The gap in life expectancy at birth among women was higher than that observed for males and accounted for -7.7 years (Fig. 4). Discrepancies between men and women were not only about the value of the range, but also about the causes of death. Thus, in the case of women, the elderly population is more prominent, the contribution made by the working-age population being much lower compared to elderly.

Female infant mortality in Moldova was higher than that observed in Estonia. The structure of causes of death in this case was similar to that observed for males. Other causes of death and diseases of respiratory system were the two major causes of death that contributed substantially to the child mortality in Moldova. Similarly, the proportion of other causes of death was higher than that of diseases of the respiratory system, which accounted for 60% of the total infant mortality discrepancy, while respiratory diseases accounted for 30%.

As mentioned, the contribution of female mortality on the differences between Moldova and Estonia was shifted to the older ages, including the last age groups within the working population (55-59 years). Two major causes of death: cardiovascular system diseases and digestive system diseases characterized the specific of the structure of causes of death. The cumulative contribution of this age group (55+ years) was -5.7 years, mortality due to circulatory system diseases caused over 80% of all deaths, and the deaths from diseases of the digestive system accounted for 15% of all deaths. The contribution of mortality due to cardiovascular system diseases had an important influence on the overall gap in life expectancy of women in Moldova and Estonia, determining 60% of it. For the most advanced age groups (80+ years), the mortality due to cancers for women in Moldova was lower than in Estonia. This has the same explanation as for men. Thus, we cannot talk about a real low level of mortality due to cancers in these age groups, but only that deaths caused by neoplasms were specific to the younger population.

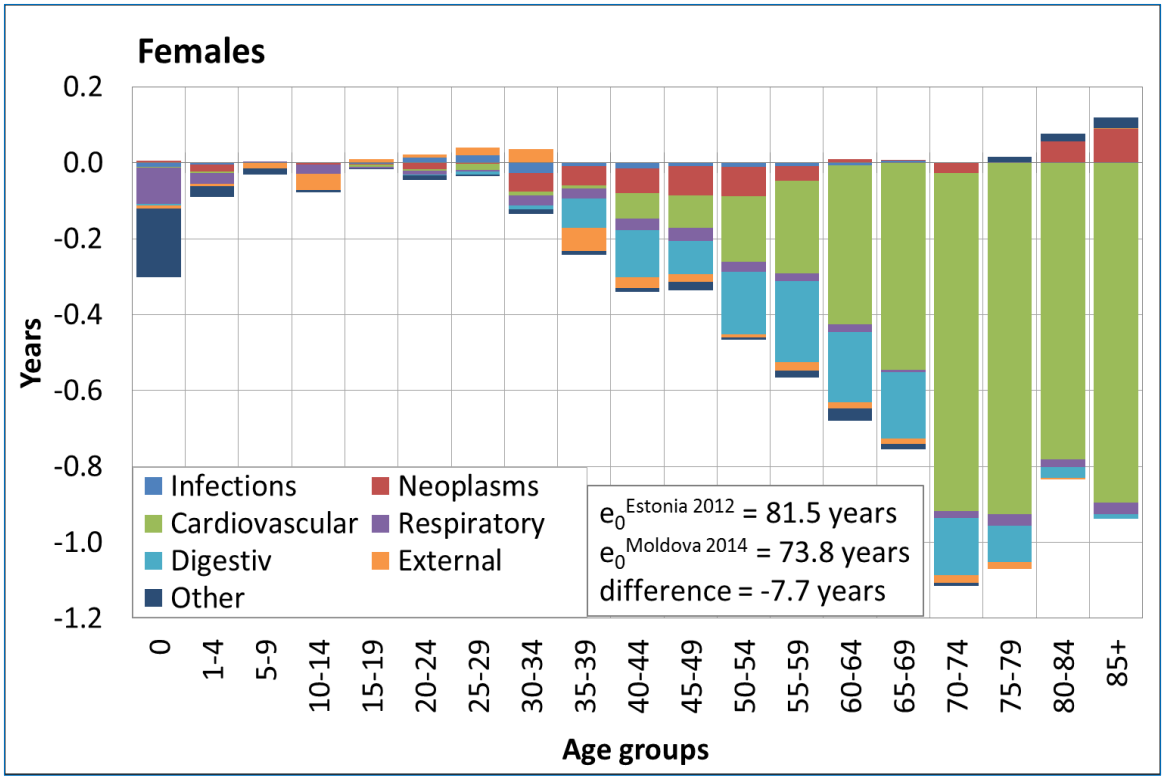


Figure 4. Contribution of the main causes of death to differences in life expectancy at birth, by age groups, between Moldova and Estonia

Source: Author's calculations based on HCD data.

Cancer mortality was one of the three major causes of death for the 30-54 years old population. This cause of death determined just over 20% of the total contribution to the differences between Moldova and Estonia in this age group (-1.5 years). For this age group, mortality due to diseases of the digestive system and of the cardiovascular system were noteworthy. The diseases of the digestive system held the highest proportion in the mortality of causes of death - just over 30%, and those of the cardiovascular system were at the same level with cancer mortality, determining just over 20% from the total contribution of this age group in the mortality differences between Moldova and Estonia.

Conclusions

Of all the selected countries, only the Baltic States have managed to make impressive progress and to move beyond the level of life expectancy at birth registered in the mid-1960s. Estonia has achieved tremendous successes compared to other post-Soviet countries in the cardiovascular revolution and the postponement of amenable causes of death, which is a determining factor in reducing mortality and increasing life expectancy.

In Moldova, the situation is opposite – the epidemic transition has just started and is not completed yet. The structure of causes of death confirms this. Reducing mortality due to cardiovascular diseases has had a major impact on the gap in life expectancy observed between Estonia and Moldova.

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DIRECTIONS OF MODERNIZATION OF UKRAINIAN EDUCATIONAL SYSTEM IN THE CONTEXT OF INCREASING YOUTH COMPETITIVENESS IN THE LABOUR MARKET

Larysa BOGUSH*[1]*, PhD, Senior Researcher, Leading Researcher,
Ptoukha Institute for Demography and Social Studies
of the National Academy of Sciences of Ukraine

The paper studies features, objectives and prospects of the development of Ukrainian educational system in the process of improving the quality of its services as a significant factor of competitiveness of graduates of vocational and higher education institutions in the labour market. The organizational and economic principles of functioning of this component of the national economy in the conditions of globalization of educational standards are grounded. The author defines urgent problems of modernization of the spectrum of professional education levels in the national and regional dimensions, the coordinated solution of which will eventually strengthen the productive potential of the population and territorial communities. Approaches to implementation of innovation strategy of increasing competitiveness of services and graduates of Ukrainian vocational and higher education institutions are generalized.

Keywords: *system of vocational education, quality of educational services, innovations in education, demand in the labor market, competitiveness of graduates and employees, Ukraine.*

În articolul dat au fost studiate particularitățile, obiectivele și perspectivele dezvoltării sistemului de educație al Ucrainei în procesul de dezvoltare a calității serviciilor prestate, fiind un factor deosebit de important în capacitatea de concurență a absolvenților liceelor și școlilor profesionale și a învățământului superior pe piața muncii. Sunt demonstrate principiile organizațional-economice ale acestei părți componente a economiei naționale în condițiile globalizării standardelor educației. Au fost stabilite problemele de urgență ale modernizării spectrului de domenii ale educației profesionale în spațiile republicane și regionale, rezolvarea cărora, în final, va consolida potențialul productiv al populației și al comunităților teritoriale. Au fost însumate abordările realizării strategiei de creștere a capacității de concurență a serviciilor și a absolvenților liceelor și școlilor profesionale și a învățământului superior din Ucraina.

Cuvinte-cheie: *sistemul de educație profesională, calitatea serviciilor de educație, inovări în educație, cererea pe piața muncii, capacitatea de concurență a absolvenților și angajaților, Ucraina.*

В статье исследованы особенности, ориентиры и перспективы развития системы образования Украины в процессе повышения качества ее услуг как весомого фактора конкурентоспособности выпускников учреждений профессионально-технического и высшего образования на рынке труда. Обоснованы организационно-экономические начала функционирования этой составляющей национальной экономики в условиях глобализации стандартов образования. Определены насущные проблемы модернизации спектра звеньев профессионального образования в общегосударственном и региональном измерениях, согласованное решение которых в итоге укрепит производительный потенциал населения и территориальных общин. Обобщены подходы к реализации инновационной стратегии повышения конкурентоспособности услуг и выпускников учреждений профессионально-технического и высшего образования Украины.

Ключевые слова: *система профессионального образования, качество образовательных услуг, инновации в образовании, спрос на рынке труда, конкурентоспособность выпускников и занятых, Украина.*

JEL Classification: I25, H44, J24, E24, J4, J13, N3.
UDC: 37.07: [331.5: 316.35]
UDC: 37+331.5] (477)

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[1] ***© Larysa BOGUSH, bogush_lg@ukr.net***

Introduction. The modernization of the educational system remains an urgent necessity in response to the challenges and needs of the national economy diversification, the development of knowledge intensive units of its specialization and the transition to a new technological structure in general, the expansion of a competitive presence in the external markets of goods and services, primarily, due to increasing competitiveness of the economically active population and business entities, as well as revival of the processes of the state joining the socioeconomic world integration processes.

Taking into account the realities of the market economy, the development of public institute of education, markets of educational services and labour in globalized world, the main task of the spectrum of vocational training levels in Ukraine is to ensure their innovative development within the strategy for improving the quality of educational services, their consumers' competitiveness, the industry itself and the national economy in general.

The innovative changes both in the state educational policy and in the system of vocational training itself are intended to found the basis for increasing the competitiveness of consumers of educational services in the labour market. Among the first ones, improvements in the mechanisms of implementation of legislative guarantees of consumption of socially necessary goods in the field of education should be noted, in particular:

- ensuring equal starting conditions for getting professional education that is in demand in the labour market (first of all, by the following factors: the quality of secondary education; economic and time access to out-of-school educational and cultural institutions that expand the opportunities and information resources for the preparation of entrants of vocational and higher education institutions; the cost-effective availability of services for vocational education itself and professional development, balancing their supply with the needs of regional economies);
- stimulating a broad access to professional education, including the formation and financing of the state and a certain part of the regional order for the training and professional development of specialists and workers on the basis of vocational and higher education institutions;
- implementing targeted measures to optimize the spatial characteristics and the organizational and economic mechanism for the development and operation of vocational educational infrastructure in order to comply with the guarantees of social inclusion of vulnerable population strata and optimize the specific expenditures of local budgets.

The complexity (multidimensionality) of the state educational policy also ensures the implementation of the programs for:

- diversification of regional economic systems, expansion of their specialization in the regional and national division of labour;
- strengthening of the innovative incentives for their sustainable development based on increasing and capitalizing the innovative potential of territorial communities;
- compensation of the negative impacts of free market for vulnerable categories of working-age population (young people first entering the labour market, the disabled, mothers with minors, etc.), employees, and small business owners.

The main directions of modernization of professional education system include a set of measures for the implementation of innovations in:

- the content, methods, forms, technologies of learning activities and training of an individual and a specialist, which is reflected in the modernization of the content of comprehensive and professional education, improvement of quality, sectoral and socioeconomic efficiency of the educational process;
- the organizational and economic mechanism for meeting socially necessary and private needs in education, which is reflected in reforming the approaches of the organization and management of the educational system, including improving the territorial organization and structure of the network of educational institutions;
- the processes of strengthening the links of territorial education systems with other parts of the economy in regions and country as a whole, including by participating in the formation and functioning of special economic zones, innovation infrastructure, serving clusters, etc.

Scientific approach of the topic and its presentation in literature. Significant results on the modernization of the Ukrainian educational system in the area of increasing the competitiveness of services and graduates of vocational and higher education institutions were obtained in the scientific papers, where:

• methodology and strategy of innovative modernization of this component of social reproduction are grounded [2-5; 20; 21];

• theoretical principles of educational services marketing, as well as other aspects of the competitiveness of professional educational institutions in the market are studied, corresponding practical problems are solved [1; 4-6; 8-11; 16; 22];

• approaches to improve the efficiency of the national professional training system of personnel at the enterprise are developed taking into account the world experience, peculiarities and shortcomings of such activities are studied [7; 9; 15];

• urgent and strategic problems of organization of practical training and applied research in higher education institutions are generalized, measures aimed at increasing the competitiveness of graduates in the labour market, including by optimizing the research activity of universities, are defined [1; 6; 7; 9; 10; 16; 21; 22];

• proposals to improve public mechanisms for financing the needs of the population in professional education are formulated [1; 7; 11; 15; 20].

The aim of the article. A synthesis of these research papers substantiates the need for further study of modernization process of the professional training system in Ukraine, as well as intrasectoral and external interactions of participants in the educational process, which result in the main indicator of the effectiveness of this sector functioning, that is the competitiveness of graduates and economically active population in the domestic and foreign labour markets.

Obtained results and discussions. The sphere of education remains one of the most innovative active sectors of social purpose, given the functions in the process of social reproduction associated with the preservation and enhancement of the intellectual, professional and qualification potential of labour force, the formation of the worldview, value assessments and orientations, the organization of life and leisure of the population. The main directions of intrasectoral innovation activity in this component of the national economy are methodological and technological innovations of resource provision and organization of educational, cultural, recreational and entertainment processes, as well as control of the quality of general and professional knowledge acquired by the target groups of the population on the basis of implementation of legislative guarantees in the sphere of rights to education, personal development, realization of labour potential, provision of decent living conditions by own efforts and through the system of social protection.

Within the educational system, the interaction of its participants (educational institutions of all forms of ownership, other legal entities providing educational services, scientific and methodological institutions, state and local educational authorities, specialized non-profit and other public organizations) implements the needs of society, population and economy in the reproduction, transmission and improvement of professional and qualification potential and ideology by forming general literacy and special knowledge, abilities and skills in a person (consumer of educational services).

The market of professional education services (national, regional) generalizes and forms a wide range of relations to meet the existing and identify the corresponding prospective needs of the economy. The trends in its functioning are determined by a combination, on the one hand, of the mechanisms of free enterprise and pricing based on the institutions competition for the consumer, and, on the other hand, by state regulation, the goals, priorities and mechanisms of which are determined by the criteria of general economic and social efficiency. The main objective of improving the organizational and economic mechanism of the professional education system in the conditions of forming the post-industrial economy and development of the information society is its further integration with the productive forces, increasing its role as a factor of the organization of life-long learning of the population, as well as knowledge intensive diversification of the economy and sustainably providing with labour resources in the regions and the country as a whole.

Significant results of innovative development of the professional education system in Ukraine are associated with the implementation of the Bologna process principles and integration into the European educational and socio-cultural space. Among them should be mentioned: the modernization of the structure (in terms of educational and qualification levels and specialties), content, curricula, forms, standards of general and professional education in accordance with the samples of the leading countries of the world; large-scale implementation of information and communication technologies in the educational process, including the field of distance learning, development of electronic software for teaching and testing the quality of knowledge, textbooks, other educational and methodical literature; creation of a system of monitoring education quality; further development of a life-long learning system; improvement of the level of organizational, managerial and financial autonomy, as well as the responsibility of professional education institutions for the quality of educational services.

At the same time, the priority innovations in professional education include: implementation of modular training and rating test system of knowledge control into the educational process; development, approval and implementation of state standards of higher and vocational education for specific occupations; computerization of libraries using electronic catalogue programs and creating electronic teaching and methodological materials funds; implementation of management electronic systems in the educational process and other spheres of educational institutions activity; formation of recognizable brands of higher education institutions in the educational services market which, among other things, highlight their characteristics by the competitiveness of graduates and activity in the field of fundamental and applied scientific research.

The system of vocational education is a significant component of the mechanisms of social inclusion, prevention of marginalization, ensuring equality of starting conditions of life activity of vulnerable population strata. The prospects for reforming and, at least, survival of this sector in the conditions of the deficit of social expenditures of different levels budgets and systemic economic crisis in the regions are still poorly defined; they remain complicated by the inadaptability of the established organizational and economic mechanism of vocational education functioning to the labour market needs in the transition economy. Among the socially sensitive problems of the transformation of training and professional development of labour personnel we should first of all note the following:

• blurriness, frequent adjustments of regulatory and legal guarantees of stable functioning and preservation of the material and technical base of state, communal, departmental vocational and technical institutions that play an important role in the reproduction of the educational, professional and qualification potential of territorial communities (local, integrated) and regions. The most typical examples are: the implementation in 2014 and abolition of the subvention for the workers training at the end of 2015; the introduction of a norm regarding the distribution of a part of the educational subvention for the provision of full secondary education to students of vocational and technical schools into the Article 103^2 of the Budget Code only as revised on 05.01.2017, which in the previous year negatively affected the practice of law-making (veto of 18.03.2016 and the rejection on 18.01.2017 of the profile Law "On Amendments to the Budget Code of Ukraine on financing vocational and technical education" dated 04.02.2016) and budgeting (in particular, implementation of the relevant regulatory documentation of the Ministry of Education and Science);

• widely expressed unpreparedness of local authorities and self-government bodies, starting with the oblast ones, for: formation and financing of a regional order for the provision of vocational education services; transition of state vocational and technical institutions to getting financed from local budgets and transfer to communal property, as defined by the Law „On the State Budget for 2016" dated 25.12.2015.

The most socially resonance manifestations of economic instability, which affect the consumption of higher education services by Ukrainian population, include:

• problematic nature of improving the public mechanisms of financing the corresponding needs under significant fluctuations of exchange rates, high risks of banking institutions functioning, the high inflation, and a significant level of shadow economy, which leads to: underdevelopment of mechanisms of provision of individual loans for higher education, retraining and advanced training (in particular, on a corporate basis, e.g. interest-free with the help of potential employers); small scale of provision of state and non-state targeted educational subsidies (grants); limited practice of returning some part of student tuition payment through the tax bodies;

• unsatisfactory regulation of the started from 2015 process of transition of higher education institutions of I-II accreditation levels (technical and specialized schools, colleges, etc.) on financing from local budgets;

• threats to the competitiveness of graduates as a result of destruction of mechanisms and complication of the organization of professional practice for students in higher education institutions.

The characteristic manifestations of the latter mentioned phenomenon are:

• problems of organization and financing of the process of professional practice within the obligations of the higher education institutions themselves, namely: reduction of bases where practice is conducted, including within the infrastructure of research and auxiliary activities of this institutions; lack of funds for labour remuneration of practice supervisors among the specialists and workers at a particular enterprise entity; problems of organizing and paying students' travel costs, as well as their accommodation in the locations where the professional practice is conducted;

• imperfection of procedures for motivating economic entities involved in conducting professional

practices in the context of: complexity of taking on students in positions corresponding to their specialization; use of trainees' work, defined by the entrepreneurs' understanding of the production process and commercial secrets; selection of practice supervisors at the enterprise entities.

Necessity for adjusting both the educational guidelines of society and territorial communities and the methods of definition and distribution of the state order for personnel training is increased in the conditions of market mechanisms of formation of demand and supply for skilled labour and blue collar occupations. The rational vector for solving this problem (with balanced consideration of educational and qualification requests of population and employers, stimulation of the processes of improving the socio-humanitarian potential and social capital of the state and regions) should be defined on the basis of systemic modernization of the technical and technological base of national production, diversification and raising the level of knowledge intensity of the Ukrainian economy, entering the different segments of external markets for goods and services of social purpose.

The principles of organizational, managerial and financial autonomy of higher education institutions of all accreditation levels, institutionalized by the new version of the Law of Ukraine "On Higher Education" dated 01.07.2014, have become a factor of significant changes in the territorial organization of their network, exponentiated by measures of the Ministry of Education and Science to optimize budget expenditures for training, to strengthen the requirements for the quality of educational services, their material and personnel support, and to improve the training level of graduates. As a result, the number of higher education institutions has rapidly declined since the beginning of this Law operation (to 657 units at the beginning of the 2016/17 academic year against 854 in the 2010/11) [14; 12]. At the same period, the above-mentioned disadvantages with the practice and strategy of reforming and funding the vocational and technical education system also led to the curtailment of its institutions network, whose number decreased from 976 to 787 units [17; 19].

The annual number of graduates from the vocational and technical education institutions in 2010-2016 declined by 38.2% to 152.8 thousand persons; 20.1% of them were unemployed people and workers who have completed advanced professional training and improved their qualification (in comparison to 23.1% in 2013). The indicators of graduation from the higher education institutions of I-II and III-IV accreditation levels (respectively, from colleges, technical schools, specialized schools, and universities, academies, institutes) decreased by 38.7 and 41.4% (to 68.0 thousand and 318.7 thousand persons) (Table 1).

Table 1

Characteristics of training and employment of vocational education institution graduates in Ukraine

Indicators	2010	2013	2016	2016 to 2010, +/-
Graduates of **vocational and technical education institutions**, thousands persons	247.4	227.3	152.8	61.8 **
including, %:				
upon the completion of primary vocational training (secondary school graduates)	77.4	76.9	79.9	2.5
upon the completion of professional education and advanced training (employees, unemployed population)	22.6	23.1	20.1	-2.5
employed by profession	84.2	82.0	80.8	-3.4
Students, trainees, who have been graduated, upon the completion of primary vocational training:				
thousands persons	191.4	174.7	122.0	63.7 **
including (%) by:				
state order	97.1	97.3	97.2	0.1
funds of legal entities and individuals	2.9	2.7	2.8	-0.1
percentage of employed after graduation from the vocational and technical education institution, who have received a job in:				
Industry	32.5	32.1	31.0	-1.5
Agriculture	9.2	9.6	10.5	1.3
Transport	17.4	16.6	16.4	-1.0

Indicators	2010	2013	2016	2016 to 2010, +/-
Communications	0.6	0.6	0.5	-0.1
Construction	13.8	12.9	12.1	-1.7
trade and catering	16.3	18.1	19.3	3.0
housing and communal services, non-industrial types of household services for population	10,2	10,1	10,2	0,0
The number of students of **higher education institutions** who have completed the primary and final cycles of training and have received the appropriate educational and qualification level, thousands of persons	958.5	793.8	525.4	54.8 **
including, %:				
graduates of higher education institutions *	68.3	72.6	73.6	5.3
persons who studied at the expense of budgets:				
State	33.8	37.8	42.7	8.9
Local	3.2	3.6	4.5	1.3
Graduates of higher education institutions, thousands of persons:				
institutions of the I-II accreditation levels (colleges, technical schools, specialized schools)	110.9	91.2	68.0	61.3 **
institutions of the III-IV accreditation levels (universities, academies, institutes)	543.7	485.1	318.7	58.6 **
by educational and qualification levels,%:				
Master	14.3	16.3	13.2	-1.1
Specialist	41.7	36.8	27.3	-14.4
Bachelor	18.4	20.9	27.5	9.1
junior specialist	25.6	26.0	32.0	6.4
The percentage of graduates of higher education institutions of all accreditation levels who received an appointment to work	27.8	27.2	17.6	-10.2
The proportion of these graduates by source of funding for their education from budgets, %:				
State	74.1	77.1	69.2	-4.9
Local	10.0	11.5	18.2	8.2

Source: Compiled and calculated by the author according to: [17-19; 12-14].
** without students who have completed the appropriate training cycle (in particular, for bachelor's degree) and continue their education in order to obtain a higher educational and qualification level*
*** 2016 to 2010, %.*

Along with the consistent reduction of students and graduates contingent caused by the effects of the demographic crisis, as well as a decrease in the scale of professional education and advanced training of workers and unemployed population, it is worth to note a number of negative trends in the development of the Ukrainian vocational education system in the context of providing a decent level of youth competitiveness in the labor market (Tables 1, 2). These trends, in particular, are:

- consistent growth of high unemployment rates of the population aged 15-24;
- reduction of employment of graduates of vocational and technical education institutions in industry, construction and transport, i.e., links that have a powerful effect on the pace of economic development;
- a significant number of graduates of vocational and technical and higher education institutions among the registered unemployed who were not employed up to 1 year, as well as among the total number of unemployed aged 15-70;
- decrease in the proportion of graduates of higher education institutions of all accreditation levels who received an appointment to work;
- subjectively and objectively negative assessments of the competitiveness level of vocational education as a factor of despair in work search opportunities.

Table 2

Unemployment rate of Ukrainian youth and prevalence of its certain causes

Indicator	2010	2013	2016	2016 to 2010, +/-
Unemployment rate by age groups,%:				
15-24	17.4	17.4	23.0	5.6
25-29	9.9	8.7	11.7	1.8
30-34	7.9	6.6	8.9	1.0
For comparison:				
15-70	*8.1*	*7.2*	*9.3*	*1.2*
15-59 (working-age population)	*8.8*	*7.7*	*9.7*	*0.9*
15-24 years old in the EU countries	*20.8*	*23.2*	*18.7*	*-2.1*
The number of registered unemployed who were not employed up to 1 year (thousands persons) among the graduates of:				
secondary comprehensive schools	2.7	1.9*	…	…
vocational and technical education institutions	11.0	6.3*	…	…
higher education institutions	18.9	12.5*	…	…
The proportion of graduates in the total number of registered unemployed who were not employed up to 1 year (%), by types of education institutions:				
secondary comprehensive schools	0.6	0.4*	…	…
vocational and technical education institutions	2.3	1.4*	…	…
higher education institutions	4.0	2.8*	…	…
The number of unemployed who were not employed after graduating from secondary and higher education institutions:				
thousands persons	289.3	275.9	261.8	90.5 **
% of the total number of unemployed aged 15-70	16.2	17.5	15.6	-0.6
The proportion of the economically inactive population who became despondent in the search of work (%), by age groups:				
15-24	0.9	0.5	0.6	-0.3
25-29	3.7	1.9	2.1	-1.6
30-34	3.8	2.6	1.8	-2.0
For comparison:				
15-59 (working-age population)	*2.2*	*1.3*	*1.3*	*-0.9*
all economically inactive population aged 15-70	*1.3*	*0.8*	*0.8*	*-0.5*
The number of unemployed after graduation from secondary and higher education institutions, who became despondent in the search of work:				
thousands of persons	35.4	19.7	14.6	41.2 **
% of the total number of corresponding contingent of working-age population	20.2	20.5	16.0	-4.2

Source: Compiled and calculated by the author according to: [23-26].
** 2012, ** 2016 to 2010, %, … data not available*

Thus the competitiveness of a higher education institution in the market of educational services now depends even more on the success of its marketing activities, as well as on the effectiveness of the combination of teaching and methodological, organization and coordination, and diagnostic and forecasting directions of work. The revival of innovative activity of higher education institutions in the field of modernization of technologies of organizational and managerial activity and educational process (as well as conducting and commercializing the results of scientific research) is expected from the latest amendments to the Budget Code. According to these changes, a higher education institution is allowed to place income from core activities, funds of charitable contributions and grants on the accounts of the state banks, including keeping on deposit temporary free budget funds received for paid services.

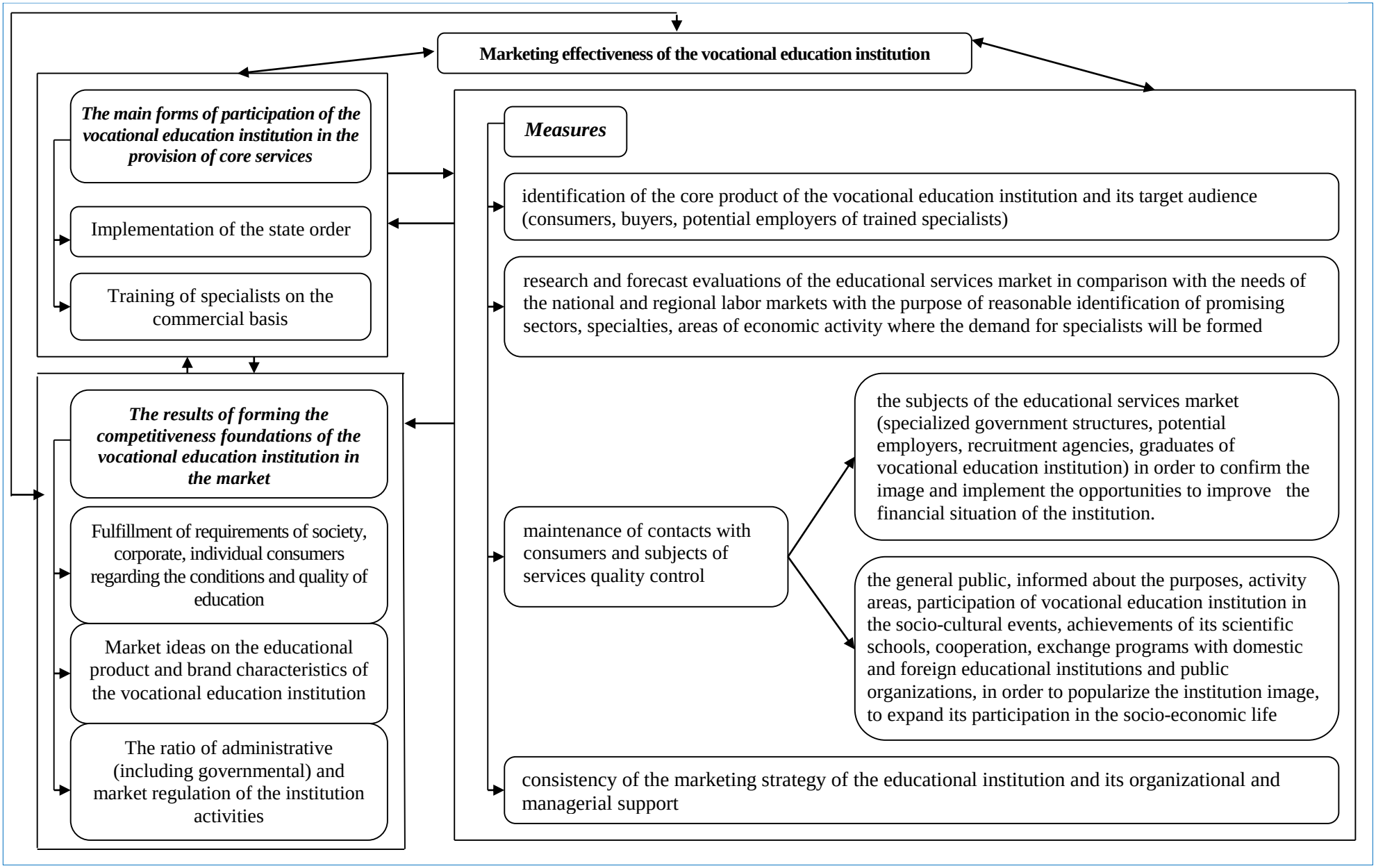

Figure 1. Approaches for improvement of the marketing efficiency of vocational education institutions in Ukraine

Source: Developed by the author.

The effectiveness of the marketing of a vocational education institution (Figure 1) within both participation in implementation of the state order and training of specialists on a commercial basis is related to the following measures as:

- identifying a specific product of a higher education institution and its target audience (consumers, customers, potential employers of trained specialists);
- conducting research and predictive assessments of the educational services market in comparison with the needs of the national and regional labour markets, which increases the validity of identifying promising sectors, specialties, areas of economic activity, where demand for specialists will be formed;
- maintaining contacts with: subjects of educational services market (specialized government agencies, potential employers, recruiting agencies, graduates) to confirm the image and implement opportunities for improving the financial situation of the educational institution; general public informed about the goals, activity directions, participation of the higher education institution in socio-cultural events, achievements of its scientific schools, cooperation and exchange programs with domestic and foreign educational institutions and public organizations in order to popularize the image and expand the participation of the institution in the socioeconomic life;
- implementing of a consistent strategy of marketing and its organizational and managerial support.

The basis of the competitiveness of a higher education institution in the educational services market forms a balance between its ability to offer acceptable conditions for obtaining both quality of education and the ability of society represented by state, ordering the training of personnel, and potential private consumers to pay for the relevant services. The fulfillment of requirements set by corporate and individual consumers forms the conjuncture for educational services, their social and market components, and, as a result, market ideas about the educational product and brand characteristics of a higher education institution, the ratio of state and market regulation of its activities.

The improvement of students' training for occupational careers requires effective cooperation and interaction between institutions of professional education, the sectoral ministry, other specialized government agencies, trade unions and employers' organizations on:

- conducting research to investigate the needs and qualification requirements for specialists by the directions of training (specialties);
- realizing the rights of vocational education institutions on the independent formation of curricula, taking into account the results of labour market research, the principle of interdisciplinarity (primarily on the study of subjects and courses in Humanities), as well as attaching to the curriculum a segment formed from the disciplines selected by the students themselves (according to the recommendation of the Ministry of Education and Science, this segment can cover at least a quarter of its total);
- promoting the links between vocational education institutions and employers for conducting students' professional practice, acquiring the necessary skills and initial qualifications by them;
- improving professional practice programs in order to full implementation of practical issues of curricula and better assimilation of knowledge; promoting the cooperation between the teachers, in particular between the practice supervisors from educational institutions departments and enterprise entities in the preparation of practice training programs;
- stimulating the processes of: implementation of applied research programs in higher education institutions; acquiring by these institutions the status of resource training, methodological and research centers in the priority sectors of the economy of regions and the country as a whole; participation of vocational education institutions in the activities of such centers, territorial educational, research and industrial complex facilities and a range of innovative structures (technology parks, research consortia, innovative and technological clusters, etc.);
- implementing administrative and fiscal measures which ensure: getting the first job by graduates and their early adaptation in primary positions; encouraging enterprises and organizations that provide practice bases and first jobs for graduates, as well as enter into agreements with educational institutions on the production of goods, services (including in the field of training and retraining), research.

Experience of developed countries requires standardizing and spreading, where the accepted mechanisms to stimulate enterprises for cooperation with higher education institutions and invest into their own human capital, in particular, are:

- provision of tax exemptions, preferential loans for organization of vocational training, state subsidies for employers, who create additional places for professional training and on-job training;
- provision of targeted state subsidies for the on-job training, in particular, within the programs for

increasing the competitiveness of sectors of the specialization of territorial economic complexes, rehabilitating and stimulating the development of depressed regions, preventing structural unemployment;

- creation of educational funds regulated by collective agreements, the assets of which are formed at the expense of payroll tax or from state subsidies.

Conclusions. Assessing the dynamics of indicators and criteria for the effectiveness of reforming the organizational and economic mechanism of the vocational education system for society and its specific groups, it is reasonable to note the following positive changes, including:

- renewal of the content of basic comprehensive and vocational education, implementation of a system of relevant state educational standards (including standards for specific occupations), as well as the structure of personnel training in the context of educational and qualification levels and specialties;
- deepening the profile orientation of teaching in high school; implementation of external independent assessment of knowledge of comprehensive education institutions graduates;
- improvement of accreditation and licensing procedures for educational institutions;
- expansion of the state order for the skilled workers training; improvement of the structure of the state order for the training of specialists in knowledge intensive occupations and specialties in higher education institutions;
- increase of the level of administrative, educational, methodological, and financial autonomy of higher education institutions, simplifying the procedures for using their income from core activities, including the provision of paid educational services;
- development of methods for the formation and distribution of state order for personnel training, coordinated with other tripartite institutes (representatives of employers and trade unions).

The orientation of the vocational education system on the implementation of the socially oriented economy principles (in particular, ensuring the equity of the population educational opportunities and the educational space integrity) (Figure 2) exacerbates the need to:

- optimize financial, budget and fiscal regulators of access of low-income strata and middle-class population to quality vocational training (using educational vouchers, interest-free education loans, state targeted educational subsidies (grants), scholarship fund, etc.);
- implement the state programs for training skilled workers in mass professions (including on the educational and production basis of economic entities) developed with the participation of sectoral ministries and departments, associations of employers' representatives;
- improve the methods for determining, distributing the prospective parameters of the state and regional orders for the training of skilled workers and specialists in the regions and among institutions of higher, and vocational and technical education of all forms of ownership, as well as technologies of forecasting and explaining this parameters among entrants and broad public.

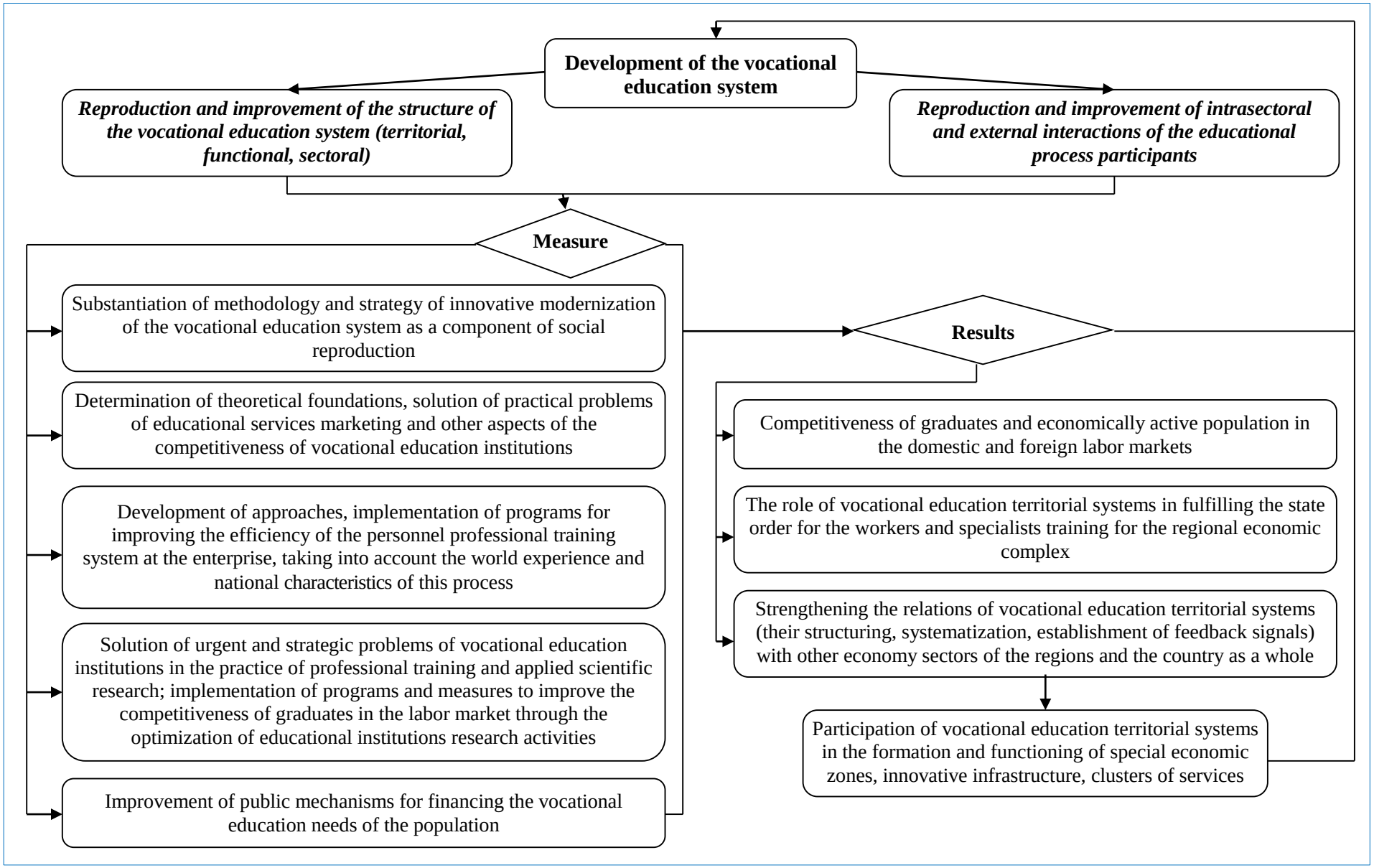

Figure 2. Conceptual approaches to modernization and improvement of the functioning efficiency of the Ukrainian vocational education system

Source: Developed by the author.

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OTHER COMPARTIMENTS

REVIEW
on a scientific report: "AGRICULTURAL LAND TURNOVER ON THE BASIS OF A RURAL-SAVING MODEL OF THE AGRARIAN SYSTEM OF UKRAINE"
Author: Valerii ZHUK, Doctor of Economics, Professor, Academician of the National Academy of Agrarian Sciences of Ukraine, Honored Scientist of Ukraine

Land resources represent the basis of the functioning of any society. Science faces the task to seek the ways of optimizing the relations associated with the ownership, use and disposal of land.

In his scientific report, Professor Valerii Zhuk shows that Ukraine has the most productive land potential in Europe. Almost 26 million hectares of agricultural land in Ukraine are distributed among 6.8 million peasants. At the beginning of 2017, only about 15 percent of them cultivate the land independently. All others lease their land.

An agroholding model of the agrarian system was formed in Ukraine during the period from 2005 to 2017. 150 large companies cultivate about one third of agricultural lands in Ukraine. There is a tendency towards further consolidation of business.

Ukraine's agrarian sector has become monocultural and oriented to the export of raw materials. Rural population employment in agricultural production has decreased tenfold. Family farming is in decline.

The International Monetary Fund requires Ukraine to abolish the moratorium on the sale of agricultural land. This moratorium has been in force in Ukraine since 2001. At the end of 2017, the Parliament of Ukraine once again extended its action. The state institutions of Ukraine are not ready to introduce agricultural lands market.

However, big business is actively fighting for the introduction of the land market. According to various expert estimates, large businesses have already bought about 3-5 million hectares of land bypassing the current legislation. Ukrainian peasants are desperate and sell their land for nothing.

At the same time, the Ukrainian nation is genetically tied to the land. The land represents a significant component of the national idea of Ukraine. It is only the fear of the people's anger that deter politicians and oligarchs from the immediate introduction of the land market.

That is why the scientific report on the agricultural land turnover prepared by the academician of the National Academy of Agrarian Sciences of Ukraine Valerii Zhuk deserves special consideration and has to be taken into account.

The report covers ideological, philosophical, economical and theoretical approaches to issues of ownership of agricultural land and their circulation.

The consequences of land reform and land market introduction on the basis of agroholding and rural-saving agrarian models are considered.

The effectiveness of systemic and synergetic enhancement of land reform and land market effectiveness due to administrative-territorial, tax, social and informational reforms is revealed.

Legal and regulatory provisions concerning the basic preconditions for the introduction and functioning of pro-peasant and rural-saving land use are proposed.

This report is motivated by necessity of:

- removal of political and civic tension around the issues of the moratorium on the sale of agricultural land;
- the disclosure of the mechanism of transfer and capitalization of local resources for the development of rural areas;
- the formation of a paradigm (national idea) of Ukraine-saving in a global world.

The report consists of 6 paragraphs and includes 57 illustrations. It has all the grounds for being recognized and taken into account in the activities of public authorities, social entities, science institutions, education and business, not only in Ukraine, but also in other post-socialist countries.

The report will be interesting for all scholars who study the development of rural areas and land relations.

Reviewer:
Alexandru STRATAN, Cor. Mem. of ASM, PhD, Professor,
National Institute for Economic Research, Moldova

REGULATION
of the publication of scientific articles in the journal "Economy and Sociology" B category

The Journal "Economy and Sociology" of the National Institute for Economic Research of the Academy of Sciences of Moldova is a high-level scientific platform which tackles the most actual issues from the economic and social fields. The journal is addressed to researchers, professors, PhD students and those interested in the topic of the journal.

Objectives of the Journal:

- theory and methodology development in the economic and social fields;
- elucidating the key issues of economic and social development of the Republic of Moldova and other countries;
- extending and integrating the scientific community from the economic and social fields;
- international promotion of scientific results obtained by scientists from the Republic of Moldova by publishing the Journal in English language.

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