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TRENDS IN COOPERATIVE LEGISLATION: WHAT NEEDS HARMONIZING?

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Abstract

Taking globalization as a fact and sustainable development as a common goal, the article pleads for a more harmonized approach by legislators as concerns cooperative law. Whilst providing guidance in this respect, public international law also creates uncertainties, not the least the one concerning the very object of cooperative law, namely cooperatives. A harmonized approach is vital, if cooperatives are to contribute to sustainable development. However, instead of unifying cooperative laws, the article suggests harmonizing the interpretation of the universally recognized definition of cooperatives and to develop common cooperative legal principles that would translate into a vital variety of cooperative laws.

1. Introduction

When starting to work on cooperative law in 1992 the author of this short contribution was thought to have turned his interest toward legal history. Less than ten years ago, some still considered the subject as part of the "archeology of enterprise forms".

As of lately, such views have vanished. Indeed, academics and practitioners alike have come to think again of cooperatives as a legal form of enterprise worth considering. May the fact that cooperatives have been included in 2016 into the List of the Intangible Cultural Heritage of Humanity by the UNESCO demonstrates this renewed interest!

There are three main reasons for this change of mind. Firstly, the economic, social and societal impact of cooperatives cannot be overlooked anymore; secondly, there is a growing awareness that the common goal of sustainable development is difficult to pursue without enterprises, like cooperatives, which by their objective have to address social justice issues; and, thirdly, law is being recognized again as a necessary, albeit not a sufficient, element of the development of enterprises in general.

As concerns the economic, social and societal impact of cooperatives, it is to be noted that cooperatives count more than one billion members world-wide, who improve at least in part their living conditions through cooperatives; that the number of direct employment by cooperatives stands at some 250 million; and that cooperatives contribute considerably to the GNPs of their countries. Cooperatives are active in all sectors, increasingly also in sectors which used to be considered public, such as utilities, education, social and health care. Cooperative enterprises

range from small and medium sized enterprises to very large entities, from single to multi-purpose; they have homogeneous memberships or are composed of so-called multi-stakeholder groups. Their interpenetration of the social, economic and political fabric varies – it being probably the strongest in Switzerland. It is hard to belief, although not sufficiently researched, that it is a pure coincidence that countries with a stable political system over long periods of time are also those where the cooperative sector is strong. Famous examples of cooperatives are the London Philharmonic Orchestra; the Toulouse Chamber Orchestra, which is the oldest chamber orchestra in the world; the Himmelb(l)au architects bureau; the Society for Worldwide Interbank Financial Telecommunication, SWIFT; Mondragon Corporation; the World Air Traffic Controllers´ Association; the enterprise that organizes the logistics in most airports, operating out of Geneva; the most common housing scheme in New York City; KPMG international; Intersport international; Best Western international etc.

As concerns the common goal of sustainable development, it has been recognized by the International Court of Justice since 1997 as a concept of public international law. [1] Sustainable development presupposes the possibility of development. The only known source of development is diversity in its two aspects, biological diversity and cultural diversity, including a diversity of forms of enterprises. The central aspect of sustainable development is social justice. It regenerates most effectively through democratic participation in the decisions on what and how to produce and how to distribute the produced wealth. The factors of globalization render the state and the labor market partners, who used to organize this kind of participation, ever less capable of doing so. This is why attention must shift toward enterprises that allow for democratic participation, like cooperatives.

As concerns the role of law in the development of enterprises, lawyers are not prepared for the change of attitude toward cooperative law. Decades of neglect have left us without a theory of cooperative law, i.e. without a canon of mutually referential principles, notions, rules and praxes which would institutionalize the idea of cooperatives and would help us find answers to questions which I shall raise here.

After a brief review of the history of cooperative law and highlighting its trends, and before concluding with few remarks on the harmonization of cooperative law, I shall discuss some certainties and many more uncertainties concerning cooperative law.

2. Results and discussions
2.1. Trends in cooperative legislation

The history of cooperative law starts in the mid-19th century in England, shortly after the founding of what is considered to be [2] the first modern cooperative, namely the cooperative set up by the Rochdale Society of Equitable Pioneers in 1844 and similar enterprises. These first cooperatives

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[1] For details see Henrÿ, Hagen, Sustainable Development and Cooperative Law: Corporate Social Responsibility or Cooperative Social Responsibility?, in: International and Comparative Corporate Law Journal Vol.10, Issue.3, 2013, 58-75.

[2] "Considered to be", because others claim an earlier start, for example by Scottish weavers in the 18th century and by the Decembrists in Russia in the 1830ies already.

emerged as a response to the social questions, which industrialization caused, but did not address. They were, so to speak "children of necessity".

Since then, three trends have marked cooperative law, namely, a pronounced distinction of the cooperative form of enterprise from other organizational forms over a period of ca. 120 years, roughly from 1850 to 1970; an approximation of the legal structural features of cooperatives with those of capital-centered enterprises ("companization"), starting at the beginning of the 1970ies; and a mutual approximation of enterprise forms as of the 1990ies, while the center of cooperative law-making has been shifting since then from the national to the regional and international levels.

The first trend covers several divides between countries, which are still relevant today. In the planned economy countries cooperatives and cooperative law are seen as part and parcel of the execution of the state economic plans. In the colonies, which later became the so-called developing countries, and contrary to what had occurred in the countries where cooperatives and cooperative law originated, namely Europe, cooperatives and cooperative law were seen as a development tool for governments. There, the establishment of the first modern cooperatives was a consequence of cooperative law and not the result of a sociological reality. [3] Another divide pertained to the fact that the type of the first cooperatives in a country would also be the mould for the cooperative law, with lasting consequences until today. Still another divide relates to the development of the welfare state, labor law and consumer protection legislation. On the one hand, this led to the neglect of the social aspect of the objective of cooperatives. On the other hand, it allowed for cooperatives to become "children of choice", instead of perceiving them only as "children of necessity". But it also led to a persisting divide of countries, depending on which aspect of the objective of cooperatives they put emphasis on: more on the economic or more on the social aspect. Finally, this period, 1850-1970, is also the time when a cooperative legal theory developed. [4]

The second trend, the "companization" [2] [5] leads to the neglect of the non-economic aspects of the objective of cooperatives, as it disregards the functional relationship between the objective of an enterprise and its legal form. In addition, the companization exacerbates the specific control risks in cooperatives that ensue from a triple information gap: one between the management and the board of directors, one between the board of directors and the supervisory committee, if any, and one between that committee and the members.

The companization of cooperatives is reinforced by the application of other laws, such as for example labor law, competition law, accounting standards, tax laws, if these are modeled on capital-centered companies and not adapted to the specifics of cooperatives.

The companization is a consequence of economics being reduced to econometrics and of the assessment of the competitiveness of enterprises by the sole criterion of their financial performance. As from that period, the 1970ies, the cooperative idea is being questioned.

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[3] This brief account neglects the development in other parts of the world, especially in countries, which were not colonized by European powers.
[4] To mention but one name: Otto von Gierke.
[5] As for details concerning this "companization", see Henrÿ, Hagen, Quo Vadis Cooperative Law?, in: CCIJ Report No. 72/2014, 50-61 (in Japanese. Manuscript in English).

Cooperatives disappear from political party programs, from bilateral and multilateral development programs, from the policy agendas of national governments, regional and international organizations and also from the research and education curricula [3]. [6] As a consequence, cooperative legal theory does not develop any further.

The third trend, post 1989, is marked by growing social disparities [7] and a diminishing capacity of the welfare state and the labor market partners to cater for social justice [4, 5, 6]. [8] Social injustice is the major stumbling block to sustainable development. This is one of the reasons why Corporate Social Responsibility (CSR) is juridifying. As the debate on the CSR is shifting from behavioral aspects to governance issues, this leads to a convergence of enterprise forms. The awareness grows that the isomorphization of enterprise forms contradicts the requirement of diversity as a source of development and that it weakens the resilience of economic systems against shocks [7]. [9]

A number of international texts, adopted post 1989, recognize the importance of a cooperative law that distinguishes cooperatives from other enterprise forms. The most important among these texts are the 1995 International Cooperative Alliance Statement on the co-operative identity (ICA Statement) [8], [10] the 2001 United Nations Guidelines aimed at creating a supportive environment for the development of cooperatives [9] [11] and the 2002 International Labour Organization Recommendation No. 193 concerning the promotion of cooperatives (ILO R. 193) [10]. [12] The latter text is central to our discussion. It constitutes the nucleus of the public international cooperative law. Despite its denomination as "recommendation" it is legally binding as far as cooperative law is concerned. Two groups of arguments support this opinion: (1) the democratic legitimacy of ILO R. 193, demonstrated, amongst others, by its integrating the text of the ICA Statement, and (2) the behavior of governments before and after the adoption of ILO R. 193, respectively prefiguring and endorsing the content of the ILO R. 193 [11]. [13]

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[6] As for the latter, see the recurrent reference to this shortcoming by many of the authors who contributed to: Hagen Henrÿ, Pekka Hytinkoski and Tytti Klén (eds.), Co-operative Studies in Education Curricula. New Forms of Learning and Teaching, Senäjoki and Mikkeli: University of Helsinki, Ruralia Institute Publications series No.35, 2017.

[7] See interview with Angus Deaton (Nobel Prize 2015) based on his book "La grande évasion" (orig. in English), Paris: PUF 2016), in: La Matin Dimanche 11.9.2016, 26: "Or, les inégalités se renforcent depuis les années 70 et se sont accélérées avec une mondialisation … ».

[8] See Henrÿ, Hagen, Superar la crisis del Estado de bienestar: El rol de las empresas democráticas. Una perspectiva jurídica [To Overcome the Crisis of the Welfare State: The Role of Democratic Enterprises. A Legal Perspective], in: Revista Jurídica de Economía Social y Cooperativa (CIRIEC-España) 24/2013, 11-20; Idem, Social Justice through Enterprises. The End of the 1972/1973 Conjuncture? A Legal Perspective, in: International Journal of Social Quality 5(2), Winter 2015: 81–96; Idem, Social Justice in the Global World – the Role of Enterprises, in: Justice and Solidarity: The European Utopia in a Globalising Era, European Academy of Sciences & Arts, eds. Juhani Laurinkari & Felix Unger, Kuopio: Grano 2015, 88-99.

[9] As for the resilience of a multi-pillar banking system for example, see Groeneveld, Hans, The Value of European Co-operative Banks for the Future Financial System, in : Johanna Heiskanen, Hagen Henrÿ, Pekka Hytinkoski and Tapani Köppä (eds.), New Opportunities for Co-operatives: New Opportunities for People. Proceedings of the 2011 ICA Global Research Conference, Mikkeli and Seinäjoki/Finland: University of Helsinki/Ruralia Institute Publications No.27, 2012, 185-199.

[10] International Co-operative Review, Vol. 88, no. 4/1995, 85 f.; http://ica.coop/en/whats-co-op/co-operative-identity-values-principles

[11] UN doc. A/RES/54/123 and doc. A/RES/56/114 (A/56/73-E/2001/68; Res./56)

[12] The Promotion of Cooperatives Recommendation, 2002. ILC 90-PR23-285-En-Doc, June 20, 2002. At : www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:R193

[13] For a detailed discussion of these arguments, see Henrÿ, Hagen, Public International Cooperative Law: The International Labour Organization Promotion of Cooperatives Recommendation, 2002, in: International Handbook of Cooperative Law, ed. by Dante Cracogna, Antonio Fici and Hagen Henrÿ, Heidelberg: Springer 2013, 65-88.

This public international cooperative law leaves us with some certainties, but also with many more uncertainties as concerns cooperative law [12]. [14]

2.2. Certainties and uncertainties as concerns cooperative law

1. Certainties

Paragraph 2 of the ILO R. 193 integrates the definition of cooperatives as contained in the ICA Statement. This definition makes no reference to the size, sector (reinforced by Paragraphs 1 and 12) or social strata of the members. Apart from laying down the objective of cooperatives, it outlines the basics of the legal form through which and how this objective is to be pursued. Paragraph 7 of ILO R. 193 emphasizes the principle of equal treatment of cooperatives. The (ICA) cooperative values and principles are contained in Paragraph 3 and in the Annex to the ILO R. 193. Together with the definition, they constitute the identity of cooperatives. Cooperative law needs to translate this identity. Furthermore, in its Paragraph 6 the ILO R. 193 emphasizes the importance for cooperatives to form unions and federations and to be audited regularly, taking their specifics into consideration.

2. Uncertainties

The uncertainties relate principally to the very object of cooperative law, i.e. to the notion of cooperatives. The definition of cooperatives as enshrined in Paragraph 2 the ILO R. 193 reads as follows. "For the purpose of this Recommendation, the term "cooperative" means an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise." This definition deviates in some respects from the one enshrined in the ICA Statement.

The cooperative values and principles guide the interpretation of this definition [13] [15] and must be read in the context of globalization. Globalization is driven by the digitalization of economic processes and social relationships. It brings about radical socio-politico-economic changes. Challenges are the internet of things, Big data and the disappearance of employment, not that of "work".

I shall demonstrate this by briefly raising questions concerning each of the elements of the cited definition of cooperatives.

- *"For the purpose of this Recommendation"*. This formulation hints to the fact that the ILO R. 193 is part of general public international law. Two of its elements, namely the repeated recognition of sustainable development as a concept of public international law by the International Court of Justice and the two binding 1966 Covenants on Human Rights, oblige legislators to strike two balances. One between the three aspects of the objective of cooperatives and one between the two elements of the structure of cooperatives, namely "association" and "enterprise".

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[14] As for a detailed presentation of the contents of the ILO R. 193 cf. Henrÿ, Hagen, The Relevance of ILO Recommendation No. 193 Concerning the Promotion of Cooperatives for Cooperative Legislation, in: Analele Stiintifice ale Universitatii Cooperatist-Comerciale din Moldova, 2012, vol. 11, 19-28.
[15] See also ICA Guidance notes to the cooperative principles, 2015, at: www.ica.coop

- *"autonomous (association of persons)"*. Apart from accommodating the notion of autonomy as regards its literary sense, the legislator must be aware of the fact that the autonomy of (potential) cooperators is both widened and narrowed by the effects of globalization. It is widened as ever more rules of the cooperative laws are formulated as default rules, allowing cooperators to regulate almost any issue through their statutes/byelaws. Where this widens the scope of their autonomy, it limits the government to pursue policy aims through organizational enterprise law. It is narrowed by the phenomenon of Big data and the organizational integration of enterprises into vertical and horizontal value chains.

- *"association (of persons):"*. There is no consensus on whether cooperatives are partnerships, societies, a special kind of capitalistic company, or a sui generis type. The answer to this question is relevant, for example, for statistics, for the liability of the members, the application of default rules. There is also a trend in legislation to bilateralize (by contract) the relationship between the members and the cooperatives. Where such contractual arrangements might be necessary in single cases, for example in the case of a risky investment by the cooperative that requires assurance that the members will use the services of the cooperative for which the investment is made, such bilateralization/contractualization changes the very nature of cooperatives as being *associations* of persons. *Obligationes in solidum* (as an expression of the legal principle of solidarity) are vital for cooperatives and difficult to materialize through contractual relationships. Contracts relate to specified purposes, whereas associations allow for the pursuit of a wider range of purposes under a general one.

- *"(association of) persons"*. The question is whether also legal persons may be members of primary cooperatives. Public international law and the general understanding of the term "person" by lawyers point to that being possible. However, in many countries, legal persons are not allowed to be members of primary cooperatives. This restriction is a hindrance for the development of enterprises, especially of small and medium sized enterprises that in a number of countries have been pooling successfully their strengths and mitigating their weaknesses by setting up primary cooperatives [14]. [16] The possible risk of legal persons overriding the interests of natural persons in cooperatives with mixed membership, where such membership is accepted by the natural person members, may be reduced through adequate rules in the byelaws of the cooperative [15]. [17]

- *Economic, social and cultural needs and aspirations"*. These aspects of the objective of cooperatives need to be kept in a balance, considering overarching policy aims, such as sustainable development and Human Rights issues (cf. above "for the purpose of this Recommendation"). The reasons that led to companizing cooperatives are not valid anymore. Financial performance is still an important aspect of the competitiveness of enterprises, but it is not the only one anymore. Equally important is the normative capacity of enterprises to contribute to sustainable development. This shift is also prompted by a

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[16] See Göler von Ravensburg, Economic and other benefits of the entrepreneurs´ cooperative as a specific form of enterprise cluster, Dar es Salaam: International Labour Office 2010.

[17] For more detail, see Henrÿ, Hagen, Guidelines for cooperative legislation, Geneva: International Labour Organization 2012, Part 3, 4.

changing conception of what is "public" and what is "private". The requirement for private entities to internalize hitherto public concerns and, vice versa, the requirements for public institutions to adopt private enterprise behavior leads to dysfunctionalities and inefficiencies as long as the respective legal structures have not been adapted accordingly [16].[18] This question is also at the heart of new-type cooperatives, so-called multi-stakeholder cooperatives (see below).

- *"common needs and aspirations [of the members]"*. There are two schools, which interpret this element in different ways: A more restrictive one limits the element to mean that cooperatives should serve exclusively their members. The definition seems to support this school. The other school recognizes the reality of entities which are registered as cooperatives and/or call themselves cooperatives and which serve also non-members, at times even the general public. It might sound as a sophism to say that service to non-members might be a common need of the members. The issue is closely related with the delimitation of the term "member".

- *"member"*. Not the least the debate on the CS and on the social economy has raised the question of whether also the interests of non-members, i.e. stakeholders whose rights are affected by the activities of cooperatives, should be taken into account and whether the shift in the debate on the CSR from behavioral aspects to governance issues requires that stakeholders be integrated with rights and duties into the governance structure of enterprises in general. Such multi-stakeholder cooperatives are emerging especially in the education sector, in health and social care and in the utilities sector.

- *"jointly owned (and democratically controlled enterprise)"*. The joint ownership relates foremost to the reserve fund, i.e. the lock-in part of the capital. Ever less laws require the reserve fund to be indivisible. Besides protecting third party interests and improving the creditability of the cooperatives - it has the same function as the minimum capital requirement in other forms of enterprise - and besides diminishing speculative behavior of the members, the (indivisible) reserve is an expression of intergenerational solidarity. This intergenerational solidarity is also one of the founding principles of sustainable development.

- *"democratically controlled (enterprise)"*. Democratic participation is, as mentioned, the most effective mechanism through which social justice regenerates. Social justice is part of one of the aspects of the objective of cooperatives and it is the central aspect of sustainable development as it secures political stability. Political stability, in turn, is a prerequisite for economic security. And economic security is a precondition for people to care for the biosphere.
The often-cited principle of one member/one vote (2nd ICA Principle) is also an important rule. But, it is not sufficient. Democratic participation must permeate all organizational and operational aspects of the cooperative, from the determination of needs of the members and

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[18] Henrÿ, Hagen, Basics and New Features of Cooperative Law - The Case of Public International Cooperative Law and the Harmonisation of Cooperative Laws, in: Uniform Law Review. Revue de droit uniforme, Vol. XVII, 2012, 197-233.

transactions between the cooperative and its members, via education/training to cooperative specific audit as a prerequisite for the meaningful exercise by the members of their control rights. Therefore, the "participants", the "loci of participation" and the "modes of participation" need rethinking [17]. [19]

- *"enterprise"*. As far as the notion of "enterprise" is concerned, globalization is causing three major changes. Enterprises, including cooperative enterprises, integrate ever more into vertical and horizontal chains, operationally and organizationally interwoven and producing wealth out of data. Networks of machines, linked and operating digitally, replace networks of people and networks of people and machines. The positions of producers and consumers fuse to form co-pro-sumers. Enterprises disappear. Contractually regulated connectivity replaces association-type collectivities, with considerable consequences for solidarity-based entities, like cooperatives.

All of these changes require adaptations of the organization law on cooperatives and also of other areas of law which regulate for example warranties, liabilities - as responsibilities diffuse and anonymization increases -, labor relationships, taxation, consumer protection, competition, product liability etc.

3. Conclusions

Legislators give different answers to the questions discussed here. To many of them they do not provide any answer. However, globalization urges us to ensure a coherent implementation of existing regional and international rules, [20] and to avoid at the same time an overall harmonization in the sense of a unification of cooperative laws. A coherent implementation of existing regional and international rules requires, nevertheless, a certain degree of harmonization. The question is: what should be harmonized? The answer follows from the conception, we have, of cooperatives. Are they "associations of persons" (cum enterprise) or a specific form of "associations of capital? [18] [21] The more we want them to be associations of persons, the less unification is indicated. What is needed, however, is a harmonization of the interpretation of the definition of cooperatives, of the cooperative values and of the cooperative principles, on the one hand, and the elaboration of cooperative legal principles, which are to inform legislators, on the other hand. The task is not easy as the terminologies of the ICA and the ILO concerning the categories of values and principles differ from one another and as they differ from that of philosophy. The harmonization of the

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[19] Henrÿ, Hagen, Cooperative Law in the 21st Century. Keynote to the 1st International Forum on Cooperative Law held in Montevideo on November 16-18, 2016, in conjunction with the II Intercontinental Congress on Cooperative Law on the occasion of the IV Cooperative Summit of the ICA Americas region (to be published by ICA Americas Region).

[20] By degree of decreasing national sovereignty to regulate freely through the national law: the 2008 Ley marco para las cooperativas de América Latina; the 2009 Mercosur Common Cooperative Statute; the European Union Council Regulation 1435/2003 on the Statute for a European Cooperative Society; the 2010 Uniform act on cooperatives of OHADA, the Organization for the Harmonization in Africa of Business Law and the 2015 Uniform Cooperative Act of the East African Community (not yet in force).

[21] Terms frequently used by Edgar Parnell. See recently Parnell, Edgar, Reason v. Dogma – the Great Challenge and Opportunity for Cooperative Education, in: Henrÿ, Hytinkoski and Klén (eds.), Co-operative Studies in Education Curricula ..., op. cit., 23-36.

interpretation of the cooperative values and principles and the elaboration of cooperative legal principles will be the more successful, the more we clarify how the cooperative principles could fit into the world of existing, universally recognized legal principles, such as the principle of equal treatment, the principle of solidarity and the principle of democracy, instead of trying to fit independently developed cooperative legal principles into the legal systems. Legal principles do not have the function to be the definite reason for a decision; they are the reason in favor of a decision. I.e. harmonized cooperative legal principles allow for necessary variations in cooperative legislation [19]. [22]

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[22] As for Europe, see Gemma Fajardo, Antonio Fici, Hagen Henrÿ, David Hiez, Deolinda Meira, Hans-H. Münkner and Ian Snaith (eds.), Principles of European Cooperative Law. Principles, Commentaries and National Reports, Cambridge et al.: intersentia 2017, written by the members of SGECOL, the Study Group on European Cooperative Law (see Fajardo G., Fici A., Henrÿ H., Hiez D., Münkner H.-H., Snaith I. (2012), New Study Group on European Cooperative Law: "Principles" Project, Euricse Working Paper, N. 024 | 12, at: http://euricse.eu/sites/euricse.eu/files/db_uploads/documents/1329215779_n1963.pdf
Similar study groups will possibly be set up in other parts of the world.

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Rezumat

Considerând globalizarea drept o realitate, iar dezvoltarea durabilă ca un obiectiv comun, articolul pledează pentru o abordare mai armonizată de către legiuitori în ceea ce priveşte dreptul cooperatist. Deşi oferă îndrumare în acest sens, dreptul internaţional public creează, de asemenea, incertitudini, nu în ultimul rând cu privire la însăşi obiectul dreptului cooperatist, şi anume cooperativele. O abordare armonizată este esenţială, dacă cooperativele trebuie să contribuie la dezvoltarea durabilă. Totuşi, în loc de unificare a legislaţiei în domeniul cooperatist, articolul sugerează armonizarea interpretărilor definiţiei universal recunoscute a cooperativelor şi dezvoltarea unor principii juridice comune cu privire la cooperaţie, care ar fi puse în aplicare într-o varietate vitală de legi cooperatiste (sau în domeniul cooperaţiei).

Cuvinte-cheie: cooperative, drept cooperatist, dezvoltare durabilă

Аннотация

Рассматривая глобализацию как реальность, а устойчивое развитие как общую цель, статья призывает к более согласованному подходу законодателей к кооперативному праву. Несмотря на определенное руководство в этом вопросе, международное публичное право также создает неопределенности, и не в последнюю очередь в отношении самого предмета кооперативного права, а именно кооперативов. Согласованный подход имеет жизненно важное значение, если кооперативы будут способствовать устойчивому развитию. Однако вместо объединения кооперативных законов в статье предлагается согласовать толкование общепризнанного определения кооперативов и разработать общие юридические принципы по кооперации, которые будут воплощены в жизненно важное разнообразие законов о кооперации.

Ключевые слова: кооперативы, кооперативное право, устойчивое развитие

THE CONTENT OF THE SPECIAL FUNCTIONS OF ORGANIZING AND CONTROLLING THE COMPLEX MANAGEMENT SYSTEM FOR THE COMMERCIAL ASSORTMENT OF GOODS

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Abstract

Efficient management of commercial assortment of consumer goods is possible only on the basis of a complex management system, which is accomplished by performing a range of special functions. This range of special functions includes organizing and controlling functions, from the achievement of which depend to a great extent the success and efficiency of any management. In the case of management of the commercial assortment of consumer goods, the following functions are assigned to the special functions of organization and control: organizing and performing the opportune formation, maintaining and modifying (improving, correcting) the optimal commercial assortment of consumer goods; the permanent internal and systematic external control (audit) of the management of the process of formation and maintaining the optimum commercial assortment of consumer goods.

Elaboration of the complex management system for the commercial assortment of consumer goods (CMSCACG) requires, first of all, the formulation of the definition and determination of the content (the aim, tasks and specific elements) of each of the special and specific functions of the system. In this work we present the definitions and contents of special organizing and controlling functions of the complex management system for the commercial assortment of consumer goods, as well as the definition and content of the special function of insurance investigative science, with which at the same time we completed the nomenclature of special functions of insurance of CMSCA of consumer goods. Realization of listed functions intends to ensure that the organization and control of creating and efficient functioning of the (CMSCA) of consumer goods in the retail network, in compliance with the requirements of the methodology and normative-technical acts, is approved in the established manner.

Keywords: commercial (trade) assortment of consumer goods; the management of the commercial assortment of consumer goods; special functions of organization, control and assurance of the complex management system for the commercial assortment of consumer goods; the contents of the special functions of organization, control and assurance of the complex management system for the commercial assortment of consumer goods; the goals, tasks (objectives) and elements of special functions of organization, control and assurance of complex management system for the commercial assortment of consumer goods

1. Introduction

The volume of consumer goods sale is predetermined, in essence, by the volume of solvency demand and by the variety of goods offering. At the same time, the structure of the commercial product assortment offered by the retail trade network has to be fully correlated with the structure of the demand of buyers, which a priori presupposes the permanent mutual concordance of the structure of consumer goods trade assortment and the structure of the demand for consumer goods buyers [12, p. 7; 13, pp. 56-57; 14, p. 5, p. 9]. The ensuring of permanent concordance on the consumer market of the structure of the supply of consumer goods and of the structure of buyers

demand can be achieved only in the case of the complex management system of the commercial assortment of consumer goods (CMSCACG). The need for objective and acute management of the assortment of goods in the commercial network en-detail is demonstrated in a series of publications of scientists and experts in the field [3, p. 17; 4, p. 77; 9, p. 51; 10, p. 21; 12, p. 8; 14, p. 5, p. 9].

The objective of commercial goods assortment management is [10, p. 22; 12, p. 8] creating and maintaining permanently within the retail trade network of optimal assortment of goods, and the goal - maximum satisfaction of consumer needs and demand of goods buyers interests while achieving sellers (producers).

As well as any other, the management of commercial assortment of goods is accomplished by performing a complex set of special and specific functions [9, pp. 52-53; 10, p. 23], which includes the organization and control functions for which the specific content (purpose, tasks and elements), delimited area of application [2, p. 15; 10, p. 23] must be clearly determined and formulated.

2. The degree of investigation of the problem at the current moment, the purpose of the research

The trade specialists and researchers are deeply concerned, especially in the last few decades, about the management of goods assortment in both the wholesale and retail trade networks [1-3; 5-6; 15-16; 18.2-22], as the scale of assortment of goods has become extremely numerous and complicated in the structure. But, at present, the researches in the field and their results [1-5, 14-16, 18.2-22] are focused more on processes and methods of forming the rational assortment and do not include the aggregate measures and actions that would ensure the formation and systematic improvement, maintaining permanently in the commercial network en-detail of the optimal assortment of goods. The formation and permanent maintenance in retail trade network of optimal assortment of consumer goods can be assured, in our opinion [10-13], only on the basis of the complex management system for the commercial assortment (CMSCA) of consumer goods, which development is currently at the initial stage.

In the previous papers we presented the definitions, the contents and the areas of application of the special normative-planning and ensuring functions of CMSCA of consumer goods. The purpose of the actual paper is to formulate the definitions and to elaborate the content, as well as to outline the area of application of *the special functions of organizing and controlling* the complex management system for commercial assortment of consumer goods.

3. Applied methods and material

The research is performed using the following methods: comparative analysis, correlative analysis, analogy, induction and deduction, expertise, practical experience etc. The definitions and content of the special organizational and control functions of the complex management system for the commercial assortment of goods are proposed by focusing on the standards regarding the

production quality management in the spheres of production and circulation [17-18] and on the specialty literature [9, pp. 52-53; 10, p. 23].

4. Results and discussions

The investigations and elaborations in the field of goods assortment management [2; 9-10; 12-13] demonstrate that this management is carried out by accomplishing the complex of functions including the special functions *of organization and control* to which the activities are assigned:
- organizing and performing the opportune formation, maintaining and modifying (improving, correcting) the optimal commercial assortment of consumer goods;
- permanent internal and systematic external control (audit) of the management of the process of formation and maintaining the optimum commercial assortment of consumer goods [9, p. 53].

However, by analyzing the nomenclature and the elements of the special functions of the complex management system for the commercial assortment of consumer goods (CMSCACG) presented in the previous papers [8; 9, p. 53], we have pointed out that the nomenclature of these special functions must be supplemented **by another special ensuring function:** *the scientific-investigative ensuring* of the complex management system for the commercial assortment of consumer goods.

Each of the listed functions must have its definition and content that include the purpose, objectives (tasks) and elements of the function, which so far has not been developed and is the purpose of this paper.

Based on the study and analysis of the normative documentation [17-18] and the specialized literature [1-6; 8-9; 13-16; 19-22] in the field of formation of the commercial assortment of consumer goods and the production quality management, including in the sphere of circulation, there were formulated *the definitions* and elaborated *the contents of the special functions of organization and control* as well as of the *special function* **of ensuring**: *the scientific-investigative assurance* of CMSCACG, as follows.

The function "Scientific-investigative ensuring" is the activity of elaboration and realization of the set of measures and actions (organizational, investigative, methodological, technical, economic, ideological and other measures and actions), using the appropriate methods and means, having the mission to insure timely the process of systematic formation and improvement of the commercial assortment of consumer goods with the realization of the science and technology in the given field and the ways of their application in practice, with the materials of its own management, marketing and merchandising investigations in the field.

The purpose of the function – assuring the development of the process of systematic formation and improvement of the commercial assortment of consumer goods of the respective commercial enterprise based on the achievements of contemporary science and technique in the field and own marketing and merchandising investigations of the consumer market and the assortment of consumer goods in the area of activity of the concerned commercial enterprise.

The tasks of the function are: a) permanent study and thorough analysis of the achievements of science and technique in the field of management of commercial assortment of consumer goods; b) scientific ensuring of conducting and performing the management of consumer goods; c) performing scientific researches of management, marketing and merchandising in the field, and of the particularities of the consumer market and assortment of consumer goods in the area of activity of the relevant commercial enterprise; d) elaboration of methodologies and ways of implementing the achievements of contemporary science and technique and of the results of own investigations in the given field of activity of the relevant commercial enterprise; e) improving the use of the trade enterprise of the achievements of science and technique in the management of commercial assortment of consumer goods in practical activity.

Performing the listed tasks includes the following **elements**: the organization of the study works and thorough analysis of the achievements of the contemporary science and techniques in the field of formation, maintenance and improvement (modification, correction) of the commercial assortment of consumer goods; selecting the achievements of contemporary science and technique in the field liable for the implementation of the activity of the relevant commercial enterprise; organizing and conducting research work of the management of the assortment of goods (particularities of CMSCACG; the nomenclature, the content, the way of realization and the area of application of the special and specific functions of consumer CMSCACG etc.), of the marketing (the dynamic study: status, structure, development and conjuncture of the consumer market; of the volume and structure of consumers' needs; the capacity and structure of demand for consumer goods buyers; the volume and structure of the supply of consumer goods; consumer goods prices; consumer and buyer behavior; segmentation of the consumer market; consumer and buyer typing etc.) in the area of activity of the relevant commercial enterprise (network) and merceological (classification of consumer goods; elaboration of the characteristics of the assortment of goods, the methods and indices of their analysis and their qualitative and quantitative estimation; the quality of consumer goods from the supply of consumer goods; factors, regularities and forms development of commercial assortment of consumer goods; the rationality of consumption products; merceological and commercial particularities of different groups of consumer goods etc.); processing, analyzing thoroughly and generalizing the results of the own investigations; elaborating and approving the conclusions and proposals in the established way; elaboration and homologation in the established manner of the methodology, ways and action plan implementation in the practical activity of the respective trade undertaking of the achievements of contemporary science and technology and the results of own investigation; the systematic analysis of CMSCACG's scientific level and the efficiency of the implementation of new developments in science and technology in the given field etc.

The area of application of the function: all subdivisions and business services of commercial enterprise in question, as well as all macro-environment and micro-environment components (factors) of marketing of the retail trade enterprise [7, pp. 125-161].

The function "Organizing and performing the opportune formation, maintaining and modifying (improving, correcting) of the optimal commercial assortment of consumer goods" is **the activity of elaboration and realization of the set of measures and actions (organizational, methodological, investigative, technical, economic, ideological and other**

measures and actions), with the use of corresponding methods and means, which have the mission to organize and carry out the systematic and timely formation, maintenance and improvement (correction) of the optimal [9, p. 51; 12, p. 8; 18.2, pp. 46-48] **commercial assortment of consumer goods.**

The purpose of the function - to ensure the timely and qualitative formation, maintenance and improvement (correction), scientifically argued, of optimal assortment structured on groups, subgroups, types, subtypes and varieties of consumer goods of the retail trade enterprise (network) for maximum satisfaction of consumer demands on the structure of the supply offer.

The tasks of the function are: a) meticulous analysis and use of the accumulated information and materials elaborated as a result of the fulfillment of the special normative-planning functions of the complex management system for the commercial goods assortment (CMSCGA) of consumption [9] and ensuring [8] including scientific-investigational one; b) efficient use of the achievements of science in the field of management of the commercial assortment of goods; c) elaboration, formulation and approval of the concept of formation of optimal commercial assortment of consumer goods; d) efficient development, approval and making of assortment policy; e) establishing the optimal, scientifically argued correlations between the structural components (groups, subgroups, types, subtypes, varieties) of commercial assortment of consumer goods, establishing and permanently assuring of the optimal structure of consumer goods assortment of the enterprise concerned; f) maximal contentment of consumer needs and buyer requirements to the consumer goods assortment structure under the reasonable satisfaction of the interests of suppliers (vendors), sellers and society; g) ensuring the permanent alignment of the consumer goods structure with the structure of consumers' needs and the structure of buyers' demand; h) timely and systematic inclusion in the commercial assortment of consumer goods renewed and new and the exclusion from the commercial circuit of outdated and inefficient consumer goods; i) ensuring the satisfaction of consumers 'needs (buyers' demand) in the complex through the complexity of the supply of consumer goods; k) ensuring the continuous improvement of the quality of structure of the commercial assortment of consumer goods; l) education and reasoning the consumption goods by the population, including new ones; m) ensuring the stability of the structure of consumer goods, which enjoys increased consumer demand; n) ensuring, on the one hand, the increase in the efficiency of meeting the needs and interests of consumers (buyers) and, on the other hand, the needs and interests of sellers (suppliers, manufacturers) and society.

The process of accomplishing the tasks of the examined function is constituted by a series of **elements**: establishing the order of elaboration and formation of the optimal structure of the commercial assortment of consumer goods; organization of meticulous study and analysis of works, selection and efficient use of the information elaborated and accumulated in the performing of the special norming-planning functions and ensuring of CMSCACG; the organization of works for the selection and efficient use of science achievements in the field of management of commercial assortment of consumer goods; the accumulation, processing, analysis and generalization of the information obtained as a result of performing the norming-planning functions and ensuring of CMSCACG regarding: the economic characteristics of the commercial activity area of the relevant commercial enterprise, the composition and typing of consumers (buyers), the volume and structure of consumer needs, the capacity and structure of buyer demand,

the structure and segmentation of the consumer market in the service area of the given enterprise, consumers and buyers' requirements toward the consumer goods assortment structure; determination, according to the legislation in force, and approval in the established manner of the type of the trading enterprise concerned; establishing (outlining) the area of the commercial service offer of the business enterprise; selecting, determining and approving the segment (segments) of the consumer market and the type (types) of consumers (buyers) for incorporation with the commercial service by the enterprise given by the trade; determination and approval of the commercial type of consumer goods assortment in accordance with the type of business concerned; organizing the work of elaboration of the concept and assortment policy (goals, objectives and principal directions in the formation of goods assortment) of trade enterprise oriented to the buyer (consumer); the approval of assortment concept and politics of enterprise in question; elaboration and approval of the strategies of the trade enterprise in the field of consumer goods assortment; organizing the works to achieve the concept, policy and strategy of the trade enterprise in question; determining and approving the stages (**A** - optimal assortment formation, **B** - optimal maintenance and improvement of the optimal assortment) and **A** stage phases formation of the optimal commercial assortment of consumer goods (I - formation of the initial assortment, II - formation of the optimal assortment) [13, p. 57]; selecting, approving and applying the scientifically-argued methodology and methods of elaboration, formation and improvement (correction) of the structure of the initial assortment and of the structure of the optimal commercial assortment of consumer goods, including the application of the categorical management [6; 15-16; 19] of formation and improvement of the commercial assortment of consumer goods or on the basis of commodity complexes (sets); the analysis of the production assortment and the commercial assortment of suppliers in the wholesale trade possible for the delivery of the retail enterprise in question; familiarizing the specialists with the retail units in the area of the commercial activity of the relevant commercial enterprise and with their conception and policy of assortment; selecting the characteristics and indices [11, pp. 124-128] of the analysis and the qualitative and quantitative estimation of commercial assortment of goods; selection, argumentation and approval in the established manner of the parameters of quantitative indices of the characteristics of the commercial assortment of consumer goods; organizing and conducting works to ensure the formation, refinement and maintenance of the optimal commercial assortment of goods of the enterprise concerned; elaboration, argumentation and approval in the established manner the nomenclature of the initial groups (categories) of consumer goods for the initial commercial assortment of goods and the elaboration (formation) of the contents of consumer goods groups (categories), included in the nomenclature in question; elaboration and approval in the established manner for the relevant commercial enterprise of the structure of the commercial consumer goods assortment in the group of commodities, taking into account the role (importance) of the group (category) of the goods in the commercial circuit (profit-generating goods or creative flow of buyers, cash generators or image creators, protection or test-goods or auxiliary) [6; 15; 19] and in the commodity type section [11, p. 123]; elaboration, argumentation and approval in the established way of ordering the necessity of consumer goods in the optimal assortment; determining sources of commodity to cover the need of the enterprise concerned in consumer goods; selecting in a determined manner the suppliers of goods and approving in accordance with the legislation in force of the contractual economic relations of delivery - purchase of consumer

goods between the relevant commercial enterprise and the suppliers of consumer goods, with particular emphasis on the requirements to the structure of assortment, quality and schedule (periodicity) of delivery of goods; placing the order to the consumer goods needs in the optimal assortment of the relevant commercial enterprise of the suppliers (manufacturers, wholesale trade enterprise) of consumer goods; organizing and controlling the delivery and reception of consumer goods in the assortment ordered in the optimal structure by groups, subgroups, types, subtypes and varieties; the placement of the goods received in compliance with the rules and requirements established respectively in the trading room for realization of the buyers by groups (categories) or complexes of goods, taking into account the importance (the role) of each group or complex of goods and the accessibility of the buyers, or as a stock - in the storage rooms under the established conditions in the technical-normative acts; the organization and unfolding of merchandising in the initial assortment; observance of developing of goods and the degree of satisfaction of the purchases by the structure of the initial goods assortment of the relevant commercial enterprise in the retail trade; collecting the objections of consumers and purchasers of consumer goods on the assortment of goods and their analysis; determination and analysis of the deviations between the structure of the initial goods assortment presented in the supply of goods and the structure of the goods assortment presented in the structure of the consumers' needs and requested in the customers' request, showing the causes of the deviations found; studying the possibilities of the suppliers of consumer goods, the interests of the society and the trade unit in question to improve (correct) the initial commercial assortment and its transfer to the optimal assortment of consumer goods, in line with the requirements of consumers (purchasers), on the one hand, and, on the other hand, with the interests and possibilities of the supplier (producers), of the seller (of retail unit) and the society; elaboration, approval in the established way and implementation of proposals, measures and actions for transformation of the initial commercial of consumer goods assortment into optimal commercial assortment; elaboration and approval in the established manner of the consumer goods nomenclature in the optimal commercial assortment (basic assortment), the parameters of the coefficients of its characteristics [11, pp. 124-128]; informing in a determined manner and familiarizing the producers and suppliers of consumer goods with the requirements (desires) of consumers (purchasers) regarding the assortment structure of the supply of goods; organizing and making purchases of consumer goods in the quantity and assortment necessary to cover the structure of the optimal assortment of consumer goods of the enterprise in question; elaboration and realization of the complex of measures and actions to ensure the permanent maintenance within the limits established parameters of the characteristics of the optimal commercial assortment of consumer goods [11, pp. 124-128]; constant tracking and analysis of the achievement of consumer goods in the optimal commercial assortment with the formulation of the conclusions and the elaboration of the respective proposals; determining the order and requirements regarding the operative improvement (renewal) of the optimal structure of the consumer goods assortment; the timely elaboration and realization of the measures regarding the systematic improvement (correction) of the optimal basic assortment, regarding, in particular, the inclusion in the commercial circuit of the renewed and new consumer goods and the timely exclusion of outdate and inefficient goods in consumption; the estimation of the economic and social efficiency of the retail sale of consumer goods in the optimal commercial assortment with the formulation of the conclusions and the elaboration of the respective proposals etc.

The area of application of the function: all subdivisions and business services of commerce enterprise in question, as well as all micro-environment components (factors) of the retail trade enterprise marketing [7, pp. 125-136].

The function "The permanent internal and systematic external control (audit) of the management of the process of formation and maintaining the optimum of the commercial assortment of consumer goods" is the activity of elaboration and realization of the set of measures and actions (organizational, methodological, investigative, technical, economic, ideological and other measures and actions), using the appropriate methods and means, which have the task of constantly checking by the internal control and systematically by the external control the conduct of the process of formation of the optimal commercial assortment of consumer goods and the maintenance of the conformity of the real structure of the consumer goods assortment of the enterprise in question by the structure of the optimal assortment of consumer goods, approved for the way set for the enterprise concerned, with conclusions and proposals for winding up the deviations.

The purpose of the function - ensuring compliance with the requirements of the normative and technical documents (NTD) in the process of formation and maintaining the optimality of the commercial assortment of consumer goods, increasing the sense of responsibility of the personnel and the factors involved in the management of the commercial goods assortment of the retail trade enterprise regarding the results of its activity by constantly monitoring the conformity of the actual structure of the assortment of the merchandise offer of commercial enterprise controlled by the structure of the optimal commercial assortment of consumer goods, approved in the established manner; the determination of the deviations of the actual values from the approved values of the indices of characteristics of the optimal commercial goods assortment of the controlled retail trade, the identification of the causes and the guilty persons (the factors), the formulation of the reasoned conclusions and the proposals regarding the liquidation of the established deviations.

The task of the function *is:* a) ensuring the proper control of the formation and maintenance process according to the methodology and regulations prescribed in the technical normative acts (standards, documents, guides: instructions, guidance, indications, recommendations, prescriptions, methodologies etc.), approved and legalized in the established manner, of the optimal commercial assortment of goods of the supervised trading enterprise; b) revealing the deviations from the requirements of the normative-technical norms (standards, guiding documents) in the process of formation and maintenance of the optimal commercial assortment of goods in the merchandise supply of the monitored trade enterprise; c) establishing and estimating the degree of correspondence of the real structure of the optimal structure, approved in the established manner, of the assortment of consumer goods analyzed and the deviation of the actual values from the approved normative values of the indices characteristic of the optimal commercial goods assortment of goods [11, pp. 124-128] of the controlled retail trade enterprise; d) the revelation of the causes and the deviations ascertained as a result of the checks carried out in the context of monitoring the conformity of the actual structure of the assortment of the merchandise supply of the supervised enterprise the structure of the optimal commercial assortment of goods approved in the established way, indicating the guilty persons (factors) and formulating the proposals regarding the liquidation of the established deviations; e) the timely familiarization of the personnel

concerned and the goals and methodologies of internal and external controls, verified and estimated indices and the requirements, the consequences of controls, as well as appropriate preparation for the planned controls of all CMSCACG by enhancing and personalizing responsibility, increasing the quality of their professional activity, and preparing timely and qualitative documentation and materials; f) increasing the permanently optimal degree of the consumer goods assortment of the minority retail enterprise by elaborating the complex of measures in order to eliminate the deviations revealed in the controls of the formation process and to maintain the optimality of the commercial consumer goods assortment of the relevant commercial enterprise, as well as to implement the proposals as a result of the controls carried out.

The enumerated assignments of this function will be accomplished through the achievement of following **elements**: elaboration and approval in the established way of the concept, strategy and program (plan) of the internal controls of regarding with methodologies and rules prescribed in normative-technical acts (standards, guiding documents: instructions, guidance, indications, recommendations, methodologies, prescriptions etc.), approved and legislated in the established way, in the process of formation and maintaining of the optimal commodity trade of the relevant commercial enterprise, as well as the verification and estimation of the degree of conformity of the actual structure of the analyzed assortment of consumer goods of the trading enterprise controlled by the structure of the optimal (basic) commodity assortment of consumer goods, approved in the established way; elaboration, argumentation and approval in the established manner of the nomenclature of characteristics of the commercial goods assortment and their indexes [11, pp. 124-128] susceptible to verification, estimation and analysis; elaboration and approval in the established manner of the study and analysis methods, requirements (qualitative-descriptive and quantitative-values) and the scale of the estimation of the characteristics indicators of the commercial assortment of goods [11, pp. 124-128]; constitution and legislation in the manner established of the internal team (commission) of experts (experts-controllers or auditors) empowered to carry out internal checks on the conformity of the actual structure of the analyzed consumer assortment of goods of the commercial undertaking in question the structure of the optimal (basic) consumer goods assortment, approved in the established manner; elaboration and approval in the established way of the Regulation on the carrying out of the internal audits (controls) and the activity of the internal audit commission of the authors (controllers-experts) (hereinafter the "internal audit commission") to maintain optimality of the consumer commercial assortment of goods of the enterprise retail trade in question; elaboration and approval in the established manner of the order, methodology, methods and guide for the internal controls to carry out the preoccupation of formation and maintenance of the optimality of the commercial assortment of consumer goods of the enterprise in question; elaboration and approval in the established manner of the documentation nomenclature (materials) susceptible to mandatory presentation to the relevant commission for study and analysis; familiarization with the Regulation of the internal audits (controls) and the work of the internal audit commission of maintaining the optimality of the commercial assortment of consumer goods of the enterprise of the retail trade, with order, methodology, methods and guide for performing the internal controls (audits) and corresponding training in the matter of the members of the nominated internal audit commission; familiarization of all the employees of the enterprise with the purposes and program (plan), the

orders, methodology, methods and guide for the internal controls (audits) and their consequences, with the nomenclature, the methods, the requirements (qualitative-descriptive and quantitative-value) and the scale of the estimation the indicators of the characteristics of the commercial assortment of goods, with the nomenclature of the documentation (materials) that are compulsory susceptible to control (study, analysis), as well as organizing and conducting formation in the matter of the respective employees of the given enterprise; planning and carrying out the work of nominated internal audit commission; elaboration and approval of the program, the organization and conduct of the works, the measures and actions for the preparation of the enterprise, including the respective documentation, to expected or planned internal audits; the collection and accumulation by the internal audit commission data (information) about the requirements of the methodology and rules, prescribed in the normative-technical acts (standards, guide documents: instructions, guidance, indications, recommendations, methodologies, prescriptions etc.), regarding to the conduct of the process of formation and maintaining the optimal commercial consumer goods assortment of the retail trade enterprise, as well as regarding to the normative values (qualitative-descriptive and quantitative-value requirements) approved for the indices of characteristics of the optimal commercial assortment (basic) [11, pp. 123-128] of consumer commodity of the enterprise trade data; the collection and accumulation by the internal audit commission of the actual data(s) (information) on the development of the process of formation and maintaining the optimal trade assortment of consumer goods of the controlled trade enterprise, as well as the real qualitative-descriptive and quantitative-value values of the characteristics of the analyzed assortment of consumer goods; processing of data and gathered information as a result of the control carried out by the nominated commission; comparison the content of the working documentation and the actual actions carried out in the process of formation and maintaining the optimal assortment of consumer goods of the controlled trading enterprise, with the requirements of the methodology and rules, prescribed in the respective normative-technical acts (standards, guide documents etc.,), as well as the comparison of the actual values of the indices of characteristics of the commodity assortment analyzed with the approved normative values for the optimal assortment (basis) of the trading enterprise concerned; establishing and estimating the degree of compliance with the requirements of the methodologies and rules prescribed in the respective normative and technical documents, in the practice of formation and maintaining the optimal assortment of consumer goods of the controlled enterprise, as well as the degree of correspondence of the actual structure of the commercial assortment of consumer goods analyzed, the optimal structure, approved in the established manner, for the relevant trade undertaking; revealing deviations from the requirements of the methodology and the respective normative-technical acts (standards, guide documents etc.) in the process of formation and maintenance of the optimal commercial assortment of goods in the supply of goods of the monitored trade enterprise, as well as the revelation (determination) of the deviations of the real values from the approved normative values of the indices of characteristics of the optimal (basic) commercial assortment of consumer goods [11, pp. 124-128] of controlled retail trade enterprise; deviations and diversions of the real structure of assortment offer freight analyzing and generalizing the results of each internal audit (control) of formation and maintaining the optimality of the commercial assortment of consumer goods of the retail trade enterprise in question, with the emphasis, in the case of

establishing: a) of deviations from the requirements of the methodology and technical-normative acts in the process of formation and maintenance of the optimal trade assortment of consumer goods in the supply of goods of the monitored trading enterprise, with indicating the causes and the person (factors) guilty; b) deviations and diversions of the real structure of assortment in the supply of goods of the supervised trade enterprise from the structure of the optimal commercial assortment of consumer goods, approved in the established manner, with indicating the guilty causes and persons (factors); drawing up the objectively justified conclusions and formulating the real proposals on liquidation, in case of revelation, of abstains and deviations found; examining and approving the results of internal audits (controls) in the established manner, of conclusions and proposals of the nominated internal audit commission; elaboration and approval of the program, the organization and conduct of the works, measures and actions in order to carry out the proposals of the internal audit commission, formulated as a result of the control of the formation and maintenance of the optimality of the consumer commercial goods assortment of the enterprise in question; broad information and familiarization of all employees of the enterprise concerned and the interested participants of CMSCACG with the results of the internal audits (controls) of formation and maintaining the optimality of commercial assortment of consumer goods in the controlled enterprises and with the measures taken to implement the proposals formulated in the course of these controls; obtaining the information on the bodies, order of initiation, program, methodology, methods and guide conducting the external audits (controls) of formation and maintaining the optimality of the commercial assortment of consumer goods of the retail trade enterprise, as well as of the way of approving their results; initiating in the established manner to conduct external audit of the process of formation and maintaining optimality of the commercial assortment of consumer goods of the enterprise in question; familiarization of all the employees of the enterprise with the purposes and program (plan), the orders, methodology, methods, with the Regulation and guide for the external audits (controls) and their consequences, with the nomenclature, the methods, the requirements (qualitative-descriptive and quantitative-value) and the scale of the estimation the indicators of the characteristics of the commercial assortment of goods, with the nomenclature of the documentation (materials) that are compulsory susceptible to control (study, analysis), as well as organizing and conducting formation in the matter of the respective employees of the given enterprise; elaboration and approval of the program, the organization and conduct of the works, the measures and actions for the preparation of the enterprise, including the respective documentation, to expected or planned external audits (controls); adequate preparation and presentation of all materials and information, provided for in the regulation and guide to external audits (controls), approved in the manner established by the competent bodies, and requested by the members of the external commission empowered to do so; organizing and ensuring the active and productive participation of all employees of the enterprise in carrying out the work of the commission concerned; examination in the established manner the results of the external audits (controls) of the formation and maintenance of optimality of the commercial assortment of consumer goods of the controlled enterprise, of the conclusions and proposals of the external commission nominated with the elaboration and approval of the respective decisions and of the plan of measures for the implementation of the proposals of the respective external commission of expert-auditors; elaboration and approval of the program, the

organization and conduct of the works, measures and actions in order to carry out the proposals of the external audit commission, formulated as a result of the external audits (controls), and plan of measures to ensure maintaining the optimality of commercial assortment of consumer goods of the respective enterprise; broad information and familiarization of all employees of the controlled trade enterprise and the interested participants of CMSCACG with the results of the external audits (controls) of formation and maintaining the optimality of commercial assortment of consumer goods of the enterprises in question and with the measures regarding to implement the proposals, formulated in the course of these controls; obtaining the respective approved act, issued as a result of the audit performed by the authorized body etc.

The area of application of the function: all the subdivisions and business services of commerce enterprise in question, as well as all micro-environment components (factors) of marketing of the retail trade enterprise [7, pp. 125-136].

5. Conclusions

The successful performance of the management of commercial assortment of consumer goods requires the achievement of a number of general management functions as well as the special and specific functions complex. In order to be effectively implemented, it is necessary to clearly define and determine the content (the purpose, tasks and specific elements), as well as delimite the area of application of each function.

The elaboration of the definitions and contents of special and specific functions of management of the commercial consumer goods assortment constitutes one of the objectives of the investigations in the field. Previously, we developed and presented [8; 9] the definitions and the contents of the special normative-planning and ensuring functions of the complex management system of the commercial assortment of consumer goods.

At the present stage, we have developed and presented for the first time the definitions, the areas of application and the contents (purposes, tasks and specific elements) of the special functions of organization and control, as well as the scientific-investigative assurance of the complex management system for commercial assortment of consumer goods, following the further investigations to develop the definitions, areas of application and contents of the special stimulation, attestation-assessment and specific functions of CMSCA of consumer goods.

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Rezumat

Dirijarea eficientă a sortimentului comercial de mărfuri de consum este posibilă doar în baza sistemului complex de management, care este efectuat prin realizarea unui şir de funcţii speciale. Acest şir de funcţii speciale include şi funcţiile de organizare şi control, de realizarea cărora depinde în mare măsură succesul şi eficienţa oricărui management. În cazul managementului sortimentului comercial de mărfuri de consum, la funcţiile speciale de organizare şi control sunt atribuite funcţiile: organizarea şi efectuarea formării, menţinerii şi modificării

(perfecţionării, corecţiei) oportune a sortimentului comercial optimal de mărfuri de consum; controlul (auditul) permanent intern şi sistematic extern a desfăşurării procesului de formare şi menţinere a optimalităţii sortimentului comercial de mărfuri de consum.

Elaborarea sistemului complex de management a sortimentului comercial de mărfuri (SCMSCM) de consum presupune, înainte de toate, formularea definiţiei şi determinarea conţinutului (scopul, obiectivele şi elementele specifice) fiecărei din funcţiile speciale şi specifice ale sistemului. În această lucrare prezentăm definiţiile şi conţinuturile funcţiilor speciale de organizare şi control ale sistemului complex de management a sortimentului comercial de mărfuri de consum, precum şi definiţia şi conţinutul funcţiei speciale de asigurare ştiinţifico-investigativă, cu care concomitent am completat nomenclatorul funcţiilor speciale de asigurare ale SCMSCM de consum. Realizarea funcţiilor enumerate este menită să asigure organizarea şi controlul creării şi funcţionării eficiente a SCMSCM de consum în reţeaua comerţului cu amănuntul, cu respectarea cerinţelor metodologiei şi actelor normativ-tehnice, aprobate în modul stabilit.

Аннотация

Эффективное управление торговым ассортиментом потребительских товаров возможно только на основе комплексной системы менеджмента, который осуществляется путем реализации ряда специальных функций. Этот ряд специальных функций включают в себя и организационные и контрольные функции, от реализации которых зависит в большой мере успех и эффективность любого менеджмента. В случае управления торговым ассортиментом товаров народного потребления, к специальным организационным и контрольным функциям относятся функции: организация и осуществление формирования, поддержания и своевременной модификации (совершенствования, коррекции) оптимального торгового ассортимента потребительских товаров; постоянный внутренний и систематический внешний контроль осуществления процесса формирования и поддержания оптимальности торгового ассортимента потребительских товаров.

Разработка комплексной системы менеджмента торговым ассортиментом потребительских товаров (КСМТАПТ) предполагает, прежде всего, формулирование определения и установление содержания (цели, задачи и специфические элементы) каждой из специальных и специфических функций системы. В данной работе представляем определения и содержания специальных организационных и контрольных функций комплексной системы менеджмента торговым ассортиментом потребительских товаров, а также формулировку и содержание специальной функции научно-исследовательского обеспечения, с которой одновременно дополнен перечень специальных функций обеспечения КСМТАПТ. Реализация перечисленных функций призвано обеспечить организацию и контроль создания и эффективное функционирование КСМТАПТ в розничной торговой сети, с соблюдением требований методологии и нормативно-технических документов, утвержденными в установленном порядке.

DEMAND ESTIMATION IN THE BANKING SECTOR OF MOLDOVA

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Abstract
Following the idea of some experts that concentration indexes (Herfindahl-Hirschman Index, concentration ratio, etc.) could be misleading indicators of market power, we used a structural demand model for deposits to measure the market power within the Moldovan banking sector.
The goal of the paper was to estimate the demand function for deposit market within the banking industry. Based on discrete-choice demand estimation, we have calculated the-price elasticities for deposit market provided by the commercial banks in Moldova.
In this paper, we would like to analyze how consumers respond to prices and bank characteristics, market power and impact of changes on consumer welfare.

Keywords: demand estimation, deposits, discrete choice, market power, banking sector

1. Introduction

Function of competition in the market is to ensure better quality of goods, lower prices and promote innovation. Competition in banking sector allows the private sector, households and entire economic system to benefit of cheap financial resources and higher returns for money deposited in the financial institutions. In this article, we have the goal to estimate the demand function for deposit market and calculate the price elasticities. The obtained results could be useful to measure the unilateral effects of mergers between banks and formulate some conclusions about possible price increase and effects on consumer's welfare. Demand estimation is the first step in assessing competition, market power and consumer behavior in the market.

The estimation is applied to deposit market of the banking industry. Our goal is to answer the questions about what and to what extend influence the consumer behavior. The model is constructed based on individual banking characteristics and we would like to assess in particularly how price, availability and quality of banking services influence the consumer decision on choosing the deposit services of a specific bank. We paid a specific attention to elasticities of interest rates and service fees established by financial institution and have seen to what extend they determine the behavior of a consumer. In other words, using the estimation of a logit-based model,

we evaluated the consumer response to deposit interest rates and account fees in choosing a bank and how they react with respect to bank characteristics, density of branches, staff professionalism.

One of the main disadvantage of the structural demand model for assessing competition in a market is necessity of large accounting data. We used the monthly dataset provided by National Bank of Moldova for 2014-2016. The method used is discrete-choice approach, because it gives the possibility to estimate a large number of substitution parameters due to several banks in the market. The discrete-choice model could be used for industries where there are a large number of competing products, products are differentiated, and consumers make „discrete choices", meaning that they typically use only one of the competing products. The demand for deposit market could be calculated based on individual utility maximization and characteristics-based discrete choice model with product differentiation. First, we performed demand estimations in order to calculate the elasticities. Second, we analyzed the results and gave some comments on price elasticities in banking industry.

The paper is composed of three sections. Section one, except introduction, provides an overview of the banking industry in Moldova, some remarks about competition and methods to measure it, and estimation results of demand functions obtained by other researchers. In section two, we described data and estimation model. Results are presented in section three, including price elasticities. We ended with some conclusions on the results, and explanations on the way the bank characteristics influence the consumer behavior.

2. The degree of investigation of the problem currently, and purpose of research

Moldovan banking sector is composed of 11 banks, which employs 7808 people and has 796 branches. At the end of July 2017, return on equity (ROE) for the whole sector was equal to 14.7% and return on assets was 2.5%. As a whole, banking sector is considered concentrated, because five largest banks hold 83.5% of total assets of the banking system. In 2016, banking sector accounts for 89.8% of total assets of the financial system, share of banking assets to GDP was equal to 54.2%, while the share of financial system assets was – 60.3% to GDP. Financial system of Moldova is dominated by banks and its stability has a direct impact on economic growth [5].

In the last three years, the banking system could be characterized as unstable and vulnerable, due to fail of three banks in the system. One of them is state-owned bank "Banca de Economii", which put pressure on the entire system stability. At the same time, the trust between private sector and financial institutions was affected to a large extent because of banking crises in 2014-2015. So, in 2017 it was registered a low demand for loans, liquidity surplus in the industry, while the interest rates for deposits continued to reduce with a higher pace comparing to loans. One of reasons of low demand on loans is high interest rates due to high level of non-performed loans (16.2% - quarter I, 2017), which creates obstacles to lowering the interest rates and increases the amount of lending activity. We elaborated a graph on trends of deposits and interest rates in the banking system during 2013 - quarter II 2017 [5].

After the crises, deposit market showed revival tendencies and interest rates decreased. Anyway, the amount of deposits, nor in national currency, neither in foreign currency reached the level of

2014. Comparing to 2015, the amount of deposits in national currency increased by 30.6% at the end of semester I 2017, while the amount of deposits in foreign currency decrease by 5.0% in the same period. Among the factors that influenced the decrease of deposits is lack of trust between client and bank and reduction of interest rate on foreign deposits with 0.86 pp.
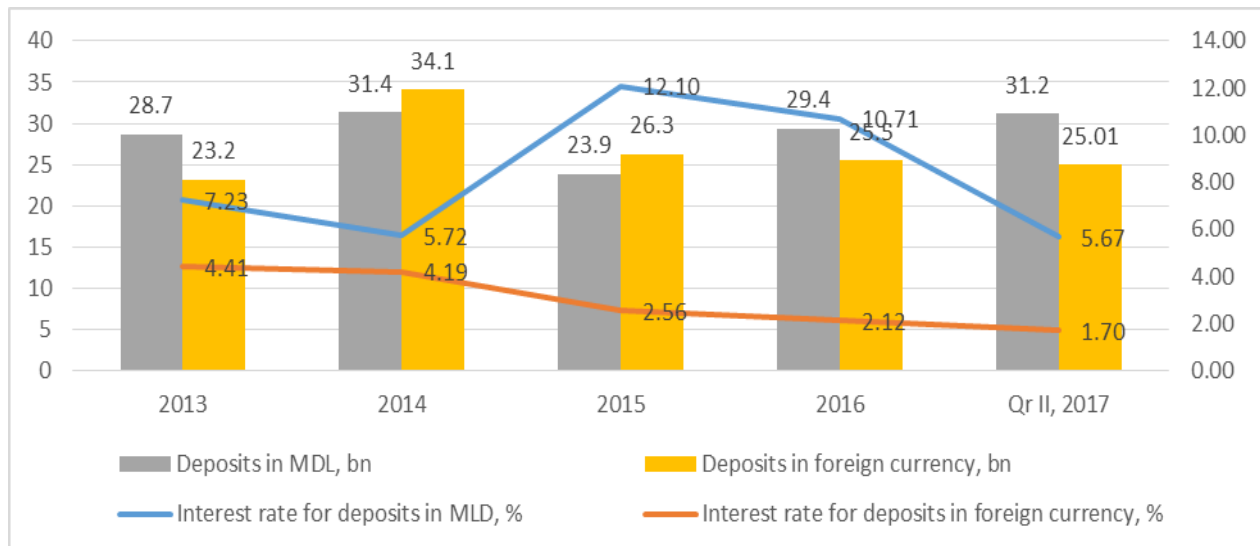
Chart 1. The dynamics of deposit and interest rates during 2013 and quarter II 2017

Source: Elaborated by authors based on data provided by National Bank of Moldova [5]

We used the statistical information about deposits to estimate demand function for deposit market. In the calculations, we excluded data for three banks that are in process of liquidation (Banca de Economii, Unibank, Banca Sociala) because lack of statistical information for 2016 and half of 2015 put pressure on calculations and could generate wrong results.

There are different methods to assess competition in the banking industry. Each of them has their own limitations and advantages. Among the main approaches to analyze competition in the banking sector is the Structure-Conduct-Performance paradigm, explored a lot by the researchers. One of the disadvantage of this paradigm is its reliance on accounting data and endogeneity issues pervading the relationship between the variables. The new method developed is called "New Empirical Industrial Organization", which focuses on a single industry and introduce theoretical methods to analyze the firm behavior and market power could be estimated.

One of the most popular approaches to test the market power were Panzar-Rosse, developed in 1987 and Bresnahan's conjectural variation model. Panzar-Rosse approach exploits the fact that changes in input prices should affect revenues differently, depending on the degree of competition. The model relies on the relationship between input prices (marginal costs) and equilibrium gross revenue, derived from the theory of the firm under alternate assumption about competitive conditions [1, p. 410]. Conjectural variation (CV) approach, proposed by Bresnahan and Lau in 1982 focuses on market structure parameters. A potential shortcoming of CV approach is it requires knowing the nature of demand relationship and accurate determination of the geographic scope of the market would seem to be of a particular importance [1, p. 412]. The Panzar-Rosse

test's data requirement is low and available, but it is very sensitive to the specification of the reduced-form revenue function.

Researchers have developed new methodologies and among the most significant is structural demand estimation. This approach is more realistic and measures market power based on assumptions of differentiated products. Given that once demand parameters are known, estimates of own-price elasticity and cross-price elasticity can be used to determine markups and the effects of changes in policy or market environment [1, p. 413]. In antitrust practice, estimation of demand is central to the determination of the relevant market, which is required in the evaluation of mergers among firms operating in the same market.

As part of new methodologies used to study competition in banking sector is discrete choice models, which define consumer preferences over characteristics of the products. The research done by Berry, Levinson and Pakes (1995), known as BLP, provides the framework to structurally estimate demand and supply using aggregate price and quantity data [2, p. 841]. The approach is to map firms observed pricing decisions into their unobserved costs by estimating a demand function and assuming a particular strategic model of competition.

For the banking industry, Dick (2002) was the first to structurally estimated demand for deposits as a way to determine the impact on consumer welfare from significant changes in banking markets followed by deregulation of branching networks [3, p. 38]. In her work, she did not test market power. Molnar (2008) in his paper wrote about results of other researchers, as Nakane et al. (2006), Ho (2007) and Molnar et al. (2007), who applied similar technics to estimate demand elasticities to study market power on supply side in the Brazilian, Chinese and Hungarian retail banking sector. Nakane et al. (2006) used outside estimates of marginal costs, while Molnar et al. (2007) used accounting data to calculate marginal costs. Ho (2007) estimated a system of differentiated product demand and pricing equation jointly under alternative market structure [4, p. 8].

In this paper, we used structural demand estimation to obtain all the parameters of demand function and calculate price elasticities.

3. Methods and materials applied

We estimated the demand function for deposit market following the methodology described by researcher Dick (2002) and Molnar (2008). The idea of the modeling is to aggregate heterogeneous consumer's discrete choice for deposit services of commercial banks. It is based on nature of consumer decision in choosing a financial institution to deposit money. Model is built on utility function, which reflects consumer preferences over product characteristics.

Demand is estimated following the discrete choice approach. The methodology allows for product differentiation and solves the dimensionality problem present when many firms are in the market. The simplest specification of the discrete-choice model is the logit demand specification. The basic assumption is that an individual consumes a unit of brand that yields the highest utility. In our model, consumers $i = 1,…, I_t$, maximize their utility by purchasing deposit services from a

bank $j = 0, 1, ..., J_t$ in time $t = 1,..., T$ time period. j=0 choice present the outside option of not choosing a commercial bank, which represents all the households savings in the financial institutions minus deposits in the commercial banks. The utility function takes a linear form. The conditional indirect utility of consumer i from choosing bank j's deposit service at time t includes a mean utility δ_{jt}^d and individual specific, iid, mean zero random disturbance ε_{ijt} [4, p. 9].

$$v_{ijt}^d = \delta_{jt}^d + \varepsilon_{ijt} = r_{jt}^d \alpha^d - r_{jt}^{sd} \alpha^s + x_{jt}\beta^d + \xi_{jt}^d + \varepsilon_{ijt} \quad (1)$$

Where r_{jt}^d is interest rates paid by banks on deposits and r_{jt}^{sd} is fees on deposits, x_{jt} is a K dimensional vector of observed bank characteristics other than interest rate, ξ_{jt}^d represents bank characteristics unobserved by an econometrician (depicted as mean across consumers and independent across banks), and $\theta_D = (\alpha^d; \alpha^s; \beta^d)$ is a $K + 2$ dimensional vector of the mean level of taste parameters to be estimated. Parameters of utility function do not depend on individual i's characteristics. We assumed that variation in consumers taste enters only through the additive term ε_{ijt}. Consumers maximize their utility and choose bank j whenever it gives them highest utility. For example $U\left(r_{jt}^d, r_{jt}^{sd}, x_{jt}, \xi_{jt}, \varepsilon_{ijt}; \theta_D\right) \geq U\left(r_{lt}^d, r_{lt}^{sd}, x_{lt}, \xi_{lt}, \varepsilon_{ijt}; \theta_D\right)$ for all $l \neq j$ and t, where ε_{ijt} reflects consumer specific terms that are not observed by econometricians. The closed form solution of the multinomial logit model, assuming that the unobservable' distribution is a type-I extreme value, yields banks j's market share in market d at time t as following.

$$s_{jt}^d\left(\delta_t^d\right) = \frac{\exp(\delta_{jt}^d)}{\sum_{r=0}^{J} \exp(\delta_{rt}^d)}, \qquad j = 1,...J \quad (2)$$

The limitations of logit model is that it restricts consumers to substitute towards other brands in proportion to market share despite the characteristics. Anyway, this problem is not serious because the share of outside good is almost inexistent, the number of banks is limited and there are no huge quality differences among them. It seems reasonable that the market share drives the substitution patterns.

One of the problems of estimating demand function could be that prices are correlated with unobserved demand factors, such as style or service quality. Endogeneity issues could produce biased parameter estimates. It was emphasized by researchers that ignoring correlation could lead to upward sloping demand curves. In order to fix the endogeneity problem, the literature suggests using instrumental variables. Instrumental variables are called BLP instruments, because Berry, Levinsohn and Pakes (1995) developed them [2, p. 841].

The main idea of instrumental variables in discrete choice model is to use characteristics of other products in the market as instruments for price. It is assumed that product characteristics other than price are exogenous and therefore orthogonal to unobserved demand. In the same time, price and unobserved product characteristics enter the demand equation in a nonlinear way, and the application of instrumented variables become heavy. In order to avoid this problem, Berry

proposed to transform the equation such that the parameters enter the objective function linearly. The logit demand function will take the following form for deposit supply.

$$\ln\left(s_{jt}^d\right) - \ln\left(s_{0t}^d\right) = \delta_{jt}^d = r_{jt}^d \alpha^d - r_{jt}^{sd} \alpha^{sd} + x_{jt}\beta^d + \xi_{jt}^d \quad (3)$$

We can estimate this equation by a simple ordinary least square regression, but interest rate and fees are potentially endogenous. Equation was estimated using General Method of Moments (GMM) estimator, standard IV as special case of GMM estimator.

Based on estimated parameters of the demand equation, we calculated the elasticities. The price elasticities of bank j in period t are derived from equations (1) and (2). The formula for interest rate elasticity is formula (4), while fee elasticity can be calculated using formula (5).

$$\eta_{jkt}^d = \frac{\partial s_{jt}^d}{\partial r_{kt}^d}\frac{r_{kt}^d}{s_{jt}^d} = \begin{cases} \alpha^d r_{jt}^d \left(1 - s_{jt}^d\right) & if\ j = k \\ -\alpha^d r_{kt}^d s_{kt}^d & if\ j \neq k \end{cases} \quad (4)$$

$$\eta_{jkt}^{ds} = \frac{\partial s_{jt}^d}{\partial r_{kt}^{sd}}\frac{r_{kt}^{sd}}{s_{jt}^d} = \begin{cases} \alpha^{sd} r_{jt}^{sd} \left(1 - s_{jt}^d\right) & if\ j = k \\ -\alpha^{sd} r_{kt}^{sd} s_{kt}^{sd} & if\ j \neq k \end{cases} \quad (5)$$

In order to estimate the equation (3), summary statistics of the variables, which contains a description of the variables, is reflected in the table below.

Table 1. Descriptive statistics of the demand estimation model

Variables	Description	Min	Max	Mean	St. dev.
1	2	3	4	5	6
Deposit market share (MS)	Share of deposit of each bank to total deposit in the market, %	0.15	28.193	7.497	7.865
Interest rate (INT)	Interest expenses to total deposits, %	0.042	10.839	2.712	1.886
Fees (FEE)	Fee revenue to total deposits, %	0.102	12.366	1.561	1.317
Branch density (BD)	Number of branches per 1 square km	0.0001	0.0064	0.0019	0.0016
Banking Efficiency Index (IEB)	Change in Banking Efficiency Index calculated by EVM Group,	-13.885	2.586	-0.084	1.276
Employees per branch (EMP)	Number of employees to number of branches	6.13	47.50	13.90	7.25
Instrumented Variables					
Fixed capital costs (AMR)	Fixed capital costs to total assets	0.016	0.717	0.202	0.134
Personnel Expenses (CAT)	Personnel expenses to total assets, %	0.069	6.679	1.139	1.008

1	2	3	4	5	6
Operational costs (COAT)	Operational costs to total deposits	0.038	4.282	0.970	0.721
Euribor	1 month Euribor	-0.374	0.258	-0.083	0.209
Wages (PERS)	Wage per employee	5487.8	44547.0	11955.2	5242.7

Source: developed by authors based on statistical information provided by National Bank of Moldova for 2014-2016

We used a monthly dataset provided by National Bank of Moldova for 2014-2016 and Banking Efficiency Index calculated by "EVM" Rating and Evaluation Agency. During the estimations, we excluded the data for three banks that are in liquidation process, to ensure consistent estimation. The bank characteristics are chosen from available data and we believe that they are important and recognizable to the consumer.

In the demand estimation, the two prices are observed, which are interest rate and service charges (fees) for deposit services. They are imputed as share of interest expenses and fee revenues to total deposits. In addition, we included several bank characteristics, number of employees per branch and branch density, which was calculated as number of branches of individual bank to total area of the country, which is 33846 square km.

Unobserved bank characteristics are variables such as bank's service quality, reputation and prestige, reputation aspects related to its soundness as a financial institution. In order to avoid endogeneity between variables, unobserved characteristics and price of the deposit services, instrumental variables are used.

An important issue is choosing the instruments. For estimating the demand function, the interest rates and fees are instrumented with administrative costs per total assets, lagged values of fees and interbank interest rate (Euribor) and characteristics of other banks. So, we used as instruments: 1 month Euribor, lagged fees, wage per employee and cost shifters (operational expenses, fixed capital expenses, personnel expenses). Cost shifters were derived from profit and loss report provided by the National Bank of Moldova.

4. Results obtained and discussions

Based on equation (3), we estimated the demand of deposit services using logit specification and IV estimation with cost shifters and BLP instruments. The dependent variable are the logarithms of deposit market shares of each bank. We excluded the logarithms of share outside goods provided by other monetary institutions, because the share of other institution, which accept savings, is very low and insignificant. The explanatory variables are the interest rate, service fee, bank characteristics (employees per bank and bank density) and change in banking efficiency index. Table below reports the GMM estimates of demand function for deposit services in a logit specification using Eviews program.

Table 2 reports the results of estimations. All the variables are significant, and interest rate and fee have the expected sign. Increase of service fee and decrease of interest rate will reduce the market share and demand for deposit services of a bank. The density of branches and number of

employees per branch are significant and have the expected sign. Even if internet banking is developing, presence of banks in territory, as well as number of people who provide deposit services are very important. Market share of deposits and branch density and number of employees per branch have a direct proportional link.

Table 2. Results of demand estimation with logit specification and BLP instrument

Dependent Variable: MS
Method: Generalized Method of Moments
Sample (adjusted): 2 372
Included observations: 121 after adjustments
Estimation weighting matrix: HAC (Bartlett kernel, Newey-West fixed
Standard errors & covariance computed using estimation weighting matrix
Instrument specification: AMR CAT COAT EURIBOR LAGFEE PERS BD IEB EMP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.482140	0.567785	-9.655315	0.0000
INT	14.57557	5.048769	2.886955	0.0046
FEE	-28.54023	6.135895	-4.651356	0.0000
BD	963.5805	104.0198	9.263432	0.0000
IEB	-0.229564	0.113965	-2.014339	0.0463
EMP	0.038009	0.016431	2.313210	0.0225

R-squared	0.808292	Mean dependent var	-3.453497
Adjusted R-squared	0.799957	S.D. dependent var	1.347150
S.E. of regression	0.602528	Sum squared resid	41.74960
Durbin-Watson stat	0.163465	J-statistic	5.657812
Instrument rank	10	Prob(J-statistic)	0.226202

The change in banking efficiency index is significant and has a negative sign, which means that an increase in banking efficiency index, cause a decrease in deposit market share. The banking efficiency index is calculated based on three indicators: return on sales (net income to total income); return on equity (net income on average equity capital); and asset rotation (total income to average total assets). This index takes into account all the activity of a bank and a huge contribution to its value should be the lending activity.

We tested the model using the tests provided by Eviews on endogeneity of regressors and diagnosis of weakness of instruments. Results for weak instruments diagnosis show that selected instruments are not weak, because Cragg-Donald F-statistic equal to 37.3927 is higher than Stock-Yugo critical values. Regressor endogeneity test rejected the null hypothesis and we can reject the assumption that variables can be treated as exogenous.

The estimated demand function will take the following form:

$$Deposit\ market\ share = -5.49 + 14.58 * interest\ rate - 28.54 * fee + 963.58 *$$
$$branch\ density - 0.23 * banking\ efficiency\ index + 0.04 * employees\ per\ branch$$

(6)

We used the estimated parameters of the demand function to calculate the price elasticity. Under the logit function, the median elasticity of service fees is -0.35, while the median deposit rate elasticity is 0.32. If we have to interpret the results, we could say that 1% increase in fees would lead to 0.35% decrease in market share, while 1% increase in interest rate, would lead to 0.32% increase in deposit market share. Table 3 shows the percentiles of distribution of price elasticities across banks, based on estimation of equation 6.

Table 3. Price elasticity percentiles

Price	Median	10%	25%	75%	90%
Service fee	-0.35	-0.76	-0.52	-0.19	-0.09
Interest rate	0.32	0.07	0.16	0.51	0.70

Source: developed by authors based on estimated parameters of demand function

According to the table, in case of service fee elasticity, in 90% of cases the elasticity will be lower or equal to -0.09. In the same time, in 25% of all the results, the elasticity of interest rate will be lower or equal to 0.16.

5. Conclusions

In the last years, researchers have developed new methodologies on assessing the market power of the firms, called structural demand estimation. The approach measures competition based on product differentiation, consumer reaction to bank characteristics, density of branches, staff professionalism. The goal of out paper was to estimate the demand function and calculate the prices elasticities for deposit market in the banking industry of Moldova. The elasticities can be used to determine the effects of changing policies and market environment. The obtained results are the first step and a useful tool in measuring competition in the banking sector and analyses the effects of a merger in the market.

Based on discrete-choice approach and logit specification, we estimated the demand function for deposit market. According to results, deposit market share of banks depends on interest rate, fees charged as well as bank density and employees per branch. Even if internet banking has developed in the recent years, banks will increase their share on deposit market by direct contact with the population. Therefore, we can conclude that consumers respond not only to price, but also to other bank characteristics.

We used the parameters of the estimated demand for deposit market in the banking sector to calculate the price elasticities for interest rate and service fees. According to results, an increase of 1% in fees would lead to 0.35% decrease in market share, while an increase of 1% in interest rate would lead to 0.32% increase in market share.

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Rezumat

Urmare a părerii unor experţi, conform căreia indicii de concentrare (ex. indicele Herfindahl-Hirschman, rata de concentrare, etc.) ar putea fi înşelători în vederea evaluării puterii de piaţă, am folosit modelul cererii structurale pentru a măsura puterea de piaţă în sectorul bancar moldovenesc.

Scopul lucrării este de a estima funcţia cererii pentru depozite din cadrul sectorului bancar. În baza estimării cererii discreţionare am calculat elasticitatea preţurilor pentru serviciile de depozit oferite de băncile comerciale din Moldova.

În această lucrare am analizat modul în care consumatorii răspund preţurilor şi caracteristicilor băncilor comerciale din ţară, puterii de piaţă şi impactului reformelor asupra bunăstării consumatorilor.

Cuvinte-cheie: estimarea cererii, depozite, alegerea discretă, puterea de piaţă, sector bancar

Аннотация

Следуя мнению экспертов, согласно которым индексы концентрации (например, индекс Херфиндаля-Хиршмана, уровень концентрации и др.) могут вводить в заблуждение при оценке рыночной способности, мы использовали модель структурного спроса для измерения рыночной власти в банковском секторе Молдовы.

Цель данной статьи состоит в оценке функции спроса на депозиты в банковском секторе. На основе оценки дискреционного спроса мы рассчитали ценовую эластичность депозитных услуг, предлагаемых молдавскими коммерческими банками.

В этой статье мы проанализировали, как потребители реагируют на цены и характеристики коммерческих банков, рыночную способность (власть) и влияние реформ на благосостояние потребителей.

Ключевые слова: оценка спроса, депозиты, дискреционный выбор, рыночная способность (власть), банковский сектор

THE FUNCTIONAL - INFORMATICS APPROACH TO THE STRUCTURING OF UNITARY ECONOMIC MANAGERIAL SYSTEM INFORMATION

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Abstract

This article delimits and reveals the decisive reason and imperative factors of the necessity in structuring economic information. The objective character of this management phase with such resources is emphasized. As currently and in the unpredictable perspective, the information in question is formed and manipulated in two spheres of theirs existence and evolution – managerial and informatics (technical) – it becomes imperious the use of their primal elucidation in each of these domains, so that they can be integrated then into a unitary one. Performing and conducting investigations in the given succession contribute to the superior performance of both the management domain and the applied informatics means and methods for ensuring its functioning. Also, given the fact that economic information has a fairly wide range of issues to examine, it is essential to establish those that are appropriate to the purpose of research. Since the aim of the article is to integrate the information in the aspects of their processing within the management functions and the informational environment, their functional and informational treatment is incontestably logical.

Starting from these considerations, in the present work, at the conceptual level, the constitutive units of the economic content information entities are highlighted, systematized and analysed. An analogy is made between the logical (content, functional) and physical (informatics) structural information units, and on this basis - their concordance. Within the framework of the unitary process of economic management, the structural material and informational units (situational (informative), decisional) are brought into correspondence. Through such a theoretical approach, as well as practical realization, a field is prepared for the development and functioning of the economic management information systems that act in real time regime.

Keywords: structuring, informational structural logical (functional, informative (situational), decisional) units, informational structural physical (informatics) units, concordance, integration

1. Introduction

In order to perform a work or to manipulate an object certain organizational activities are necessary, imposed by both considerable volumes and complicated structure, as well as by the pronounced specific of the works. But, in order to organize any activity or to put into action any object, it is required first to highlight those actions or constituents in their composition, which interconnections and interactions ensure the existence and achievement of the predestined role of integrity. Therefore, the organization of any activity and functioning of any object cannot occur without the preliminary setting of their structure. This thesis refers to any information that is considered as an organic component of the management process and object of manipulation, processing and use.

The necessity and the content of the paper are motivated by the analysis of the created situation and the continuous perspective of the existence and evolution of information in two spheres - material and managerial, the integration of the structural information units of which will contribute to the automatic realization of the unitary process of economic management.

2. The degree of investigation of the problem and purpose of the research

At present, the evolution of basic informatics resources (technical, programmed, informational) is characterized by uneven progression, the first two advancing considerably in development, and the third - not being prepared to the necessary level for their application. The created situation is caused by the inadequate organization of information, which would ensure the continuous automatic realization of the information process in integrity. At the same time, in order to organize the functioning of any object (process), it is necessary, first of all, to determine the constituent components, that is, its structuring.

From the scientific point of view, and even more so, of the practical realization, the structuring of information of the economic managerial system is insufficiently investigated nowadays. It means to highlight the structural units, of which the informational compartment of the unitary economic management system consists.

Since currently such information is formed, processed and circulated in two environments - managerial (external) and informatic (internal) - objectively it is necessary to reveal the structural components of both spheres, their systematization according to the size of the reflecting area, establishing correspondence between them and, on this basis - their integration into an inseparable totality.

Starting from the above-mentioned considerations, taking into account the expressive evolutionary character of the informatics resources and the necessity to guarantee their homogeneous existence and functioning, theoretical topical and applicative importance has any research related to the structural aspect of the economic information resources. In the given sense, the performances of the informatics achievement of economic problems are manifested on the account of the qualitative and quantitative expansion of the rational structural aspect of the information resources.

3. Applied methods and materials

Research was carried out on the basis of the theory of investigation, analysis and synthesis of information, management theory, theory of systems and systemic analysis, theory of economic informatics and cybernetics. A part of the content of the applied materials of the present paper was formulated due to the consultation and analysis of the scientific bibliographic sources of economic informational management, economic informatics and cybernetics and the fields adjacent to these specialties. Another part of information is obtained following the elaboration and implementation of projection methods and techniques of the informatics systems used by the economic organizational units of the Republic of Moldova, former S.U. and other countries.

4. Analysis and results
4.1. Functional approach to structuring of the economic situational information

The highlighting of functional structural information units is motivated by pragmatic factors, as they are created out of the needs of serving certain functions or functional management works with the intention to achieve certain goals.

The crystallization and formation of examined informational units have been produced according to the spatial and temporal descriptive (reflective) areas of the existence and evolution of the managed material objects and activities. The concordance between these units and their descriptive areas is as follows: attribute→ property (name, feature, parameter, value, etc.); indicator → object (activity); informational massif (picture) → group of objects with some of the same features; informational collection→ the same homogeneous group of objects, but with some common specific features (values), represented by some attributes, communications or separated indicators, other specific features remaining individual; system of information → the ensemble of interconnected and interacted objects (activities, resources) for obtaining a common result [1; 2; 5; 7].

Structurally, the attributes are formed by the semiotic combination of symbols; the indicators – by pragmatic (functional) merge of attributes; the informational massifs - by synthesizing the attributes or indicators; the informational collections – by the combination of previously enumerated three units; finally, the system of the information - by systematic spatial and temporal organization of all informational units in the environment of an object (activity).

With account of composition, all structural functional information units are of static (organizational) character. However, in addition to them there is also a dynamic structural unit, such as an information flow, whose composition can include any structural units in any combination. That´s why it has much in common with the informational collection, but the latter may have fixed predestination, not being orientated in the space and time. Therefore, the flow is nothing but the information collection channeled into certain spatial and temporal coordinates. To be noted that the flow does not obligatory consist only of various combinations of structural informational units, but also from every variety of them.

If the structural units are the composition of the information core of the managed object, then the flows reflect the dynamics (movement) of these units. As a rule, due to combined composition the flow is the basis for the formulation of the decision, while structural units predominantly have a descriptive (reflection) role, although in some cases their values serve as basis for the undertaking of certain activities (foreseeing) and respecting certain limits (rating).

With account of composition, complexity of formation and reflecting area, the examined informational units follow one after another in such a sequence: attribute → indicator (communication) → massif (picture) → collection (flow) → system.

In the future, the formation through stratification of the new structural information units will depend on the evolution of the diversity of the management functions, the composition and the number of objects (activities), their described components and characteristics, and on the possibilities of organizing and processing the values of these units by the informatics system.

Ideally, the superior degree of performance of the latter can lead to a single informational unit under the shape of informational fund with flexible possibilities of forming and distributing its components in any spacial dimension and temporal term of utilization.

4.2. Informatics approach to the structuring of the economic situational information

Unlike the functional structuring, the informatics one is achieved on the basis of the physical properties and "capacities" of memory space of presentation, recording, distribution and organizing of functional informational units. Depending on the method of approach, two categories of structural informational units are distinguished - logical and physical. The first are nothing more than the physical equivalents of those functional, while the latter are the possibilities of physical environments of various technical information means and of their devices to materially realize the functional information units [1, 4, 7, 8, 9, etc.].

The physical presentation of the values of informational units on the environment of the certain devices (of input, display of the values of these units) has an auxiliary role, of intermediate and operative character, as they achieve these units only during operation, without remembering them later, thus serving as an interface (channel) of transport and recording on the physical memory space and extracting the nominated values off this environment, to display them.

Regarding the technical means of extraction, recording, distribution, accumulation, etc. of primary data that serve as interfaces for the processes of automatic informational, structural and calculus processing, it is necessary to mention that, at present, they often have different ways of presenting the functional information units physically. Such situation fairly requires the co-ordination or unification of the physical presentation of these units so as they traverse as few as possible "obstacles" of transformation from one form of presentation to another until it is saved and processed by the computer.

If the data input and displaying devices of the values of informational units are co-ordinated after productivity and connected in physical mode with other devices of computer and for this reason it automatically works in tandem with them, without causing essential stoppings, then the informatics technical means of other classes until now do not have such possibilities, working discreetly with the computer. In this respect, quite sharply becomes the issue of unification of this presentation on any media and technical devices, the final goal of which cosists in offering the informational units in such material form so that they are received by the memory and accessed by the processor for storage and processing. So, the physical informational units, formed in computer, must be unified for all informatics technical means and devices. That is why their composition should be predetermined by the features of informational units, which are structured, stored and processed by the computer.

The logical information units in the computer are in the shape of measurable constructive physical units of various types of memories, such as position (element), physical cell, and etc. That is why, such presentation refers to the general notion, as it is the memory structure. For the same reason, it is motivated the systematization of physical informational units into two groups — one on the

internal memory of the computer, and another - on the external one. The first include the bit, semi-syllable, syllable, semi-word, word and double word.

Constructive possibilities of internal memory allow physical presentation of functional information units as well as in the form of page and segment. In the version of paginational organization of the memory, the informational massifs are divided into parts (sub-massive) - nominated pages. Then, when the memory is organized segmentally, the files can contain the programs, subprograms and initial data, each of them being considered the segment. Be mentioned that the page may be subdivided into blocks of established sizes.

In such a way, the following physical informational units can be organized on the internal memory in ascending order: bit → semisyllable (4 bites) → syllable (octet) → semiword (two octets) → word (4 octets) → double word (8 octets) → page segment. If the syllable, semiword, word and double word are units of a physically structured order, as each of them constructively is organized in the form of cell, then the block, page, segment are of the organizational order, because they consist of sets of cells. Therefore, the first informational units are elementary, because they are linked to the constructive realization of the most elementary functional information unit - the attribute. At the same time, the block, the page and the segment are the composed physical information units and they form constructively such functional informational units as, respectively, the indicator (block), informational massif or sub - massif (page, segment).

The structural physical informational units are characteristic not only for internal (basic) memory, but also for the external memory, it consisting also of certain constructive elements. For this type of memory, physical information items are used, which are developed in the shape of sector (section), block (physical record), extent (track) and volume (tome). The last two units are of constructive order, while the first two units are formed by segmentation of magnetic uninterrupted space of track.

Regarding the "possibilities" of physical presentation of functional informational units it comes out that the volume (module) can place on its media much more data files and vice versa, a file may be located on several modules. That's why the notion of "volume (module)" identifies the external data support and not at all functional information unit.

The first two units of physical structures on the external memory (sector, block) refer more to the material development of such a functional information unit, as recording, while the extent and module relate mainly to the informational massif and sub-massif.

Logical informational units are nothing but analogies of functional units. That is why it is more about their terminological aspect.

Depending on the physical environment, on which they are fulfilled, there are external (functional) (p.A) and internal (informatics) structural informational units In the composition of the latter it is highlighted (in ascending order) the field (word), recording (logical), the data file, the data collection (set of files) and database (ensemble of systematized files or data collections). They are nothing but analogues of the functional information units, namely the attribute, the indicator, the file, the information collection and the information system.

4.3. The functional - informatics integration of the structuring of economic situational information

The concordance between economic structural situational informational units of the logical (of functional sense) and technical (material, informatics) types is presented in the table 1 [1, 5, 6].

Table 1.Concordance of the equivalents of economic structural situational informational units

Levels of formation		Structural situational informational units			
		Functional (logical)		Informatics (physical)	
		External	Internal	On internal memory	On external memory
Initial (semiotical)		Sign (letter, digit, others)	Symbol	1 bit (rank, ferrite core)	1 bit (impulse)
Primary logical		Attribute (naming, digit)	Word, field (key, value)	Semi-sillable (4 bits)	4 bits (impulses)
				Cell (field, 8 bits, sillable)	1 octet (8 bitgs)
				Semiword (2 cells)	2 octets
				Word (4 cells)	4 octets
				Double word (8 cells)	8 octets
Logical more superior		Indicator	Recording	Block (physical record)	Block (section, sector, a part of track of the magnetic disc, or of magnetic tape)
		Document	Recording, set of recordings		
	I	Informational massif (table	Data file	Physical page	Extent-track of the magnetic disc
		Set of the informational massifs	Colection of data files	Physical segment	Set of the tracks, cilinder
	II	System of information of the led object	System of the data files (database)	Module (cub of memory)	Volume (module-package of magnetic discs, magnetic tape coil, etc.)

From the Table it is clear that according to the descriptive ray (reflecting) the concordance of the examined information units is not univocal because the possibilities of physical presentation do not always ensure the equivalence between the content and its material realization. So, depending on the content, the unity of the primary logical level (attribute, word) is materialized by the five physical units. A reverse correlation is also observed in the logical level units I and II.

The diversity of the composition of structural functional information units is motivated by the varieties of the described spatial and temporal rays, but of informatics – by the varieties of physical environments and of their possibilities to form the material amounts to fix the values of these information units in order to keep, process and utilize them.

Counterposition of the equivalents of examined units is also caused by the intention to establish as accurately and clearly as possible the achievement of one aspect of their treatment by another one. In this respect it is noticed that some units of this category in one aspect do not have structural independence (logical and physical), while in another aspect they are considered structural elements.

It is also observed the assignment of some and the same names to various logical and physical structural information units.

It should be noted that the organization of information resources in the form of the database has contributed to the formation of the new internal structural logical information units or to the modification of the names initially applied with the purpose of their bringing into line with the specific of the datologic environment of the concrete data management system (D.M.S.).

4.4. Concordance of the equivalents of structural material and informational units

In isolation from the material environment, the information loses its motivation and does not achieve the integrity of the unitary economic management process. In the interconnection, the motivation, the role and place of material and informational activities of this process are presented schematically in fig. 1.

At present, the varieties of above compartments and sub-compartments are motivated not by the categories of economic activities (material, informative, decisional), but by the level of evolution of the existing means and methods that perform these activities. At the same time, such a differentiation of the listed activities is not negligible, as without it disappears the possibility of their knowledge, study, analysis, performance, and therefore their optimal realization by means of the most productive processes and technologies.

Unitary economic managerial process		
Material compartment	**Informational compartment**	
	Informative sub-compartment	**Decisional sub-compartment**
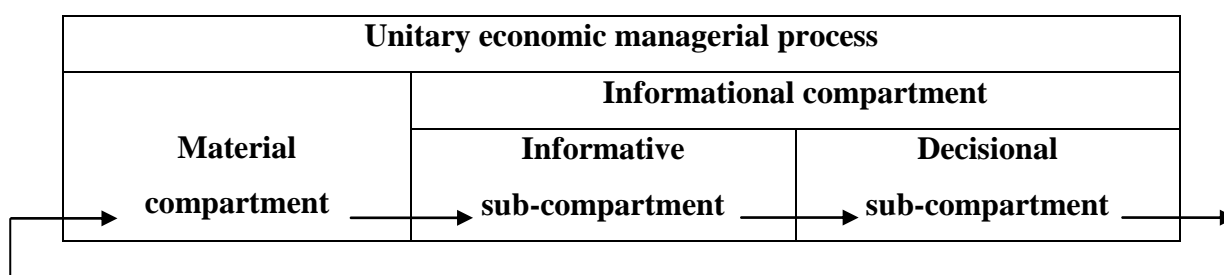
Figure 1. The composition, interconnection and interaction of compartments and sub-compartments of the unitary economic management process [1, p. 145; 3, p. 845]

At the moment, the following evolution of the structural information units is observed in the economic informational field: attribute → indicator → massif → collection → system. If the first two from those listed refer to an object or a concrete material situation and for this reason they have a particular aspect, then the next three have an attribution to sets of such objects (situations), and, therefore, they are of systemic order.

The massif of information reflects the events (resources) on the one-sided position, on the basis of some of the same quantitative and qualitative parameters. This particularity confirms that it refers to a homogeneous group of material elements. At the same time, the collection of information, also can refer to a group of this nature. But, if the massif contains one and the same composition of descriptive values for each object (the work) of the group, then the collection can consist of additional and constant values for the whole group. Finally, the information system refers to the multitude of objects of diverse composition, interconnected and interacted to obtain a common result.

On the basis of the rays and specifics of the content, it is possible to establish the consistency between the structural units of these three categories (material, informative, decisional) characteristic for the existing situation of the unitary economic management process and presented in Table 2.

The structural units of any predestination are of the static order, as each of them has its well-determined portion of functioning and influence on the objective reality At the same time, their compositional variability depending on the spatial and temporal evolution of events is specific for dynamic structural units. That is why they include diverse structural units in various joints, the variants of which are predetermined by the concrete managerial situation. In this sense the flow of information can serve as example of such informative dynamic unit.

It is to be noted that often the flow is interpreted as oriented massive of information. In this case, only the movement and not the structural component is taken into account, which in some cases can consist of only one unit (for example, the same massif), and in others - from several units.

Table 2. The concordance of structural material and informational (situational, decisional) structural units of the unitary economic management process

Unitary economic managerial process			
Structural materials units		Structural informational units	
		Situational	Decisional
1.	Object (activity)	Attribute, indicator	Peculiar decision
2.	Uniform group of the objects (activities)	Massif of the information (array)	Unilateral of the group decision
3.	Set of the varied objects (activities)	Collection of information	Complex (multilateral) of group (groups) decision
4.	Lots of the uniforms and varied objects (activities) oriented towards achivement of a common goal	System of information	Systemic decision

5. Conclusion

1) The structuring of the information is done depending on the semantic and semiotic aspects of their existence and evolution, the first being materialized in a functional plan.

2) On the informatics environment the structuring of the information is carried out starting from the physical properties and "capabilities" of the material space of presentation, recording, distribution and organization of the values of informational units.

3) Depending on the mode of approach to the content and its material presentation it is necessary to divide the structural informational units into two categories - logical and physical.

4) Because of the pronounced variety of physical possibilities of presenting the values of information units on the material media, it is necessary to coordinate or unify the physical accomplishment of structural data units with the purpose of traversing fewer "obstacles" – physical transformation interfaces from one form of presentation to another until their storage and manipulation. Therefore, physical data units of the computer are required to be unified with the same structural units of other informatics technical means.

5) As the computer has two types of physical memory space, it is necessary to divide data structures into internal and external data.

6) According to this concept, the objective is to elaborate, systematize the composition, perform the concordance of the functional informational structural units and the situational logical and physical informational units (Table 1).

7) Based on the results of the concordance, the integration of the functional and informatics aspects for informative and decisional units is carried out (Fig. 1).

8) As a result of composition analysis of the existing situational informational units it was established that after the descriptive (reflective) ray their concordance (coincidence) is not univocal.

9) The concordance of the structural material, informative and decisional units is necessary for the purpose of awareness and automatic realization of the unitary management process (table 2).

10) Such approach contributes to the realization of the informational system as an integral unit, indispensably interconnected and interacted within the framework of the economic management system.

In this context, at present it is becoming more and more convincing that the achievement of certain performances in the informational compartment can occur through the most appropriate awareness and the most rational operation with the notions and actual structural information units.

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Rezumat

În articol sunt delimitaţi şi elucidaţi motivul determinant şi factorii imperativi ai necesităţii structurării informaţiilor economice. Este accentuat caracterul obiectiv al acestei faze de management cu astfel de resurse. Aşa cum în prezent şi în perspectiva imprevizibilă informaţiile în cauză sunt formate şi manipulate în două sfere de existenţă şi evoluţie a lor – managerial şi informatic (tehnic) – devine imperioasă utilitatea elucidării lor primordial în fiecare din aceste domenii, pentru ca mai apoi ele să fie integrate într-un tot unitar. Efectuarea şi realizarea investigaţiilor în succesiunea dată contribuie la performanţe superioare atât a domeniului de gestiune, cât şi a mijloacelor şi metodelor informatice aplicate pentru asigurarea funcţionării lui. De asemenea, având în vedere faptul că informaţiile economice dispun de o gamă destul de extinsă de aspecte de examinare, esenţială devine stabilirea acelora din ele, care sunt adecvate scopului cercetării. Deoarece în articol se urmăreşte obiectivul integrării informaţiilor în aspectele de procesare a lor în cadrul funcţiilor de gestiune şi mediului informatic, incontestabil logică este tratarea lor funcţional-informatică.

Pornind de la aceste considerente, în lucrarea de faţă, la nivel conceptual sunt evidenţiate, sistematizate şi analizate unităţile constituante ale entităţilor informaţionale de conţinut economic. Este efectuată analogia dintre unităţile informaţionale structurale logice (de conţinut, funcţionale) şi fizice (informatice), iar în această bază – concordanţa lor. În cadrul procesului unitar de management economic sunt aduse în corespondenţă unităţile structurale materiale şi informaţionale (situaţionale (informative), decizionale). Prin astfel de abordare teoretică, cât şi realizare practică se pregăteşte teren pentru elaborarea şi funcţionarea sistemelor informaţionale şi informatice de management economic ce acţionează în regim real de timp.

Cuvinte-cheie: *structurare, unităţi informaţionale structurale, unităţi logice (funcţionale, situaţionale (informative), decizionale), unităţi fizice (informatice), concordanţă, integrare*

Аннотация

В статье раскрыты и рассмотрены определяющий мотив и настоятельные факторы необходимости структурирования экономической информации. Подчёркнут объективный характер этой фазы менеджмента информационными ресурсами. Так как в настоящее время и в непредвиденной перспективе такая информация формируется и подвергается манипулированию в двух сферах – менеджмента и информатической - становится насущной потребность в их рассмотрении первоначально в каждой из них, для того чтобы на этой основе в дальнейшем интегрировать информационные единицы в единое целое. Выполнение и практическая реализация исследований в приведенной последовательности способствуют достижению значительных совершенств как в области управления, так и применяемых информатических средств и методов обеспечения её функционирования. Также, имея в виду тот факт, что экономическая информация обладает достаточно широкой гаммой аспектов её рассмотрения, существенным является установление тех из них, которые наиболее адекватны (подходящи) целям исследования. В связи с тем, что в статье преследуется объектив интегрирования информации в аспектах её преобразования (процессирования, переработки) в среде функций управления и в информатической среде, логически неоспоримой является её функционально-информатическое интерпретирование.

Исходя из данных соображений, в представленной работе, на концептуальном уровне, выявлены,

систематизированы и подвержены анализу составляющие информационные единицы экономического содержания. Проведена аналогия между логическими (содержательными, функциональными) и физическими (информатическими) структурными материальными и информационными единицами, а на её основе определено их соответствие. В составе единого оперативного процесса экономического менеджмента согласованы структурные материальные и информационные (ситуационные (информативные), управляющие) единицы. Посредством применения как такого теоретического подхода, так и практической реализации подготавливается почва для разработки и функционирования информатических систем экономического менеджмента, функционирующих в режиме реального времени.

Ключевые слова: *структурирование, информационные структурные логические (функциональные, информативные (ситуационные), управляющие (решения)) единицы, информационные структурные физические (информатические) единицы, соответствие, интегрирование*

ECONOMIC FREEDOM, REFORMS IN THE TRANSITIONAL PERIOD AND OPPORTUNITIES FOR EXPORT FOR THE REPUBLIC OF MOLDOVA

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Abstract
In this article we attempt to analyze the essence of economic freedom in conditions when the national economy passes through a long and difficult period from centralized planning to market relations. Economic freedom is determined by private property, which reproduces private labor, market-based production relations. The employer (the owner of the means of production) decides what to produce, how to do it (by what technologies and methods), how much to produce at his own risk and responsibility. This means that the owner of the means of production freely chooses the type and volume of economic activity, but economic freedom is limited by the market divided into different economic groups that sell their goods and services at predetermined prices. In the absence of real economic freedom in the market, economic laws, and first of all, the law of supply and demand, are not fully executed. Free competition between producers of goods does not dominate, does not completely control the market and has a low impact on price reduction. We stress that as a result, the economy of the Republic of Moldova is still not a market economy in the classical sense. It is still in a transitional state. The low efficiency of the reforms, their half-heartedness and inconsistency led to a decrease in the country's production potential, and therefore the production sector of the national economy and the export potential have been declining since 1991.

Keywords: market economy, private property, employer, economic activity, demand and supply, competition, commodities, export

1. Introduction

In the early 1990s, the Republic of Moldova started the transition process from a centrally planned economy, based on state ownership dominating the national economy, coupled with a non-stimulus pay system administered by over-politicized functional structures, to a private property market-oriented economy.

Economic research is influenced by the problems caused by structural reforms, including the transformation of state ownership into private ownership, price liberalization and trade, and along with that, the implementation of a macroeconomic stabilization policy, the creation of the new

banking system, efficient reformation, the fundamental reformation of state decision-making institutions, the legislative and judicial system, the development and implementation of an adequate tax system, the introduction of some restrictions and budgetary constraints on public spending, etc.

The absence of a strategy with criteria and terms of implementation, involvement of political colorings in the implementation of reforms led to the burdening of various political groups, woven with corrupting activities to the detriment of national interests, and the realization of reforms based on the sacrifices of the population. Perverse privatization had led to the closure and liquidation not only of large enterprises, but also to the disappearance of the leading branches, and to the breakdown of national industry. Decreasing productive potential of the country had negative repercussions on the structure and volume of foreign trade.

2.   Degree of investigation of problems at the current stage

The need to transform the national economy into a functioning market economy was the driving factor for the national economic science. The analysis of the structural reforms' main components has been the subject of many national and international scientific conferences, dissertations, monographs, articles published in various specialized journals. The reforms are researched by the scholars of the National Institute for Economic Research, teachers from USM, ASEM, ULIM, UCCM and other university centers. The subject of economic reforms in the Republic of Moldova is in the attention of IMF, WB, WTO, UNCTAD, and other international bodies.

First and foremost, the transitional economic reforms mean liberalization of the national economy embedded in the development plan, accompanied by specific socialist mechanisms. The liberalization of market insures equal access of all economic agents supported by price liberalization, by privatization of state property with objective to create jobs, and the start of the economic market relations. This component package also requires liberalization of foreign trade activity, granting domestic foreign investment access, creating a credit-banking market, etc.

The purpose of this study is to explore ways to approach and run these reforms in the transition period through economic freedom. This category is inherent in the nature of the market economy that makes the emergence and reproduction of the relations based on private ownership of other fundamental components, which in their entirety ensure the functionality of this economic system.

3. Applied methods

The subject of study in this article is the concept of economic freedom. According to dialectical logic, the abstraction method is used, which means that research studies its nucleus without taking into account a minor (less important), secondary facts derived for the purpose of highlighting the essence of this economic category. In addition, the research method is used to pass from the abstract notion to concrete. Economic freedom is tight to the form of ownership, the character of the work, the economic interests and the mechanisms for their realization. We continue to study

the economic reforms in the Republic of Moldova during the transition period and the formation of market relations based on private property and individual work.

Method of analysis and synthesis, the logical and historical method (economic freedom is drawn from the physiocrats to the 20th century), the method of induction and deduction, quantitative and qualitative analysis were used during this analysis.

The systematic approach of the material allowed us to notice the high degree of economic freedom in the production process in conditions when the private property became dominant in the national economy, the workforce in the private sector exceeded 65%. In agriculture the area of arable land in private ownership reached 83.9%. The share of gross domestic product on private property exceeded 56%.

More profound analysis allows us to notice that the consumer (either productive or personal) does not have the freedom of choice. The main sectors of the economy continue to be dominated by monopolies or cartels: electricity, natural gas, heat generator, telecommunications, transport services (railways), public transport, imported cars, etc.

Understandings and convergence in different forms between cartels, dominant enterprises in certain market segments continue to these days. As a result, the competitor is constrained and some companies have little access to import, export, and to the domestic market. Prices are regulated (adjusted) between vendors to such vital products as meat, seafood, sugar, teas, coffee, some imported drugs, etc. Limited freedom in some economic segments denounces the fact that the country's economy has not reached the level of a competitive market and continues to be in transition to it.

4. Results obtained and discussions
4.1. Evolution of the concept of Economic freedom

The economic content of freedom is linked to ownership, nature of the work (private or social), economic concerns, mechanisms for achieving them, multiple motivations and it finds expression in the society, in relations between the state on the one hand, and legal entities and individuals on the other hand.

All of the subjects working in the economic market are independent and autonomous in deciding on their activities. This forms the main condition of occurrence, existence, and reproduction of the market relations (money-goods-services). Economic freedom is expressed in a relative separation of business entities as owners of the production means, on private labor and its results.

Relations between the state and the economic subjects, as well as between the subjects related to economic freedom, have a special significance in the current national economic shift to a market economy. The connection between these pillars means an economic network throughout the entire economy, of the subjects that are independent in their decisions without being subjected to the arbitrary restrictions.

Systemic and organic transformations from centralized economy to an economy that is opposed to dirigisms, promoting the idea of economic freedom, separation of producers, free trade, free

competition in the free market, defines the principle of non-intervention of the state in economic relations, achieving vertical and horizontal autonomies and self-management throughout the country in all fields. Economic freedom becomes the basic, distinguishing feature, defining entrepreneurship, market economy, which should form a social layer - mediums with a social foundation providing a reproduction of goods-money relations. Studying the behavior of market economy subjects reflecting on the economic freedom is necessary not only theoretically, but also practically to create this type of economy.

The first time the concept of economic freedom was used in England and France in 17th century. The works of such physiocrats as Boisguillebert, Turgot, Quesnay have treated notions of free trade, private property, free competition between individuals, calling individual freedom as a natural right. The ideas of these thinkers have played a progressive role in the liquidation of the feudal relations and absolute monarchy of the time. These ideas were developed by such recognized authors as A. Smith, D. Ricardo and then by J. S. Mill, and J. Bentham, the essence of which reside in the free activity of the individual without state's economic intervention. J. B. Say formulated the "law of markets." The basic idea of this law is that every material good creates its own market. In conclusion, private property and free competition create an economic mechanism that works perfectly.

Adam Smith in *"The Wealth of Nations"* formulated the concept of "homo economicus", of an economic individual working under his own economic interest. The ideas of economic liberalism of A. Smith were further developed by D. Ricardo when the ideology of economic individuality became the ideology of the market economy. All ideas and concepts of the classics were generalized in the famous motto **"*Laissez faire et laissez passer, le monde va de lui même!*"** (**"*Let do and let pass, the world goes on by itself!*"**), where the market is considered as a mechanism which adjusts itself and the world market is regulated by free competition without any protection measures.

In developing of the goods production theory, Karl Marx emphasized the freedom of the owner to choose what to produce and the need of self-isolation of his private work. Communism, according to Marx, meant the "domination" of the individual freedom.

Eugen von Böhm-Bawerk, K. Menger and J. Kornai, who are the most prominent representatives and theoretical contributors to the early years of the Austrian School on marginal utilities, formulated the conception of individual autonomy, which, according to these authors, is absolute, and the purpose of it is to satisfy the needs in terms of limited resources and individual freedom.

The concept of economic liberalism and neoliberalism in the 20th century was developed by T. H. Marshall, L. von Mises, W. Eucken, M. Friedman and F. Hayek. The theory of selecting possibilities of the individual, as well as the self-regulating market principles free of any state interventions were developed describing it as the most effective management system. Producers of goods, according to L. von Mises, must have absolute freedom as a dominant of the civilization. Representatives of the "Economics" theory (P. Samuelson, R. McConnell, and others) distinguished the incomplete from the full economic freedom and defined the concept that state intervenes to broaden the limits of freedom of economic subjects.

There were authors that insisted the individual freedom should become a criterion of the

superiority of a certain production type in comparison to another. Regardless of whether it is socialism, capitalism or a combination of these systems, **the superiority is held by that system that ensures complete freedom from natural poverty and social slavery.**

Considering that economic freedom is a fundamental feature of the market economy, and it finds expression in multiple aspects of the relations of production, distribution, exchange, and consumption, as well as various forms of expression, the authors can't and don't pretend to analyze the complexity of the problem, but merely to examine the content of the economic freedom only in the process of production and exchange of goods.

However, first we have to point out that work is a conscious activity of an individual, oriented towards the change and adoption of the objects of nature in order to satisfy human needs, executed in a defined useful form, so that the development of the social division of labor inevitably leads to an infinite number of the various types of work. These different types of work are distinguished by the use of different means and production tools, by the diversity of work objects, by the nature of operations in the production process, the goals and the results obtained – use values. "Work embodied in these values, as we know, is called concrete work. Work in its capacity as the creator of the values of use, as useful work, regardless of the social forms, ensures the existence of men, an everlasting natural necessity; without it being impossible to exchange the matter between the man and the nature, that is, a human life itself would be impossible", wrote K. Marx.

Goods are a totality of significant and specific features, which make this economic category play the defining role in a market economy. These features make up as a whole, a unity. Some of these characteristics emerge out of others, which in turn become the support for the third group. From these features, we highlight the most important ones, determined by the essential coordinates of the production environment. First, the form of exchange emerges from a production process, which in turn is driven by spontaneity, oscillations of prices, according to the supply and demand, subordinates, in turn, to the maximization of the profit.

In the production of goods, when the goods are dominating in the society, we can highlight the most important characteristics of them:
   a) separation, isolation, borderline of the working process of each contractor; specialization in a particular area according to the social division of labor,
   b) contradiction between this isolated, private and social work, and hence, the need to
      - convert finished products into goods through unknown, but free market;
      - market exchanges of goods and services, consequently being free, dominate the manufacturer because it remains unknown until the exchange; therefore, after the goods have already been produced they can't be changed. If the manufacturer does not realize this, he can become bankrupt;
   c) exchange occurs only through a purchase and sale transaction under free competition, spontaneity, generating disproportions in the development of the whole level of the national economy. The law of the value along with the law of supply and demand, the competition law, become the regulators of the production process. All these attributes taken as a whole are the essence of the economic system of goods' production, and they also form the content of economic freedom of the manufacturers' of the goods.

The market economy, as a system of economic exchange, becomes prevalent, encompassing the society. However, the exchange is only a manifestation of a market economy, which is based on such defining attributes as the inviolable right to private property, the lack of means of existence for the labor force, and, hence, the need for employment in the workplace where the conditions that are more desirable. This is why there is an objective need for the society to guarantee equality between people who can work and freedom to choose where each can realize his opportunities to work and earn respective livelihoods. In the labor market when the owner of the means of production meets the individual owner and the bearer of labor, the first assesses not the work, but the potential abilities of the individual, individual's opportunities to work, which in reality can only be relatively assessed. Hence, the classic definition of the salary notion is a transformed form of labor value and, respectively, its price.

In addition to this, the democratic governance is needed for a market economy, which ensures the functioning of the legal and economic institutions and, above all, the sacred right to private property, the freedom of labor, the functioning of the market, where the law of value, competition, and the offer as a mechanism for price self-regulation, as well as the elaboration and coordination of a complex economic and non-economic rules that are respected by all economic agents and which ensure the reproduction of fairly productive relations for all forms the essence of the production of goods as an economic system and, at the same time, forms the content of the economic freedom of the goods' manufacturers.

The first and most important element, as mentioned above, is the production of goods that starts when producers, due to modern means of production, are able to produce more goods than they need for their own consumption. Production separates from the consumption. The direct purpose of production is not only the consumption but the exchange of goods at the market that can provide an added value. The added value, not the consumption, becomes the goal of the production process. Production of goods occurs when producers are isolated, separated from the rest of the economic world, and the interconnection between them occurs through the market.

The production process and the exchange form a whole, where the production process has the primary role, basically becoming self-sufficient and bearing the specific form of equivalent exchange, by purchase and sale. The primacy of production is determined by the fact that you can consume only the quantity of goods and only that type of goods that were produced. At the same time, only that produced quantity and those produced goods can be consumed through the exchange process.

More broadly, goods production is an economic form of organization of the social product, in which producers are delimited, autonomous, independent, where each manufacturer tends to specialize in the production of a good or group of goods to satisfy social consumption where necessary, and to organize the exchange through purchase and sale of these goods, under which goods are transformed into a merchandise and acquire a value. Additional value can be obtained by satisfying consumption of the society and by producing socially necessary goods.

This means:
   a) the manufacturer can produce a surplus of goods when it uses improved means of production and accrues an experience that allows him to produce more goods than its own

consumption. The surplus product becomes a surplus value. Part of it is used for accretion of private property, ensuring extended reproduction;

b) a relatively separate production process without any social division of labor, can't replicate market relations. These two categories coexist, and only as a contradictory unity between them forms the defining attributes of goods' production as the economic system;

c) due to a social division of labor, autarchic manufacturers specialize in a particular product, which becomes the object of the transactions due to the economic nature of goods. Multiple consumer needs of the society, their diversity meet the specialization in production of a narrow number of goods by each manufacturer. Dysfunctions, as well as contradictions, occur, solved by the billions of purchasing and sales transactions that take place daily in the market economy, which do not identify with the market itself.

4.2. Production and exchange of goods

The problems created by the socialist economy in the USSR were immense for the Moldovan economy in addition to its local specific problems. By 1991, when the Republic of Moldova became an independent and sovereign state, the economy of the country had accumulated macroeconomic, sectoral and enterprise problems. All the circumstances of the national economy have created a unique situation in its own way. Based mainly on the monopoly of state property and the immanent form of development of this property, the centralized planning system, the country's economy was unable to cope with the problems that emerged from the very first steps of implementing market mechanisms and instruments. The economy of the country has come to a standstill in the continuous decline. In some branches, there have been financial and material breakdowns as a result of the disappearance of the centralized distribution system, the large enterprises with double purpose woke up with exaggerated debts that occurred overnight but continued to insist on allocating planned resources without reorienting their activity to the market requirements. Instantly, it was found that baseline indicators for goods-producing enterprises, such as the technical and technological level of products in most branches, labor productivity, prices, profitability and economic efficiency, benefits, commodity competitiveness, living standards of the population were net inferior to those of the capitalist countries. Disproportions were at macroeconomic and microeconomic level. The existence of oversized enterprises oriented to the Union economy could not adapt to the requirements of the internal market. The state no longer had structural financial funds. Due to the lack of the centralized allocations, businesses ceased their activity and mass layoffs occurred. Non-competitive prices established not by market's demand and supply, but on a planned on a relatively long-term basis, caused businesses inefficiencies and bottlenecks.

The Republic of Moldova did not participate directly in the world commodity circuit and did not export goods produced in the country. The goods for export were selectively requested and checked by the representatives of the ministry of the Union that exported through the specialized Union Centers.

The egalitarian remuneration system, but at a mediocre level, created an equal civil society with a solvable demand of a relatively small size, which had a negative impact on the economic growth

rates.

All enterprises, economic, public, state and civilian organizations had a functionally managed and monitored management by one party. Management of the country at all levels was over-politicized, and, in some cases, oversized.

Being non-convertible, the USSR currency could not fulfill the function of international currency. The ruble was used as a means of payment with a special exchange rate only between the socialist countries. Black markets showed currency exchange rates according to the actual purchasing power.

The progressive deterioration of the Moldovan economy, which increased in the late 1980s, led to the economic distortions and a major structural crisis in the early 1990s. The transition from the planned economy to the market economy has become objectively necessary, and it meant the change of economic, organic, and structural system. These changes incorporated property reforms, price liberalization and creation of a competitive market, dominated by the market mechanisms. Radical changes in the country's legislation and state institutions, which were implicated in the economy, got diminished as a measure of the liberalization of economic relations.

Despite the fact that the market-based economy had grown in size since the 15th century, and the components of this production in all respects were well-known, the ex-socialist countries, including the Republic of Moldova, lacked notions, concepts, passing theories from the socialism to the capitalism.

Majority of the population with a relative standard of living, with some privations in the national problems, but with dominant communist ideology, did not know what a market economy meant, nor did it meant to become poor, and in this case - extremely poor, because of market economy was dominating the country. Also, Republic of Moldova did not have managers capable of conducting the transition to an economy that is in line with market requirements simply because in the years before 1991 there were no lucrative practices in this field. Governors were equally trained in socialism and were not ready for the inevitable risks and inconveniences during the post-socialist reform period.

In order to help the ex-socialist countries that started the transition to a market-oriented economy, the World Bank and the International Monetary Fund have proposed a reform package, called the "Washington Consensus" which provided, among others, the following structural changes in the fundamental components of the economy during the transition period:
    - liberalization of prices and trade;
    - state property reforms;
    - macroeconomic stabilization, combating inflation;
    - reforming the tax system;
    - budgetary restraints of economic and banking agents, restrictions on public spending;
    - reforms of the legal and public institutions;
    - creating an efficient business environment.

Economic reforms based on the liberal and monetary principles have started in the Republic of Moldova in the early 1990s. The transition period was expected to be completed around 5 years, during which time the country had to shift from an imbalance to a macroeconomic balance, based

on the private ownership and competitive market mechanisms.

In reality, the expected reforms from the very beginning have been given an ideological, party-based coloring combined with the socialist heritage. The tendency for inconsistency and incoherence was primarily manifested in the elaboration of the legislature of the components that formed the base of the reform.

This was due to the fact that the governors did not represent the party as in the communist era, but different political groups with different economic interests. In this way, economic reforms have also gained political significance. In reality, the "one step ahead, two backward" half-reforms were carried out asynchronous, and some components with great delays or limited. As a result, instead of the structural reforms, ideas from the legacy combined with the import of economic policies dominated. Incoherence in theory and half-reforms in practice have threatened the model of perverse reforms.

In 1992, prices and markets were liberalized in the Republic of Moldova. This liberalization shocked the whole country without implementing the shock therapy model as designed. This first step in reforms can be undertaken only when it subordinates to a policy of economic macrostabilization through measures that lead to the revival of the economy and the establishment of effective control over the inflationary process. This liberalization of market and prices combined with macro stabilization measures determined the social cost of the fundamental reforms during the transition period, the rhythm of poverty growth, the level of health protection, the development of education, the demographic processes, the emigration of the labor force and the depopulation of the country.

The negative effects that emerged in the countries during the transition period explain the emergence of a new "recipe" of the World Bank and the International Monetary Fund entitled „Post-Washington Consensus", which was launched in 1998 with some corrections. Taking into account the practice of the reforms achieved until that time, it was concluded the macrostabilisation means creation of jobs, ensuring the economic growth of the country during the difficult transition period, monitoring the inflationary processes, etc. by an intervention of the state with some respective economic policies.

In the Republic of Moldova liberalization of prices and markets was carried out without providing measures for economic macrostabilization and inflationary processes. In the first year of reforms, the hyperinflation reached a four-digit number - 1200%, in 1995-1600%.

Chaos dominated in the economy. In 1993, Moldova received the first credit that was seconded by the economic policies conforming to the "recipe" from Washington. With great delays in 1994, the first steps of macrostabilisation have been undertaken, but the results, according to experts, have been somewhat contradictory to Washington's "recipe." Hyperinflation began to cede in 1996, in 1999 it accounted for 44%. Only in 2005 inflation was reduced to 10%.

The start of the reforms has caused mass layoffs, which together with hyperinflation drastically reduced the standard of living of the population. Unbearable social costs have caused the poverty of the population at galloping rhythms. In the mid-1990s, the World Bank in an assessment determined that 70% of the population of the Republic of Moldova lived in poverty, of which 60%

- in extreme and absolute poverty. According to Bank's forecast, if Moldova developed at the annual rate of 7% GDP by 2007, every fourth citizen would continue to live in poverty. In reality, the country has not achieved an annual GDP growth rate of 7% until now (except for 2010). The precarious situation in the country has forced mass emigration, which eventually led to the depopulation of the country. At present, Moldova is the poorest country on the continent with a GDP of 1621 USD per capita.

The property reform was among the fundamental directions of the transition to the market economy. Privatization began much later. The first reforms in the field were qualified as neo-collectivization. Then there were „vehicles of privatization" on a fair basis that had not been adopted. In the end, privatization turned into a caricature. The "Land" program for the privatization of agricultural land was named "Tomb" by the people. Excessive land batch breaks made impossible their mechanical processing. The country's impoverished population couldn't afford the overinflated costs for combining the lot batching. We won't comment the fact that a horse or a milk cow from the former farmhouse was divided between two households.

A disastrous situation was also created in the industry. The closure of industrial enterprises led to a fall of the GDP to a critical level of 30-40% compared to the previous period, after which the breakdown of the industry began in the national economy. In 1994 GDP fell by 30.9% compared to 1993, GDP in the Republic of Moldova decreased to 39% in 1995 compared to 1990. In 1990-1999 period of economic crisis, the GDP decreased by 3 times. Some branches and sub-branches have completely disappeared. The industrial share of the gross domestic product (which has fallen into irreversible disintegration) has sharply declined, and the share of the productive sector has fallen from 42% to 28% in 2009-2014. The Republic of Moldova has begun to transform itself from an industrial-agrarian country into an agrarian-industrial country. In present time, the country has become commercial only.

Perverse privatization has led to tax evasion and corruption at all levels, to an inefficient business environment, which compromised reforms. For the first time in Moldova in 2017 more enterprises were closed than open: 5000 new enterprises were opened, while 7000 of enterprises have seized their activity. Because of the unpleasant business environment, the internal investors are tightening the economy and foreign ones are not coming. Since 1995 to the beginning of 2018, 27 billions of USD were remitted to the Republic of Moldova. In the same time period, the salary fund was reported at 20 billion USD. Thus, an economical growth was registered without any development. The base for the current state economy is consumption and not investments. According to the latest pension reform, the contribution to the pension fund makes on average 33% of the employee's salary. At the same time, the pension distribution is 26% from the average salary. Natural gas is being purchased at $174USD/1000m3, and it's being sold to the public at the rate of $350USD/1000m3. Over 40% of the population is living beyond the poverty level, and at the same time 1% of the population is holding 95% of the cash deposits.

At present, the imitation of reforms continues, and the transition period is prolonged indefinitely. Oligarchic capitalism is establishing in the country. The state became captured and is moving toward a dictatorship.

4.3. Formation of production relations based on private ownership during the transition period

In conditions where Moldova's economy is shifting from state ownership and collective work to private property and individual work (peasants being granted land also become private owners). Work of each owner with the means of its own production (including the land) and produced goods is the concrete individual work that becomes a private direct work.

Goods produced by this work have a well-defined end goal - to provide an added value to the owner. For this, this individual private work should be a part of the social labor that countermeasures and counterbalances to the other types of work that changes in the market. This metamorphosis means that individual concrete private work is recognized directly by the society as part of necessary social labor, and this exchange between landowners who practice qualitatively different kinds of work, bear the same time a social character that is certified in the market when this work takes value as expressed in prices.

In the market economy, social work becomes a totality, a cumulative concrete, private work of various kinds, which in turn forms a social division of the branched labor. The rods of this social division are interconnected, complement each other, concurrently in one another, and can not exist without one another, forming a whole, existing in certain correlations and proportions, which ensure a constant reproduction in society.

In conclusion, the country's transition to a market economy, the work of each owner becomes a mean of production, namely private concrete work that makes work of each market agent to isolate itself. Spacers and boundaries are the subjects of this private work as a link of social work, which is developing not at the command of society, but as desired by the owner's own risk and responsibility, without having to coordinate with other manufacturers. This is the base for the freedom of the manufacturer - the cornerstone for the creation of a market economy. The only factor that causes him to get active and to be taken into account is the market situation. It becomes the barometer and compass to guide producers of goods. None of the manufacturers know or can determine the volume and structure of the social consumption, and therefore, each produces at their own risk and responsibility of deciding *what, how and how much* to produce.

The manufacturer decides what to produce in time when social consumption remains of unknown magnitude to him in terms of quantity and quality, and in terms of the kind of goods are needed by the society at the moment. Therefore, he can close business and start another one in a homogeneous area or shift entirely into another branch of the national economy according to its own calculations if this transfer will provide a greater economic opportunity.

By changing the activity, the manufacturer changes the raw material suppliers and marketing agencies, which carry finished goods, market outlets, etc.

The whole range of working links in their totality constitute private social work and form a social division of labor in the society, *which turns the whole country into one decentralized multipolar economy.*

Likewise, manufacturers independently decide not only what to produce, but how and how much

to produce, choosing the way they like what means to use, **what kind of raw material to use, what type of technology in the production process, time and the place where and when to begin the process, etc.** Without agreeing with other producers or the state, they decide from which suppliers to purchase the equipment and raw materials, as it is more convenient to carry out these operations in order to buy at the best prices.

Under its own calculations determined according to the market situation, the owner of the means of production decides how much to produce, the volume and the structure of the material goods. This volume can be reduced or enlarged; the product structure can be changed according to the supply and demand fluctuations in market prices. The owner uses the favorability market that may appear in a limited time to solve the created productive potential.

Once the goods are being produced, the manufacturer decides on the private market to sell the material assets, in which period, to whom and at what price, as it is most convenient to secure the maximum possible profit under these circumstances. In conclusion, the private owner of the means of production at his own risk and liability decides on what, how, how much to produce and when, where and at what price to sell. And there are hundreds of thousands of such producers in a market economy. In their totality, they are in an interconnecting and interdependent relation through the division of labor and market, which remains unknown to them.

On the other hand, the labor force lacking the means of existence is free to choose where the work is more convenient. Work performed at the risk of a private employer conflicts with the one that is socially necessary. And so that the work of every owner to be accepted and appreciated by the society, there is a need for goods produced by it to be put on the market and evaluated. This act determines to what extent the work of everybody becomes a part of the socially necessary labor. These private assets are given the form of value and are exchanged for other commodities under the laws of the market economy. The oscillatory prices determine to what extent the work of each is acknowledged by the society regardless of the volume of actual expenses incurred by each producer and embodied in the goods presented on the market. Price fluctuations around the merchandise make the value law to become the regulator of the social product. Thus, the value of the commodity determines the destiny of the producers, becomes the dominant element in the economic system.

The fact that the assets of private producers are recognized and valued by the society only at the marketplace, after these goods are finished, and the manufacturer cannot intervene in this case destabilises, creates conditions for anarchy that not only affects, but also ruins some of the producers, craftsmen and individual households, farmers, etc. Proportions in the economic system are ensured through permanent disproportions of different sizes in the different sectors of the national economy. There is freedom of the producer in all types of activity, the freedom of the workforce to apply his/hers possibilities to work, the freedom of the goods and labor markets, the freedom of competition, etc. the very nature and basic properties of commodity production contravene any regulation, coordination, and planning by the state.

To what extent are the private property and the private work developed in Moldova, i.e., the production of goods that began barely 26 years ago? Some features in goods-money relations in the national economy are more, and others are less developed, all depending on the level of

separation of each individual's work, and the latter depends on the degree of development of the private property.

The importance of private property as a system of complex, fair relations between people in the process of production, distribution, exchange, and consumption, which characterizes the private ownership of production means and consumer goods, determines the essence of the social-economic essence of the property in the market economy.

In the Republic of Moldova, which has recently moved to the new economic system, there are several forms of property, and the significance of these forms in society is determined by the contribution of each form to the creation of the gross domestic product in the country. According to official statistical data, the share of private property in the formation of the GDP structure was the highest - 56.4% in 2012. Calculated together with the share of foreign ownership (20.9%) and mixed property (2.0%), which are legally and de facto private, these forms reached 79.3% and were dominant in GDP formation in the Republic of Moldova in 2008, this share is 73.6% (see Table 1).

Table 1. Gross Domestic Product Structure by Forms of Ownership[1] [11]

	1995	2008	2010	2012
Public property	39,1	23,7	21,9	20,7
Private property	56,0	54,5	52,5	56,4
Mixed ownership (public and private) without foreign participation	4,0	2,7	4,4	2,0
Foreign property	0,0	5,4	-	-
Property of mixed and foreign enterprises	0,9	13,7	21,2	20,9
Total	100,0	100,0	100,0	100,0

Equally important is the division of labor in RM in the form of ownership (see Table 2).

Table 2. Distribution of the labor force occupied by forms of ownership

	2006	2007	2008	2009	2010	2013
Total:	100	100	100	100	100	100
Public	27,0	26,4	26,4	27,8	28,4	27
Private	66,2	67,1	66,8	65,5	71,6	73
Other forms	6,8	6,5	6,8	6,7	-	-

According to the data of the labor force survey and statistical business reports submitted to the NBS press release. Moldova in figures http / www.statistica.md / newsview.12.07.2010, NBS 2013.

Over the 4 years (2006-2009), the maximum share of working-age population engaged in

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[1] National Bureau of Statistics / Press Release. Moldova figures. http // www.statistica.md/newsview. 12.07.2010. Statistical Yearbook 2010, 2012

production process of private property reached 67.1% in 2007, while the minimum - 65.5% in 2009, and increased to 73% in 2013. This means that the labor force in Moldova in its majority practices private work. As a result of this work, through material goods, freight, and the free exchange the society recognizes that private employment is socially necessary.

Another important aspect is the increase of fixed capital investments in the private property, which ensures a broader reproduction of it. This means profound structural changes in the total social product in the RM. According to statistical data, the total of fixed capital investments amounted to 7,899 million. Lei, of which investments in private, foreign and joint ventures - 7,345 mln. Lei. In all three forms of private ownership, the long-term assets amounted to 9,962 million. Lei in 2014[2].

Private ownership of the land is also dominating in agriculture. This demonstrates the statistical data in Table 3.

Table 3. Agricultural land by form of ownership in 2008[3] and 2012[4] [9-11]

	Year 2008					
	All forms of ownership:		Of which:			
			Public		Private	
	Th.of ha	%	Th.of ha	%	Th.of ha	%
Agricultural land -total:	2506,2	100	664,0	100	1842,2	100
Arable land	1821,7	72,7	265,7	40,0	1556,0	84,5
Perennial plantings	302,7	15,7	37,8	5,7	264,9	14,4
Orchards	132,7	5,3	21,8	3,3	110,8	6,0
Vineyards	157,5	6,3	8,4	1,3	149,1	8,1
	Year 2012					
Agricultural land -total:	2500,1	100	651,7	100	1848,4	100
Arable land	1816,1	72,6	264,7	46,6	1551,4	83,9
Perennial plantings	295,3	11,8	37,5	5,8	257,8	14,0
Orchards	135,8	5,4	21,8	3,3	114,0	6,2
Vineyards	141,2	5,6	8,2	1,3	133	7,2

Despite all the economic shocks caused by the domestic systemic economic crisis, as well as the negative effects outside the country, the agricultural production obtained in all categories of households ensures the food security of the country and produces surpluses for export.

Agriculture, like other branches of the real economy, is driven by private property that plays respective motivations for economic activity.

Therefore, private property in Moldova in the most important branches of economic activity has not only influenced the individual work but also decisively contributed to the fact that the manufacturers became private, making decisions what to produce, how and when it deems necessary based on their own risk. **Private property ensures the producer's economic freedom**

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[2] NBS / Press release. Moldova figures. http // www.statistica.md / newsview. 12.07.2010, BNS 2015.
[3] Statistical Yearbook of the Republic of Moldova, 2008; Tab. 16.2.2, p. 332
[4] National Bureau of Statistics of the Republic of Moldova, 2016. E-mail moldstat@statistica.md http//: www.statistica.md

in the production process, serves as a motivational mechanism through which his economic freedom is achieved. Since private property dominates our society, the economic system is production of goods on the national level of economy. Under similar circumstances, public-owned enterprises also separate their work not on the individual, but the collective level. The motivation is expressed by collective interest and not by a centralized, administrative management**.**

In conclusion, in Moldova, the production of goods, as an economic system, is developed to such an extent that it reproduces private property, and with it reproduces and develops the entire economic system created under the private ownership in terms that the workforce is also good. Equally, the economic freedom is developing as a distinctive feature of the market economy.

4.4. Trade in transformation during the transition period

For production of goods to become dominant in the society, it is necessary that the freedom of the producer in the production process to continue in the process of distribution, exchange, and consumption, so that all parts of the interdependent relations of production can enable the required level of freedom. The entrepreneur, before being a producer, is a consumer of products and raw materials. The freedom of the manufacturer must be predetermined by consumer's freedom. Otherwise, the consumer has no free choice. Many sectors of the national economy continue to be monopolized. Energy, Heat Generators, Telecommunications, Railway Services, Civil Aviation, Public Transport, Beer, Sugar, Vegetable Oil, etc. Production of petroleum products is cartelized, of natural gas - is monopolized.

Many sectors of imports of goods vital to the national economy, such as meat, fish, tea, coffee, vehicles continue to be monopolized. In the classic mode, the manufacturer sells separately his goods when, where, to whom he wants, and at the prices, he thinks are acceptable. The market for manufacturers remains unknown and free. In Moldova, the existence of many producers to an extent does not mean that they can sell their goods through competition by the fluctuations of demand-supply and, respectively, prices.

Thousands of livestock entrepreneurs breed animals not only for personal consumption but also for social consumption. Dozens of vendors sell meat, but without any palpable and efficient competition, so all meat is constantly sold at the same price. Prices do not fluctuate neither from a seller to seller nor around the value of merchandise. In this case, this value law is not the stiffer regulator of the production process. More and more farms are importing and selling cars, but competition between them is missing completely. The market does not appear to have any disproportions, dislocations; the prices do not fall.

Most of the goods in the country are not made under competitive conditions. The commercial process is hampered by the various restrictive agreements of competition established by different cartels and monopolies. There are different forms that impose these restrictions: control over production, dominance in some market segments, market sharing, price arrangements, price discrimination, exclusivity arrangements, etc.

Similar arrangements are made for imports of goods. Some cartels or specialized enterprises

impose discriminatory conditions for domestic importers or foreign competitors. National or mixed export-specific cartels restrict competition or restrict the goods for export by other manufacturers. External markets become a territorial exclusivity of a limited number of cartels. As a conclusion, on the domestic market, and in the import-export operations there is convergence of behavior between cartels and enterprises. This concentrated practice constrains competition by fixing the prices for some groups of commodities or some market segments, setting up a market control, or sharing it, introducing clauses for trading competitors that contravene commercial usage, etc.

In addition to these trade irregularities, the privatization of state and collective property, as mentioned in chapter II, had negative consequences, perverse effects that led to corruption, large tax evasion. There has been a rupture between the theoretical content of the reform and the implementation model. As a result, enterprises were shut down; mass layoffs were made, some basic branches of the country's industry went into a decomposition, and country's industrial infrastructure - in the process of irreversible degradation. The economic crisis that dominated 10 years (1990-1999) has impoverished the population by 6 times according to some calculations. With the liquidation of some branches and the decrease of production in the branches that continued the activity, the share of the productive sector in GDP decreased significantly – up to 28% in 2014. In the first 6 months of that year more than 500 businesses closed their businesses, influx of foreign capital substantially increased, export potential of the country fell significantly[5]. With all that, in 2016 the trade balance of the country was negative 1,975 million USD.

The problems of ensuring equal conditions of access for the producers to the market, organizing fair competition, including in import-export processes, that would lead to oscillations in prices of the goods and ultimately a reduction, the creation of the effective state anti-monopoly levers and their implementation, the breakdown of natural monopolies by ensuring freedom of consumer's choice between providers of electricity, heat, etc., require a solution for the creation of a homogenous market. Hence, the economic freedom of the goods exchange in the Republic of Moldova is limited. Borders of the economic freedom are determined by the production process.

It is important to emphasize in our case: the lack of consumer's freedom to choose a market, lack of the liberty of the market, dominated by supply and demand, lack of the freedom of economic resources' holders, autonomy of local governing bodies, lack of mechanisms for achieving economic freedom and many others undermine the nature of the production process of the goods, as economic regulation, and substantially limit economic freedom as a distinctive feature of the commodity system. All these prove that the Moldovan economy hasn't yet reached the level of a competitive market economy, but it is in the transition state to such economic system.

This requires that government officials continue to develop and implement a set of managerial, legal, budgetary, fiscal, financial measures and regulations, with the goal to continuously improve the country's trade.

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[5] In the years 2004-2005, the EU granted GSP and GSP + trade preferences to the Republic of Moldova for export to the EU for 7200 groups of goods (out of a total of 10 thousand) with zero customs duties and some groups of goods with a reduction of 10-20% . Of all the groups of goods, the Republic of Moldova chose only 500 groups of goods that were of interest to the country.

5. Conclusions

The investigations presented in this study allow us the following conclusions:

1. The fundamental economic reforms during the transition to a market economy that began in 1991 continue in 2018. This expansion over time is explained by the difficult objective conditions in which reforms, the economic and political crises that accompanied the pace of reforms, of frequent changes in government.

Each new government came to power as a rule to evaluate negatively what its predecessors had done its predecessors or tacitly let go of forgetting and only under the pressure of necessity reforming began again. These government initiatives involved the corrupt interests of the political groups of the ruling parties. In such conditions, we have half the reforms of the partial measure of transformations and reforms mixed with the interests of different political groups that have developed unevenly, contradicting, incomplete, incoherent, lacking consistent actions and stability. As a result, Moldova has not reached the level of a country with a functioning market economy and is still in transition.

2. The "shock therapy" model was used to liberalize the market and prices without taking measures to macro stabilize the economy and fight inflation as required by the "Washington Consensus", recommended by the WB and the IMF. Other programs were also implemented, based on the sacrifices of the population. The level of social costs of the reforms was so high in 1995, the WB in its report estimated that 70% of the country's population was poor, of which 60% - extremely poor. The unbearable economic conditions in the country led to the mass-emigration of population of the most fertile segment. Then they began to emigrate whole families. If 106 people were leaving the country daily in 2017, currently this number reached to 140/day. The country became depopulated.

3. Among the measures, determined during the transition period and the creation of an efficient business environment, the "Washington Consensus" will stimulate businesses and companies in their everyday work. Under the conditions of partial transformations, bureaucracy and massive corruption, many of the expected reforms have not been fully realized and the finished ones do not meet all the required qualities of that level in the Republic of Moldova. Coming to power under pressure from various factors, Governors begin with reforms in legal system, prosecution, police. By doing this, the credibility of population towards these branches remains low.

In such situations, the inadequate business environment, on the one hand, does not only mean large financial costs, but also an unjustified time to start the lengthy binding procedures related to business, permissive acts, authorities, licenses, opinions. At the stage of business development, the nightmares of inspections and controls, reports, mandatory information, regulations that detract from the business, surpass Moldova from the countries in the region, positioning Moldova behind in the ranking of regional, continental and global competitiveness. The unfavorable environment not only does not stimulate foreign investors to come to Moldova, but also forces local entrepreneurs to close their businesses. In 2017, for the first time, the number of businesses that closed was 2000 units higher compared to the newly launched businesses.

4. The fundamental component of the transition to the market economy is the reform of state and collective property in agriculture. Property reform started spontaneously without having a strategy with privatization targets with pre-established terms. Reformation of the state property led to layoffs, while the appearance of private enterprises created new jobs. Without this consecutiveness, the liberalization of markets and prices becomes unbearable for those who have been employed before the structural changes. Reforms of state and collective property have not created so many jobs, as they have systematically destroyed national wealth. This was done not only through inefficient, faulty management (through artificial bankruptcy, liquidation and closure of businesses with hundreds and thousands of employees, the emergence of various dysfunctions and difficulties that led to the fall of production and ultimately to the bankruptcy), and through direct massive robberies. In the short period or time not only businesses, but modern branches and sub-branches (of economy?) closed down and were liquidated. Industry and infrastructure got broken down. The share of the industry, which in 1989 was around 70% of GDP, fell to 42% in 2009, and in 2014 it was only 28%. Presently, the GDP volume is 80% compared to 1989, the industrial production volume - 73%, agricultural production- 68%, and the investment volume is only 22% (according to the calculations of an opposition party).

This economic decline confirms that the ways, in which the economic reforms in Moldova have been achieved, have not contributed to the growth of the real economic sector. Losses are well above economic growth. The decline of the productive sector has contributed to shrinking of the country's export potential, and export growth in the EU is the result of a decrease in export volumes to the CIS, and, especially, to the Russian Federation.

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Rezumat

În articolul dat se încearcă să se analizeze esenţa libertăţii economice în condiţiile în care economia naţională trece printr-o perioadă lungă şi dificilă, de la planificarea centralizată la relaţiile de piaţă. Libertatea economică este determinată de proprietatea privată, care reproduce munca privată, relaţiile de producţie bazate pe legile economice de piaţă. Proprietarul (asupra mijloacelor de producţie) decide ce trebuie să producă, cum să o facă (prin ce tehnologii şi metode), cât să producă pe proprie teamă, risc şi responsabilitate. Aceasta înseamnă că proprietarul asupra mijloacelor de producţie alege în mod liber tipul şi volumul activităţii economice, dar libertatea

economică este limitată de piaţă divizată în diferite grupuri economice care îşi vând bunurile şi serviciile la preţuri predeterminate. În absenţa unei libertăţi economice reale pe piaţă, legile economice şi, în primul rând, legea cererii şi ofertei nu acţionează pe deplin. Concurenţa liberă între producătorii de bunuri nu domină şi nu controlează piaţa, şi are un impact nesemnificativ asupra reducerii preţurilor. Subliniem că, prin urmare, economia Republicii Moldova nu este încă o economie de piaţă în sensul clasic. Ea este încă într-o stare de tranziţie. Eficienţa redusă a reformelor, implementarea jumătăţilor de reforme, inconsecvenţa lor a condus la o scădere a potenţialului productiv al ţării şi, prin urmare, sectorul de producţie al economiei naţionale şi potenţialul de export sînt în continuă scădere din 1991.

Cuvinte-cheie*: economia de piaţă, proprietatea privată, angajatorul, activitatea economică, cererea şi oferta, concurenţa, mărfurile, exportul*

Аннотация

В статье делается попытка проанализировать сущность экономической свободы в условиях, когда национальная экономика проходит через долгий и трудный период от централизованного планирования к рыночным отношениям. Экономическая свобода определяется частной собственностью, которая воспроизводит частный труд, рыночные производственные отношения. Работодатель (владелец средств производства) решает, что производить, как это делать (по каким технологиям и методам), сколько производить под свой страх и риск, и ответственность. Это означает, что собственник средств производства свободно выбирает тип и объём экономической деятельности, но экономическая свобода ограничена рынком, разделенным на различные экономические группы, которые продают свои товары и услуги по заранее определенным ценам. В отсутствие реальной экономической свободы на рынке, экономические законы, и в первую очередь, закон спроса и предложения, не действуют в полной мере. Свободная конкуренция между производителями товаров не доминирует, не управляет рынком и оказывает низкое влияние на снижение цен. Подчеркнём, что поэтому экономика Республики Молдова по-прежнему не является рыночной экономикой в классическом смысле. Она по-прежнему находится в переходном состоянии. Низкая эффективность проведённых реформ, их половинчатость и непоследовательность привела к снижению производственного потенциала страны, а потому производственный сектор национальной экономики и потенциал экспорта снижается с 1991 года.

Ключевые слова*: рыночная экономика, частная собственность, работодатель, экономическая деятельность, спрос и предложение, конкуренция, товары, экспорт*

THE PROPERTIES AND QUANTITATIVE INDICES OF THE ASSORTMENT OF GOODS - TOOLS TO ANALYZE AND OBJECTIVE ESTIMATION OF IT

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Abstract

The systematic analysis and estimation, the timely improvement of the commercial assortment of goods, are important components of the commercial activity, directed to the formation and maintenance of the optimal assortment of goods in the offer of the retail trade enterprise. Optimality of trade assortment of goods is a complex property which combines a few properties of trade assortment of goods, nomenclature which is still under development. It is important that the properties of the range of goods to be separately nominated, defined and uniformly used in commercial practice.

In this work an extensive set of properties (characteristics) of the commercial assortment of goods are highlighted, nominated, symbolized distinct and defined (revised, specified or first time)) and qualitative and quantitative indicators of the properties nominated, as well as the methods and formulas for the establishment and evaluation of quantitative properties (characteristics) of the trading range of goods are developed, symbolized distinct and presented. The complex includes the following 23 properties (characteristics):coverage (y), span (e), stretch (r), length (l), thickness (u), breadth (m), profoundness (h), plenitude (p), complexity (k), novelty (n), optimality (o), structure (s), stability (c), replacement (z), renewal (i), expanding (dy), widening (de), stretching (dr), elongation (dl), thickening (du), expansion (dm), deepening (dh), filling (dp).

Keywords: the trade assortment of goods; the properties of the commercial goods assortment: coverage, span, stretch, length, thickness, breadth, depth, plenitude, complexity, novelty, optimality, structure, stability, replacement, renewal, expanding, widening, stretching, elongation, thickening, expansion, deepening, filling

1. Introduction

The specialists and scientists concerned with the organization and conduct of the retail trade with the consumer goods pay great attention to the formation of the commercial goods assortment, which underlies the satisfaction of the consumers' needs and the demand of the buyers, predetermines to a great extent the efficiency of the trade activity of the commercial enterprise [2-5; 8; 10; 12-16; 18-19].

Formation of the commercial assortment - activity of creating the set of goods offered by the trade enterprise to the buyers, taking into account the needs of the consumers and the need to ensure the profitability of the commercial activity of the enterprise [3; 8]. Needs of consumers and buyers' demand for consumer goods are in constant change, perfecting, which causes the necessity of systematic improvement of the commercial assortment of goods. Both the constitution as well as the systematic improvement of the commercial assortment presuppose its ample and objective

analysis, which requires the highlighting and research of the properties of the commercial goods assortment, the elaboration of the indices of its characteristics [2-3; 8-10; 13-16].

Property of assortment – specific feature which is manifested in the formation and modification, and index (indicator) of the assortment – quantitative expression of the property (characteristic) assortment of goods [3; 10]. The properties and indices of the commercial goods assortment, expressing numerical co-report between different segments of the range of goods [2-3; 10; 12-14; 18] and are arranged according to the hierarchical classification of consumer goods. Therefore, highlighting the properties and developing the set of indices of commercial assortment of consumer goods can only be made on the basis of clear goods classification, well-grounded and clear definitions of classification levels.

The nomenclature of properties and indices of the assortment of goods are the basic tools of the management of the commercial consumer goods assortment, which consists in the timely formation, modification and maintenance within the optimal limits of the set of properties (characteristics) of the commercial goods assortment [3; 8; 11]. So, in order to manage the commercial goods assortment, it is necessary to determine the nomenclature and the limits of the property (characteristics) of the assortment.

2. Degree of investigation of the problem at the moment, the purpose of the research, methods and applied materials

According to the scientific development of the last decades, the commercial goods assortment is characterized by a set of qualitative descriptive properties [characteristics] [2-3; 8; 10; 12], which can be estimated quantitatively by the respective coefficients, but the nomenclature of these characteristics (properties) is in the process of developing.

In specialty literature [2-3; 8; 12-14; 18] some properties of the commercial goods assortment are nominated, but the definitions, descriptions, symbols and ways of calculating their indices are not unified, which prevents uniform use in practice.

The purpose of this paper is to improve and complement the nomenclature, to formulate and to distinguish the definitions, to develop the distinctive symbolization and the ways of calculating the different quantitative indices of the properties of the commercial assortment of consumer goods.

Development is done using mathematical statistics methods, such as: comparative analysis, correlation analysis, analogy, induction and deduction, expertise, practical experience, etc. Definitions are proposed by focusing on standards on commercial terminology [17] and specialty literature [2-3; 5-6; 8; 10; 12-14; 18]. Highlighting and identifying the properties of the goods assortment are carried out according to the proposals of the scientists [2-3; 13-14], based on the hierarchical classification of consumer goods [7; 13], which encompasses several levels [7; 10; 13].

In order to nominate and define the properties (characteristics) of the commercial goods assortment there are used classification levels: classes, subclasses, groups, subgroups, types, subtypes and varieties. Taking into account the normative and technical documents [1; 17] and

specialty literature [7; 10; 12-13; 19], we have used the following specified definitions regarding levels of consumer goods classification and respective symbols [3; 10]:

- ✓ Class (C) of goods –the ensemble of goods with analogue functional purpose;
- ✓ Subclass (C_s) of goods - segment of the goods ensemble of the goods class distinct by the raw material or the principle of functioning, satisfaction of the consumers' needs;
- ✓ Group (G) of goods - reunited (aggregated) range of goods based on common raw material or on a directional basis of any common features of use, operation, satisfaction of a specific group of consumer needs;
- ✓ Subgroup (G_s) of goods - subdivision or part (a set, segment) of the range of goods of a group that differs from other sets (segments) by one or more distinct particularities;
- ✓ Type (T) of goods - genus (species, kind, etc.) of goods, which has representative features essential for a large number of distinctive goods units, which in particular satisfy a distinct need for consumers;
- ✓ Subtype (T_s) of goods - subdivision (sort, breed, etc.) or part (a set, segment) for a large number of goods of the same type that differ from other segments by one or more distinct consumption properties;
- ✓ Variety (V) of goods - representative (distinct name) of the subtype (type) of goods, which possesses one or several distinct properties and satisfies one or more of the needs of consumers, in particular.

At the same time, we mention that the variety (subtype, type, subgroup, etc.) of **goods** may be **old**, known on the consumer market for a long time (the length of the period of obsolescence perception depends on the hierarchical level, for example: the variety of goods could be considered old 6 months after it appears on the consumer market, the subtype - after 12 months, the type - after 24 months, the subgroup - after 5 years, the group - after 10 years etc.), and **new** or **renewed**. As **new** consumer **goods**, we consider goods with new consumer properties that are designed to meet new human needs, or obtained, manufactured from the new raw material or in an absolutely innovative composition or operating and satisfying the needs of the consumer on the basis of fundamentally new principles or regularities, but the **renewed goods** (**modernized, perfected, ennobled**) are the well-known goods, but modified, perfected, ennobled, etc. in order to satisfy as much as possible the requirements of the consumers in constant development. When renewing the goods range, both new and renewed goods contribute to it.

Obviously, the commercial goods assortment consists of varieties of goods of the respective types (subtypes) organized into groups (subgroups) of goods and the latter into classes (subclasses) that constitute the supply of goods of the commercial enterprise. In this paper the following notions are also used:

- optimal assortment - a range of goods that, mostly, corresponds to the consumers' needs and buyers' demand, on the one hand, and, on the other hand, corresponds mostly to both the possibilities and interests of the producers and the seller, as well as the high consumption culture and healthy lifestyle, namely the needs and economic and social requirements of society;
- complex assortment (complex of goods) - set of consumer goods that meet a complex necessity (a complex of interconnected necessities);

- elaboration of the structure of optimal assortment- establishment of the co-reports between the weights of the groups, subgroups, types, subtypes and varieties of consumer goods in the offer of goods in accordance with the structure of the buyers' demand, taking into account the possibilities of the consumer goods providers (producers).

It is also appropriate to distinguish, on the one hand, the basic assortment (b) which composition and characteristics are determined by external or internal regulatory acts of the commercial entity, and, on the other hand, the analyzed assortment (a) consisting of the goods present in the goods supply of the commercial unit at that time and which is researched (analyzed).

3. Results obtained and discussions. The extended complex of properties and indices of the commercial goods assortment

Having the definitions of levels of classification of consumer goods and of types of commercial assortment [3; 7-8; 10; 13], we propose the following extended complex (nomenclature) of properties (characteristics) and measurable coefficients of the commercial goods assortment as well as the ways of calculating these indicators:

- coverage (y) - number of classes, and in the case of division of the class into subclasses - the number of classes, which do not divide into subclasses, and subclasses of other classes in the commercial goods assortment. The degree (level) of covering of the assortment is expressed by the *coefficient of coverage* (y), which is calculated by reporting the number of classes (Ca),which do not split into subclasses, plus the number of subclasses in the other classes ($C_s a$) (number of classes and subclasses*) of goods in the assortment analyzed ($Ca + C_s a$) to the number of classes in the basic assortment (Cb), which do not divide into subclasses, plus the number of subclasses in the other classes ($C_s b$) (number of classes and subclasses*) of goods from the basic commercial goods assortment ($Cb + C_s b$),

$$ y = \frac{C_a + C_{sa}}{C_b + C_{sb}} . \qquad (1) $$

Depending on the coverage, the commercial goods assortment is *comprehensive (extended),* if it includes more than 2 classes or more than 6 subclasses of consumer goods, *relatively comprehensive (extended),* if it includes 2 classes or 3-6 subclasses of consumer goods, and *not comprehensive (restricted),* if it consists of a class without or with 2 subclasses of consumption goods, and depending on the *coefficient of coverage,* the commercial assortment of consumer goods analyzed has the *corresponding coverage,* when y≥1[1], *satisfactory*, when y = 0.7–0.99 and *unsatisfactory*, when y <0.7;

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[1] Note: In all cases the coefficient may exceed the value of 1, if the base assortment does not include all assortment items in the Combined Nomenclature of Goods [1].
*) In all cases the numbers include classes that do not divide into subclasses and subclasses of other classes.
**) In all cases the numbers include the groups that do not divide into subgroups and the subgroups of the other groups.
***) In all cases, numbers include types that do not divide into subtypes and subtypes of others types.

- **span** (width, latitude) **(e)** - number of groups, and in the case of division of the group into subgroups - the number of groups, which do not divide into subgroups, and subgroups of other groups in the commercial goods assortment. The degree (level) of the span (latitude) is expressed by the *coefficient of span or width (latitude) (e)*, which is calculated by reporting the number of groups (Ga),which do not divide into subgroups, plus the number of subgroups of other groups (G_sa) (number of groups and subgroups**) of goods in the assortment analyzed ($Ga + G_sa$) to the number of groups in the basic assortment (Gb), which do not divide into subgroups, plus the number of subgroups in the other groups (number of groups and subgroups**) of goods of the basic assortment ($Gb + G_sb$),

$$e = \frac{G_a + Gsa}{G_b + G_{sb}}. \qquad (2)$$

Depending on the span, the commercial goods assortment is *wide,* if it includes over 3 groups or over 8 subgroups of consumer goods, *relatively wide*, if it includes 2-3 groups or 4-8 subgroups of consumer goods, and *narrow*, if it consists of a group without or with 2-3 subgroups of consumer goods, and depending on the *coefficient of span*, the analyzed commercial assortment of consumer goods has the *corresponding span*, when e≥1, *satisfactory*, when e = 0.7– 0.99 and *unsatisfactory*, when e < 0.7;

- **stretch (r)** - number of subgroups in the group of goods (G) of the commercial goods assortment. The degree (level) of the extent of the commercial assortment of the group of goods is expressed by the *coefficient of stretch* (r), which is calculated by reporting the number of subgroups of goods in the examined group (G_sa) of goods in the assortment analyzed to the number of subgroups of goods in the given group from the basic commercial assortment (G_sb) of goods,

$$r = \frac{Gsa}{Gsb}. \qquad (3)$$

Depending on the stretch, the commercial assortment of the group of goods is *stretched,* if the group includes over 6 subgroups of consumer goods, *relatively stretched*, if it includes 3-6 subgroups of consumer goods, and *tight,* if it is constituted by a group without or with 2 subgroups of consumer goods, and depending on the *coefficient of stretch*, the commercial assortment of consumer goods analyzed is *corresponding stretch,* when r ≥ 1, *satisfactory*, when r = 0.7– 0.99 and *unsatisfactory*, when r < 0.7;

- **length** (longitude) **(l)** - number of types, and in the case of type subdivision in subtypes - the number of types, which do not divide into subtypes, and subtypes of the other types in the assortment of the goods group (subgroup). The degree (level) of the length (longitude) of the assortment is expressed by the *coefficient of length or longitude* (l), which is calculated by reporting the number of types (Tga), which do not divide into subtypes, plus the number of subtypes from the other types (T_sga) (number of types and subtypes ***) of goods in the assortment of the group (subgroup) analyzed ($Tga + T_sga$) to the number of types in basic assortment (Tgb), which do not divide into subtypes, plus the number of subtypes of the other

types (T_sgb) (number of types and subtypes ***) of goods from the basic assortment ($Tgb + T_sgb$) of the group (subgroup) in question,

$$l = \frac{T_{ga}+T_{sga}}{T_{gb}+T_{sgb}} \text{ (4) (in the case of the group of goods) or}$$

$$l = \frac{T_{gsa}+T_{sgsa}}{T_{gsb}+T_{sgsb}} \text{ (5) (in the case of the subgroup of goods).}$$

Depending on the length, the commercial assortment of the goods group (subgroup) is *long,* if the group (subgroup) includes more than 4 types or over 8 subtypes of consumer goods, *relatively long,* if it includes 3-4 types or 5-8 subtypes of consumer goods, and *short*, if it is composed of 1-2 types without or with 1-2 subtypes of consumer goods, and depending on the *coefficient of length*, the commercial assortment of consumer goods analyzed has the *corresponding length,* when $l \geq 1$, *satisfactory*, when $l = 0.7 - 0.99$ and *unsatisfactory*, when $l < 0.7$;

- **thickness (u)** - number of subtypes (T_s) of the type of goods in the commercial goods assortment. The degree (level) of thickness of the commercial assortment of the type of goods is expressed by the *coefficient of thickness* (u), which is calculated by reporting the number of subtype of goods of the type of goods examined (T_sa) in the assortment analyzed to the number of subtypes of goods of the type of goods given in the basic commercial assortment (T_sb) of goods,

$$u = \frac{Tsa}{Tsb}. \qquad (6)$$

Depending on the thickness, the commercial assortment of goods type is *thick,* if the type includes over 5 subtypes of consumer goods, *relatively thick*, if it includes 3-5 subtypes of consumer goods and *thin,* if it is constituted by a type without or with 2 subtypes of consumer goods and depending on the *coefficient of thickness*, the commercial assortment of consumer goods analyzed has the *corresponding thickness*, when $u \geq 1$, *satisfactory*, when $u = 0.7 - 0.99$ and *unsatisfactory*, when $u < 0.7$;

- **breadth (m)** - total number (sum) of the types, and in the case of division of type into subtypes- total number (sum) of types, which do not divide into subtypes, and subtypes of the other types in all subgroups of the goods group. The degree (level) of breadth of the assortment of the group of goods analyzed is expressed by the *coefficient of breadth* (m), which is calculated by reporting the total number (sum) of types ($\sum Tg_sa$),which do not divide into subtypes, plus the total number (sum) of subtypes from other types ($\sum T_sg_sa$) (number of types and subtypes***) of all the subgroups of the commodity group analyzed ($\sum Tg_sa + \sum T_sg_sa$) to the total number (sum) of types of the basic assortment ($\sum Tg_sb$),which do not divide into subtypes, plus the total (sum) number of subtypes of other types ($\sum T_sg_sb$) (number of types and subtypes ***) in all subgroups of the respective goods group ($\sum Tg_sb + \sum T_sg_sb$),

$$m = \frac{\Sigma T_{gsa}+\Sigma T_{sgsa}}{\Sigma T_{gsb}+\Sigma T_{sgsb}}. \qquad (7)$$

Depending on the breadth, the commercial assortment of the group of goods is *broad,* if the group includes over 12 types or more than 20 subtypes of consumer goods, *relatively broad*, if it includes 8-12 types or 15-20 subtypes of consumer goods, and *narrow* , if it is composed of 1-7 types without or with 1-2 subtypes of consumer goods, and depending on the *coefficient of breadth*, the commercial assortment of consumer goods analyzed has the *corresponding breadth*, when m ≥1, *satisfactory*, when m = 0.7– 0.99 and *unsatisfactory*, when m < 0.7;

- **profoundness** (depth) **(h)** - number of varieties within the type (subtype) of goods. The degree (level) of depth is expressed by the *coefficient of profoundness (depth)* (h), which is calculated by reporting the number of varieties of goods within the analyzed type (subtype) of the goods (*Vta* or *Vt$_s$a*) to the number of varieties of goods within the respective basic type (subtype) of goods (*Vtb or Vt$_s$b*),

$$h_t = \frac{V_{ta}}{V_{tb}} \quad (8) \quad \text{or} \quad h_{ts} = \frac{V_{tsa}}{V_{tsb}} \quad (9).$$

Depending on the profoundness, the commercial assortment of the goods type (subtype) is *profound (deep),* if the type (subtype) includes over 6 varieties of consumer goods, *relatively profound*, if it includes 3-6 varieties of consumer goods, and *superficial (not profound, not deep),* if it is made up of 1-2 varieties of consumer goods, and depending on the *coefficient of profoundness (depth)*, the commercial assortment of consumer goods analyzed has the *corresponding depth*, when h ≥1, *satisfactory*, when h = 0.7– 0.99 and *unsatisfactory*, when h < 0.7;

- **plenitude** (fullness) **(p)** - total number (sum) of varieties of goods in the assortment of class ($\sum$Vc) or subclass ($\sum Vc_s$), or group ($\sum Vg$) of consumer goods analyzed. Degree (level) of the plenitude of the assortment of the class (subclass or group) of goods analyzed is expressed by the *coefficient of plenitude* (p), which is calculated by reporting the total number (sum) of varieties of goods within the class (of all subclasses, groups, subgroups, types and subtypes of the respective class) or of subclass (of all groups, subgroups, types and subtypes of the respective subclass), or of group (of all subgroups, types and subtypes of the respective group) of goods in the assortment analyzed ($\sum Vca$ or $\sum Vc_sa,$ or $\sum Vga$) to the total number (sum) of goods varieties within the class or subclass, or respective group of goods in the basic assortment ($\sum Vcb$ or $\sum Vc_sb,$ or $\sum Vgb$),

in the case of class analysis: $p_c = \frac{\sum V_{ca}}{\sum V_{cb}},$ (10)   or   in the case of the analysis of the subclass:

$$p_{cs} = \frac{\sum V_{csa}}{\sum V_{csb}}, \quad (11) \quad \text{or} \quad \text{in the analysis of the group of goods:} \quad p_g = \frac{\sum V_{ga}}{\sum V_{gb}} \quad (12).$$

Depending on the plenitude, the commercial assortment of the class or subclass, or of the group of goods is *full (complete)*, when p≥1 and *incomplete (reduced, partial)*, when p<1. The *incomplete (reduced, partial)* assortment can be qualified as *rich,* when p=0.81–0.99, *satisfactory,* when p=0.5–0.8 and *poor,* when p<0.5.

In the analogue mode it can be calculated the coefficients of the fullness of the whole assortment, or subgroup, of the type or subtype of goods analyzed;

- **complexity (k)** - the correspondence of the nomenclature of types (subtypes) of goods from the assortment analyzed to the nomenclature of the types (subtypes) of goods from the complex assortment (complex of goods) envisaged for satisfying the needs of certain groups of consumers (for youth, tourists, newborns, women, etc.), or for meeting the complex of related needs (for home, kitchen, garden, orchard, motor vehicles, etc.).The degree (level) of complexity is expressed by the *coefficient of complexity* (k), which is calculated by reporting the number of types (Tka), which do not divide into subtypes, plus the number of subtypes from the other types (T_ska) (number of types and subtypes ***$^{)}$) of goods within the complex assortment of approved (basic), present in the assortment analyzed (*a*) to the number of types (Tkb), which do not divide into subtypes, plus the number of subtypes of the other types (T_skb) (number of types and subtypes ***$^{)}$) of goods within the respective basic complex assortment (*b*),

$$k = \frac{T_{ka}+T_{ska}}{T_{kb}+T_{skb}}. \qquad (13)$$

The complexity of the commercial assortment of consumer goods is *corresponding,* when the *complexity coefficient* k $\geq$1, *satisfactory*, when k= 0.7–0.99 and *unsatisfactory*, when k < 0.7;

- **novelty (n)** - number of varieties of goods, presented on the consumer market as new and upgraded (*Vn*), included in the assortment analyzed over the determined period of time. The degree (level) of novelty assortment is expressed by the *coefficient of the novelty* (n), which is calculated by reporting the number of varieties of goods, present on the consumer market as new and upgraded (*Vn*), included in the assortment analyzed (*Vna*) over the determined period of time (90 or 180days), to the number of varieties in the assortment analyzed (*Va*),

$$n = \frac{V_{na}}{V_a}. \qquad (14)$$

Depending on the novelty, the commercial goods assortment is *innovative*, when the *coefficient of novelty* n>0.l, *relatively innovative*, when n = 0.03 – 0.1 and *conservative*, when n < 0.03;

- **optimality (o)** - the correspondence to the nomenclature of the varieties of goods from the assortment analyzed to the nomenclature of varieties of goods in the optimal assortment. The degree (level) of optimality assortment is expressed by the *coefficient of the optimality* (o), which is calculated by reporting the number of varieties of goods from the assortment of optimal, presented in the assortment analyzed (*Voa*), to the number of varieties of goods established in the optimal basic assortment (*Vob*),

$$o = \frac{V_{oa}}{V_{ob}}. \qquad (15)$$

Depending on optimality, the commercial goods assortment is *optimal,* when the *coefficient of optimality* o = l, *sufficiently optimal*, when o = 0.7– 0.99 and *non-optimal*, when o < 0.7;

- **structure (s)** - the composition of assortments of groups (subgroups), types (subtypes), varieties, etc. of goods and the respective weight of each group (subgroup), of each type (subtype) and of each varieties in total volume of the analyzed assortment expressed in value (w) or physical quantity (f), or numerical (q). Quantitatively the structure of the goods assortment is expressed by the *coefficients of weight* (s) of each component in the total volume of the assortment analyzed:

  • coefficient of weight in the total *value* volume (S_w) is calculated by reporting the value of the group (G_{iw}) or the subgroup (G_{siw}), type (T_{iw}) or subtype (T_{siw}), variety (V_{iw}) respective to the total assortment analyzed ($\sum G_{wa}$, $\sum G_{swa}$, $\sum T_{wa}$, $\sum T_{rswa}$, $\sum V_{wa}$),

$$s_w g_i = \frac{G_{iw}}{\sum G_{wa}} \ (16) \ \ \text{or} \ \ s_w g_{si} = \frac{G_{siw}}{\sum G_{swa}} \ (17);$$

$$s_w t_i = \frac{T_{iw}}{\sum T_{wa}} \ (18) \ \ \text{or} \ \ s_w t_{si} = \frac{T_{siw}}{\sum T_{swa}} \ (19); \ \ s_w v_i = \frac{V_{iw}}{\sum V_{wa}} \ (20);$$

  • weight coefficient in the total volume expressed in the *physical* (S_f) or *numerical* (S_q) quantity is calculated by reporting the physical (mass, surface, volume, etc.) or numerical (units etc.) quantity of the group (G_{if}, G_{iq}) or subgroup (G_{sif}, G_{siq}), type (T_{if}, T_{iq}) or subtype (T_{sif}, T_{siq}), variety (V_{if}, V_{iq}) respectively to the total physical or numerical quantity (volume) of the analyzed assortment (respectively, $\sum G_{fa}$, $\sum G_{sfa}$, $\sum T_{fa}$, $\sum T_{sfa}$, $\sum V_{fa}$, or $\sum G_{qa}$, $\sum G_{sqa}$, $\sum T_{qa}$, $\sum T_{sqa}$, $\sum V_{qa}$),

$$s_f g_i = \frac{G_{if}}{\sum G_{fa}} \ (21) \ \ \text{or} \ \ s_f g_{si} = \frac{G_{sif}}{\sum G_{sfa}} \ (22); \ \ s_f t_i = \frac{T_{if}}{\sum T_{fa}} \ (23) \ \ \text{or} \ \ s_f t_{si} = \frac{T_{sif}}{\sum T_{sfa}} \ (24); \ \ s_f v_i = \frac{V_{if}}{\sum V_{fa}} \ (25)$$

or

$$s_q g_i = \frac{G_{iq}}{\sum G_{qa}} \ (26) \ \ \text{or} \ \ s_q g_{si} = \frac{G_{siq}}{\sum G_{sqa}} \ (27); \ \ s_q t_i = \frac{T_{iq}}{\sum T_{qa}} \ (28) \ \ \text{or} \ \ s_q t_{si} = \frac{T_{siq}}{\sum T_{sqa}} \ (29); \ \ s_q v_i = \frac{V_{iq}}{\sum V_{qa}} \ (30).$$

In the analogue mode are calculated and the weighting coefficients of the respective structural components of the base assortment.

Analysis and assessment of the quality of the structure of consumer goods assortment are carried out by comparing the weighting coefficients volumes values or quantity (physical, numerical) of groups (subgroups), types (subtypes), varieties, etc., of goods from the assortment of goods analyzed with the respective coefficients of the weighting respective groups (subgroups), types (subtypes), varieties of goods within the assortment of basic and calculating the *coefficients of structural deviations* **(φ)**, in case of existence, as the difference between the coefficients of the weighting of the structural components of the assortment of goods analyzed (S_{wa}, S_{fa}, S_{qa}) and the weighting coefficients of the respectively structural components of the assortment of goods of the base (S_{wb}, S_{fb}, S_{qb}), expressed as a percentage **(φ,%)** by the latter (S_{wb}, S_{fb}, S_{qb}),

$$\varphi_w\% = (S_{wa} - S_{wb}) / S_{wb} \times 100 \ (31) \ \ \text{or} \ \ \varphi_f\% = (S_{fa} - S_{fb}) / S_{fb} \times 100 \ (32),$$

$$\text{or} \ \ \varphi_q\% = (S_{qa} - S_{qb}) / S_{qb} \times 100 \ (33),$$

for example: the coefficient of the weighting of the goods J group value in the basic assortment constitutes 0.1 ($S_w g_{jb}$ = 0,1), but in the assortment analyzed constitutes 0.11 ($S_w g_{ja}$ = 0,11),

$$\varphi_w g_j\% = (S_w g_{ja} - S_w g_{jb}) / S_w g_{jb} \times 100 \ (34) = (0{,}11 - 0{,}1) / 0{,}1 \times 100 = 10\%.$$

The structure of the assortment of goods to be analyzed is considered *corresponding*, if the *coefficients of structural deviations* $\varphi,\% = 0$, *satisfactory*, if φ, % = –5% ÷ +5%, *acceptable*, if $\varphi,\% = \pm 5{,}01\% \div \pm 10\%$ and *unsatisfactory*, if $\varphi,\% < -10\%$ or $\varphi,\% > 10\%$.

Analysis and assessment of the quality of the consumption goods assortment structure may be carried out on the basis of calculation of the *standard deviation* (deviation of the mean squared) **(σ,%)** of the differences between the coefficients of the weights of the structural components of the assortment analyzed (S_{wa}, S_{fa}, S_{qa}) and the coefficients of the weighting of the structural components of the assortments of the base (S_{wb}, S_{fb}, S_{qb}), expressed as a percentage ($\varphi,\%$) by the latter (S_{wb}, S_{fb}, S_{qb}). For example, $\varphi,\%$ for the group of goods A is –4% ($\varphi,\% = -4\%$), for the group of goods J is 10% ($\varphi,\% = 10\%$), for the group of goods B is –6 % ($\varphi,\% = -6\%$) and by calculation get as the standard deviation ($\sigma,\%$) is 8.72% ($\sigma,\% = 8.72\%$).

The structure of the assortment of goods analyzed is considered *corresponding,* if the *standard deviation* of coefficients of structural deviations $\sigma,\% = 0$, *satisfactory*, if $\sigma,\% < 5\%$, *acceptable*, if $\sigma,\% = 5{-}10\%$ and *unsatisfactory,* if $\sigma,\% > 10\%$;

- **stability (c)** - expresses the permanence of the presence in the supply of goods of the commercial enterprise for a specified period, but not less than 20 calendar days, of the set of varieties of goods from the analyzed group or the assortment of goods examined. The degree (level) of stability is expressed by the *coefficient of stability* (c), which is calculated by reporting the sum of the numbers of varieties of goods, which were recorded as present in all controls carried out with periodicity (interval) 10 days, of the assortment of the respective group analyzed (*ΣVcga*) or of the assortment of goods examined (*ΣVca*), to the sum of the numbers of all varieties registered with all assortment controls of the respective group analyzed (*ΣVga*) or of the assortment of goods examined (*ΣVa*),

$$c_g = \frac{\Sigma V_{cga}}{\Sigma V_{ga}} \ (35) \quad \text{or} \quad c_a = \frac{\Sigma V_{ca}}{\Sigma V_a} \ (36).$$

It is established that controls will be performed with periodicity (intervals) 10-day, and the duration of a monitoring period will not exceed one quarter. Thus, in the case of the 20-day period, there will be carried out 3 checks, in the case of a one-month period, 4 checks will be carried out, in the case of the 2-month period – 7 checks, and in the case of one quarter – 10 checks. The annual coefficient of the assortment stability shall be calculated as the average of the quarterly coefficients.

Depending on the stability, commercial goods assortment is *stable,* when the *coefficient of stability* c=1.0, *sufficiently stable,* when c=0.7– 0.99 and *unstable*, when, c <0.7;

- **replacement** (substitution) **(z)** - denotes the possibility of replacing some varieties or types (subtypes) of goods with other varieties or types (subtypes) of goods to meet the needs of buyers (consumers). The degree (level) of the possibility of this reciprocal goods replacement is expressed by the *coefficient of replacement (substitution)* (z: for varieties -z_v; for types - z_t; for subtypes - z_{ts}), which is calculated by reporting the number of varieties (*V*) or types (*T*), or subtypes (*T_s*) of goods liable to be replaced from the analyzed assortment of goods (*Vza* or *Tza*, or *T_sza*) or the analyzed group of goods (*Vzga* or *Tzga*, or *T_szga*), to the total number of varieties or respectively types (subtypes) of goods from the assortment analyzed (*Va* respectively *Ta* or *T_sa*) or basic (*Vb* respectively *Tb* or *T_sb*) or respectively from the assortment of goods analyzed or basic of the analyzed group of goods (*Vga* or *Vgb* respectively *Tga* or *Tgb*, or *T_sga* or *T_sgb*), as follows:
- in the case of the analysis of the total assortment of goods,

$$z_{va} = \frac{V_{za}}{V_a} \ (37) \quad \text{or} \quad \frac{V_{za}}{V_b} \ (38),$$

$$\text{respectively } z_{ta} = \frac{T_{za}}{T_a} \ (39) \quad \text{or} \quad \frac{T_{za}}{T_b} \ (40), \quad z_{tsa} = \frac{T_{sza}}{T_{sa}} \ (41) \quad \text{or} \quad \frac{T_{sz\,a}}{T_{sb}} \ (42), \text{ and}$$

- in the case of the analysis of the group of goods,

$$z_{vg} = \frac{V_{zga}}{V_{ga}} \cdot (43) \quad \text{or} \quad \frac{V_{zga}}{V_{gb}} \ (44),$$

$$\text{respectively } z_{tg} = \frac{T_{zga}}{T_{ga}} \ (45) \quad \text{or} \quad \frac{T_{zga}}{T_{gb}} \ (46), \quad \text{or } z_{tsg} = \frac{T_{szga}}{T_{sga}} \ (47) \quad \text{or} \quad \frac{T_{szga}}{T_{sgb}} \ (48).$$

Capacity of the reciprocal replacement (substitution) of varieties of goods in the analyzed commercial assortment of goods is *high*, if $z_v > 0.3$, *average*, if $z_v = 0.05–0.3$ and *low*, if $z_v < 0.05$, and the degree of replacement of the types (subtypes) of goods in the commercial assortment is *high*, if z_t or $z_{ts} > 0.2$, *average*, if z_t or $z_{ts} = 0.05 – 0.2$ and *low*, if z_t or $z_{ts} < 0.05$;

- **renewal (î)** - number of varieties of goods (*V_i*), including new ones, included in the assortment of goods analyzed during the time of reporting (determined) period. The degree (level) of renewal of the assortment is expressed by the *coefficient of renewal* (î), which is calculated by reporting the number of varieties of goods (*Vî*), including new ones, included in the assortment analyzed (*Vîa*) during the period of time determined (30 days), to the number of varieties of goods in the assortment analyzed (*Va*), established at the end of the period by the report,

$$\hat{i} = \frac{V_{ia}}{V_a} . \qquad (49)$$

The commercial goods assortment is *essentially renewed,* when the *coefficient of renewal* î > 0.5, *sufficiently renewed,* when î $= 0.1 – 0.5$ and *slightly renewed,* when î < 0.01;

- **expanding (*dy*)** - increase the number of classes, including new ones, and in the case of division of the class into subclasses – increase the number of classes, including new ones, which

do not divide into subclasses, and subclasses, including new ones, from the other classes in the period of time determined by the report (360 days) within the commercial goods assortment analyzed. The degree (level) of expanding of the assortment is expressed by the *coefficient of expanding* (*dy*), which is calculated by reporting the difference between the number of classes (*Cda*), including new ones, which do not divide into subclasses, plus the number of subclasses, including new ones, from the other classes(*C$_s$da*) (number of classes and subclasses*) of goods included (*Cda* + *C$_s$da*) in and minus the number of those excluded (*Cxa* + *C$_s$xa*) from the assortment analyzed in the period of time determined by the report (360 days), to the number of classes from the analyzed assortment (*Ca*), which does not divide into subclasses, plus the number of subclasses in the other classes (*C$_s$a*) (number of classes and subclasses*) of goods in the analyzed assortment (*Ca* +*C$_s$a*) at the beginning of the reporting period,

$$dy = \frac{(C_{da}+C_{sda}) - (C_{xa}+C_{sxa})}{C_a+C_{sa}}. \qquad (50)$$

Depending on the expanding, the commercial goods assortment has been *substantially expanded,* when *dy* >0.15, has *sufficiently expanded,* when *dy* = 0.05–0.15, *slightly expanded,* when *dy* <0.05 →0 and *restricted*, if *dy* <0;

- **widening (*de*)** - increasing the number of groups, including new ones, and in case of division of the group into subgroups - increasing the number of groups, including new ones, which do not divide into subgroups, and subgroups, including new ones, from the other groups of goods, during the time period determined by the report (180 days) within the commercial goods assortment analyzed. The degree (level) of widening the assortment is expressed by the *coefficient of widening* (*de*), which is calculated by reporting the difference between the number of groups (*Gda*), including new ones, which do not divide into subgroups, plus the number of subgroups, including new, from the other groups (*Gsda*) (number of groups and subgroups**) of goods included (*Gda* + *G$_s$da*) in and minus the number of those excluded (*Gxa* + *G$_s$xa*) from the assortment analyzed in the period of time determined by the report (180 days), to the number of groups from the analyzed assortment (*Ga*), which does not divide into subgroups, plus the number of subgroups in the other groups (G$_s$a) (number of groups and subgroups**) of goods in the analyzed assortment (G*a* + *G$_s$a*) at the beginning of the reporting period,

$$de = \frac{(G_{da}+G_{sda}) - (G_{xa}+G_{sxa})}{G_a + G_{sa}}. \qquad (51)$$

The commercial goods assortment has been *essentially widened,* when the *coefficient of widening de* >0.25, *sufficiently widened,* when *de* = 0.1– 0.25, *slightly widened,* when *de* <0.1→0 and *shrunk,* if *de* <0;

- **stretching (*dr*)** - increasing the number of subgroups, including new ones, within the group of goods analyzed in the commercial goods assortment analyzed in the period of time determined by the report (180 days). The degree (level) of stretching of the commercial assortment of goods group is expressed by the *coefficient of stretching* (*dr*), which is calculated by reporting

the difference between the number of subgroups, including new ones, included (G_sda) in and minus the number of those excluded (G_sxa) from the assortment of goods of group analyzed in the period of time determined by the report (180 days), to the number of subgroups of goods of group data in the analyzed assortment (G_sa), established at the beginning of the reporting period,

$$dr = \frac{G_{sda} - G_{sxa}}{G_{sa}}. \qquad (52)$$

Depending on the stretching, the commercial assortment of the group of goods has been *essentially stretched,* if the *coefficient of stretching dr* >0.25, *sufficiently stretched*, if $dr = 0.1–0.25$, *slightly stretched*, if $dr < 0.1 \rightarrow 0$ and has been *cut off,* if $dr < 0$;

- **elongation (*dl*)** - increasing the number of types, including new ones, and in case of division of type into subtypes - increasing the number of types, including new ones, which do not divide into subtypes, and subtypes, including new ones, from the other types of goods within the assortment of the group (subgroup) of goods analyzed over the period determined (by the report) (90 days). The degree (level) of elongation of the group (subgroup) of goods analyzed is expressed by the *coefficient of elongation* (*dl*), which is calculated by reporting the difference between the number of types (*Tdga* or *Tdg$_s$a*), including new ones, which do not divide into subtypes, plus the number of subtypes, including new ones, from the other types (T_sdga or T_sdg_sa) (number of types and subtypes***) of the analyzed group (subgroup) of goods from the commercial assortment analyzed, included (*Tdga* + T_sdga or Tdg_sa + T_sdg_sa) in and minus the number of those excluded (*Txga* + T_sxga or Txg_sa + T_sxg_sa) from the assortment of group (subgroup) of goods analyzed in the period of time by the report (determined) (90 days), to the number of types from the assortment of group (subgroup) analyzed, which is not divided into subtypes (*Tga or Tg$_s$a*), plus the number of subtypes of the other types (T_sga or T_sg_sa) (number of types and subtypes ***) of the respectively group (subgroup) of goods in the analyzed assortment (*Tga* + T_sga or Tg_sa + T_sg_sa) at the beginning of the reporting period,

$$dl = \frac{(T_{dga} + T_{sdga}) - (T_{xga} + T_{sxga})}{T_{ga} + T_{sga}} \qquad (53) \quad \text{(in the case of the group of goods) or}$$

$$dl = \frac{(T_{dgsa} + T_{sdgsa}) - (T_{xgsa} + T_{sxgsa})}{T_{gsa} + T_{sgsa}} \qquad (54) \quad \text{(in the case of the subgroup of goods).}$$

The commercial goods assortment has been *essentially elongated,* if the *coefficient of elongation dl* > 0.3, is *sufficiently elongated*, if $dl = 0.1–0.3$, *slightly elongated*, when $dl < 0.1 \rightarrow 0$ and *shortened*, if $dl < 0$;

- **thickening (*du*)** - increasing the number of subtypes (T_s), including new ones, of the type of goods from the commercial assortment of goods in the time of report period (determined) (90 days). The degree (level) of thickening of the commercial assortment of the type of goods is expressed by the *coefficient of thickening* (*du*), which is calculated by reporting the difference

between the number of subtypes, including new ones, included (T_sda) in and minus the number of those excluded (T_sxa) from the assortment of the type goods analyzed in the period of time determined by the report (90 days), to the number of subtypes of goods of type data in the analyzed assortment (T_sa), established at the beginning of the reporting period,

$$du = \frac{T_{sda} - T_{sxa}}{T_{sa}}. \qquad (55)$$

Depending on the thickness, the commercial assortment of the type of goods has been *substantially thickened,* if the *coefficient of thickening du > 0.3,* is *sufficiently thickened,* if *du = 0.1–0.3, slightly thickened,* when *du < 0.1→0* and *thinned*, if *du < 0*;

- **expansion (*dm*)** - increasing the total number (sum) of types (*T*), including new ones, and in the case of division of types in subtypes - increasing the total number (sum) of types, including new ones, which do not divide into subtypes, and subtypes (*T_s*), including new ones, from the other types of goods from all subgroups of group of goods, which are part of the analyzed group of goods, during the reporting period (determined) (60 days).The degree (level) of the widening of the assortment group of goods examined is expressed by the *coefficient of expansion (dm)*, which is calculated by reporting the difference between the total (sum) number of types, including new ones, which do not divide into subtypes (ΣTdg_sa), plus the total (sum) number of subtypes, including new ones, from the other types (ΣT_sdg_sa) (number of types and subtypes***) of all subgroups of the goods group analyzed included ($\sum Tdg_sa + \sum T_sdg_sa$) in and minus the number of those excluded ($\Sigma Txg_sa+ \Sigma T_sxg_sa$) from the assortment of group or subgroups of goods group analyzed in the period of time by the report (determined) (60 days), to the total (sum) number of types, which do not divide into subtypes (ΣTg_sa), plus the total (sum) number of subtypes of the other types ($\sum T_sg_sa$) (number of types and subtypes ***) of goods in the assortment of all analyzed subgroups of the group of goods ($\Sigma Tg_sa + \Sigma T_sg_sa$) at the beginning of the reporting period,

$$dm = \frac{(\sum T_{dgsa} + \sum T_{sdgsa}) - (\sum T_{xgsa} + \sum T_{sxgsa})}{\sum T_{gsa} + \sum T_{sgsa}}. \qquad (56)$$

The commercial goods assortment has been *essentially expanded,* when the *coefficient of expansion dm > 0.3, sufficiently expanded,* when *dm = 0.1–0.3, slightly expanded,* when *dm < 0.1→0* and *narrowed,* if *dm < 0*;

- **deepening (*dh*)** - increasing the number of varieties (V), including new ones, of goods within the assortment of the type (subtype) of goods analyzed from the commercial goods assortment during the time of the report (determined) (30 days). The degree (level) of deepening the type (subtype) of goods analyzed is expressed by the *coefficient of deepening (dh)*, which is calculated by reporting the difference between the number of varieties, including new ones, of goods included (*Vdta or Vdt_sa*) in and minus the number of those excluded (*Vxta or Vxt_sa*) from the assortment of type (subtype) of goods analyzed in the period of time determined by the report (30 days), to the number of varieties of goods within of the type (subtype) of goods from commercial assortment analyzed (Vta or Vt_sa), found at the beginning of the reporting period,

$$dh = \frac{V_{dta} - V_{xta}}{V_{ta}} \text{ (57)} \quad \text{(for the type)} \quad dh = \frac{V_{dtsa} - V_{xtsa}}{V_{tsa}} \text{ (58)} \quad \text{(for the subtype) of goods.}$$

The commercial assortment of the type (subtype) of goods has been e*ssentially deepened,* if the *coefficient of deepening dh > 0.4, sufficiently deepened*, if *dh = 0.1–0.4, slightly deepened,* when *dh< 0,1→0* and *cut in depth*, if *dh<0;*

- **filling (*dp*)** - increasing the total (sum) number of varieties (V), including new ones, of all types, subtypes and subgroups of goods, which are part of the commercial assortment of the analyzed group of goods, during the reporting (determined) period (30 days).The degree (level) of the filling is expressed by the *coefficient of filling* (*dp*), which is calculated by reporting the difference between the number of varieties, including new ones, of goods included (*Vdga* or *ΣVdg$_s$a*) in and minus the number of those excluded (*Vxga* or *ΣVxg$_s$a*) from the commercial assortment of group (subgroups of group) of goods analyzed during the period of time determined by the report (30 days), to the total (sum) number of varieties of goods in the assortment of group (*Vga*) or of all subgroups of the group (*ΣVgsa*) of goods analyzed in the commercial assortment of goods examined, found at the beginning of the reporting period,

$$dp = \frac{V_{dga} - V_{xga}}{V_{ga}} \text{ (59)} \quad or \quad dp = \frac{\Sigma V_{dgsa} - \Sigma V_{xgsa}}{\Sigma V_{gsa}} \text{ (60).}$$

The commercial goods assortment has been *essentially filled (enriched),* if the *coefficient of filling dp > 0.3,* is *sufficiently filled,* if *dp= 0.1–0.3, slightly filled when dp < 0.1→0* and is *emptied (impoverished)*, if *dp < 0.*

In the continuation of those presented, the extended complex of properties (characteristics) and indicators (indices) of the commercial assortment of consumer goods can be perfected and supplemented with new characteristics and indices and derivatives thereof, for example: with the averages quarterly (annual) of the coefficients of span, stretch, length, thickness, breadth, depth, fullness, widening, elongation, expansion, deepening etc. and other averages of indices of commercial goods assortment properties.

4. Conclusions

Commercial assortment of goods underlying meet the needs of consumers and buyers demand, predetermines to a great extent the efficiency of the commercial activity of the trade enterprise. Qualitative and timely formation and improvement of the goods assortment are primary objectives of the commercial activity of the retail trade enterprise. Both the constitution as well as the systematic improvement of the commercial goods assortment presuppose its multilateral and objective analysis, which requires the highlighting and research of the properties of the commercial assortment of goods, the elaboration of the indices of its characteristics, which could be estimated quantitatively, but the nomenclature of these characteristics (properties) is at the stage of elaboration.

On the basis of the studied specialized literature and the investigations carried out, the use of the levels of the hierarchical classification of goods an extended complex of properties (characteristics) of commercial goods assortment are highlighted, nominated, distinctly symbolized and defined (in specified edition or for the first time) and the qualitative and quantitative indices (indicators) of the nominated properties, as well as the modes of calculating the quantitative indicators of the properties (characteristics) of commercial goods assortment are developed and symbolized distinct.

The extended complex of property (features) of the commercial goods assortment proposed in this paper includes the following 23 properties (characteristics): coverage (y), span (width, latitude) (e), stretch (r), length (longitude) (l), thickness (u), breadth (m), profoundness (depth) (h), plenitude (fullness) (p), complexity (k), novelty (n), optimality (o), structure (s), stability (c), replacement (substitution) (z), renewal (î), expanding (dy), widening (de), stretching (dr), elongation (dl), thickening (du), expansion (dm), deepening (dh), filling (dp).

The presentation of each of the listed properties includes: the nomination and the distinct symbol, the definition (in the specified edition or for the first time), as well as the quantitative index of the respective property: the nomination and distinct symbol, the mode and formula of the calculation, the estimation of the index values.

The promotion and use in the commercial practice of the proposed complex of properties and indicators of the commercial goods assortment will contribute to the understanding of the notions and their unambiguous perception and uniform symbolization, to the multilateral analysis, objective estimation and development of the extensive feature the commercial goods assortment in different cases, to the development of assortment policies, requirements and the establishment of limits on the properties (indices) of the commercial goods assortment, including the optimal assortment, as well as performing efficient management of the commercial goods assortment.

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Rezumat

Analiza şi estimarea sistematică, perfecţionarea oportună a sortimentului comercial de mărfuri sunt importante componente ale activităţii comerciale, direcţionate spre formarea şi menţinerea sortimentului optimal de mărfuri în oferta întreprinderii de comerţ en-detail. Optimalitatea sortimentului comercial de mărfuri este o proprietate complexă, care îmbină mai multe proprietăţi ale sortimentului comercial de mărfuri, nomenclatorul cărora este încă în curs de elaborare. Este important ca proprietăţile sortimentului de mărfuri să fie distinct nominalizate, definite şi uniform utilizate în practica comercială.

În această lucrare sunt evidenţiate, nominalizate, simbolizate distinct şi definite (în redacţie precizată sau în premieră) un complex extins de proprietăţi (caracteristici) ale sortimentului comercial de mărfuri şi sunt elaboraţi, simbolizaţi distinct şi prezentaţi indicii calitativi şi cantitativi ai proprietăţilor nominalizate, precum şi modurile şi formulele de calcul şi estimare a valorii indicilor cantitativi ai proprietăţilor (caracteristicilor) sortimentului comercial de mărfuri. Complexul include următoarele 23 de proprietăţi (caracteristici): cuprinderea (y), anvergura (lărgimea, latitudinea) (e), întinsoarea (r), lungimea (l), grosimea (u), lăţimea (m), profunzimea (adâncimea) (h), plenitudinea (plinătatea) (p), complexitatea (k), noutatea (n), optimalitatea (o), structura (s), stabilitatea (c), înlocuirea (înlocuitatea) (z), înnoirea (i), extinderea (dy), lărgirea (de), întinderea (dr), alungirea (dl), îngroşarea (du), lăţirea (dm), adâncirea (dh), umplerea (dp).

Complexul propus va contribui la înţelegerea şi perceperea univocă şi simbolizarea uniformă a proprietăţilor şi indicilor sortimentului comercial de mărfuri.

Cuvinte-cheie: sortimentul comercial de mărfuri; proprietăţile sortimentului comercial de mărfuri: cuprinderea, anvergura (lărgimea, latitudinea), întinsoarea, lungimea, grosimea, lăţimea, profunzimea (adâncimea), plenitudinea (plinătatea), complexitatea, noutatea, optimalitatea, structura, stabilitatea, înlocuirea (înlocuitatea), înnoirea, extinderea, lărgirea, întinderea, alungirea, îngroşarea, lăţirea, adâncirea, umplerea; indicii cantitativi ai proprietăţilor sortimentului de mărfuri

Аннотация

Систематический анализ и оценка, своевременное совершенствование торгового ассортимента товаров являются важными составляющими коммерческой деятельности, направленные на формирование и поддержание оптимального ассортимента товаров в предложении розничного торгового предприятия. Оптимальность торгового ассортимента товаров является комплексным свойством, которое сочетает несколько свойств торгового ассортимента товаров, перечень которых находятся все еще в стадии разработки. Важно, чтобы свойства ассортимента товаров были обособленно названы (наименованы), определены и однозначно использованы в коммерческой практике.

В этой работе выделены, обособленно названы, отличительно символизированы и даны определения (в уточнённой редакции или в премьере) расширенному перечню (комплексу) свойств (характеристик) торгового ассортимента товаров и разработаны, отличительно символизированы и представлены

качественные и количественные показатели названных свойств, а также и способы и формулы вычисления и оценки значений количественных показателей свойств (характеристик) торгового ассортимента товаров. Перечень включает следующие 23 свойства (характеристики): охват (y), широта (размах) (e), растянутость (r), длина (l), толщина (u), ширина (m), глубина (h), полнота (p), комплексность (k), новизна (n), оптимальность (o), структура (s), устойчивость (стабильность) (c), заменяемость (взаимозаменяемость) (z), обновление (î), охватывание (dy), размахивание (обширение) (de), растяжение (dr), удлинение (dl), утолщение (du), расширение (dm), углубление (dh), пополнение (dp).

Предложенный комплекс будет способствовать пониманию, однозначному восприятию и одинаковой символизации свойств и показателей торгового ассортимента товаров.

Ключевые слова: *торговый (коммерческий) ассортимент товаров; свойства торгового ассортимента товаров, охват, широта (размах), растянутость, длина, толщина, ширина, глубина, полнота, комплексность, новизна, оптимальность, структура, устойчивость (стабильность), заменяемость (взаимозаменяемость), обновление, охватывание, размахивание (обширение), растяжение, удлинение, утолщение, расширение, углубление, пополнение; количественные показатели свойств ассортимента товаров*

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THE EVOLUTION OF THE LEGISLATION OF THE PROMISSORY NOTE IN MOLDOVA, ROMANIA AND AT INTERNATIONAL LEVEL

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Abstract

In this article I present the evolution of the promissory legislation in Moldova, Romania and at an international level. Because of its use on a large scale and in the international commercial relationships, the promissory note has been the object of an unitary judicial regulation. In 1930 the Convention regarding the uniform law of the promissory note and of the bill of exchange was signed in Geneva. The main regulation of the promissory note in Moldova is the Law of the Promissory Note from Moldova nr. 1527-XII of 22.06.93, Monitor nr. 10 of 30.10,1993 and the Civil Code of 2003. In Romania the promissory note is regulated through Law on the promissory note and the bill of exchange nr. 58 of 1st May 1934. Although Moldova and Romania did not hew at this convention, most of the stipulations of the uniform law were taken into the Moldovan and Romanian law.

Keywords: law, promissory note, legislation

1. Introduction

The international commerce represents a social fact that has a major importance in our days. The interdependence and the complementarity that exists between the economies of different countries in the context of the diversification and the specialization without precedent of the production of goods and services is the fundament of the international economical exchanges. Independently from this argument, the international commerce is an important factor in promoting the collaboration between nations, an essential mean of developing a climate of trust, security and peace in the world [1]. The processes of enhancing the world economy in the past decades are profoundly marked by the phenomenon of internationalizing business. Thus we can notice the changes from the world economy that happen because of the intensification of commerce and of the growth of the investments, as a consequence of the elimination of barriers and the expansion of the interdependence between states, as an effect of the liberalization of commerce and free trade [2]. The freedom of commerce is not a right given to the businessmen to do whatever they want, this would mean his slavery. The principle gives expression to the objective need to dismiss the obstacles of an economical, customs, fiscal, administrative or political nature and it represents the condition for the assessing, developing and the consolidation of the market economy. The principle is established in the Moldovan Constitution of the 29th of July 1994 in art. 126 paragraph 2 letter b: "The state must ensure the freedom of commerce and of the enterprise activities, the protection of the loyal competition, the making of an auspicious frame in order to capitalize all the

production factors" and also in the Romanian Constitution revised in 2003 in art 135 paragraph 2 letter a: "The state must ensure the freedom of commerce, the protection of loyal competition, the creation of the auspicious frame in order to capitalize all the production factors." At an interstate level there is a constant preoccupation to create organizational structures that are able to promote the freedom of commerce in more and more broad geographical areas [3].

In these conditions and taking into account the phenomenon of internationalization of the businesses the promissory note has become to have a very important role.

This promissory note is at a worldwide level one of the titles of credit with great usability and circulation in the international commercial activity [4].

The promissory note is defined as being a document through which a person, called drawer or issuer, gives disposition to another person, called drawee, to pay at tenour a sum of money to a third person, called beneficiary, or at his order [5].

2. The evolution of the promissory law

Because of its use on a large scale and in the international commercial relationships, the promissory note has been the object of an unitary judicial regulation. In 1930 the Convention referring to the uniform law of the promissory note and the bill of exchange was signed at Geneva [6].

After 1990 the promissory note has become once again one of the most used credit instruments in the commercial activity and on the internal market because in the external commercial relationships has been used continually [7].

The main stipulation of the promissory note in Moldova is represented by the Promissory Law of Moldova nr. 1527 – XII of 22.06.93, Monitor nr. 10 of 30.10.1993 and the Civil Code of 2003 with article 1279.

In Romania the promissory note is regulated through Law on the promissory note and the bill of exchange nr. 58 of the 1st of May 1934.

Although Romania and Moldova did not hold by this convention, most of the stipulations of the uniform law have been taken in the Romanian and Moldovan law. Of course that Law on the promissory note and the bill of exchange nr. 58 of the 1st of May 1934 [8] from Romania was used as a model and as well the Italian Law on the promissory note and the bill of exchange of the 14th of December 1933, that was based on the uniform law of the promissory note and the bill of exchange [9].

In the conditions of the making of the free enterprise in Romania and Moldova, some measures were taken regarding the use of the promissory note in the internal [6]. and international commercial relationships.

Thus through OG nr 11/1993 [10] in Romania modifications and completions have been made to Law on the promissory note and the bill of exchange nr. 58/1934 [11].

Then the National Bank of Romania and that of Moldova issued certain stipulations regarding the commerce made by the banking companies and the other institutions of credit with promissory notes, bills of exchange and cheques, as well as technical stipulations regarding the promissory note and the bill of exchange, according to the actual international practices [4].

Also the National Bank of Romania regulated an informational system [12] meant to reinforce the certainty of the credit of the promissory note, the bill of exchange and of the cheque, through the creation of the Centre of the Payment Incidence [13].

Law on the promissory note and the bill of exchange nr. 58/1934 from Romania has been modified and completed through O.U.G. nr. 39/2008 [14], approved with modifications and completions through Law nr. 163/2009 and Law nr. 76/2012 [6].

At an international level we can notice the making, in 1930 in Geneva, of the Convention regarding the uniform law of the promissory note and the bill of exchange [6] and then the Convention of the United Nations regarding the international promissory notes and bills of exchange, that is the result of the effort made in almost 20 years of works of the United Nations Commission for the international commercial law (Eng. U.N.C.I.T.R.A.L., Fr. C.N.U.D.C.I). It was adopted by the General Assembly of the United Nations, based on the recommendations of the 6th commission (judicial), on 9th December 1988 in New York [15].

The objective for U.N.C.I.T.R.A.L, New York, 1988, was the limitation to a minimum of the fund frictions that exist between the main promissory systems that exist: the Geneva one, on the one hand, and the Anglo-American one, on the other hand, keeping in mind the new requirements of the international commerce, the bank practices and the financial markets [15].

3. The current degree of investigation of the problem, the purpose of the research

The purpose is to make a thorough research of the promissory note legislation of Moldova and the European Union, including Romania, and to propose real measures in order to improve the using conditions of this payment instrument in Moldova, Romania and the European Union.

The main objectives of the research is to identify the most important regulations of the international promissory note and the changes that appear in real time regarding the promissory legislation and to propose improvements for it.

4. Methods and materials applied

The promissory note is a title of credit that represents a written claim, made according to the present law, that gives its possessor the certain and enforceable right to claim at tenour the payment from the debtor, and in case of failure to pay this demand he can ask other people that are bound through the promissory note to pay the indicated sum of money [16].

The appearance of the promissory note marks an important historical moment in the evolution of commerce and of the means of payment, alongside the fiduciary mint (the banknote) and the scriptural mint (of account) [17].

The comparative method is used in this research of the promissory note. Comparison is the operation through which we want to determine and to assess the identical or similar elements or the divergent elements between two or more phenomena. The comparison can be of two types:

1. Affirmative
2. Contrasting.

5. Results obtained and discussions

The promissory note is one of the oldest credit titles, but in its present form is the result of an evolution and of some long sedimentations. [18].

This appearance of the promissory note marks a very important historical moment in the evolution of the commerce and of the international payment instruments, alongside the fiduciary mint (the banknote) and the scriptural mint (of account) [17].

There are many publications referring to the promissory note in which it is presented in a succinct manner the evolution of this title of credit.

The origin, the place and the time when the promissory note appeared cannot be determined with precision. Several authors, especially French, claim that the ones that invented the promissory note are the Jewish traders, during the 1290s when they were driven out of France [19].

Other authors claim that there is a higher probability that the promissory note to come from Italy, during the reign of the Crusaders, a time in which the commerce was flourishing, in countries like Italy, France and Spain and then it was perfected continually during the next centuries, coming to the actual level of development. Thus the promissory note has become from a mean of replacement of the actual transport of coins, as it was in the beginning, a form of representing the credit, through which sums of money can be put into circulation. With all their hard work, the researchers and the historians did not succeed until now to determine with accuracy the exact date when the promissory note came into being in the international economical relationships [2, p. 16]

6. Conclusions

Because of its use on a large scale in the international commercial relationships, the promissory note has been the object of an unitary judicial regulation. In 1930 in Geneva it was signed the Convention regarding the unitary law of the promissory note and the bill of exchange.

The main regulation of the promissory note in Moldova is the Law of the Promissory Note of Moldova nr. 1527 – XII of 22.06.93, Monitor nr. 10 of 30.10.1993 and the Civil Code of 2003.

In Romania the promissory note is regulated through Law on the promissory note and the bill of exchange nr. 58 of the 1st of May 1934.

Although Romania and Moldova did not hold on this convention, most of the stipulations of the uniform law were taken in the Moldovan and Romanian law.

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Rezumat

În acest articol prezint evoluția legislației cambiale în Republica Moldova, România și la nivel internațional. Din cauza utilizării ei pe scară largă și în raporturile comerciale internaționale, cambia a făcut obiectul unei reglementări juridice unitare. În anul 1930, s-a încheiat la Geneva Convenția referitoare la legea uniformă a cambiei și biletului la ordin. Principala reglementare a cambiei în Republica Moldova o reprezintă Legea cambiei din Republica Moldova Nr.1527-XII din 22.06.93, Monitorul oficial nr. 10 din 30.10.1993 și Codul Civil din 2003. În România cambia este reglementată prin Legea nr. 58 din 1 mai 1934 asupra cambiei și biletului la ordin. Cu toate că Republica Moldova și România nu au aderat la această convenție, cele mai multe prevederi ale legii uniforme au fost preluate în legea moldovenească și românească.

Cuvinte-cheie: lege, cambie, legislație

Аннотация

        В данной статье описывается развитие вексельного законодательства в Республике Молдова, Румынии и на международном уровне. Из-за широкого использования векселя в международных торговых отношениях он был предметом унитарного правового регулирования. В 1930 году была заключена Женевская конвенция о унитарном законе по векселям. Основными регулирующими актами применения векселя в Республике Молдова являются Закон Республики Молдова о векселях № 1527-XII от 22.06.93 года, Официальный монитор № 10 от 30.10. 1993, и Гражданский кодекс (2003 года). В Румынии вексель регулируется Законом № 58 от 1 мая 1934 года о векселях. Несмотря на то, что Республика Молдова и Румыния не придерживались указанной конвенции, большинство положений единого закона были отражены в законодательстве Молдовы и Румынии.

Ключевые слова: закон, вексель, законодательство

OPERATIONAL FINANCIAL SOLUTIONS ON PRODUCT ASSORTMENT OF DISTRIBUTION COMPANY

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Abstract

In the course of the evolution of financial management objectives, the organizations have undergone significant changes over the past decades, both from the establishment of financial control, the establishment of operational and organizational control, operational improvement (business process reorganization), to the formation of a new model for increasing efficiency.

Operational financial decisions taken by the distribution company are aimed at solving tasks such as: assessing and maximizing the value of business, reorganizing the company and ensuring long-term financial planning, working capital and cash flow management, and providing timely information on decision-making for diagnosing and identifying financial improvement of the company.

This work considers the development and implementation of the entire complex of operational financial solutions in the management of the product range of the organization.

The paper analyses the types of financial solutions and market strategies illustrated by an example of product assortment management at a distributor company using modern methods of market positions diagnosing and financial instruments.

The studied approaches in the pricing and product range management of the company in question are considered taking into account the sales volume and the final margin profit based on the "Marcon" matrix, which allows to assess the success / failure of individual products and adjust the assortment policy. The main stages of the matrix construction are considered in the paper: the creation of a database, the definition of binary codes characterizing the economic result, the construction of the "Marcon" matrix for the analysis of homogeneous groups of goods, the determination of the position of goods in homogeneous groups, the analysis of the position of assortment positions, and the decision-making based on the analysis.

The analysis carried out by the financial service of the company is the source of basic information for the sales department, whose management takes fully weighted decisions regarding the marketing support of the goods.

The analysis of Delta's product range illustrates graphically the effectiveness of the presented approach in making decisions on managing working capital and cash flows of the company, which at the present stage is a key factor in the company's competitiveness on the market.

Keywords: financial management, financial solutions, distribution, product assortment, price formation, Marcon matrix, marginal profit

1. Introduction

In a market economy, the state is not responsible for business performance of economic entities. In this regard, one of the most important tasks of businesses is to ensure effective financial management. This requirement is put forward as the most important for companies applying for authorization as an official importer and distributor. The recipient of such rights from brands well-known in the global market must ensure professional application of a wide range of financial instruments for successful promotion of the proposed product range.

2. Degree of investigation of the problem at present, aim of research

The company Delta, considered by us, is a distributor of a number of well-known brands represented on the territory of the Republic of Moldova. The company considers its financial activities proceeding from the logic of developing financial management objectives, including the establishment of control over commodity and financial flows (including the establishment of operational and organizational control), the formation of a new holistic approach to improving the effectiveness of financial activities aimed at sustainable behavioral changes of Delta.

The purpose of research is to conduct an analysis of the company's policy in the field of pricing and product range management using the Marcon matrix as a toolkit and to develop some recommendations for improving the efficiency of operational financial decisions on the product range of the Delta distribution company.

3. Methods and materials applied. Results obtained and discussions

Strategic: how to evaluate and maximize the value of a business by means of financial and non-financial solutions; how to create a tree of goals and reorganize a company; how to ensure long-term financial planning and growth. Financial management of an organization provides a forecast when adopting one or another strategy/tactics to solve strategic issues. Methods for strategic analysis of the company's development are known marketing techniques: SGM (sustainable growth matrix), FSM (financial strategies matrix), and DuPont model [2].

Operational solutions: for floating capital and cash flow management; income and expenses management; ensuring liquidity and solvency.

Methodical techniques for operational analysis of the company include: Marcon matrix, ABC matrix, BCG matrix [1].

Financial solutions: solutions involving search of financial resources at acceptable cost; solutions for optimization of capital structure; for capitalization and dividend policy.

Investment solutions: involving decisions on capital investments and selection of perspective types of assets; portfolio (projects) management; management of project and financial risk.

Analytical solutions: how to support the decision-making process with adequate information; how to carry out diagnosis and identify ways of financial recovery. An analytical approach helps to identify problems associated with the profitability (efficiency) of the capital used, as well as an indicator of the business monetary return.

Based on the types of financial solutions described above and applied by businesses, we would like to focus on operational solutions and illustrate their effectiveness by example of Marcon matrix application for analysis of the product assortment of Delta company. Since 2007, Delta company (The Republic of Moldova) is the exclusive importer and distributor of cosmetics of global brands. Initially, the product portfolio included: decorative cosmetics, mass market cosmetics, middle market cosmetics and cosmetics for beauty salons.

The status of general distributor and official importer does not guarantee competitive advantages for the company, because most of the consumer market regards price as a motive for buying rather than quality and authenticity of the products. As a result, most of the budget for the promotion of goods "goes" to the regions and the release price from the importer's warehouse is formed within the cost of production. Using a competitive price formation strategy, the company retains its positions throughout the territory of Moldova. When making decisions on pricing and product promotion, the company takes into account the terms of contracts with supermarkets, in accordance with which the level of trade margin remains unchanged, regardless of the market's sensitivity to the price. Thus, all costs for product promotion and pricing are borne by the distributor; the decrease in the release price from the warehouse by the distributor does not ensure a reduction in the final price for products, because, in accordance with the concluded contracts, the intermediary shop retains its retail margin regardless of the situation on the market. Such a "winning" position of supermarkets is possible due to the oversaturation of the market with competitive goods. Another factor that significantly influences the choice of strategy of price formation is the supplier's binding of the purchase price to the exchange rate, which is quite unstable in the Republic of Moldova, which also predetermines the need for variation and adaptation of prices to the market of Moldova.

In order to make key decisions in the sphere of price formation and management of the product assortment of Delta company, taking into account the volume of sales and the final marginal profit, the authors resorted to the use of Marcon matrix, which helps to assess the success / failure of individual products and adjust the assortment policy.

After decomposition of the assortment according to the matrix, the goods are named: white giants; red giants; white dwarfs; blue dwarfs; satellites; black holes.

Three parameters are used to construct the Marcon matrix [3]:
1. Total gross margin, marginal revenue or marginal profit (MCA):

   MCA = PxQ-CxQ (1);

where:

P – unit price;

C – average variable costs per unit price;

Q – number of units sold.

2. Gross margin per commodity unit (MCU):

   MCU=MCA/Q (2).

3. Gross margin percentage (MCI):

   MCI=MCA/ (PxQ) (3).

To build a matrix, one needs to go through several stages:
1. Compilation of database.
2. Definition of binary codes characterizing the economic result.
3. Construction of Marcon matrix for analysis of homogeneous groups.
4. Determination of products positions in homogeneous groups.
5. Analysis of positions of assortment items.
6. Decision-making.

The first stage: compiling a database for the reporting period (2016) (Table 1).

Table 1. Basic data on commodity groups of Delta company for the year 2016

	Item	Q – number of units (pcs) sold	P – unit price (€)	C – average variable costs per unit (€)	MCA – marginal profit (€)	MCU – marginal profit per unit price	MCI – share of marginal profit in the price
1	Deodorants	76 052	1.65	1.23	31 732	0.42	25.31%
2	Decorative cosmetics 1	13 374	8.22	6.60	21 585	1.61	19.64%
3	Decorative cosmetics 2	29 938	4.10	3.16	28 051	0.94	22.85%
4	Hair dye 1	166 499	1.64	1.32	53 384	0.32	19.60%
5	Hair dye 2	66 327	1.98	1.60	25 179	0.38	19.21%
6	Hair dye 3	9 136	3.32	2.65	6 085	0.67	20.08%
7	Hair dye 4	13 586	4.79	3.99	10 884	0.80	16.71%
8	Hair dye 5	11 279	4.46	3.10	15 343	1.36	30.50%
9	Hair dye 6	3 798	6.13	4.97	4 389	1.16	18.85%
10	Men's series	1 757	4.40	3.47	1 628	0.93	21.05%
11	Solar series	9 682	6.11	4.80	12 695	1.31	21.46%
12	Hair stylers	4 424	2.26	1.86	1 798	0.41	17.95%
13	Hair care products 1	80 691	2.57	2.07	40 147	0.50	19.40%
14	Hair care products 2	42 757	2.04	1.64	17 214	0.40	19.73%
15	Hair care products 3	53 531	1.54	1.27	14 534	0.27	17.66%
16	Face care products 1	18 600	5.52	4.43	20 305	1.09	19.79%
17	Face care products 2	48 678	2.82	2.23	28 603	0.59	20.84%
18	Body care products	1 971	2.41	1.97	849	0.43	17.90%

In addition to the data presented, the information is also estimated regarding the shares of sales (in sales and profit) of the above mentioned product groups (Figures 1, 2).
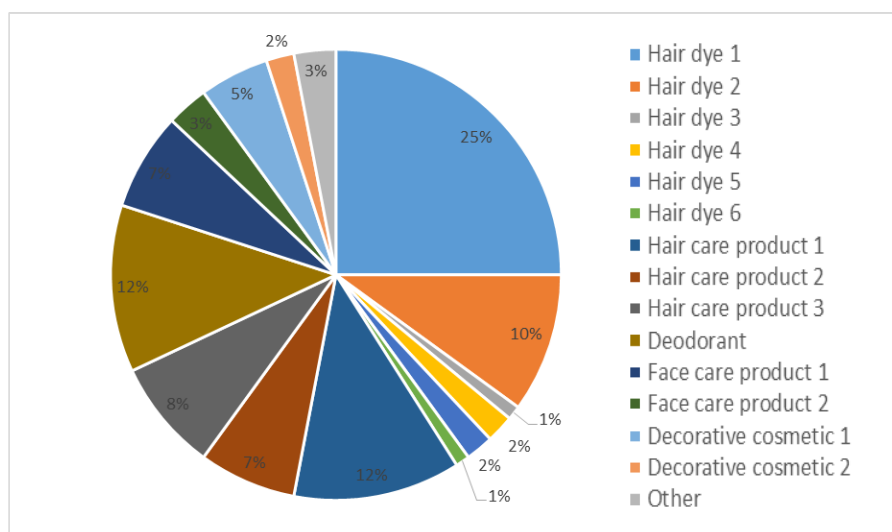

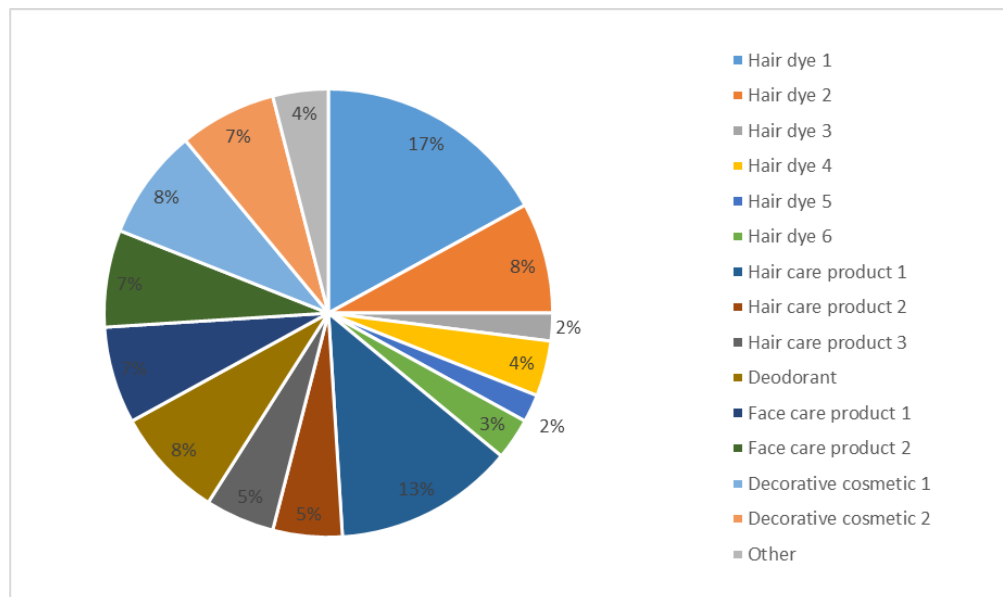Figure 1. Sales structure of Delta company in 2016 (units)

Figure 2. Sales structure of Delta company in 2016 (euro)

At the second stage of the matrix construction, binary codes are assigned ("1" or "0") to products relative to the weighted average for all groups, where "1" means "profit" and "0" means "loss". The "0" code is assigned if the value for a product shown in Figure 1 is less than the average value for the entire assortment, otherwise code "1" is assigned. This condition must be applied to all values, this can be illustrated by an example of "Hair dye 1" item (Table 2):

Table 2. Table with assigned binary codes to commodity groups of Delta company

Item	MCA	MCU	MCI	Q	P	C	AUI	QPC
Hair dye 1	1	0	0	1	0	1	100	101

The third stage: constructing matrix for analysis of homogeneous groups. Here the obtained values shall be inserted from Table 2 into the Marcon's grid (Figure 3). The obtained data are fit into the matrix (Figure 4).

White giants: - face care products 2 – profit share 8.55%, margin 20.84%.

Products with stable / growing demand bringing the main profits to the company thanks to high sales and high gross margin. These products are self-repaying, which profit is used to develop sales of other products, as well as to support those that lag behind.

Red giants: hair care products 1 – profit share 12.01%, margin 19.40%; deodorants – profit share 9.49%, margin 25.31%; hair dye 1 – profit share 15.96%, margin 19.60%; hair dye 2 – profit share 7.53%, margin 19.21%.

These products are also characterized by great "energy" although relatively less than that of "white giants". They bring a large share of profits. However, these products are not at the stage of growth, but at the stage of maturity. These products are self-repaying. If a company does not monitor the cost and does not expand the purchased assortment of a "red giant", than it can turn into a "black hole" over time.

QPC / AUI	111	110.	101	100	011	010	001	000		
111	White giants	White giants	White giants		Blue dwarfs	Blue dwarfs	Blue dwarfs		high	—> energy —>
110		White giants				Blue dwarfs				
101			Red giants							
100		Red giants	Red giants	Red giants						
011					White dwarfs	White dwarfs	White dwarfs		low	
010						White dwarfs				
001			Black holes				Satellites			
000		Black holes	Black holes	Black holes		Satellites	Satellites	Satellites		

giants		dwarfs	
<— size <—			

Figure 3. Marcon's grid

	111	110	101	100	011	010	001	000		
111		Face care products 2				Decorative cosmetics 2			high	—> energy —>
110						Face care products 1 Decorative cosmetics 1				
101			Deodorants							
100		Hair care products 1	Hair dye 1 Hair dye 2							
011						Hair dye 5 Solar series Men's series			low	
010						Hair dye 3 Hair dye 6 Hair dye 4				
001										
000			Hair care products 2 Hair care products 3				Hair stylers Body care products			

giants		dwarfs	
<— size <—			

Figure 4. Marcon matrix

The fourth stage: determination of products' positions in homogeneous groups.

Blue dwarfs: decorative cosmetics 2 – profit share 8.39%, margin 22.85%; face care products 1– profit share 6.07%, margin 19.79%; decorative cosmetics 1– profit share 6.45%, margin 19.64%.

Products characterized by significant profitability, but with low sales. This is the sale of upscale goods with high quality (high prices and variable costs, but low demand).

White dwarfs: hair dye 5 – profit share 4.59%, margin 30.50%; solar series – profit share 3.80%, margin 21.46%; man's series – profit share 0.49%, margin 21.05%; hair dye 3 – profit share 1.82%, margin 20.08%; hair dye 6 – profit share 1.31%, margin 18.85%; hair dye 4 – profit share 3.25%, margin 16.71%.

Products have a certain margin of profitability, but still or no longer bring significant revenue. Decrease in profitability leads to the "white dwarf" conversion into "satellite", while in case of errors in assessing the product's potential and in the absence of cost control it turns into "black hole". With more successful development, depending on the type, "white dwarf" can become a "red giant" or a "blue dwarf".

Satellites: hair stylers – profit share 0.54%, margin 17.95%; body care products – profit share 0.25%, margin 17.90%.

Products do not bring high profits because they are not bought in large volumes. Often these products are "unpromising" in terms of profit, but necessary for the company for some other reasons (prestige, advertising, traditions, social significance).

Black holes: hair care products 2 – profit share 5.15%, margin 19.73%; hair care products 3 – profit share 4.35%, margin 17.66%.

This is a product that absorbs a large amount of resources, but does not bring returns in the form of gross margin. Such products must either be abandoned, or, if they still have sales potential, their profitability must be increased to convert them into supernovae "hot stars".

The fifth stage: analysis of the position of assortment items according to the above characteristics. The author conducted an analysis of the product groups, taking into account the extent to which the sales of the product group should grow so that the marginal profit would not decrease, if the price is lowered by n%.

This can be illustrated by an example of "Hair dye 1" item (Table 3).

Table 3. Analysis by product group "Hair dye 1"

	Item	**Q**	**MCA**	**MCU**	**MCI**
1	Hair dye 1	166 499(un)	53 384(€)	0.32	19.60%

Lowering the price by 5% gives the margin (MCI) 14.60%; hence, the profit per unit (MCU) will fall to 0.23 euros. In order to maintain marginal profit (MCA) for the group, it is necessary to increase sales in units by 41.1%.

4. The recommendations for product assortment

Such an analysis carried out by the company's financial service is the basic information for the sales department, which management makes detailed balanced decision regarding the marketing support of products (decision on assortment, price, promotion and distribution). Based on the analysis performed, the following approaches are recommended for the product assortment management (Table 4).

Table 4. Recommendations for product assortment management in Delta company

	Item	Recommendations and Comments
1	2	3
1	**Face care products 2**	**White giants.** The supplier lowered prices for some products, and raised prices for others; the company did not change prices. Average margin has not changed. Recommendation – adjust prices in accordance with **competitors' prices.**
2	**Hair care products 1**	**Red giant.** Recommendation – **do not change** prices to avoid drop of sales and marginal profit.
3	**Deodorants**	**Red giant.** The supplier lowered prices for some products, but the company did not. Recommendation – possibly **lower** prices by 2%, if sales can be increased by 15%, if growth is not possible – prices shall not be changed! Perform promotional activities using marketing budget to increase sales.
4	**Hair dye 1**	**Red giant.** Recommendation – **do not change** prices to avoid drop of sales and marginal profit.
5	**Hair dye 2**	**Red giant.** Very near to a "black hole". Recommendation – raise the price by 3-5%. A drop in sales (in pcs) by 15% is allowed at 3% rise, by 20% at 5% rise.
6	**Decorative cosmetics 2**	**Blue dwarf.** Recommendation – **do not change** prices; rising of prices will lead to sales drop, while lowering prices will mean the need to increase sales by at least 20%.
7	**Face care products 1**	**Blue dwarf.** Recommendation – since the product is in VIP zone, adjust prices in accordance with competitors' prices.
8	**Decorative cosmetics 1**	**Blue dwarf.** Recommendation – since the product is in VIP zone, adjust prices in accordance with competitors' prices.
9	**Hair dye 5**	**White dwarf.** Recommendation – **do not change** prices; **lowering** prices by 5% will mean the need to increase sales by at least 27% to reach the profit of 2016.
10	**Solar series**	**White dwarf.** Sales increased significantly (seasonal product). Recommendation – **do not change** prices, rising prices will mean drop in sales, while price lowering by at least 2% will necessitate increase in sales by at least 15%.
11	**Men's series**	**White dwarf.** After price increase, sales fell sharply. Recommendation – **lower** prices by 3%, sales shall be increased by at least 15%, if growth is not achieved – **withdraw** from assortment of products.

1	2	3
12	**Hair dye 3**	**White dwarf.** After price increase, sales fell slightly. Recommendation – **do not change** prices. Increase sales.
13	**Hair dye 6**	**White dwarf.** After price increase, sales fell. Recommendation – **do not change** prices. Increase sales.
14	**Hair dye 4**	**White dwarf.** Prices were not raised. Sales dropped. Recommendation – **rise** prices by 5% => convert to VIP. A drop in sales (in pcs) by 15% is allowed.
15	**Hair stylers**	**Satellite.** After price increase, sales fell slightly. Recommendation – **rise** prices by 5%. In case of sharp drop in sales **withdraw from assortment of products**. A drop in sales (in pcs) by 15% is allowed.
16	**Body care products**	**Satellite.** After price increase, sales fell sharply. Recommendation – **lower** prices by 3%, sales shall be increased by at least 15%, if growth is not achieved – **withdraw** from assortment of products
17	**Hair care products 2**	**Black hole.** Sales are high, but the profit per pcs is low. Recommendation – **rise** prices by 5% to get out of "black hole". A drop in sales (in pcs) is allowed by 20%.
18	**Hair care products 3**	**Black hole.** Sales are high and did not fall. But profit per product unit is low, since high sales are achieved by means of stimulation of customers, average discount is 4.5%. Recommendation – **rise** prices by 5%, or provide discounts through promotions covered by marketing budget to get out of "black hole". A drop in sales (in pcs) by 20% is allowed.

5. Conclusions

Thus, the following decisions are advisable based on the above recommendations: maintaining the established price level; product offers shall be accompanied by active advertising and promotion (if price lowering is recommended), namely:

- prices for products which fell into the "white dwarfs" category shall be changed according to recommendations, except for products for which price lowering is possible;

- concerning products that fell into the "black hole" category it was decided to negotiate with the supplier about additional discount or about additional support of advertising actions;

- concerning "satellite" products the decision was made to withdraw them from the assortment.

Analysis of Delta company's product assortment clearly illustrates the effectiveness of presented approach in making decisions on the management of floating capital and cash flows that is a key factor in the company's competitiveness in the market nowadays.

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Rezumat

Pe parcursul evoluţiei obiectivelor managementului financiar, organizaţiile au suferit schimbări semnificative în ultimele decenii, atât de la stabilirea controlului financiar, stabilirea controlului operaţional şi organizaţional, îmbunătăţirea operaţională (reorganizarea proceselor de afaceri), până la formarea unui nou model de creştere a eficienţei.

Deciziile financiare operaţionale, luate de compania de distribuţie, vizează rezolvarea unor sarcini precum: evaluarea şi maximizarea valorii afacerii, reorganizarea companiei şi asigurarea planificării financiare pe termen lung, gestionarea capitalului circulant şi a fluxului de numerar, precum şi furnizarea oportună de informaţii pentru luarea deciziilor privind diagnosticarea şi identificarea căilor îmbunătăţirii situaţiei financiare a companiei.

Lucrarea în cauză are ca scop abordarea creării şi implementării tuturor deciziilor financiare operaţionale necesare gestionării sortimentului de mărfuri în cadrul organizaţiei.

În articol sunt analizate tipurile soluţiilor financiare şi strategiilor de piaţă utilizate, având ca exemplu gestionarea unui sortiment de mărfuri al unei companii de distribuţie cu utilizarea metodelor moderne de diagnosticare a poziţiilor de piaţă şi a instrumentelor financiare.

Sunt analizate abordările în domeniul stabilirii preţurilor şi gestionării sortimentului de mărfuri, având în vedere volumul de vânzări şi profitul marginal total bazat pe matricea „Marcon", care permite a evalua succesul / non-succesul mărfurilor concrete şi de a ajusta politica de sortiment. În lucrare sunt analizate principalele etape de construcţie a matricei: formarea unei baze de date, identificarea codurilor binare ce caracterizează rezultatul economic, construirea matricei „Marcon" pentru analiza grupurilor omogene de mărfuri, determinarea poziţiei mărfurilor în grupurile omogene, analiza situaţiei poziţiilor sortimentale, luarea deciziei în baza analizei efectuate.

Efectuarea unei astfel de analize de către serviciul financiar al companiei este sursa informaţiilor de bază pentru departamentul de vânzări, conducerea căreia ia decizii pe deplin ponderate cu privire la suportul de marketing al mărfurilor.

Analiza sortimentului marfar al companiei "Delita" ne prezintă eficacitatea abordării prezentate în luarea deciziilor privind gestionarea capitalului circulant şi a fluxurilor de trezorerie ale companiei, care în prezent este un factor cheie al competitivităţii firmei pe piaţă.

Cuvinte-cheie: management financiar, soluţii financiare, distribuţie, sortiment de marfă, formarea preţului, matrice "Marcon", profit marginal

Аннотация

В процессе эволюции целей управления финансами организации за последние десятилетия претерпели существенные изменения, от установления финансового контроля, установления операционного и организационного контроля, операционного совершенствования (реорганизация бизнес-процессов) до формирования новой модели увеличения эффективности.

Операционные финансовые решения, принимаемые дистрибьюторской компанией, направлены на решение таких задач как: оценка и максимизация стоимости бизнеса, реорганизация компании и обеспечение долгосрочного финансового планирования, управление оборотным капиталом и денежными потоками, а также обеспечение своевременной информацией принятие решений по проведению диагностики и выявлению путей финансового оздоровления компании.

Данная работа рассматривает разработку и внедрение всего комплекса операционных финансовых решений при управлении товарным ассортиментом организации.

В статье рассматриваются виды финансовых решений и применяемых рыночных стратегий на примере управления товарным ассортиментом дистрибьюторской компании с использованием современных методов диагностики рыночных позиций и финансового инструментария.

Проанализированы подходы в сфере ценообразования и управления товарным ассортиментом рассматриваемой фирмы с учетом объема продаж и итоговой маржинальной прибыли на основе матрицы «Маркон», которая позволяет оценить успешность/неуспешность отдельно взятых товаров и скорректировать ассортиментную политику. В работе рассмотрены основные этапы построения матрицы: формирование базы данных, определение двоичных кодов, характеризующих экономический результат, построение матрицы «Маркон» для анализа однородных групп товаров, определение положения товара в однородных группах, анализ положения ассортиментных позиций, принятие решений на основе проведенного анализа.

Проведение подобного анализа финансовой службой компании является источником базовой информации для отдела продаж, руководство которого принимает всесторонне взвешенные решения относительно маркетингового сопровождения товара.
Проведенный анализ товарного ассортимента компании «Дельта» наглядно иллюстрирует эффективность представленного подхода в принятии решений по управлению оборотным капиталом и денежными потоками компании, что на современном этапе выступает ключевым фактором конкурентоспособности фирмы на рынке.

ASSESSING COMPETITION IN BANKING SECTOR OF MOLDOVA USING PANZAR - ROSSE APPROACH

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Abstract

It is well known that the role of competition is to stimulate rivalry among participants in order to enhance progress and welfare of population. Improving competition in the Moldovan banking sector will have a positive effect on the quality and prices of banking services, making the activity of the financial system more efficient, which in turn will contribute significantly to country's economic growth. In the context of the European integration objective and liberalization of financial services trade with the European Union, the analysis of the level of competition in the Moldovan banking sector is necessary in order to improve the activity of the banking sector. In addition, knowing the level of competition will facilitate the process of harmonization of the legislation in the field of financial system and competition. In this article, we used the Panzar-Rosse approach, a non-structural method, to measure competition in the banking industry. This model involves measuring competition based on a simplified income function, which aims to calculate the elasticity of bank incomes to the prices of factors of production: funds, labor and capital. This method focuses on the individual behavior of each commercial bank, which is an indicator of market power.

Keywords: competition, banking sector, Panzar-Rosse approach, market structure

1. Introduction

Competition in the banking sector is a matter of debate for economic experts. The banking sector has a direct link with economic growth due to the role in providing financial resources to real sector and households. When banks do not work well, there are premises for financial instability. Banks have been considered to be more vulnerable to instability that other industries. Nevertheless, economic literature argues that too much competition in the banking sector may cause financial instability due to the exit of market participants who do not satisfy the market conditions. On the other hand, competition could result in greater financial stability, because small number of banks, which hold a higher market power, would charge higher costs for its services, which would increase the customers' bankruptcy risks. In addition, less competition could lead to the creation of large banks, deepening the "too-big-to-fail" problem and difficulties in supervising large banks. What is the optimal competitive structure to promote efficiency and stability in the banking sector: perfect competition, monopoly or something in-between? Competitive environment is efficient, but market power is necessary for stability. Because of globalization, de-regulation and technological development, the trade-off between competition and financial

stability continues to be an important issue, especially due to the wave of economic concentration on the domestic and international financial market.

In the context of the European integration goal, the Republic of Moldova has the obligation to harmonize the financial and banking legislation with the acquis communautaire in order to ensure a sustainable development of the banking sector and a harmonious integration with the European single market. Regulating the banking sector in line with European rules will ensure the creation of a financial system able to cope with competitive pressure due to the liberalization of trade with the European Union in the field of financial services. Creating a competitive financial system will have beneficial effects on the country's economic sectors by providing cheap financial resources and will allow private sector to manage the European competitive pressure. In this context, analyzing the level of competition in the banking market becomes a necessity to ensure the creation of a healthy competitive environment.

In the last period, Moldovan banking sector could be characterized as vulnerable and unstable. The fragility is due to the lack of transparency about the owners of financial institutions, poor governance and weaknesses of the sector's regulatory supervisor, as well as in the implementation of banking legislation. However, multiple problems of the banking sector go beyond the scope of this article. In this article, we aim to examine to what extent the events which took place in the banking sector over the past 5 years have influenced the competitive environment in the market. The article also aims to determine the level of competition in the national banking industry.

We used the Panzar-Rosse methodology to measure the level of competition in the banking sector. The Panzar-Rosse model is built based on data for each individual bank, which is available in samples, allowing a precise estimate of competition in the sector. The purpose of the paper is to examine the competition in the Moldovan banking sector during 2012-2016.

2. The degree of investigation of the problem currently, and purpose of research

Competition in the banking market could be analyzed through three approaches: i) measuring competition based on the "Structure-Conduct-Performance" paradigm; ii) the efficacy hypothesis, promoted by Demsetz (1973) and Peltzman (1977); iii) direct measurement of prices or market power on the basis of the "New empirical industrial organization" [2, p. 406].

The SCP paradigm assumes a causal connection between the structure of the financial sector, enterprise behavior and performance. The paradigm argues that high level of market concentration results in collusive and anti-competitive behavior among large firms. Thus, a small number of firms with a substantial market share are more likely to manifest anticompetitive behavior. According to this approach, concentration ratios (CR-3, CR-5) or Herfindahl-Hirschman Index measure the competition in the financial sector.

CR-3 indicator reflects the sum of market shares of three largest market operators, while *CR-5 indicator* reflects the cumulative market share of five largest companies from the market.

The *Herfindahl-Hirschman index* is used to establish the level of concentration and it is calculated by summing the squares of market shares of each individual company.

$$HHI = \sum_{i=1}^{n} q_i^2 \quad (1)$$

Where: HHI - Herfindahl-Hirschman Index;

q_i – market share of a company;

n – Number of market operators.

If HHI is 1.000, the authorities responsible for the protection of competition will not seize; if the index exceeds 2.000, the market will be considered as concentrated. Markets with an HHI between 1.000 and 2.000 are considered to be moderate concentration markets [5, p. 3].

The specialized literature identifies some shortcomings regarding the approximation of competition through the SCP paradigm. This method has the aim to calculate the concentration indicators based on relevant market, which is difficult to identify for the banking industry and may exceed the national border [2, p. 408]. Due to globalization and technological progress, market definition for the banking sector is experiencing increasing difficulties. Moreover, the causal link between structure and behavior is unclear. Measuring the market structure based on the number of institutions and concentration indicators is not necessarily linked to the level of competitiveness of the industry [10, p. 4].

The *efficiency hypothesis* argues that efficient firms increase their market share due to their ability to generate higher profits. According to the effective hypothesis, there is no causal relationship between competitors and concentration, and strong concentrated markets are the rational result of market forces [6, p. 9].

Over the years, experts have developed new methods of assessing competition in order to address the listed shortcomings. Thus, another approach to measure the competition is the "New Empirical Industrial Organization". This approach rejects the traditional measurement of market performance and aims to estimate market power using flexible models for analyzing company behavior in maximizing profits. An example is the Panzar-Rosse model, which is a non-structural method of measuring competition. Among the advantages of the Panzar-Rosse model is the lack of the relevant market specification, once the individual behavior of institutions is an indicator of market power. Other advantages of this method are the use of few variables; it is robust to market expansion and could be estimated using a simple linear equation.

Several studies have been conducted to assess competition in the banking sector based on the Panzar-Rosse approach. The P-R model has been applied to national and international banking industry analysis. For example, Gutierrez de Rozas (2007) applied the model for the analysis of the Spanish banking sector for the period 1986-2005 [6, p. 7], while Bikker et al. (2009) used data over 17,000 banks in 63 countries for 1994-2004 [3, p. 1]. Researchers Gelos and Roldos (2002) analyzed competition in emerging markets (Argentina, Brazil, Chile, Czech Republic, Hungary, Mexico, Poland, Turkey, Republic of Korea, Thailand, Malaysia) [4, p. 9]. Nathan and Neave (1989) applied the method for the banking sector in Canada, while Claessens and Laeven (2004) for banks in industrialized and developed countries. The latter concluded that banks in countries with a larger presence of foreign banks and few restrictions to enter the market tend to show a more competitive behavior. In the study for New York banks, Shaffer (1982) has identified that both the monopoly and the perfect competition hypothesis could be rejected. Studies conducted by Molyneux et al. (1994) or Bandt and Davis (2000) for European banks also rejected the

assumptions about the existence of perfect competition or monopoly in the European Union [2, p. 410]. All of these studies have concluded that the competitive environment for the banking sector could be described as monopolistic competition. This seems to be a reasonable conclusion in the context in which the banking market is characterized by an environment between perfect competition and monopoly.

3. Methods and materials applied

The Panzar-Rosse model (1987) assumes that change in input prices will affect the level of income differently, depending on the level of competition. It is built on the premise that firms will implement different pricing strategies because of changes in input prices depending on the competitive behavior of the participants. In other words, competition is determined to the extent that changes in input prices are reflected in the company's equilibrium revenue. Once the model has a static approach, it is recommended to perform the test on the bases of long-term observations.

This model estimates a simple equation that reflects the elasticity of bank incomes to input prices and calculates the H-statistic value. H-statistic is designed to differentiate between perfect competition, monopolistic competition and monopoly. The estimated H-statistic will vary between $-\infty < H \leq 1$. If the H-statistic equals 1, the market has a perfect competition. Under perfect competition conditions, an increase in input prices and, therefore, an increase in average costs should lead to a proportional increase in prices and income of the enterprise. If the market is a monopoly, an increase in input prices will increase marginal costs, reduce steady production, and will reduce revenues of the company. In this case, the H-statistic is negative or equals to 0. If the H-statistic is in the range $0 < H \leq 1$, the market is with a monopolistic competition.

Table 1. Interpretation of the H-statistical indicator of the Panzar-Rosse model

Parameter	Competition Test
H≤0	Monopoly
0<H≤1	Monopolistic competition
H=1	Perfect competition or natural monopoly on a perfectly disputable market

Source: Kashi, F, Beynabadi, J., Mosavi, Y. Competition in Iran's Banking Sector: Panzar-Rosse Approach. Iranian Economic Review [online]. 2015, Volume 19, Issue 1, pp. 29-39. Available: https://ier.ut.ac.ir/article_55158_21f2614c9f37509d152855bad4148813.pdf [7, p. 7].

The Panzar-Rosse model measures the impact of the input price on an observed equilibrium value of interest income (IR). The H-statistic represents the sum of the elasticity of the interest income related to the price of inputs. H-statistic is calculated based on the following equations:

$$Ln(IRTA_{it}) = \beta_0 + \beta_1 Ln(Pl_{it}) + \beta_2 Ln(Pf_{it}) + \beta_3 Ln(Pk_{it}) + \beta_4 Ln(ETA_{it}) + \beta_5 Ln(TA_{it}) + ei + \mu_{it}$$

(2)

$$H_t = \beta_{1t} + \beta_{2t} + \beta_{3t}$$ (3)

The dependent variable *IRTA* is the ratio of interest income and total assets. *Pl* is a proxy for labor cost and represents the ratio of personal expenses and total assets. *Pk* represents the ratio of expenditure on the management of fixed assets and fixed assets and is considered a proxy for the cost of capital. *Pf* is the proxy for the cost of funds and represents the ratio of interest expenses to total deposits. *ETA* and *TA* are bank specific factors. *ETA* represents the ratio of equity to total assets and is included to control differences in the capital structure. *TA* or total assets are a proxy for scale economies [1, p. 23].

Potential shortcomings of the approach are that pure competition, when H=1, will occur only in long-term equilibrium or imbalance, not in the case of short-term equilibrium. In addition, H<1 could be obtained in other scenarios than monopoly. Another problem could be the inability to identify accurately the input prices.

4. Results and discussions
4.1. Description of Moldovan banking sector

The financial sector is dominated by the banking sector, whose assets account for 91.6% of total assets of the financial system in 2015. Government and national experts are concerned about ensuring the stability of the banking sector. Failure to identify, assess the integrity and competence of final owners of the commercial banks could underestimate the level of concentration, which could undervalue the risk of contagion within the financial system. According to the IMF report, in 2014, five banks of the top 6 market leaders were owned de facto by two groups, which held 60-70% of the banking system's assets, giving rise to the "too-big-to-fail" problem [8, p 9]. In many cases, there are unjustified schemes for bank owners, which use shell companies or offshore zones to hide the identity of the final beneficiaries. In addition, difficulties in identifying ultimate beneficiaries of the banks suggest about the emergence of risks concerning the massive exposures to affiliated persons, which, in case of default, could cause insolvency of commercial banks. Moreover, shortcomings in the coverage and reliability of statistical data indicate the likelihood that the stability indicators of the banking system may be exaggerated. In recent years, the banking system is threatened by the risk of financial instability because of bank fraud, followed by the liquidation of three commercial banks.

The current situation in the banking system of the Republic of Moldova reflects its fragility. At the end of 2016, the banking system was composed of 11 commercial banks, including four branches of foreign financial groups. The total number of banks' subdivisions was 804, of which 288 branches and 516 agencies, and the total number of employees was 7868 people. The share of total assets of the top five banks was equal to 83.45%.

Commercial banks play a significant role in converting savings into investment, due to the intermediation function, namely the transfer of financial resources from those who have a surplus to those with deficits. In the Republic of Moldova, the share of loans and deposits in GDP is low compared to countries in the regions. Thus, according to data published by the World Bank in 2015, the share of credits in GDP in the Republic of Moldova was 37.1%, Romania - 37.5%,

Ukraine - 85.6%, Georgia - 52.6%, Armenia - 48.4%, Estonia – 77.3% [11]. The country's position on the share of deposits to GDP is a little more favorable than in the selected countries. In 2015, the share of deposits to GDP was equal to 40.1% in the Republic of Moldova, Romania - 32.5%, Ukraine - 39.2%, Georgia - 32.5%, Armenia - 28.1%, Estonia - 57.6% [11]. The results for Moldova reveal about difficulties regarding the access of enterprises and population to bank loans, limited level of confidence in the banking sector, as well as the relatively low level of the revenues of the private sector. A central problem is lack of mutual trust between banks and consumers. The lack of confidence between banks and population is due to macroeconomic uncertainty and it is characteristic for transition periods. Simultaneously, the problem of expensive loans is one of the most important topics debated by the business community. One of the causes of high credit price is the profit margin of commercial banks, which is influenced by the degree of competition in the sector. Comparing to the bank margin of the countries in the region, which is calculated by the difference between interest rates on loans and deposits, we conclude that in 2015 Moldova was closed to the average in the region (3.6%). Thus, the bank margin for Ukraine was 7.8%, Bulgaria - 6.2%, Azerbaijan - 8.6%, Armenia - 5.7%, Estonia - 3.8%, Georgia - 2.7% [11]. The value of the bank margin reveals the existence of similarities in the competitive environment in the selected countries.

We will use the concentration indicators in order to create a complete picture of competition in the banking sector. According to the "Structure-Conduct-Performance" paradigm, the concentration ratios (CR-3, CR-5) and the Herfindahl-Hirschman Index (HHI) could measure competition. The results of the calculations for the banking sector are presented in Table 2. From a financial point of view, market power is measured by the size of assets, deposits or credits. The dominant position on the financial market depends on the size of the assets. Thus, according to the legal provisions in the banking sector, the ratio of the bank total assets to the total assets of the banking sector must be less or equal to 30%. From a competition point of view, the share of bank turnover in the total banking sector turnover is a criterion in determining the dominant position and according to the Moldovan legislation a market share of less than 40% is unlikely to identify a dominant position.

Table 2. Level of concentration in the Moldovan banking market

Name	2014			2015			2016		
	CR-3	CR-5	HHI	CR-3	CR-5	HHI	CR-3	CR-5	HHI
1	2	3	4	5	6	7	8	9	10
Deposit market	52.6	78.1	1355.2	69.8	86.3	1789.3	66.9	85.9	1858.2
Commercial credit market	59.5	76.5	1535.3	66.7	86.2	1839.3	62.9	84.1	1716.7
Mortgage loan market	62.7	89.2	1748.8	63.5	89.1	1753.5	65.6	89.2	1794.7
Consumer credit market	83.1	93.9	3022.4	86.9	96.4	3130.9	86.2	95.7	2895.9
Total assets	48.8	75.8	1255.3	66.6	83.9	1733.3	64.2	83.4	1681.2

Source: developed by the author based on the reports of the National Bank of Moldova for 2014-2016 [9]

Analyzing the concentration indicators, the Moldovan banking market has a moderate level of concentration. According to the data in the table, we could formulate two basic conclusions. The calculation results show an increase in concentration in 2016 compared to 2014. In addition, the consumer credit market has the highest concentration level. The high value of HHI, CR-3 and CR-5 in the consumer credit market indicates the concentration of market power and outline an uncompetitive environment. Three commercial banks hold 86.2% of the market (Moldova - Agroindbank, Mobiasbanca - Groupe Societe Generale and Moldindconbank). The largest market shares in the consumer credit market and mortgage market are held by Moldova – Agroindbank, Mobiasbanca - Groupe Societe Generale, Moldindconbank. In 2016, Moldova - Agroindbank had the highest market share in the deposit market (28.1%), consumer credit market (44%), mortgage loan market (24.7%), commercial credit market (27.2%).

4.2. Results of Panzar-Rosse model in banking sector

In order to apply the Panazar-Rosse model and determine the level of competition in the banking industry, based on the non-structural approach, we use equation (2) and the statistical data for 2012-2016.

The dataset used for H-statistic calculation includes statistical data for 11 banks for the period 2012-2016. The information was collected from the banking supervision reports of the National Bank of Moldova. The descriptive statistics for the variables are reflected in Table 3.

Table 3. Descriptive statistics of variables

Indicator	2012	2013	2014	2015	2016
1	2	3	4	5	6
IRTA (Interest income / total assets)					
Min	0.059	0.052	0.057	0.062	0.061
Max	0.111	0.115	0.105	0.103	0.111
Medium	0.077	0.071	0.068	0.078	0.083
Standard Deviation	0.014	0.016	0.013	0.011	0.015
Pl (Personnel expenses / Total assets)					
Min	0.012	0.010	0.008	0.009	0.010
Max	0.062	0.069	0.067	0.053	0.054
Medium	0.025	0.024	0.023	0.020	0.020
Standard Deviation	0.014	0.016	0.016	0.012	0.012
Pf (Interest expenses / Total deposits)					
Min	0.026	0.024	0.009	0.017	0.013
Max	0.117	0.098	0.081	0.082	0.108
Medium	0.059	0.055	0.046	0.045	0.053
Standard Deviation	0.024	0.021	0.019	0.017	0.023

1	2	3	4	5	6
Pc (Expenses related to fixed assets / Fixed assets)					
Min	0.071	0.039	0.035	0.040	0.041
Max	0.379	0.421	0.351	0.438	0.372
Medium	0.171	0.148	0.131	0.132	0.131
Standard Deviation	0.106	0.134	0.111	0.117	0.110
ETA (Equity / Total assets)					
Min	0.018	0.015	0.014	0.011	0.011
Max	0.563	0.639	0.675	0.643	0.522
Medium	0.145	0.156	0.172	0.146	0.125
Standard Deviation	0.161	0.190	0.211	0.190	0.155
TA – Total assets					
Min	369749186	320521453	348378912	514871832	646514902
Max	11445400251	13414212350	15341423755	18230936232	19744383802
Medium	4238168054	5088085554	5449701701	6253654125	6631561946
Standard Deviation	3944423560	5042414526	5483499115	6245038333	6413835500

Source: elaborated by the author based on reports on the banking supervision of the National Bank of Moldova [9].

In order to assess the level of competition in the Moldovan banking sector, we used the equation (2) and (3) of the P-R model. To exploit the time series size and the cross-sectional dimension we used the pooled estimates in the E-views program. In addition, in order to determine the impact of individual banks' features on market competition, the level of competition was measured using the pooled GLS, fixed effects method. In the P-R model, the dependent variable is IRTA, and Pf, Pc and Pl represent the factors of production. The results of P-R model using fixed effects are shown below.

Table 4. Results of Panzar-Rosse model on the level of competition
in the Moldovan banking sector

Dependent variable: IRTA			
Variable	**Coefficient**	**T-statistic**	**Prob.**
Pf	0.093009	3.362504	0.0017
Pl	0.397729	14.64121	0.0000
Pc	0.067164	2.123992	0.0401
ETA	-0.076596	-1.93303	0.0605
TA	0.35092	3.459571	0.0013
Constant	-8.487535	-4.15169	0.0002
Number of observations	55		
R^2	0.806222		
Wald chi^2	78.43172		
Prob chi^2	0.0000		
H-statistic	0.557901		

Source: Developed by the author based on banking supervision reports of the National Bank for 2012-2016 [9]

According to the model's results, the dependent variable "Interest income" (IRTA) is positively correlated with the variables of factors of production (Pf, Pl, Pc). The positive sign of Pf variable

could be explained that more deposit funds are collected, more money will be provided by the bank and more interest income gained. The inversely proportional link between IRTA and ETA was predictable because lower capital ratios should generate higher bank incomes. In addition, all model coefficients are statistically significant. The cost of funds, labor cost and total assets are significant at 1%, capital cost - 5%, and ETA - 10%.

The Wald test rejects the hypothesis regarding the monopolistic structure of the Moldovan banking market (H = 0) at a significance level of 1%. At the same time, it rejects the hypothesis of perfect competition in the market (H = 1). According to the calculations, H-statistical value is equal to 0.5579, suggesting a market structure of monopolistic competition.

5. Conclusions

Competition is the promoter of the progress, innovation and well-being of the population. The banking sector has a special contribution to the development of economic growth. Competition in the banking sector ensures innovations and efficiency, reduces the interest rate on loans and increases consumer satisfaction.

In the last period, the Moldovan banking sector has been influenced by a series of events that have damaged the level of concentration and financial stability. Concentration indicators (CR-3, CR-5 and HHI) reflect an increase in concentration in 2016 as compared to 2014. However, with the exception for consumer credit market where the level of concentration is equal to 2895.9, exceeding the limit of 2000, deposit market, commercial credit market and mortgage loan market reveal a moderate level of competition. In 2016, Moldova – Agroindbank held 28.1% of deposit market, 44% of consumer credit market, 24.7% of mortgage loan market and 27.2% commercial credit market.

Assessment of the level of competition based on the concentration indicators of the "Structure-Conduct-Performance" paradigm will not reflect a complete picture of the degree of competition in the banking market. One of the problems identified by international experts is the lack of transparency of commercial banks' shareholders, which hides the reality about the level of concentration in the sector. For these reasons, we used the non-structured Panzar-Rosse model for competition assessment in the banking sector. This econometric model is based on a reduced income function and aims to observe the impact of input price changes to the bank income.

Following the use of annual statistical data for 11 commercial banks for the period 2012-2016, the H-statistic value is 0.56. If the H-statistic value is in the range of $0 < H \leq 1$, there is a monopolistic competition on the market. The result is in line with the results obtained by other researchers who applied the Panzar-Rosse model in the banking industry.

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Rezumat

Este binecunoscut că rolul concurenţei este de a stimula rivalitatea între participanţi pentru a spori progresul şi bunăstarea populaţiei. Îmbunătăţirea concurenţei în sectorul bancar moldovenesc va avea un efect pozitiv asupra calităţii şi preţurilor serviciilor bancare, eficientizînd activitatea sistemului financiar care va contribui semnificativ la creşterea economică a ţării. În contextul obiectivului de integrare europeană şi liberalizarea comerţului de servicii financiare cu Uniunea Europeană, analiza nivelului concurenţei în sectorul bancar este o necesitate în vederea îmbunătăţirii activităţii sectorului şi facilitării procesului de armonizare a legislaţiei în domeniul sectorului financiar-bancar şi concurenţial. În articolul dat am utilizat o metodă nestructurală de măsurare a concurenţei în industria bancară, abordarea Panzar-Rosse. Acest model presupune măsurarea concurenţei în baza unei funcţii reduse a veniturilor care are scopul de a calcula elasticitatea veniturilor bancare la preţurile factorilor de producţie: capital, muncă şi active fixe. Această metodă pune accent pe comportamentul individual al băncilor comerciale, care este un indicator al puterii de piaţă.

Cuvinte-cheie*: concurenţă, sector bancar, abordarea Panzar-Rosse, structura pieţii*

Аннотация

Хорошо известно, что роль конкуренции заключается в том, чтобы стимулировать соперничество между участниками для поддержания прогресса и благосостояния населения. Улучшение конкуренции в банковском секторе Молдовы окажет положительное влияние на качество и цены банковских услуг, повысит эффективность деятельности финансовой системы, что внесет значительный вклад в экономический рост страны. В контексте цели европейской интеграции и либерализации финансовых услуг с Европейским Союзом анализ уровня конкуренции в банковском секторе является необходимостью в улучшении деятельности сектора и облегчении процесса гармонизации законодательства в банковской сфере и конкуренции. В этой статье мы использовали неструктурный метод измерения конкуренции в банковской отрасли, подход Панзар-Россе. Эта модель включает измерение конкуренции на основе сокращенной функции дохода, предназначенной для расчета эластичности банковских доходов по ценам на ресурсы: капитал, труд и основные средства. Этот метод фокусируется на индивидуальном поведении коммерческих банков, что является показателем рыночной власти.

Ключевые слова*: конкуренция, банковский сектор, подход Панзар-Россе, структура рынка*

THE INTEGRATION OF THE FUNCTIONAL AND INFORMATICS ASPECTS OF ORGANIZING THE ECONOMIC MANAGEMENT UNITARY OPERATIVE SYSTEM OF INFORMATION

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Abstract

  At the level of the economic management unitary operative system and its constituent sub-systems the functional and informatics aspects of organizing the circulating situational information in its environment are disclosed. In the first aspect the place and interconnections between the object and subject of management, and information and sub-systems processing system are examined. We have elaborated and characterized the conceptual scheme of formation (obtaining) and functional interconnections between the categories of economic situational information.

  Regarding the second aspect, the particularities of organizing information in functional and informational terms are elucidated. Methods of organizing data on both memory types (internal and external) of the computer are revealed.

  Functional and informatics integration of economic situational information organizing was carried out through establishing the concordance of organizational methods of achievement on the manual and technical physical environments of the supports.

Keywords: organization, economic information, functional, informatic aspects, proceedings, forms, methods, manual and technical supports, concordance, integration

1. Introduction

Economic information evolves and will evolve into two - managerial and informatics (technical) - environments at present and in unpredictable perspective, therefore it is necessary to ensure the most rational and effective transition of semiotic presentation, of forms and methods of their equivalent organization in both environments. In this context it is appropriate to carry out research on the study and analysis of possible forms and methods of realization of one evolutionary situation, namely their organization on the physical manual and technical spaces. Considering that the unitary information process flows under the both conditions of the management and the technical environment, it is necessary to establish the consistency between the forms and the procedures of the organization of its constituents, and, on this basis, the integration of the latter. By such an approach, groundwork is prepared and conditions of automatic functionality in the real time regime of the information activities in organic interconnection with the material ones are ensured.

2. Degree of problem investigation and purpose research

Currently, it is attested practically a complete lack of investigation of the problem in question, both from a scientific point of view and from the practical aspects of the concepts of organizing information and elaborating methods of economic information. The latest research in the field was carried out in the 70-80s of the 20th century. Such a situation was created due to the formation of a profound discrepancy between the superior performance level of the technical means of data processing (multifunctionality, direct physical access, low price, excessive speeds, expanded memory space, etc.), of programmed resources (simplicity, elaborative and applicative facility) and the rudimentary level of organizing information. Currently, for the three basic components of informatics (technology, programs, information), the concept of interconnection and their inseparable interaction in the unitary process of operation has not been elaborated. As a consequence, the first two, according to their functional capabilities, have essentially advanced, whereas the domain of their application (information) has proven to be unprepared for their effective utilization. This situation requires special attention to be paid to the problems of the establishment and functioning of the ways of organizing the information. In the given context, it is essential to clarify and finalize the notions of organizational form of information and the organizational unit (organizational) functioning of the economic informatics system (E.Ic.S.), as a monolithic assembly of interconnected and interactional informatics resources, establishing their distinction and predictable perspective.

Starting from the foregoing considerations, as well as from the dynamic character of the informatics components, their complex composition and the necessity to ensure their homogeneous existence and functioning, their theoretical topicality and their applicative importance, investigations have been carried out regarding the organizational aspect of the information and informatics resources. In this respect, it is becoming more and more convincing that the improvement of E.Ic.S. can be achieved not only on the account of the progress of basic informatics resources, but of all such resources, with a synergic organization.

3. Applied methods and materials

Research on the present subject was carried out on the basis and with the application of investigation methods of the theory, analysis and synthesis of information, managerial theory, systems theory and system analysis, crowd theory, theory of economic informatics and cybernetics, graph theory, algorithm theory, theory of informatics resources selection, etc.

The materials applied for this purpose refer to the scientific literature of economic informational management, economic informatics and fields adjacent to these specialities, the results of the elaborations and implementations of the design decisions of the informatics systems at the economic partner units, the university scientific activities, the normative and legislative acts of the Republic of Moldova and the results of the author's own investigations.

4. Analysis and results
4.1. Functional aspect of organizing the economic situational information

In accordance with the principle of motivation, the informational situational processes occupy an intermediate position between the led object (L.O) and its management system (M.S.O.) (object (process) $\longrightarrow$ situational information $\longrightarrow$ decisional information). In the case, when all the informational units in the limits of L.O., on the whole, form a single organizational unit –the system of information (S.It.), the place and the interconnections of the L.O. and M.S.O. information, are presented schematically in figure1 [1, p. 54; 7, p. 39]:
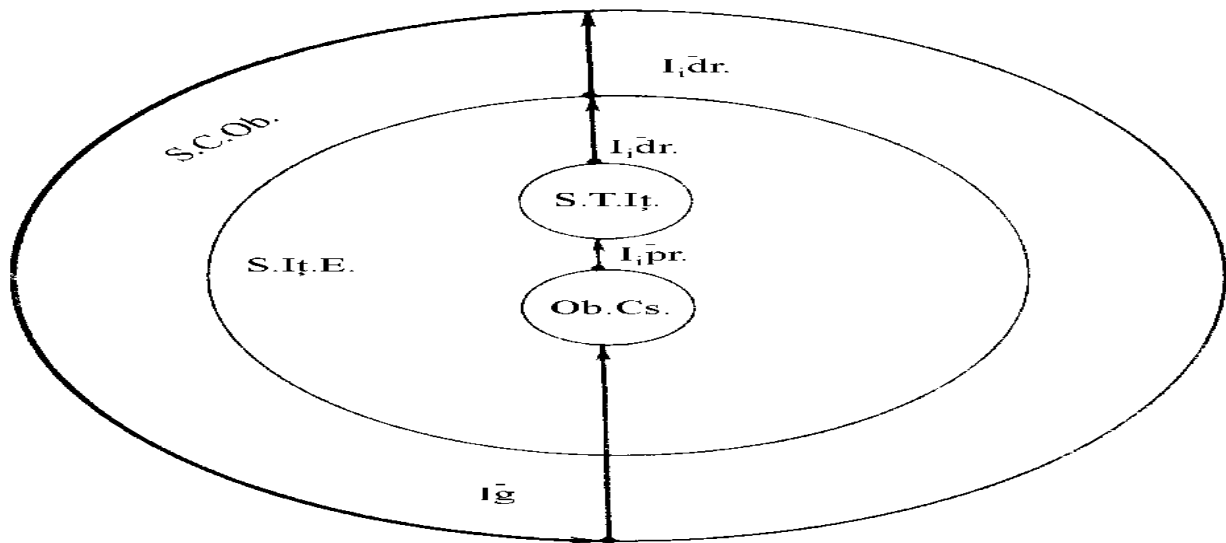
Figure 1. Place and interconnections of the information of unitary economic management process

The above figure demonstrates that the values of the primary situational information (I_{ipr}^{-}) are formed in the environment of L.O. (Ob.Cs.,), after they are provided with their transformation system (S.T.Iț.). Here, proceeding from the available algorithms, it takes place the informational, structural and calculation processing of those primary or initially informational values. The derived values, obtained as result of these processing information (I_{idr}^{-}), are farther offered to the management system of the led object (S.C.Ob.), within the framework of which the analysis is made and, on its basis, the necessary management information (I_{g}^{-}) is formed. The latter, in turn, are provided to the inputs of the driven object (Ob.Cs.) and, in accordance with these values, it organizes its working in a new variant.

Thus, conceptually, economic information is organized and moved within the framework of managerial process of the economic object. But, this system (S.C.Ob.) has not organizational or informational aspects, but also, consists of certain interconnected and interactional material components with a view to support the functioning and evolution of the managed object.

In such case the conceptual organization of economic information on the material sub-systems of S.C.Ob. schematically is presented in figure 2 [1, p. 56; 3, p. 385; 7, p. 40].
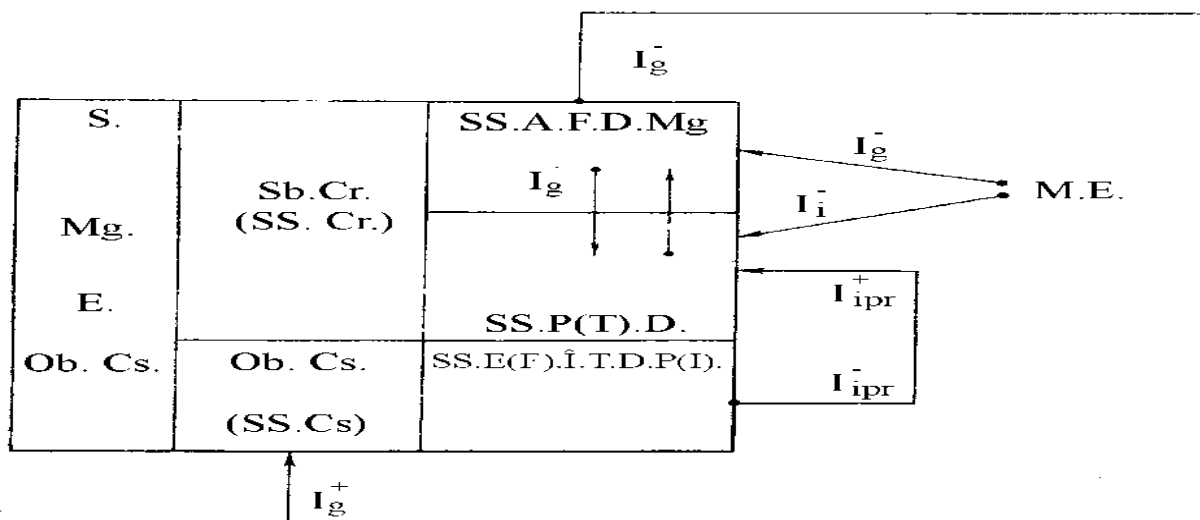
Figure 2. Conceptual scheme of the organization of information within the economic management system of the driven object (S.Mg.E.Ob.Cs.), the subject of the management ($S_b.C_r.$) (the driving subsystem–SS.Cr) and the managed object (Ob .Cs.)(subsystem led- SS.Cs.)

According to the forming directions and the exercised functions in the processes of transformation, the economic information can be divided into three categories – of evidence, forecast and normative, and reference. Besides them, in the process of economic analysis of Ob.Cs. functioning and its "behaviour", which foresees the involvement of all three categories of information, the fourth category of information appears – that of analysis, sometimes called analytical.

Figure 3 presents the orientation scheme of formation and of successive moving of the economic situational information of certain categories [1, p. 62; 2, p. 195; 7, p. 43].

The scheme confirms the fact that in the unitary process of the economic information dynamics there are three basic categories of connections between the different groups: connections of the incalculus (informational and structural) processing; connections of calculus (arithmetical, statistical methods, of multi-factorial, economic-mathematical analysis, ect.) processing, connections of functional utilization. The first two categories of connections take place within each group of information and between each of them or between all three groups. The connections of common utilization of information are motivated by the necessity of achieving the economic analysis function by the following basic variants of combining: evidence information + forecast information; evidence information + rate setting information; rate setting information + forecast information; evidence information + rate setting information + forecast information. In any variant of combination there exists the possibility of including settlement and reference information.

The combinative connections (of functional transformation and utilization) are specific for the same rate - setting, settlement and reference information. Practically, the majority of the derived values of the evidence and forecast of informational entities are obtained through involving this category of information. They also serve as the basis for many management decisions. From such positions, conventionally the values of the rate-setting, settlement and of reference informational

units can be perceived as source of feeding of the processes of obtaining derived values of evidence, forecast, economic analysis, etc.
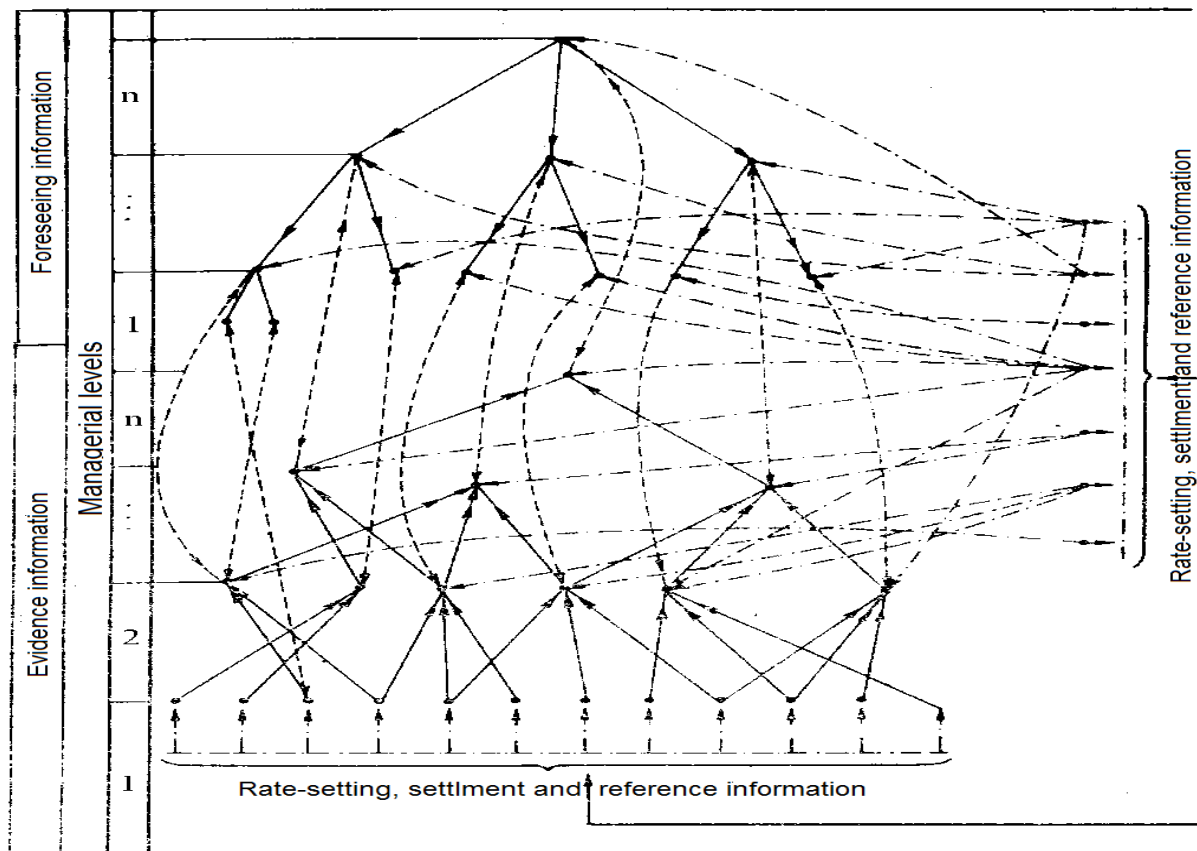

Figure 3. Scheme of the conceptual work of forming (obtaining) directions and functional interconnections between the groups (categories) of economic situational information: → forming directions (orientations) for the values of informational units based on the calculus and incalculus processing of initial data; ← − → directions of joint utilization of situational information with a view to carry out economic analysis ; −·−·−·→ directions of joint processing of the rate - setting and settlement, of reference informational units values with the values of informational units of others categories of economic information; ·- managed objects (processes) of certain managerial level (1÷n).

4.2. Informatics aspect of organizing the economic situational information

The main difference between the functional and the informatics aspects of organizing economic information consists in the fact that the former is of a general (conceptual, universal) nature, while the second refers mainly to informational units, regardless of affiliation and use of values in the processes of solving informative problems, complexes or sub-systems of issues. For this reason the functional organization of economic information is more of imaginary order, in reality being organized in the shape of a set of documents, portfolios, shelves, etc., well-arranged and ordered according to certain principles, which ensure the access and protection of necessary informational units.

Just as in functional aspect the situational information is treated from positions of ensuring with resources any material unit, it is viewed under an evolutionary angle in certain spatial and temporal rays, therefore, in moving. In the given case, the main thing is the composition and not the structure of the informational units.

At the same time, the informatics aspect of organizing the economic information is of reverse character, because, firstly, it is achieved starting from the structural informational units and physical environment of its placing, so as further to determine the methods of their organization. That is why the data base structures establish the logic of their organization, regardless of physical environment, where they are placed [1, 5, 8, 9, 11, etc.].

Nowadays, in the daily practice of economic informational activities, the physical informatics aspect is achieved prevalently concerning each issue, because, as a rule, the initial informational resources are oriented towards solving such unities, often being organized in the shape of separate data files. Only in case of obtaining certain informational products (exit situations) it takes place the concatenation of initial data files for database forming.

The conventionality of treating in practice the notion of database is aroused by its unilaterality of meaning and content, which exclusively starts only from the goals of joint processing of two and more informational entities (usually, in economy – two and more data files), to elaborate an output (of synthesis) document. But, the integrated organization of the informational resources is limited not only by the processing goals, which itself refers to each solved issue, but first of all − of the goals serving the managerial activities. Therefore, it is necessary for the database to be interpreted not as informational entity, but, especially, as organizational shape of information for such managerial space, as the economical unit is. That is why it can be considered the equivalent of the information system of the led object (process). Concerning functions, complexes of issues or particular issues of each type (material, informative, decisional), the organization of information can be presented in the form of such varieties of entities as the informational collection, massif and recording.

As previously noted the organization of informational entities on the informatics environment is produced through data structures, because each of them is coherent and owns certain organizational methods of realizing these structures, predetermined by certain physical spaces of location (recording, reading) and their specificity. Thus, the informatics aspect of organizing economic information is examined according to the following chain: information entity $\longrightarrow$ data structure $\longrightarrow$ organizational methods.

If the data structure is conceptual (logical) and, therefore, independent of the concrete properties of its space, then its organization (repartition) is physical and, therefore, dependent on the material presentation space. As a result, it was demanded such a modality of treating the organization of informational units on the informatics environment, as "packing (wrapping, setting)" data, understood as the physical organization of data structures on the storage space.

Just as the types of informatics memories and data placement proceedings are of a wide variety, the organizational methods also have a complex composition. Starting from these positions, depending on the type of physical memory space, two sets of methods of data organization are distinguished: specific to internal memory and specific to external memory.

At present, the most common and well-known methods of packing the successive and list data structures, which are specific to physical space of operative memory, are those successive, in chain, in nest and in node [1, 7, 10, 11].

For the other three organizational methods, the arbitrary physical organization of structural data units is appropriate, their registration and reading being provided by the link addresses assigned to each such unit. For this reason, their achieving is based on the gradual dynamic distribution of memory, together with the release of physical space. Therefore, if successive organization is carried in a purely technical way, then the successive data structure is physical, while the other organizational methods have associative elements (link addresses).

If data on operative memory is organized on unitary physical support (ferrite kernels) and the diversity of their packaging is ensured by varying the ways of placing and addressing the information units, then, on the external memory, the methods of data organizing predominantly depend on the physical properties of the supports, which this type of memory is constituted of [1, 7, 8, 9, 12].

4.3. Functional-informatics integration of the economic situational information organization

The meaning of this integration is reduced to the establishment of the equivalence of the methods of structural units' organization and the transformative modalities of the examined information. The general purpose of its establishment is motivated not only by the value of awareness and permanent consideration of the existing equivalents in the environment of the modern information system, but also by their correct operation, in the case of transition from one aspect of treatment to another, by ensuring the identity and their unity in any process of presentation and transformation.

As the functional aspect of economic management is inherent to human nature, and for this reason it was comprehended and realized by the subject first manually, it is related to the forms and methods of manual organization of information. Therefore, the functional and informatics integration of economic managerial system information requires the establishment of the concordance of the manual and automatic forms and methods of achieving this organization.

Depending on the multiplicity of the registration of values of the informational units on the same physical spaces, the degree of flexibility of manipulation with such units, there are distinguished forms based on organization on physical supports and forms based on the diversity of possibilities of programmed variation of the location of information units and organizing various physical domains for the same purpose. The concordance of the organizational forms of information of the economic management system, based on supports is presented in Table 1 [1, p. 92].

The physical (material) organization of all examined organizational forms is carried out starting from the composition of the situational functional content compartments (operational organization of information in sub-systems, sectors, complexes of problems and informative issues in particular). The implementation of informatics means and methods has contributed to the distinction of physical and programmatically directed organizational forms.

For manual organizational environment, such forms can be exemplified through accounting forms, such as memorial - order and diary - order. Until now the database, the main difference of which is to ensure the logical organization of data, is the only organizational form based on the programmed information management, independent of physical properties of the supports, the latter being performed not only by the programmatic system, but also by the associative elements, by means of which the values of nominated units are linked.

Table 1. Concordance of physical organizational forms of situational information of the economic managerial system based on supports

Organizational forms (physical units)					
Functional (manual)			Informatics (automatic)		
No.	Type	Supports	No.	Type	Supports
1.	Card indexes Catalogue	Documents	1.	card indexes	Perforated cards
		Cards with marginal perforation			Magnetic cards
2.	Folding	Documents	2.	Reels index	Perforated cards
	a) simple				Magnetic cards
	b) tied				Magnetic tape cassettes
	c) with rail (bookshelf)		3.	Reels	Perforated tape
					Magnetic tape
3.	Shelf: a) with non-sectioned shelves	Documents, catalogues, registers of norms and other constant digital data, guides, indicators, dictionaries, regulations, guidelines, etc.	4.	tape	Magnetic tape
	b) with sectioned shelves				Cartridges
			5.	pack	Hard disks
4.	Board: a) with non-sectioned shelves		6.	disk index	Hard disks
					Taped disks
					Laser disks
	b) with sectioned shelves		7.	Floppy disk index	Magnetic floppy disks
			8.	Librăry of CD, DVD, STICKS	Compact disks, optical disks, DV-disks

In the economic domain, the physical units of organization have evolved both depending on the types of media on which the information or data is located, as well as of the technical means that fix (record) it on the memory material environment. Initially the majority of information was concluded on the physical spaces of various paper supports in the shape of the documents of various forms, the composition and structure of which are predetermined by the content, composition and structure of the reflected (described) objects and activities. With the implementation of the informatics technique, various paper and cardboard supports have been elaborated and applied at the beginning, further on being invented and used physical data environments based on the effects of electricity and light. Respectively, their forms of organization have evolved in the directions presented in the Table.

Finally, it is necessary to mention that the the trend of data media evolution is such that by ensuring the reliability and excessive increase of the volumes stored on them a single unit of them will encompass the entire information system of the managed object. In such a situation, the usefulness of their forms of organization will decline, focusing on the methods of data organizing on the internal memorization space of the support unit.

The concordance between the functional and informational methods of situational information organization of the economic managerial system is presented in Table 2.

Table 2. Concordance between the functional and informatics methods of organizing the situational information of economic managerial system [1, p. 96; 4, p. 102]

Methods of organization		
Functional	IT (internal)	
External	On internal memory	On external memory
Sequential	Sequential	Sequential
Sequential – indexed	In nest	Regional
___	In chain	Sequential – indexed
		Direct
	In knot	Regional (Library)

From the table it is obvious that at the moment the composition of the data organization methods is not so developed, which is why the requirements of their processing are not fully and completely satisfied, and which fact confirms the incomplete achievement of performances required by the management system. Therefore, on the basis of progress of the development of technical and operational characteristics, it can be confirmed that in the future the elucidated supports will evolve in the direction of the dimensional miniaturization and the excessive increase of the density of placement of the information and data volume on a space unit thereof.

5. Conclusion

From the positions of serving the functions of the unitary economic management system, the organization of information requires permanent management of the following principles and their properties:
1) interpreting the object of management as a material-managerial-informational core;
2) indissoluble organic bond between economic material objects and activities;
3) precedence and succession of the economic material processes;
4) intermediate position between the managed object and its management system;
5) ensuring the functioning of the object and its management system by organizing information in the form of flows;
6) opposite orientation of the movement of situational informational flows that precede (normalization, regulation and forecasting) of those who succeed (evidence, statistics, management) material activities;

7) through structural and calculation infiltration of information that precedes the ones that follow the material activities the third category of information - economic analysis - is formed;

8) during processing the normative and reference information serves as basis for the formation of the values of the majority of the derived information units;

9) dual (transformative and functional) role of previous information preceding economic material activities contributes to their organizational combining;

10) organization of information at the level of economic unit in the form of a network, appropriate to the cross-linking way of accomplishing its activities;

11) diversity of variants of information organization is caused by the environment and the principles of the distribution approach.

From the positions of informatics achievement of various forms and methods of organizing the economic situational information it is necessary to take into account the following moments:

1. the modalities of information organization are determined starting from the characteristics of parameters of the field of application of the means and methods in the following order: information entity $\longrightarrow$ data structure $\longrightarrow$ method of organization;

2. the elaboration, implementation and operation of the forms and methods of informatics data organization are based on the specifics of the functional organization of the information;

3. depending on the category of physical supports, the forms and methods of functional (manual, documentary) and informatics (automatic, technical support) organization of the information are distinguished;

4. in the same context, forms and methods of physical and logical organization of data are highlighted;

5. the specificity of support and matching of the forms and methods of data organization requires their classification in two groups: suitable for the internal and proper for the external memory;

6. through establishing the correspondence between the modalities of organizing information, their functional-informatics integration is produced, which contributes to the automatic preparation of the data for processing and use;

7. along with the miniaturization and maximum increase in data fixing density per space unit, the necessity in certain physical units of organization of the supports will be totally reduced, special attention being given to the methods of presentation and organization of information on the support space.

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Rezumat

La nivel de sistem managerial economic unitar şi sub-sisteme constituente ale lui sunt dezvăluite aspectele funcțional şi informatic ale organizării informațiilor situaționale circulante în mediul lor. În cadrul primului aspect sunt examinate locul şi interconexiunile informaționale dintre obiectul şi subiectul de gestiune, sistemul şi subsistemele de procesare a informațiilor. Este elaborată şi caracterizată schema conceptuală a direcțiilor formării (obținerii) şi interconexiunilor funcționale dintre categoriile informațiilor situaționale economice.

Privind cel de al doilea aspect, sunt elucidate particularitățile organizării informațiilor în plan funcțional şi informatic. Sunt revelate procedeele organizării datelor pe ambele tipuri de memorie (internă şi externă) ale calculatorului.

Este efectuată integrarea funcțional-informatică a organizării informațiilor situaționale economice prin stabilirea concordanței formelor şi metodelor organizaționale de realizare a ei pe mediile fizice ale suporturilor manuale şi tehnice.

Cuvinte-cheie*: organizare, informații economice, abordare funcțională, informatică, procedee, forme, metode, organizare, date, suporturi manuale, tehnice, concordanță, integrare*

Аннотация

На уровне единой системы экономического менеджмента и его составляющих подсистем раскрыты функциональный и информатический аспекты организации циркулирующей в их средах ситуационной информации. В рамках первого аспекта проэкзаменированы место и информационные взаимосвязи между обьектом и субьектом управления, их системой и подсистемами преобразования информации. Разработана и охарактеризована концептуальная схема направлений формирования (получения) результатных значений информационных единиц и функциональных взаимосвязей между различными видами экономической ситуационной информации.

Относительно второго (информатического) аспекта, рассмотрены особенности организации информации в функциональном и информатическом планах. Выявлены и проанализированы способы организации данных на физическом пространстве обоих типов памяти (внутренней и внешней) компьютера.

Осуществлено функционально-информатическое интегрирование организации экономической ситуационной информации путём установления соответствия между различными организационными формами и методами её реализации на материальных средах ручных и технических носителей.

Ключевые слова: *организация, экономическая информация, функциональный аспект, информатический аспект, способы, формы (единицы), методы организации, организация данных, ручные, технические носители, соответствие, интегрирование*

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