COMPARATIVE ANALYSIS OF FINANCING OF THE RESEARCH AND DEVELOPMENT ACTIVITIES IN THE REPUBLIC OF MOLDOVA

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Currently, for the Republic of Moldova, the research and development activity is one of the issues of primary importance by the fact that only oriented economy towards diffusion of innovations in the real sector can aspire to a favorable recovery. In this context, funding for research and innovation should be an essential component of managerial policy in the field of science. Currently, although the funding of science and innovation activity is carried out under the priority directions of development of science, based on a competitive system – state programs, independent projects, international and technology transfer projects, we cannot speak of an actual „market" of funding of research and development activities, since most of the funds for this activity are allocated from the budget. The carried out study comes as an attempt to highlight certain aspects of the research and development financing processes in the Republic of Moldova. The financial support for scientific activity is based on its target orientation and multitude of financial sources. The budgetary funding of science is based on a combination of financial support of scientific organizations and specific funding of projects and scientific programs, etc. In order to accomplish the research a series of specific research methods of the economic issues were used as a methodological basis, as follow: logical (analysis and synthesis), historical, systemic, comparative and classification methods. Under the head of results and conclusions we can highlight that the scientific quality of the economic development is an innovative activity which points the production improvement in order to achieve high-quality products in large volumes to boost the economic efficiency of the industry by identifying the needs in scientific and technological progresses, researches and knowledge transfer of agricultural and industrial products to the producers. The recovery of patented innovations could bring state receipts and these royalties could be used to fund other research projects which could generate incomes in the national economy.

Keywords: *growth, research and development, investment, financing, knowledge economy, innovation, development strategy.*

Actualmente, pentru Republica Moldova, activitatea de cercetare-dezvoltare este una din problemele de importanță primordială prin faptul, că doar o economie orientată spre difuzarea inovațiilor în sectorul real, poate aspira la o redresare favorabilă. Astfel, finanțarea activităților de cercetare-inovare trebuie să fie componenta esențială a politicii manageriale în domeniul științei. În acest moment, deşi finanțarea activităților de ştiință şi inovare se efectuează în temeiul direcțiilor prioritare de dezvoltare a ştiinței, în sistem competițional pe programe de stat, proiecte independente, internaționale şi proiecte de transfer tehnologic, totuși, nu putem vorbi de o „piață" reală a finanțării activității de cercetare-dezvoltare, deoarece majoritatea fondurilor pentru această activitate sunt alocate din buget. Studiul efectuat vine ca o încercare de a scoate în evidență anumite aspecte ale procesului de finanțare a activităților de cercetare-dezvoltare în Republica Moldova. Asigurarea financiară pentru activitatea științifică este bazată pe orientarea sa țintă și pe multitudinea surselor de finanțare. Finanțarea bugetară a științei se bazează pe o combinație de sprijin financiar a organizațiilor științifice și finanțarea specifică a proiectelor și programelor științifice etc. Pentru realizarea articolului științific, drept bază metodologică a fost utilizată o serie de metode specifice de cercetare a problemelor cu caracter economic, cum ar fi: metoda logică (analiza şi sinteza), istorică, sistemică, comparativă și metoda clasificării. La capitolul rezultate și concluzii putem sublinia faptul, că asigurarea științifică a dezvoltării economice – reprezintă o activitate inovatoare, care vizează îmbunătățirea producției în vederea obținerii produselor de înaltă calitate și în volum mare pentru sporirea eficienței economice a industriei prin identificarea

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necesităţilor în progresele ştiinţifico-tehnologice, cercetările ştiinţifice şi transferul de cunoştinţe producătorilor de produse agricole şi industriale. Valorificarea invenţiilor brevetate pot aduce statului încasări, iar aceste redevenţe să fie folosite pentru finanţarea altor proiecte de cercetare, care pot genera venituri pentru economia naţională.

***Cuvinte-cheie**: creşterea economică, cercetare-dezvoltare, investiţii, finanţare, economia cunoaşterii, inovaţii, strategie de dezvoltare.*

В настоящее время в Молдове, деятельность исследования и развития является одним из вопросов первостепенной важности в том, что только экономика ориентированная на распространение инноваций в реальном секторе, может стремиться к благоприятному восстановлению. В связи с этим, финансирование научных исследований и инноваций должно стать важным компонентом управленческой политики в области науки. В настоящее время, хотя финансирование науки и инноваций осуществляется в рамках приоритетных направлений развития науки, в конкурентной системе на государственных программах, независимых и международных проектов, а также проектов по передаче технологий, однако, мы не можем говорить о реальном «рынке» финансирование деятельности исследования и развития, потому что большая часть средств для этой работы выделяется из бюджета. Данное исследование, приходит как попытка выделить определенные аспекты финансирования деятельности исследования и развития в Молдове. Финансовая поддержка научной деятельности основана на целевой ориентации и на множество источников финансирования. Бюджетное финансирование науки основана на сочетании финансовой поддержки научных организаций и специфической финансировании проектов и научных программ и т.д. Для создания научной статьи, в качестве методологической основы были использованы ряд конкретных методов исследования экономических вопросов, таких как: логический метод (анализ и синтез), исторический, системный, сравнительный и метод классификации. Результаты и выводы. Можем подчеркнуть, что научное обеспечение экономического развития представляет инновационную деятельность, направленную на совершенствование производства с целью получения продукции высокого качества и объема для повышения экономической эффективности промышленности путем выявления потребностей научно-технических прогрессов, научных исследований и передачи знаний сельскохозяйственных и промышленных производителей. Капитализация запатентованных изобретений может принести доход государству и эти взносы используются для финансирования других исследовательских проектов, которые могут генерировать доходы для национальной экономики.

***Ключевые слова:** экономический рост, исследование и развитие, инвестиции, финансирование, экономика знаний, инновации, стратегия развития.*

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Introduction. Funding is one of the key factors that ensures the sustainable operation of the research and development field, creates favorable conditions to satisfy the need of scientific research. The opportunity of this research is motivated by the fact that the Republic of Moldova requires intelligent use of economic, financial and management opportunities of research and innovation. Scientific research, technological development and innovation are the heart of the knowledge economy, the key driver of development and competitiveness [1].

The financing of science and innovation activities is carried out under the priority directions of development of science, in a competitive system – state programs, independent (youth) projects, international and technology transfer projects. The themes of fundamental and applied scientific research, projects under state programs, technology transfer and youth projects, equipment, as well as those funded or co-funded by organizations from abroad, have been selected exclusively by competition and approved by the decision of SCSTD of ASM.

Assessment of the process of distribution of budgetary allocations and financing activities in science and innovation. Financial support for scientific work is based on its target orientation and multitude of financial sources. Funding of this activity is carried out through the budget, extra budgetary sources and other sources. The budget is underlying the entire budget system, which most simply is

defined as "a document which provides every year the revenues and expenditures, or as appropriate, only expenditures, depending on the financing system of public institutions [9]. Budgetary funding of science is based on a combination of financial support to scientific organizations and specific funding of scientific projects and programs as well as specific scientific-technical programs. However, the basic issue related to activities in science and innovation is the research results. For example, the Romanian legislation stipulates that the results of the research and development actions obtained under execution of a contract financed from public funds, named further the research results represent:

- documentation, studies, research, plans, schemes and others;
- patents, certificates of registration of industrial designs and models, and others;
- technologies, methods, computer products, recipes, formulations, methods and others;
- physical objects and products made within the carried out the contract.
- collections or databases containing analog or digital records, historical sources, samples, specimens, photographs, observations, rocks, shales, and others, with information necessary for archiving, retrieval and specification of the context in which they were obtained.

It should be noted that the research and development field from the RM is undersized, regardless of the fact that the quality of research is part of the European and international trend. On the one hand, this is due to limited funding. In absolute figures, the country spents on R & D per capita, almost 40 times less than the European average [pp]. On the other hand, the demand for R & D is low. The research and development turns out to be poorly connected both with business and the public in general. In these conditions, innovation in the Republic of Moldova does not represent a central factor of economic and social development.

In accordance with paragraph (5) Article 125 of the Code on science and innovation [2] budgetary resources directed mainly for research are used for:

a) organization of competitions and funding of state programs, innovation and technology transfer programs, projects within them and independent projects, selected on a competitive basis, as well as other activities of valorization the results from the field of science and innovation in line with the strategic directions;

b) funding the fundamental and applied scientific research projects of organizations – institutional members and profile members that conduct scientific research on a competitive base within the strategic directions in order to maintain and develop the technical, material and maintaining infrastructure from the field of science and innovation.

Thus, the research and technological development activities taking place in institutions through budgetary funding are conducted within projects. The same form of projects or grants is characteristic for international and European programs. Research and development carried out at the command of some beneficiaries is performed under contracts of economic research that can be considered as an alternative of projects.

Distribution of budget allocations and funding (co-financing) of activities in science and innovation from the state budget is made based on programs and projects in line with the strategic directions of the activity in science and innovation and is done by organizations from science and innovation filed of all types of property and legal form of organization, accredited accordingly, in order to ensure the development of science, sustainable economy, increased welfare and quality of life and create an environment favorable for absorbing innovations. The financing way of science and innovation organizations is stipulated in the Code on science and innovation and depends on the category of organizations.

Under the legal provisions of Art. 125 par. (4) from the Code on science and innovation [2], the state provides funding of science and innovation in the amount of 1% of gross domestic product (hereinafter – GDP), specifying the annual ceiling in the Partnership Agreement. Analysis of situation regarding the ration of the ASM budget to GDP and to the limit of funding established in the Partnership Agreement, for 2010-2015 is presented in table 1 [3; 4; 5; 6; 7; 8]. The data presented in the table reveal that financing of the budget for science and innovation sphere recorded in the period 2010-2015 a level slightly below the amount fixed by the Partnership Agreement, respectively by 0.01 percentage points in 2010. Moreover, the limit amount of the funding of science and innovation has been exceeded since 2011 from 3 percentage points to 1 percentage point in 2015.

Table 1

The amount of state funding of science reflected in GDP *(mil.lei)*

Indicators	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Gross Domestic product (GDP)	71886,0	82349,0	87847,0	96200,0	106100,0	116800,0
ASM budget (total, determined), *including:*	365,0	342,0	367,1	350,0	441,9	437,2
- basic component	*326,1*	*295,3*	*319,2*	*286,9*	*349,6*	*345,6*
- special means	*38,9*	*46,7*	*47,9*	*63,1*	*92,0*	*91,6*
Share in GDP (2/1), total, *including:*	0.52%	0.43%	0.42%	0.36%	0.42%	0.37%
- basic component	*0.45%*	*0.36%*	*0.36%*	*0.29%*	*0.32%*	*0.29%*
- special means	*0.07%*	*0.07%*	*0.06%*	*0.06%*	*0.07%*	*0.06%*
Limit amount of state funding established in GDP through the Partnership Agreement, %	0.53%	0.40%	0.40%	0.35%	0.4%	0.36%
Exceeding the ceiling (row 4 - row 3), pp	-0.01	0.03	0.02	0.01	0.02	0.01

Source: Developed by the author based on reports on scientific and scientific-organizational activities of the Academy of Sciences of Moldova.

In accordance with the legal provisions of the State Budget laws for 2010-2015, for the funding of science and innovation field 2321.4 mil. lei have been provided, of which 2244.9 mil. lei have been allocated, that is about 96.7 percent of the specified amount, their synthesis being shown in table 2 [3; 4; 5; 6; 7; 8].

Table 2

Analysis of the basic components of the ASM budget for 2010-2015 *(mil. lei)*

Indica-tors	**TOTAL**		**Including for the years 2010-2015:**											
			2010		**2011**		**2012**		**2013**		**2014**		**2015**	
	determined	executed	determined	executed	determined	executed	determined	executed	determined	executed	determined	executed	determined	executed
Basic component	1923,0	1904,7	326,1	323,7	295,3	293,8	319,2	317,7	286,9	284,5	349,9	344,3	345,6	340,7
Special means component	398,4	340,2	44,7	42,6	56,2	52,8	50,6	47,8	63,1	53,4	92,0	74,4	91,8	69,2
TOTAL	**2321,4**	**2244,9**	**370,8**	**366,3**	**351,5**	**346,6**	**369,8**	**365,5**	**350,0**	**337,9**	**441,9**	**418,7**	**437,4**	**409,9**

Source: Developed by the author based on reports on scientific and scientific-organizational activities of the Academy of Sciences of Moldova.

Thus, the data in table 3 show that the execution of the basic component ranges from 90.7% in 2010 to 98.6% in 2015 (table 3) [3; 4; 5; 6; 7; 8].

Table 3

The level of the execution of ASM budget for 2010-2015

Indicators / Years		Total	2010	2011	2012	2013	2014	2015
Unused allocations	Basic component	48,4	2,4	1,5	1,5	2,4	5,6	27,5
	Special means	10,6	2,1	3,4	2,8	9,7	17,6	22,6
% of execution	Basic component	99.0	90.7	99.3	99.5	99.2	98.4	98.6
	Special means	85.4	94.4	95.2	94.0	84.6	80.9	75.4

Source: Developed by the author based on reports on scientific and scientific-organizational activities of the Academy of Sciences of Moldova.

Table 4

Functional classification of budgetary allocations executed 2010-2015 *(mil. lei)*

Indicators	TOTAL		2010		2011		2012		2013		2014		2015	
	Total	Including basic component	total	Including basic component	total	Including basic component	total	Including basic component	total	Including basic component	total	Including basic component	total	Including basic component
Fundamental scientific research	569,0	508,7	89,1	81,6	84,5	77,2	84,5	77,2	83,8	76,1	113,8	98,4	113,3	98,2
Applied scientific research	1253,2	1033,2	188,1	163,2	201,0	171,2	201,0	171,2	207,3	157,2	227,9	185,2	227,9	185,2
Total	1822,2	1541,9	277,2	244,8	285,5	248,4	285,5	248,4	291,1	233,3	341,7	283,6	341,2	283,4

Source: Developed by the author based on reports on scientific and scientific-organizational activities of the Academy of Sciences of Moldova.

During 2010-2015, ASM budget expenditures amounted for 1822.2 mil lei, where 1253.2 mil. lei (or 68.8%) have been executed for applied scientific research, followed by spending on fundamental scientific research – 569.0 mil. lei (or 31.2%). Thus, the appearance level / amount of funding of scientific research reveals the dynamic upward trend in allocated funds from 277.2 mil. lei in 2010 to 341.2 mil. lei in 2015 [3; 4; 5; 6; 7; 8].

The situation of budgetary allocations execution in the aspect of beneficiaries of allocations (institutional, profile and auxiliary members) of the basic component is presented in table 4 [3; 4; 5; 6].

Table 5

Analysis of beneficiaries of budgetary allocations for 2010-2013 *(mil. lei)*

Indicators	Total		2010		2011		2012		2013	
	Amount	Share, %	Amount	Share, %	Amount	Share, %	Amount	Share, %	Amount	Share, %
Institutional members	810,1	64.4	208,4	64.7	209,8	64.8	187,1	63.7	204,8	64.4
Profile members	364,5	29.0	88,2	27.4	90,5	28.0	90,3	28.0	95,5	30.1
Auxiliary institutions / organizations	82,9	6.6	25,7	8.0	23,4	7.2	16,4	5.6	17,4	5.4
Total	**1257,5**	**100**	**322,3**	**100**	**323,7**	**100**	**293,8**	**100**	**317,7**	**100**

Source: Developed by the author based on reports on scientific and scientific-organizational activities of the Academy of Sciences of Moldova.

According to the presented data, in the years 2010-2013, in regard to beneficiaries of allocations, the major share of 64.4% belongs to institutional member's activities (810.1 mil. lei), followed by 29.0%

related to the activity of profile members (364.5 mil. lei) and 6.6% – auxiliary institutions / organizations (82.9 mil. lei).

According to Article 125 of the Code on science and innovation, state budget means for science and innovation are used for both scientific research, as well as the maintenance and development of material and technical base and infrastructure; ASM institutional maintenance, including the central library, archive, information system; organization of competitions, seminars, etc.

Dynamics of expenditures for science and innovation in the field of fundamental and applied scientific research (in dependence of types of scientific projects) in 2010-2015 is presented in the table below [3; 4; 5; 6; 7; 8]:

Table 6

Dynamics of expenditures for science and innovation in the field of scientific research, *mil. lei*

Project types	**Years**							**Share in total, %**
	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**Total**	
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Total scientific research, including:	**244,8**	**238,8**	**248,4**	**233,3**	**312,8**	**283,8**	**1561,9**	**100**
Fundamental	81,6	74,6	77,2	76,1	98,4	98,2	506,1	32.4
Applied	163,2	164,2	171,2	157,2	185,2	185,2	1026,2	67.6
√ ***Institutional projects***	**207,6**	**207,4**	**221,5**	**213,8**	**304,1**	**265,8**	**1420,2**	90.9
Fundamental	75,0	69,5	73,8	72,1	102,7	95,2	488,3	31.3
Applied	132,6	137,9	147,7	141,7	201,4	170,6	931,9	59.6
√ ***State programs, including:***	**9,7**	**5,8**	**5,5**	**1,4**	**3,4**	**3,5**	**29,3**	1.9
Fundamental	1,1	0,6	0,6	0,5	0,4	0,5	**3,7**	0.2
Applied	8,6	5,2	4,9	0,9	3,0	3,0	**25,6**	1.6
√ ***Independent projects (for young researchers)***	**5,2**	**3,5**	**3,0**	**3,0**	**2,8**	**2,9**	**20,4**	1.3
Fundamental	2,0	1,4	0,9	1,1	1,7	1,7	8,8	0.6
Applied	3,2	2,1	2,1	1,9	1,1	1,2	11,6	0.7
√ ***Technology transfer and development of innovational infrastructure projects***	**13,8**	**11,0**	**10,0**	**8,7**	**7,5**	**7,7**	**58,7**	3.8
Applied	13,8	11,0	10,0	8,7	7,5	7,7	58,7	3.8
International projects, including:	**7,7**	**6,7**	**4,4**	**6,2**	**4,0**	**3,9**	**32,9**	**2.1**
Fundamental	3,5	3,1	1,9	2,3	1,1	1,1	13,0	0.8
Applied	4,2	3,6	2,5	3,9	2,9	2,8	19,9	1.3
Projects for procurement of scientific equipment	**0,8**	**4,4**	**4,0**	**0,2**			**9,4**	0.6

Source: Developed by the author based on reports on scientific and scientific-organizational activities of the Academy of Sciences of Moldova.

The analysis shows that under the regulation the targeting of funding for science and innovation and institutional maintenance, the major share of 90.9% (1420.2 mil. lei) of total expenditures on scientific research of 1561.9 mil. lei belongs to institutional projects, followed by technology transfer projects and creation of innovative infrastructure – 3.8% (58.7 mil. lei), state programs – 1.9% (29.3 mil. lei), international programs – 2.1% (32.9 mil. lei), independent projects (for young researchers) – 1.3% (20.4 mil. lei), etc.

Thus, the division of allocations for science and innovation is directed as a priority for funding the institutional projects, which mostly represents maintenance expenses for science and innovation institutions and other types of projects being funded solely within the remaining resources.

For the analysis of distribution and performance of expenses related to scientific research, the following institutions have been analyzed: Institute of Electronic Engineering and Nanotechnologies "D. Ghitu", Cardiology Institute and the University of Medicine and Pharmacy, which have two sources of funding: the state budget in terms of functional classification of budget spending and special means in

terms of revenue sources. The structure of budgetary and special expenditures according to destinations was made in accordance with the budget classification and Regulation on the management of special means of public institutions financed from the budget.

In the last 5 years of activity, institutions have received funds from the state budget allocated to: institutional projects – 103.1 mil. lei, projects under State Programs – 5.1 mil. lei, technology transfer projects – 0.7 mil. lei, independent projects – 1.4 mil. lei, projects under international, bilateral programs – 3.1 mil. lei.

Of the total expenditures, the largest share, about 54.0 per cent belong to personnel expenses, 18.2 percent – purchase of scientific equipment, 15.1 percent – payment of utilities and other expenses, 1.5 percent – spending for travel. The share of execution of allocations on activities to the total amount provided in the budget for respective period is shown in the figure below [3; 4; 5; 6; 7; 8]:

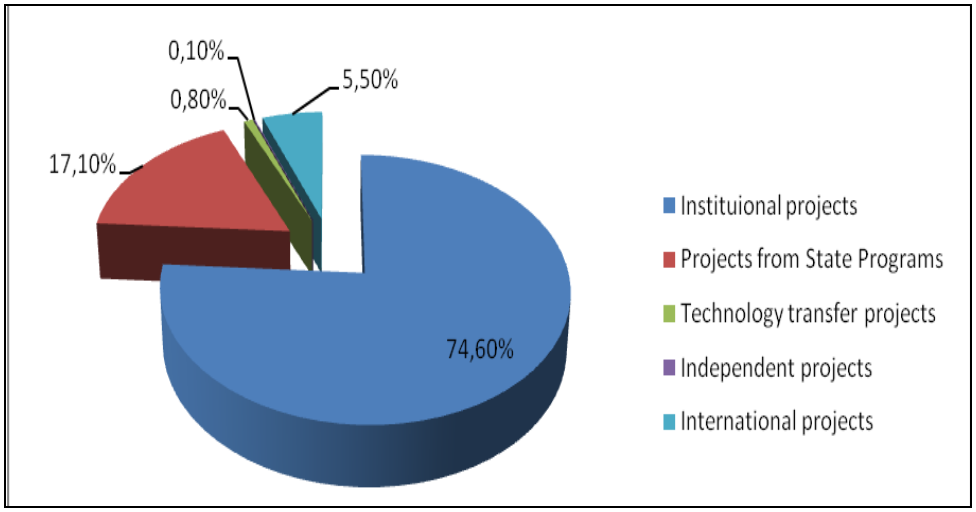

Figure 1. Share of execution of allocations on activities

Source: Developed by the author based on reports on scientific and scientific-organizational activities of the Academy of Sciences of Moldova.

Conclusions and recommendations. Based on the above mentioned, there can be concluded that the scientific assurance of the economic development represents an innovative activity, aimed at improving production in order to obtain high quality and high-volume products, to increase economic efficiency of the industry by identifying needs in the scientific-tehnological progress, scientific research and knowledge transfer to producers of agricultural and industrial production.

In the same concept, along with public finance, accounting of public institutions does no longer serve the consumer state, but occurs when the state handles the technical and financial levers to ensure the economic macro-stability and social peace [10].

Comparing the research and innovation funding in Moldova and Romania, as a representative of the European Union, we can conclude that currently funding of research and innovation is a key element in the growth and sustainability of any country. Therefore, we find that there are a number of impediments in funding research and innovation, namely: insufficient financial resources, the imperfect regulatory framework, low request for research and development, lack of integrated systems for accounting in public institutions, weak link of research and development sector with business, etc.

According to the author, it is appropriate to highlight the MTBF development objectives and priorities, namely:

– monitoring and evaluation of scientific, managerial and financial organizations in science and innovation, based on individual and collective performance indicators by field of research;

– increase the impact of research in the socio-economic development of the country;

– a transparent and efficient governance of the innovation system;

– creation, deployment and ensure the functionality of scientific-technological parks and innovation incubators to support the productive sectors of the economy;

– accelerating technology transfer and encouraging partnerships with companies and production sectors;

– encouraging public-private partnerships for implementing projects and research in order to develop national capacity for producing and assimilation of innovation, etc.

We seem appropriate that the funding of research activity in the Republic of Moldova to be supported and supplemented by the creation by the state of a venture capital fund, through which research projects that could bring benefits for the state will be financed. Once patented inventions, such as those of the Institute of Electronic Engineering and Nanotechnologies "D. Ghitu" that we mentioned above, we believe that the state could collect royalties by valorization of these inventions, and these royalties may be used to fund other research projects that can generate income for the national economy.

REFERENCES

1. DOBREA, R.C. *Investiţiile şi modernizarea sistemelor tehnico-economice*. Bucureşti: Ed. Eficon Press, 2009.
2. Codul cu privire la ştiinţă şi inovare a Republicii Moldova: nr. 259 din 15.07.2004. In: Monitorul Oficial al Republicii Moldova. 2004, nr. 125-129, art. 663.
3. Raport privind activitatea Consiliului Suprem pentru Ştiinţă şi Dezvoltare Tehnologică şi rezultate ştiinţifice principale obţinute în sfera ştiinţei şi inovării în perioada anilor 2006-2010. Academia de Ştiinţe a Moldovei. Chişinău, 2011 [accesat 14 octombrie 2016]. Disponibil: http://asm.md/administrator/fisiere/rapoarte/f168.pdf
4. Raport privind activitatea Consiliului Suprem pentru Ştiinţă şi Dezvoltare Tehnologică şi rezultate ştiinţifice principale obţinute în sfera ştiinţei şi inovării în anul 2011. Academia de Ştiinţe a Moldovei. Chişinău, 2012 [accesat 17 iulie 2016]. Disponibil: http://asm.md/administrator/fisiere/rapoarte/f169.pdf
5. Raport privind activitatea Consiliului Suprem pentru Ştiinţă şi Dezvoltare Tehnologică şi rezultate ştiinţifice principale obţinute în sfera ştiinţei şi inovării în anul 2012. Academia de Ştiinţe a Moldovei. Chişinău, 2013 [accesat 7 septembrie 2016]. Disponibil: http://asm.md/administrator/fisiere/rapoarte/f170.pdf
6. Raport privind activitatea managerială şi rezultate ştiinţifice principale obţinute în sfera ştiinţei şi inovării în anul 2013. Academia de Ştiinţe a Moldovei. Chişinău, 2014 [accesat 5 septembrie 2016]. Disponibil: http://asm.md/administrator/fisiere/rapoarte/f171.pdf
7. Raport privind activitatea CSŞDT şi rezultate ştiinţifice principale obţinute în sfera ştiinţei şi inovării în anul 2014 şi în perioada 2011-2014. Academia de Ştiinţe a Moldovei. Chişinău, 2015 [accesat 17 iulie 2016]. Disponibil: http://asm.md/administrator/fisiere/rapoarte/f172.pdf
8. Raport privind activitatea CSŞDT şi rezultate ştiinţifice principale obţinute în sfera ştiinţei şi inovării în anul 2015. Academia de Ştiinţe a Moldovei. Chişinău, 2016 [accesat 21 octombrie 2016]. Disponibil: http://asm.md/administrator/fisiere/rapoarte/f173.pdf
9. MOŞTEANU, T. *Buget şi trezorerie publică*. Bucureşti: Ed. Universitară, 2008. 346 p. ISBN 9789737493682.
10. VĂCĂREL, I. *Finanţe publice*. Ediţia a IV-a. Bucureşti: Ed. Didactică şi Pedagogică, 2003. 667 p. ISBN 9733025135.
11. PERCINSCHI, N. Principles and approaches applied in the development of open innovation mechanisms. In: Economie şi sociologie = Economy and Sociology. 2015, nr. 2, pp. 64-69.

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