

# ALLOCATION OF PUBLIC FUNDS FOR RESEARCH AND DEVELOPMENT IN A SMALL COUNTRY: THE CASE OF MOLDOVA

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## Abstract:

*Public funding for research and development is an important instrument of state innovation policy, particularly in countries with modest private investment in research. Allocation of public funds must take into account both the need to ensure the sustainability of R&D activities and the promotion of excellence research and ensuring economic and social impact. Small countries face additional problems in the process, especially related to the objective evaluation of projects' proposals. The paper examines the case of Moldova, focusing on the allocation of public funds, on specific problems and possible ways to improve this process. There has been a reduction of their competitive financing, poor compliance with the principles of peer-review and insufficient involvement of experts from abroad, the lack of clear criteria for the allocation of institutional funding. However, the current way of public funding does not stimulate R&D and industry cooperation. The findings suggest the need to strike a balance between different modes and tools of public funding for R&D in Moldova.*

**Keywords:** public R&D funding, allocation policy, institutional funding, project funding, research governance.

**JEL Classification:** H59, O31, O38

## 1. Introduction

It is now widely recognized that knowledge is the currency of the new economy, and research and innovation capacity, created on a solid public scientific base, is essential to a sustainable economic recovery. Public funding for research and development (R&D) is one of the principal means of state intervention in the processes of innovation and the pursuit of research and innovation policies. To achieve the objectives, an efficient utilization of public funds for R&D is required. In this respect, countries restructure and adapt their research funding mechanisms (ERAWATCH 2014). In turn, the European Union promotes the increase of competitive funding and the improvement of public funds distribution assessment (EC 2012).

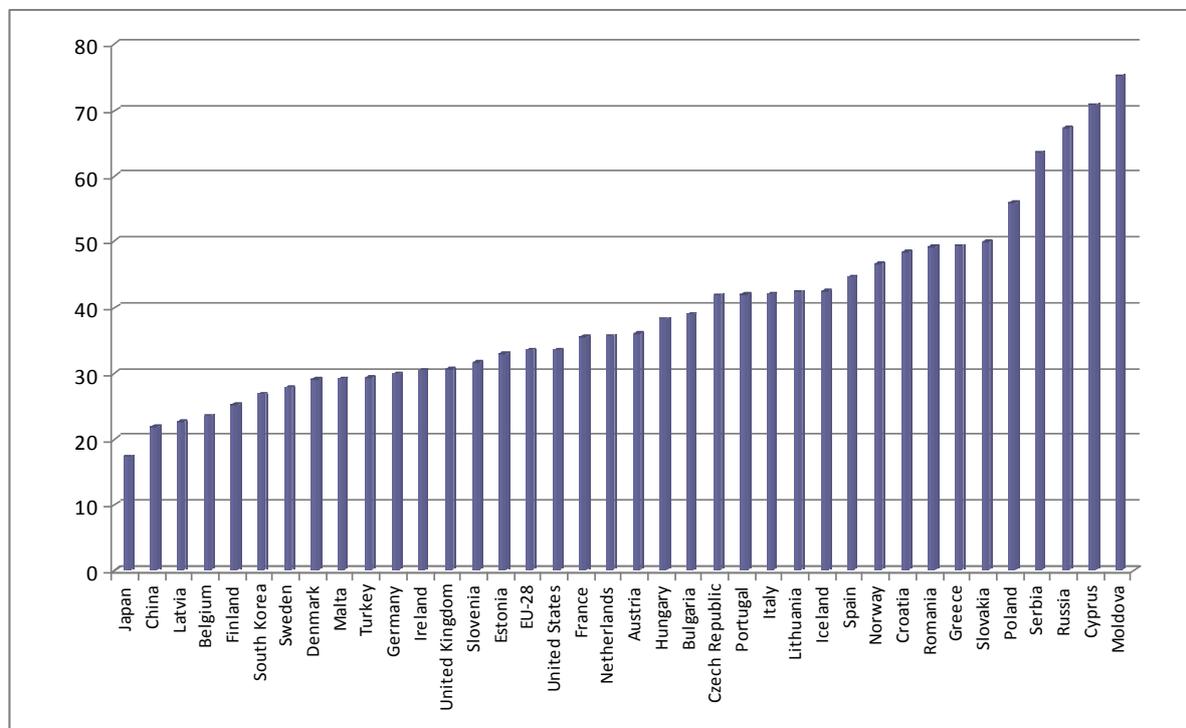
In the small states, there are particular challenges in developing an effective and efficient framework for funding R&D (see ALLEA 2002; Fabri 2013). In this context, we aimed to analyze the distribution of public funds for research and development in Moldova, focusing on their allocation, specific problems and on finding possible ways to improve this process.

## 2. The role of public funding in Research and Development in Moldova and methodological aspects of estimating it

Public funding is a major component of investment in research and development within the national R&D. Public funding of research is expressed most often by two concepts: government-financed gross expenditure in R&D (government-financed GERD), and Government Budget Appropriations or Outlays for R&D (GBAORD). The government's GERD is estimated based on the executives' reports of R&D and includes research and development exclusively within the national government funded at all levels (central, regional, etc..) and GBAORD - based on funders reports, which include R&D principally financed by the central government, also intended for executives from abroad (OECD 2002).

Per countries, the public funding ratio varies significantly, generally from 17 to 70%, with an average between 30 and 35%. Of the most important players in the world, Japan and China recorded the lowest values of the share of public funding - about 1/5 of the total, while the EU and the US are characterized by similar values - about 1/3 of the total R&D funding (see Figure 1). In most countries, public funding is the second major source of funding for R&D, and in a few countries is the most

important source. Generally, it appears that the share of public funding tends to be higher in less industrialized economies, where private funding in R&D is poor. In advanced economies, which are provided enough by private funds for R&D, public funding is usually used as a support tool for obtaining certain knowledge considered to be of benefit to society, but that cannot be secured through the competitive mechanisms of the market because of their characteristics.



Source: prepared by the authors based on EUROSTAT and their own estimates for the Republic of Moldova; the dates refer to 2011, with the exception of Japan and South Korea, for whose dates are for 2010

**Figure 1.** Proportion of public funding of all R&D funding in %

For Moldova, the public funds are a major source of funding for R&D because of a weak involvement of the private sector. It ought to be mentioned that the data for Moldova is estimated because the National Bureau of Statistics (NBS) does not keep any record R&D expenditures by sectors. However, these figures reflect the general perception and show little interest in the local business sector research and innovation. The reduced involvement of the business sector is due to the low level of innovative culture, weak links between research and entrepreneurship, unfavorable structure of investments in research and the small size of the economy, the distribution of non-stimulating foreign direct investment (PRO INNO Europe 2011). The modest private investments in research and development, and respectively, the contribution to economic growth can be explained by "the legal and normative background of the country in the sense of support the law and finance view" (Garofalo and Morganti 2010).

In approximating the value indicated in the figure (about ¾ of the total R&D funding) were taken into account the following factors:

- UNESCO Institute for Statistics indicates in 2011 a share of external funding for R&D for Moldova of 9.4% of total funding;
- The data of the Academy of Sciences of Moldova (ASM) indicates modest values from the private sector's financing through the funding schemes they used;

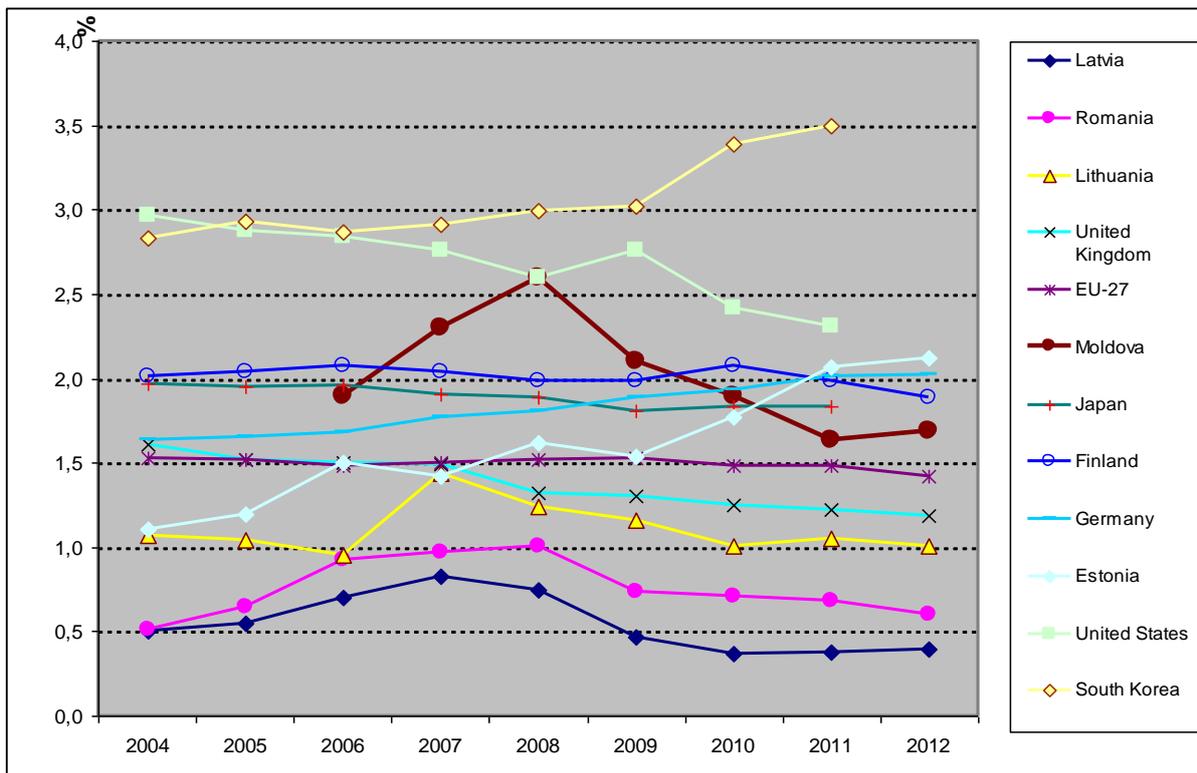
NBS indicates a small number of research and development institutions outside the governmental and academic sector.

It should be noted that in Moldova even the general public university funds are not taken into account when estimating expenditures in R&D, as recommended by statistical methodological

manuals. This is explained by the fact that these funds are not designated as a destination for research and education and there is no rule that would stipulate what percentage of GUF should be used to finance research and development.

Given these circumstances, we still use the term public funding for research and development in the Republic of Moldova as defined GBAORD, whose main source of reports is the Ministry of Finance and the Academy of Sciences of Moldova. Public funding for research and development is included in the state budget of the Republic of Moldova in Chapter 7 "Science and Innovation". In absolute terms, these funds are modest ranging around 20 million Euros annually, going down from 22.9 million in 2008 to 19.2 million in 2010. As a share of GDP, public funding for R&D decreased from 0.66% in 2008 to 0.35% in 2012 (Spiesberger and Cuciureanu 2013). Distribution of public finance for R&D is centralized and carried through the ASM.

Republic of Moldova has a high share of spending on R&D of the total government expenditure. Thus, if in 2008 was recorded the maximum value at the national level (2.6%), Moldova was on par with the US and ceded only to South Korea by this indicator (see Figure 2). With the global economic crisis, this indicator decreased significantly, Moldova fits in the category of countries that responded to the crisis by cutting public funding for research, unlike South Korea, Germany, Estonia, Czech Republic, etc., which have intensified research in the public sector. However, the Republic of Moldova was situated, in 2012, over the majority of the region and the EU on this indicator (1.69%, and, respectively, 1.42%). This demonstrates that public authorities are doing some efforts to "scientificise" the society, and satisfactory assurance of the research and development of financial resources is mostly due to not engaging the business sector (Canțer *et al.* 2013, 275). Overall, the national research and development system remains vulnerable to an unstable political and economical context, facing the long-term consequences of chronic underfunding.



Source: Developed by the authors based on EUROSTAT data and the reports from the Ministry of Finance of the Republic of Moldova

Figure 2. The share dynamics of public R&D funding of total government expenditure in some countries

### **3. Main ways of allocating public funding for research and development**

The ways of allocating public funding refer to the ways that public funding for the research and development system reaches beneficiaries, the organizations responsible for funding and the types of instruments used. There are two primary ways of public funding for R&D: institutional and on a project basis.

Institutional funding is financing directly attributed to public research institutes or universities, with no selection of projects and programs that will be carried. Such funding is allocated using different allocation algorithms that can take into account the evaluation of institutional performance. In turn, the organization that receives institutional funding has the right to allocate the money at its discretion and to determine the research it will conduct.

Project based funding is funding through a competitive and open process. An accepted definition of this type of funding is: funds allocated to a group or a person in order to perform a research and development limited by purpose, budget and time, normally under the submission of a project proposal describing the research activities that will be carried (Lepori *et al* 2007, 374). This type of financing is used primarily as a tool to guide research towards political and economic objectives. The main criteria for the delimitation of the two financing types are (Steen 2012, 9):

- purpose of the financing instrument in terms of granting authority rather than actual use of funds for research and development;
- existence of institutions (agencies, academies or councils) responsible for selecting the projects that will be financed and allocating money to the beneficiaries.

While both types of R&D funding allow resource allocation on a more or less competitive base, funding project proposals through grants is considered a purely competitive funding. Therefore, for the delimitation of funding after the two major ways in Moldova, an important factor was the competitiveness of the instruments that were used.

When choosing how to finance R&D it is useful to consider the following three dimensions:

- *Selectivity* - refers to the degree to which there is a priority between fields. Policy decisions may concern the share of resources that will be made available for research on predefined priorities and a general one, without any thematic focus;
- *Concentration* - addresses the issue of their institutions and their research teams that need to be supported and relate to the extent to which funding should focus on the best of them;
- *Sustainability* - describes whether the funding model allows restoring human and physical capital within the research system, and therefore maintains and develops institutions in the long-term. This feature can only be measured over time (EC 2013a, 11).

For the distribution of public funds for research and innovation, the EU recommends to the Member States:

- to introduce or enhance competitive funding through call for proposals and institutional assessments as the main modes of allocating public funds to research and innovation, introducing legislative reforms if necessary;
- ensure that all public bodies responsible for allocating research funding apply the core principles of international peer review (EC 2012, 6)

Countries are modernizing their research funding mechanisms through the creation of new agencies responsible for allocating public resources, the increasing use of competitive funding on a project basis, correlating more closely social and economic targeted funding, focusing on the quality and relevance of research institutions to achieve excellence in research and an economic and social impact (ERAWATCH 2014). In smaller countries three main groups of challenges exist for an efficient and effective public funding for R&D, according to the ERA-Prism project report „The Challenges faced by R&D Public Funding Systems in small (and transition) countries”, and refers to setting priorities, the human capital and stimulating investment in the private sector’s research and development (Fabri 2013).

### **4. Institutional research and development funding**

Institutional funding may take different forms, varying according to the degree of competitiveness of the allocating mode. Although there is a degree of freedom for the institution in the distribution of these funds, the institution must take into account several factors such as general

objectives and strategies established by funders, legislation and regulations. Institutional funding can be allocated non-competitively based on some factors such as historical precedent or, more often, based on some formulas that take into account the number of units of researchers, equipment maintenance costs, etc.; but more countries apply performance criteria based on the distribution of these funds. Scientific excellence is the most important criterion used, determined by means of indicators such as number of publications, citations, patents, awards (ERAWATCH 2014).

Although institutional funding is decreasing in the world, it still does not fall below a certain level in different countries. This is because institutional funding has shown some advantages in comparison with the purely competitive one:

- provides the necessary freedom for researchers to develop ideas that, in competition, could be considered too risky;
- allows institutions a greater autonomy in setting research strategies, while avoiding the risks of concentrating only on certain required research;
- offers secure funding for a long-term development (sustainability); provides equipment and support services that can be paid more difficult through grants.

In Moldova, in addition to funding projects that gathers the elements of competitive funding, there are two other important ways of financing:

- block grant, distributed outside of projects;
- institutional projects for fundamental and applied scientific research.

The first type of funding is intended for science management bodies (the Supreme Council for Science and Technological Development, the National Council for Accreditation and Attestation), their subordinate agencies (eg, the Agency for Innovation and Technology Transfer, Centre for Fundamental and Applied Research Funding), innovation infrastructure (scientific and technological parks and innovation incubators), Central Scientific Library and capital investments. The decisions about block funding are taken by the Supreme Council for Science and Technological Development (SCSTD), the executive body of the ASM, and the distribution of funds in major compartments is fixed in the Partnership Agreement between ASM and the Government. This funding type constitutes about 15% of total public R&D funding.

Institutional projects have both institutional and competitive funding features. Under the existing legal framework, this type of financing is implemented on a competitive basis by organizing competitions for project proposals. The competition is open to only organizations accredited by the National Council for Accreditation and Attestation (NCAA). Proposals are submitted to The Centre for Fundamental and Applied Research Funding (CFARF) and then are evaluated by the Advisory Council of Expertise (ACE) and SCSTD approves any funding decisions. Note that all three structures compose the ASM. However, entrepreneurship representatives or other interested parties for research and development are missing in consultative and decision-making bodies for public funding distribution.

In fact, all procedures for financing projects are observed only formally, thus there is no real competition. The proposals do not compete with one another, because the amount of funding per institution is already more or less predetermined (Spiesberger and Cuciureanu 2013). There was never a situation where an institution that had previous institutional funding has not earned an institutional project for the next period (the maximum duration for institutional projects is 4 years). When an institution submits proposals with the total financing volume higher than pre-established and they are positively evaluated by experts, this institution is proposed to decide whether it selects only the amount of projects that fall into the sum or it reduces funding to all. However, any criterion by which the amount of institutional funding will be distributed by institutions is not made public. The volume given to research institutions is "rather determined, allegedly from the conducted interviews, by the relationships they have with ASM management" (Popa and Prohnițchi 2011, 31).

The lack of compliance with competitive procedures of this type of financing is also attested in the reports of the Court of the Republic of Moldova, supreme institution for external public audit. Thus, a check carried out in 2011 revealed a lack of assessment, and respectively, participation in the competition for a significant number of institutional proposals, which have been funded (Court of Accounts 2011).

It should also be noted that the topic of institutional projects is proposed exclusively by the institutions to which they are submitted and basically there is no restriction in terms of subject. From

the above arguments, we considered that the institutional projects in Moldova can rather be attributed to institutional funding and we have treated it as such in this study.

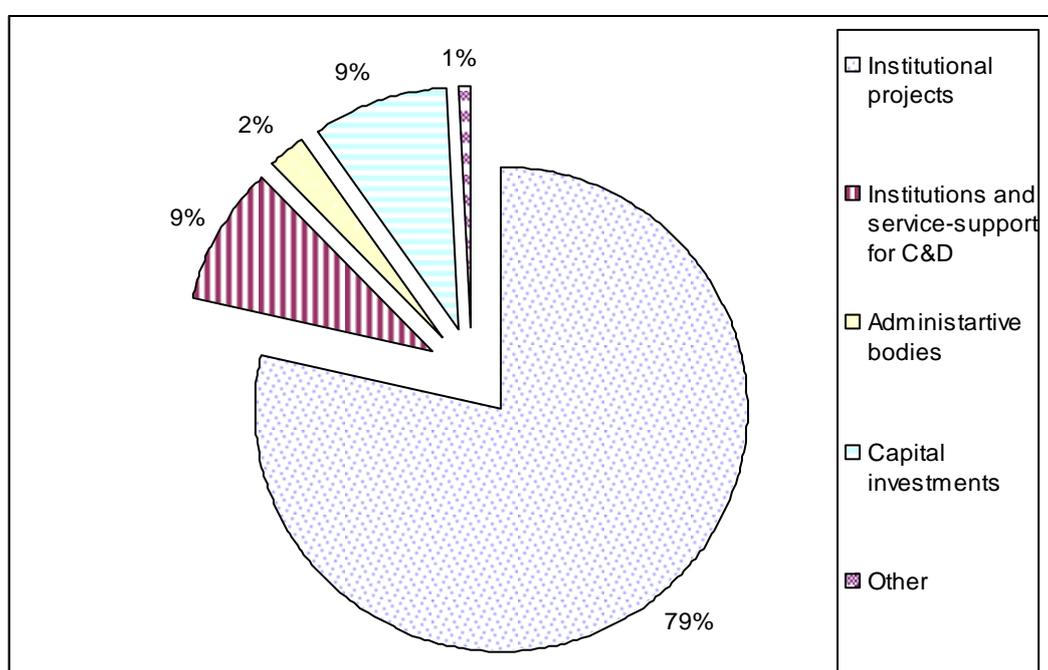
Institutional projects represent the most significant public funding of research in the Republic of Moldova, the share of which has been increasing in recent years (see Table 1).

**Table 1.** The dynamics of institutional projects funding in Moldova

Years	2006	2007	2008	2009	2010	2011	2012
The volume institutional project funding, million MDL	111,1	170,2	213,5	201,8	207,6	207,4	221,4
The share from public funding for R&D, %	63,0	60,8	59,4	63,7	66,6	73,7	72,8

Source: calculated by authors based on [the annual reports of the ASM](#);  
 Note: 1 Euro = 16 Lei MD

Together, block funding and institutional projects constitute about 85% of all public funding. The structure of institutional funding is shown in Figure 3.



Source: calculated by the authors based on [the annual reports of the ASM](#)

**Figure 3.** The structure of institutional funding for R&D in Moldova in 2008-2012

NCAA performs institutional evaluation of R&D organizations in Moldova. The evaluation criteria refer to the scientific results, their applicability and implementation potential, staff competence, internal and international collaboration. In 2011 NCAA has implemented a new methodology for evaluating and accrediting organizations. The evaluation criteria take account of the field of science in which the organization works. The accredited institutions are classified into three categories: nationally competitive organization; internationally competitive organization and internationally recognized organization (NCAA 2011). The assessment and classification of organizations carried out by NCAA is not taken into account however in the distribution of institutional funding. Meanwhile, at least 21 EU Member States have stipulations of correlation, partial or total, of institutional funding with performance. In 2013 in at least 5 Member States were introduced new stipulations or were improved the procedures (EC 2013b). In advisory or the decision-making bodies for the allocation of public funds are included representatives of the government, the scientific community, entrepreneurship and society in general.

## 5. Competitive financing through projects

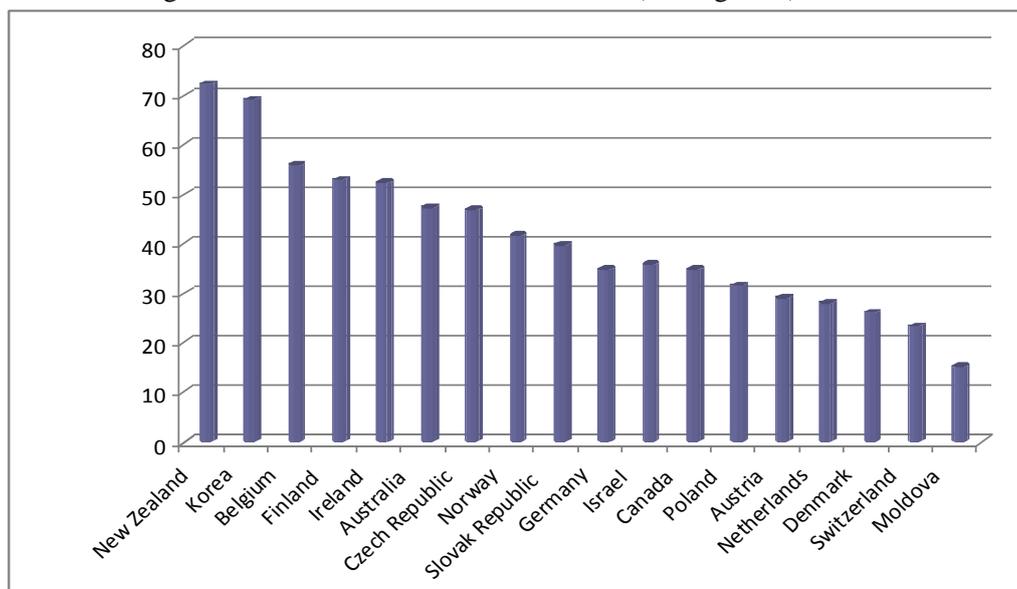
It is generally recognized that increased competition causes higher performance. Studies show that excellence in research is related to the competition between researchers and the evaluation of their proposals using internationally comparable criteria; there has been a clear relationship between a competitive environment for academic research funding and the system's efficiency and productivity as measured by the number of publications per one unit of invested funds (Auranen and Nieminen 2010). Thus, it was shown that every percent of a university's budget awarded through competitive grants leads to an increase of 6.5 points in the Shanghai ranking of universities in the world (Aghion *et al.* 2009, 12).

However, this correlation is not so linear and there it is unreasonable that all funding is distributed through competition. It is necessary to take into account other features of competitive funding:

- focus more often on a set of predetermined priorities, usually with a potential socio-economic impact (scientific correlation specialization – economic necessity);
- focus on the best research teams, and contributing less to the formation of new human resources in research;
- limited autonomy of institutions to establish research programs and develop their specialization;
- ensure less the institution's sustainability, but allows flexibility and can ensure a greater accountability for public spending;
- cost and time for preparation and evaluation of proposals does not differ significantly depending on the amount of funding, so that even the small competitions of grants can become expensive.

Therefore, research in Europe is increasingly being financed by a mix of institutional funding and project funding. The most common reasons cited for the adoption of new methods of funding are: increasing excellence and quality of research, encouraging interdisciplinary research, overcoming institutional and structural rigidities, facilitating the development of networks between institutions and the promotion of young researchers (Maass 2003). With all the implemented changes, it seems that the peer review still has the main role in selecting projects, and ex-post evaluation does not have a relevant impact on the selection of institutions (Poti and Reale 2007).

There is no official statistical record of the share of competitive funding projects, but ERAWATCH experts' calculations and estimates show that this share varies from 20% to 80% among the EU countries (ERAWATCH 2014). OECD data, based on the research of a working group in the field shows us also significant differences between countries (see Figure 4).



Source: the ASM reports on the years 2010-2012 (Moldova); OECD data for 2008 (Steen 2012, 21)

**Figure 4.** The share of competitive public funding of all projects of public funding for R&D (in %)

In Moldova, the share of truly competitive financing projects is low, averaging about 15% in 2010-2012. If we exclude the financing of doctoral grants (those provided from the public funds for R&D until last year), which is competitive, but not project based, then this share was of only 9% in 2012, reducing from 12% in 2010. There is a decreasing trend of competitive funding in the context of a stagnating funding of the public sector. The ASM, which organizes the competition according to the same procedures as institutional projects, apparently decided to reduce competitive funding in order to secure core funding of institutions.

The most important instruments of competitive funding through projects, according the amount of public funding in the period 2008-2012, are state programs in research and development (3.6% of total public funding) and innovation and technology transfer projects (3.7%) (see Table 2).

**Table 2.** The dynamics of public funding through the main competitive financing instruments (projects) in Moldova (million Moldavian lei)

Years	2006	2007	2008	2009	2010	2011	2012
State programs in research and development	11,0	19,9	17,8	17,0	9,8	5,8	5,5
Independent projects*	1,3	2,0	4,3	4,4	5,2	4,9	6,1
International projects	0	5,2	6,5	8,3	7,7	6,7	4,4
Innovation and technology transfer projects	3,0	8,3	11,5	12,0	13,8	11,0	10,0

*Source: Annual reports of the ASM SCSTD*

*\*Note: Independent projects include projects for young scientists and projects for the procurement of scientific equipment (the last only for some years)*

State programs are the main competitive tool for public funding for R&D according to national legislation. They are developed by ASM in consultation with other stakeholders. The programs are approved for a period of 4 years with annual funding and reporting cycles. Projects competitions under existing programs are organized annually by CFARF. Since the beginning of these programs in 2004 and until 2012, 26 thematic programs have been implement, in which 317 projects were financed (amount - 6.4 million euro).

Innovation and technology transfer projects attempts to connect research with entrepreneurship. The program is administered by the Agency for Innovation and Technology Transfer (AITT) under ASM. The selected projects are funded in annual competitions for a period of up to two years. Eligibility conditions require that at least 50% of the project's total cost is funded by non-public sources.

In the framework of "International Projects" bilateral joint R&D programs are funded with key partners such as Germany, Romania, Italy, France, Ukraine, Russia etc. Public funding covers the cost of Moldovan researchers' participation in joint programs. The competitions are organized by the Centre for International Projects of the ASM.

Scientific equipment procurement projects are funded since 2007. The procurement of equipment for joint use of several organizations is encouraged. Projects for young researchers are also funded since 2007. The competitions are announced annually and the maximum duration of the project should not exceed two years. The eligibility criteria require the presence in a team of at least 4 young scientists under the age of 35 years, including the project director.

Two other competitive tools have been implemented in the past two years: grants to organize scientific events and grants for publishing monographs. The last four listed tools are managed by CFARF.

For all competitive financing tools for projects, the evaluation of proposals is carried out by the ACE of the ASM. Making an objective assessment is one of the key issues in the competitive distribution through public funding for R&D projects. Basic principles of their evaluation, recognized internationally: relevance, excellence, fairness, transparency, quality, privacy, ethics and integrity (ERAC-GPC 2010) - in many cases are not followed. The main causes of such situations are:

- the small size of the local scientific community and the difficulty of finding experts who won't be in a conflict of interest, and on the other hand the involvement of external experts is insignificant;
- the concentration of all political functions and management of research and development in the ASM and the lack of real autonomy of the institution of experts;
- the lack of prioritization of internationally recognized results and a high share of local origin indicators and non-scientific criteria.

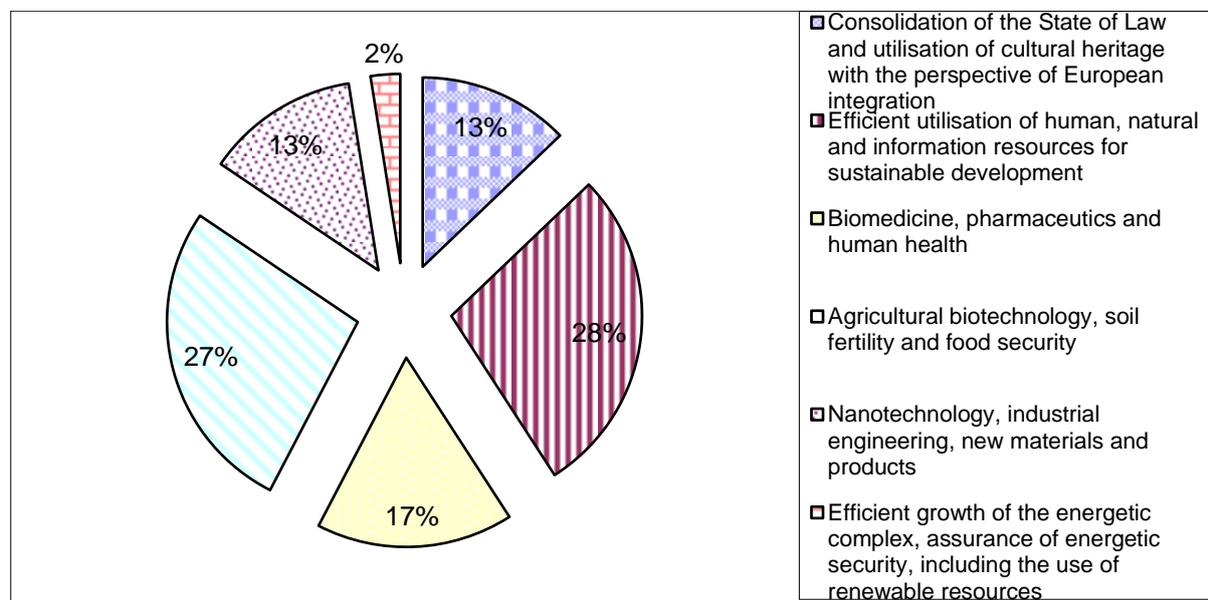
The situation is somewhat common with other Central and Eastern European countries that have or have had a transitional period to the competition based model (Radosevic and Lepori 2009).

As a result, in Moldova are reported deficiencies in performance evaluation, some of which mentioned in the reports of the Court of Auditors (No. 67 of 25/09/2007, no. 48 of 29/10/2009 and no. 19 of 16/04/2011): not encouraging the competitiveness of funded projects, both in research and in technology transfer, as well as financing projects outside competition; an inadequate management of conflicts of interest in the evaluation of proposals, as there were identified situations where experts involved in the expertise of the projects were later engaged in the projects; a lack of clear and objective criteria for the selection of projects, of monitoring indicators for the implementation of projects and criteria for evaluation of implemented projects; the approval of projects that were previously endorsed negatively by the EAC.

By comparison, the use of assessment procedures (*peer review*) resulted in the gain of transparency and quality of research funds' allocation in the European Research Area. In all EU countries (with two exceptions) there are stipulations for using the basic principles of evaluation, nine of these countries already adopting these criteria in 2012 (EC 2013b). In several EU countries, particularly in Eastern Europe, there are formal and explicit stipulations to include a share of experts from abroad. In countries with a custom in assessment there are no explicit formal requirements on the involvement of international experts, but this is part of their culture of assessment (JRC 2013, 59).

## 6. Other aspects of the distribution of public funding for research and development in Moldova

For the distribution of public funds, it is formally taken into account the strategic directions in the field, approved by the decision of Parliament. By 2013 there were 6 strategic directions in effect, to which have been distributed public funds quite unevenly (see Figure 5)



Source: prepared by the authors based on data from [The ASM SCSTD Report for 2012](#)

**Figure 5.** The distribution of public funds for R&D in Moldova after the strategic directions in 2012

If we compare the national priorities with those of the EU 7th Framework Programme (the thematic priorities of the Cooperation Programme) it can be stated that they are largely similar. It notes, however, differences in the weight of each priority, which seems to reflect the level of

development and the grade of building the knowledge society. In Moldova, a much lower share is invested in research related to the information society, transport, and environment. In contrast, research related to agriculture receives a support of almost 5 times higher, in relative terms, compared to FP7, which otherwise is explainable by the economic specialization and the meeting of competitive advantages in this field. Energy research is highlighted as a priority in both entities, however in Moldova they are financed about 2.5 times less than in the EU, even if nationally this sphere has pressing problems. An exception to the overall pattern that's reflected is support for research in the field of nanotechnology in Moldova, investing financial resources is justified by the relatively high specialization of the national R&D and the results recorded by Moldovan researchers in this field.

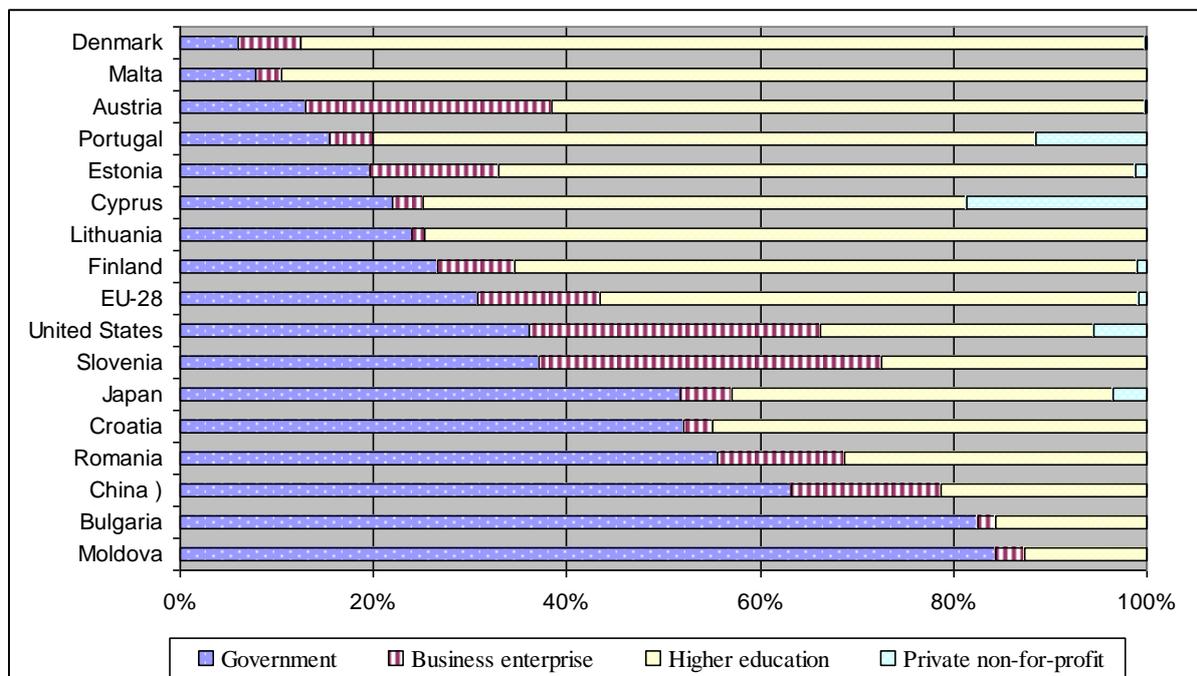
These areas of priority are quite broadly formulated (that can include any scientific activities) and there are no clear mechanisms through which public funds would focus on priorities. There is a lack in well-defined areas (niches) that would focus resources, making it difficult to support competitive areas of the economy or to encourage technological specialization.

Most used instruments are generic, and procedures for funding, evaluating, monitoring and reporting are identical for all thematic priorities. The distribution of public accounts follows a more from bottom to top approach – usually in announcing contests the researchers can submit any proposals in all strategic directions.

From the financial instruments, only state R&D programs are focused thematically. It is a mixed scheme which includes top to bottom and bottom to top approaches in setting priorities: the programs' conceptions are submitted by researchers, for deciding the state programs, who then must take into account the interests of various stakeholders (ministries and agencies). However, the finances allocated for this measure are modest, reducing more than 3 times over the last 5 years.

Distribution of public funding for R&D at a territorial level confirms the exceptional role of the capital in Moldova. In 2012 only 5.3% of institutional project funding was allocated to organizations outside Chisinau.

Most public funding for R&D is assigned to Moldova for the public sector institutions with a higher share than in other countries (see Figure 6). A bit closer is the public funds allocation structure by sectors in Moldova by certain former socialist countries. The higher education sector is however more poorly funded even compared to these countries.



Source: prepared by the authors based on Eurostat data; for Moldova – based on the data from the Official Monitor, special edition, June 24, 2011

Figure 6. The distribution of public funds for R&D by sectors in some countries, in 2011

For the Republic of Moldova the values given are estimates due to lack of official statistics in the field. The estimates are based on the public funding of research projects, without the consideration of the costs for administration, capital investments and other block grants. The structure of public expenditures for R&D by sectors in Moldova is determined by the current legislation. According to the Code on Science and Innovation, only accredited organizations can benefit from public funding. Following the accreditation, the organizations may become institutional members (ASM institutes), profile members (universities and institutes subordinated to the ministries and departments) or affiliates of the ASM (private organizations). Depending on the achieved status, the organization may require a greater or lesser funding from the state budget, however this status does not depend on the scientific performance of the organization, but on its administrative subordination. Unlike the ASM institutes, which may benefit from a full funding of projects from the state budget, state universities can claim only the status of profile members in the field, allowing them to receive partial funding, by competition, from the state budget, of the applied research, and private universities can claim only the status of affiliated member, allowing them to benefit from a budgetary financing of up to 40% of the total amount of the winning project. Private companies and NGOs have practically no access to public funds due to single criteria for accreditation for all organizations (eg, 13 people with doctorates and founder of a scientific journal).

### **Conclusions**

The mode of R&D funding is a major tool in the reforms undertaken by governments of the countries that are advanced, from a scientific point of view, oriented towards enhancing the national scientific capacity and increasing the contribution of publicly funded research to meet the society's needs. The funding proportion allocated by project competitions is increasing in comparison to the institutional funding in the public sector. Institutional funding is increasingly more often allocated based on performance evaluation, a process involving all stakeholders in the society.

In Moldova there is a reverse trend of reducing competitive financing projects in the context of stagnation (in absolute terms) and decrease (relative values) of public funding for research and development. Institutional projects, even if they meet the formal requirements for competitive funding, cannot be considered a truly competitive instrument in the distribution of public funding because of the particularities of the process.

The lack of an appropriate infrastructure for research, as well as non-attractive working conditions because of chronic underfunding, are limiting factors for achieving excellence in research, but also for increasing the share of public funds allocated through competition. However, the biggest problem in the distribution of competitive finance is a non-objective assessment of project proposals due to the small size of the scientific community and the lack of an evaluation culture. It requires a gradual inclusion of foreign experts in the evaluation of proposals within the competitive funding programs, firstly of experts from Romania and from diaspora (due to the language factor). We find it useful as well the prioritization of internationally recognized scientific results in the evaluation process.

The existing mechanisms for evaluation of institutions, primarily the assessment and accreditation by the NCAA, are not used in the distribution of institutional funding. The score and qualifications awarded to the institutions in this process ought to form an important element of the distribution algorithm of institutional public funding.

The analysis of the distribution of public funding for R&D on other criteria (thematic, territorial, sectoral, etc.) highlights certain imbalances with a negative potential for the development of national research and development. Thus, the "bottom-top" approach for the distribution of public funds contributes to the poor integration of research and development in the national innovation system. The unequal access to public funds is another limiting factor in developing an effective innovation system.

All the evidence suggests the need to strike a balance between different modes and tools of finance in Moldova that will ensure, on the one hand, an efficient use of funds, and on the other hand, the autonomy of the R&D activities. In the process of reconfiguring the allocation mechanism, it should be taken into account the need to increase the proportion of project finance allocated through competitions, the use of organizations assessment as a basic element of the allocation of institutional funding and the effective implementation of the core principles of international evaluation.

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