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## DEVELOPMENT OF AD VALOREM REAL PROPERTY TAXATION SYSTEM IN MOLDOVA

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### Abstract

The author analyzes key aspects of the new ad valorem property taxation (AVT) system which is currently implemented in the Republic of Moldova and outlines ways of its further potential development. The author uses both systemic and synergistic approaches to develop a methodology for the assessment of the AVT system efficiency based on the multipurpose cadastre data. The study identifies key characteristics of the AVT system, as well as main problems associated with the implementation of the new property taxation system and with the compatibility of the fiscal and the real property cadastre data, and makes suggestions for further development of the AVT system in the country. The study allows to identify and maximize the benefits of the AVT system.

**Keywords:** Real Property Valuation, Ad Valorem Property Taxation, Assessed Value, Cadastre Value, Multi-Purpose Cadastre

**JEL Classification:** H21, H71, O23

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### 1. Introduction

Real property tax is an important source of revenue for local budgets. For countries with developing economies, it is important to establish an effective system of real property taxation in order to create a basis for decentralization of public governance. The tax captures for local governments some of the increases in property values that are partially created by public expenditures. As McCluskey (1999, p.5) points out, real property is "visible, immobile, and a clear indicator of one form of wealth." The real property tax is especially attractive when compared with other potential sources of local tax revenue (Bird and Bahl, 2008). If well administered, it can represent a non-distortionary and highly efficient fiscal tool.

When countries in Central and Eastern Europe declared their independence and began to build (reconstruct) a market economy, they also started to reform their system of taxation, including taxation of the real property (e.g. Slovenia, Russian Federation, Belarus, and Lithuania).

There is a variety of approaches to taxation of real property in the world. In a number of countries, the tax is calculated on the basis of the area of tracts of land and buildings, while in others, the real property tax is calculated based on the market value of land and buildings. (Malme and Youngman, 2001).

Area-based systems have the advantage of administrative simplicity. Calculating property tax based on the area requires only area measurements thus obviating the need for costly collection and analysis of market data and revaluations. In addition, the measurement of area is more objective than estimations of market value of the property because assessors

make judgments on comparable properties on which to base their estimate of market value (Bahl, 1998). Area-based valuation is, therefore, less contestable than market-based valuation (Zorn *et al.* 2000).

Ad valorem property taxation (AVT) provides estimates of the tax amount based on the value of property. There is a variety of approaches to assessing the value of real property for taxation, such as normative assessment used in Ukraine, or the value at the last sale of the property used in California, USA. The assessment of the market value of real property for taxation purposes can be done in a variety of way. On the one hand, when the assessment is carried out by independent assessors upon the request of tax authorities or property owners, it allows for the most accurate appraisal of the value of property. However, in this case, a number of subjective factors can affect the assessed value. Assessment of property value based on a simplified formula with standardized methods of market analysis and property valuation provides a less accurate, but adequate for the purposes of taxation, valuation, the so-called assessed value.

The development of ad valorem property taxation system is one of the main trends of tax reform in many countries. The transition to the new system of real property taxation is especially relevant in the emerging economies, where concepts of private property and market value are relatively new. Nowadays, the Republic of Moldova is implementing a comprehensive tax reform, which includes a new approach to real property taxation with estimated market value used as a basis for tax assessment. The multipurpose real property cadastre system, which is currently implemented in the country, plays an important role by providing adequate tax platform. Analysis of the real property cadaster and the fiscal cadastre, along with such issues as interoperability and ways to improve efficiency of the new property taxation system, are the purpose of this study.

The author used property taxation legislation of the Republic of Moldova and other countries and economics publications on the subject as a basis for the study, along with the data from the State Agency for Land Relations and Cadastre and State Tax Service of the Republic of Moldova.

## **2. Key Characteristics of the New Real Property Taxation System in the Republic of Moldova**

Republic of Moldova is one of the newly independent states which emerged after the break-up of the Soviet Union. Since 2000, the country has been implementing a tax reform which includes transition to the new system of real property taxation.

Essential elements of the new tax policy are following:

- The basis of the tax is capital improved value (reflecting in one assessment the combined value of land and improvements);
- The assessed value is determined based on standard market methods of valuation;
- The object of taxation is real property, such as land parcels and/or improvements thereon, including buildings, structures, apartments, and other detached property. This also includes improvements in construction projects which are 50 percent complete;
- Taxpayers are natural and legal persons (both residents and non-residents of the Republic of Moldova) who are owners or holders of any rights in real property;
- Legislation establishes a minimum and a maximum tax rate. Local bodies of public administration establish a specific tax rate depending on economic circumstances prevalent within their jurisdiction and local budgetary requirements.

Currently, Republic of Moldova is in transition from the old system of real property taxation, based on inventory value, to the new ad valorem system. The new system has been implemented in Moldova since 2007. In the period of 2007-2009, the ad valorem system has been used only with respect to residential property in cities. In 2010, the new real property tax was levied on owners of commercial and industrial property, seasonal property, and garages. By 2014, the assessment included main categories of real property with the highest market values.

If we consider the ad valorem taxation as a system, we can examine its components, each of which also represents a system. The following documents serve as the database for the new tax system: the fiscal cadastre, the real property cadastre, and the property assessment system.

Fiscal cadastre is a database that contains information on all taxpayers, taxable properties and their values, taxation amounts, and other information necessary for the purposes of taxation.

Real property cadastre combined with the property assessment system together form a system of multi-purpose property cadastre. This cadastre is a land database containing information on all real property on the territory of the country and its owners, as well as property values and rights.

The new ad valorem system of taxation applies mass appraisal methods with respect to all property registered within the cadastral system. For those categories of property which are not yet included in the cadastre, the old system of taxation still applies as an interim measure. The primary objective of the new property tax system is to provide an equitable basis for the tax in accordance with the assessed market value.

Property taxation system is based on identification of the taxpayer and of the taxable property. During Soviet era, there was a strict process of recording of all real property parcels and buildings in urban areas in the Republic of Moldova. Each building/structure had an inventory file with a detailed description of the technical characteristics of the structure, including parcel maps and floor plans. In rural areas, however, this inventory of buildings and other structures was less comprehensive. In 1998, the government of the Republic of Moldova started the development of the immovable property cadastre aimed at registration of all real property objects and creation of a unified land information system.

The process of mass registration and mass assessment of all real property (based on the property cadastre data) and introduction of the new system of property taxation are closely interrelated. As mass registration of real property is being carried out gradually, the new property taxation system is also being introduced as a part of an incremental process (see Table 1).

So far, considerable progress has been made in the sphere of mass registration and mass assessment of real property, but the process revealed some methodological and institutional problems. The purpose of this article is to identify these problems and to discuss possible solutions.

### **3. Assessment of Property for Tax Purposes as one of the Components of the Cadastre**

According to the Law of the Republic of Moldova (1998), the cadastre in the Republic of Moldova is a single multi-functional system for state registration of real property and rights to it, as well as its value. The purpose of the cadastre is identification, description, evaluation, and registration of property and the rights to it; protection of public and private interests in the legal ownership of property; creation of a system of protection of property rights of owners of immovable property; and creation of an open database for the participants in the real property market and public authorities, including tax authorities.

The advantage of the multi-purpose cadastre is that it provides a single database by combining operations of the real property cadastre and registration of property rights. This ensures the correlation between the cadastre and the property registration system. Any changes in methodology for creating the cadastre database do not require coordination between the agencies but can be introduced within a single system. The unity of the database requires fewer resources for its maintenance, thus saving time, labor, and financial resources associated with its creation, maintenance, and updating.

The unified system of cadastre and property registration database serves as a platform for creating a property tax assessment system. Development of such assessment system requires most attention from the government because it affects the interests of all property owners and provides a solid foundation for ad valorem property tax system which is being currently implemented in the Republic of Moldova.

**Table 1. Mass registration and mass assessment of real property and the new system of taxation**

Type of Property	Number of Objects	Registration Period	Assessment for Taxation (period of implementation)	New Taxation System (year of implementation)
Apartments	335,000	2000-2002	2004	2007
Private houses in urban areas	180,000	2001-2003	2005	2007
Lots within lawn-and-garden associations with/without structures	80,000	2006-2007	2006-2007	2010
Garages	50,000	2006-2007	2006-2007	2010
Commercial and industrial property	90,000	Registration in process	2006-2009	2010
Agricultural plots	4,095,000 <sup>1</sup>	2000-2005	In progress	Not applied
Houses in rural communities	850,000	550,000 objects registered	In progress	Not applied
Special-purpose objects/ Other objects	20,000	Partially registered	In progress	Not applied

The economic component in the property cadastre enhances functionality of the cadastral system. Property assessment for tax purposes relies on the property registration system and the cadastre database for subsequent creation of a new layer of data, such as technical specifications of properties and their values.

In accordance with the established procedure, property assessment for tax purposes may be carried out only after the identification of properties and their official owners and after mandatory registration of real property in the cadastre system.

The process of property registration comprises the legal part of the cadaster, which contains the following information: the unique cadastre number of the object, address, and type of the object.

In order to identify institutional features of the property cadastre in the country, the author researched cadastre management systems, registration of property rights, and property assessment for tax purposes in the CIS and countries of Central and Eastern Europe (Buzu, 2012) and arrived at the following conclusions:

- In all of the studied countries, the cadastre system and property rights registration system are integrated into a single unified cadastre system. Creation of such a system is recommended by the UN Economic Commission and supported by the trends of integration in many countries.

- The use of a unified cadastre system in the country creates preconditions and serves as a basis for the property assessment system for tax purposes.

- The multi-purpose cadastre is a prerequisite for creating a unified property database, which results in savings of resources necessary for the creation, maintenance, and development of the AVT system.

<sup>1</sup> The large number of agricultural plots is a result of the privatization of land of former collective farms. Depending on years of service and salary/wages, each former member of a kolkhoz was entitled to and received the ownership of a share of land, on average 1.5 ha. In practice, this share of land included a number of parcels, each with an area of 0.2 to 0.7 ha (i.e. share of arable land, share of a vineyard, an orchard, etc.). At present, the process of consolidating small holdings to form larger properties is taking place. During the period of 2008-2013, the average share of transactions involving agricultural land is between 60% and 80% of the total number of transactions in immovable properties.

The Republic of Moldova is one of a few countries where a uniform system of the multi-purpose cadastre is being created. The results of implementation of the new assessment system were analyzed by studying the relationship between the legal and economic components of the real property cadastre taking into consideration the flow of new information.

The research shows that creation of the real property cadastre (Government Resolution, 1998), as well as implementation of the new system of real property assessment (Government Resolution, 2003) were not completed on time. The real property cadastre was supposed to be completed by 2011, and assessment of all property for taxation, by 2012. However, the two programs are still in progress.

#### **4. Problems with Implementation of Mass Assessment of Real Property for Tax Purposes**

Real property assessment for tax purposes is based on the information contained in the real property cadaster and cannot be completed until all the real property in the country is registered in the cadastre system. The assessment is carried out in stages, by the type of property. At present, individual houses with garden plots in villages, land for agricultural use, special-purpose property, and public property remain undervalued for tax purposes. All objects in the aforementioned categories must be first registered and then assessed for taxation.

The author analyzed key features of property assessment in the cadastre system, its advantages, and disadvantages associated with its institutional organization (Table 2).

In the course of research, the author identified and systematized the problems of institutional, organizational, and financial nature which affected the time of completion of the unified system of cadastre. A number of circumstances prevented completion of the cadastre on schedule:

- New priorities emerged in the development of the country.
- Establishing the cadastre took a long time, which led to the perception of the process as normal and routine.
- Need for continuous funding for the work on the cadastre created negative attitude in government officials who were in charge of relevant decisions.
- Due to a persistent budget deficit, high-ranking officials were unable to see the economic advantages from the establishment of the cadastre and considered possible social and economic benefits a matter of a very distant future.

These reasons hampered the development of the cadastre in the Republic of Moldova for at least 7 years because, in the period of 2003-2010, primary mass registration of property was not funded. Work on the cadastre was carried out only in a sporadic way, through selective registration done at the request of citizens and economic agents. Even so, the property cadastre of the Republic of Moldova is one of the best cadastral systems in the CIS countries and one of the most advanced cadastre systems in Europe. According to the World Bank, in the period of 2009-2014, Moldova constantly ranked 18th-19th out of 189 countries in the sphere of property registration. In 2014, the Republic of Moldova was in the 19th place in the sphere of property registration. For comparison, neighboring countries in the region occupy following places: Russian Federation – 17, Romania – 70, Ukraine – 97. However, not all the possibilities of the multi-purpose cadastre system in the Republic of Moldova are being utilized. In the ranking of World Bank Group (2014), countries that have established such cadastre systems occupy a higher place on its use: Belarus – 3rd, Lithuania – 6th, and Armenia – 5th place.

**Table 2. Advantages and disadvantages of the new system of mass assessment of real property**

<b>Advantages</b>	<b>Disadvantages</b>
Permanent entry in the cadaster; creation of the initial cadastre	Implies inability to perform assessment of the objects that are not registered in the cadaster.
High accuracy of the assessment results due to reliability of the source data on properties and their owners	The accuracy of the source data is relative: 1. There is no property monitoring. 2. There is no legal requirement to register property. 3. There is a large volume of illegal construction.
Optimal institutional organization: the combination of cadastre, registration, and valuation platforms in a single system, a unified database	There are inaccuracies and errors in the original data, which show up, as a rule, at the stage of taxation.
Saves financial resources compared to individualized assessment	Lack of adequate funding mechanisms; funding allocated only from the central budget while benefitting local budgets
Can perform evaluation of a large number of objects in a short time	The prolonged process of establishing the cadastre did not allow for its use as an advantage in the tax assessment
Allows for the objective market analysis	Analysis is performed sporadically; there is no unified database of transactions; the actual price is often not specified in the purchase/sale agreements
The accuracy of value assessed for the tax purposes at the date of assessment corresponds to the market value with 10-15% margin.	Assessment results become obsolete because revaluation is not carried out (there are no approved regulations on the revaluation for tax purposes).

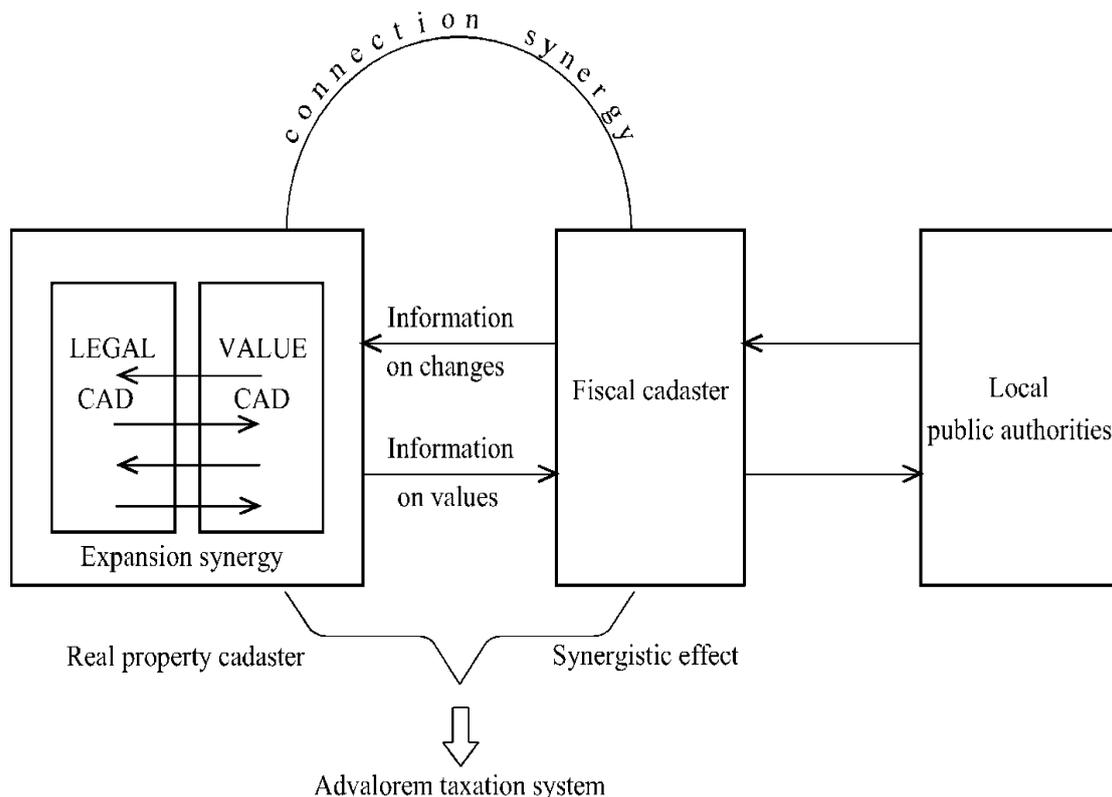
Real property assessment for tax purposes is a test of quality of cadastre data (having the most complete set of data about all immovable property and its legal owners). In the process of real property taxation, tax authorities receive feedback from property owners, which greatly improves the quality of initial information necessary for the evaluation and management of the cadastre. At this stage, any inaccuracies in the graphical, technical, and legal data on the property in the multi-purpose cadastre system are identified.

### **5. Synergistic Effect of the Unified Operations of the Real Property Cadastre and Fiscal Cadastre**

Real property assessment for tax purposes carried out within the platform of the property cadastre forms a unified multi-purpose cadastre system, creating a synergistic effect of expansion (Figure 1). This effect is a result of combining the potential of legal and economic components of the cadastre. The problem of utilization of resources of each of the subsystems of the cadastre has existed for a long time. When the assessment system was in the early stages of development (development of methodology, formation of regulatory and legal platform, training of the specialists), it utilized the resources of the property cadastre necessary for its development. Over time, with strengthening of the assessment system, it became a source of the necessary resources (financial, informational) for the property cadastre. Thus, each of the integrating systems is able to use the resources of the other system.

Connective synergy, in our view, happens during interaction of the property tax assessment system with the fiscal cadastre. In this case, combining information in the property cadaster with the data on the assessed value of the property and information in the fiscal cadastre results in a qualitatively new resource – information about the objects and subjects of taxation and the amount of their tax obligations.

Property assessment is an integral part of the land information system and is useful not only for establishing adequate tax base of property, but it also greatly contributes to the quality of the cadastre data and information on registration of property rights. As noted by the famous Peruvian economist Hernando De Soto (2000, p.49), "Capital is born by representing in writing – in a title, a security, a contract, and in other such records – the most economically and socially useful qualities about the asset as opposed to the visually more striking aspects of the asset. This is where potential value is first described and registered." Thus, registration of property ownership reflects social and economic values of the object, such as suitability for securing a loan, for reimbursing creditors, for proof of servitude right, etc.



**Figure 1. Synergies of connections between the property cadastre and the fiscal cadastre**

The synergistic efficiency is a system sum of partial efficiencies (economic, social, regional, etc.). As we can see in Formula 1, synergistic efficiency ( $e_{syn}$ ) can be expressed as a nonlinear function of the increment of the economic system as a result of concerted influence of diverse elements:

$$e_{syn} = E_{syn} : C, \quad (1)$$

where  $E_{syn}$  – synergistic effect;  $C$  – costs associated with the achievement of the effect.

Economic impact associated with improvements in property assessment within the property cadastre is a result of combined functions of multiple systems (cadastre, registration, organization of data, and assessment for tax purposes). It is, therefore, a synergistic effect, and it is manifested in the increased revenues from real property taxes in the budgets of local public authorities.

Improvements in efficiency of property assessment are the indicator of efficiency of all subsystems of the multi-purpose cadastre. It seems most appropriate to determine cost-effectiveness of property assessment for tax purposes by taking into account all the costs associated with the creation of the multi-purpose property cadastre and the fiscal cadastre. It is

also necessary to take into account the efficiency of individual categories, such as efficiency of the cadastral system; effectiveness of the fiscal cadastre; and effectiveness of the new property assessment system for tax purposes. It should also be noted that in the Republic of Moldova, assessment and taxation of property are carried out in stages by the type of property. In this regard, it is also important to determine the effectiveness of property assessment for tax purposes by the type of property. Such calculations may be necessary in order to determine the effectiveness of fiscal policy or to determine specific tax rates on property in different localities. The formula for calculating the efficiency of property assessment for taxation ( $e_{ass}$ ) can be expressed in the following form:

$$e_{ass} = \Delta R : (C_{cad} + C_{reg} + C_{ass} + C_{fisc}), \quad (2)$$

where  $\Delta R$  is the increase in revenue of local budgets resulting from transition to the ad valorem real property taxation;  $C_{cad}$  – costs of creating the real property cadastre;  $C_{reg}$  – cost of the initial mass registration of real property;  $C_{ass}$  – cost of real property assessment for taxation;  $C_{fisc}$  – costs of creating the fiscal cadastre.

Time is an important factor for determining cost-effectiveness of improvements in tax assessment. Costs associated with graphic work, collection of data on real property, registration of property, and its subsequent assessment are incurred at different times during the period of assessment. This period can be quite long and may last, depending on the schedule of financing of the cadastre and assessment, from 7 to 12 years. Therefore, to determine the total cost, it is necessary to bring all costs incurred at different times to one moment in time for which the performance indicator is determined. The synergistic efficacy of property assessment ( $e_{syn}$ ) reflects the effectiveness of the property cadastre and fiscal cadastre and can be described by the formula 3:

$$e_{syn} = \Delta R : \left( \sum_{i=1}^m C_{cad} \cdot K_i + \sum_{j=1}^n C_{reg} \cdot K_j + \sum_{k=1}^o C_{ass} \cdot K_k + \sum_{l=1}^p C_{fisc} \cdot K_l \right), \quad (3)$$

where:

$$\sum_{i=1}^m C_{cad} \cdot K_i, \sum_{j=1}^n C_{reg} \cdot K_j, \sum_{k=1}^o C_{ass} \cdot K_k, \sum_{l=1}^p C_{fisc} \cdot K_l - \text{cumulative costs associated}$$

with cadastral work, registration of property objects, real property assessment, and creation of the fiscal cadastre respectively;

$K_i, K_j, K_k, K_l$  – cumulative factors for periods of time  $m, n, o, p$ , during which the work on the cadastre is carried out along with real property registration, evaluation, and creation of a fiscal cadastre, respectively.

Storage coefficient ( $K$ ), which allows to transfer cash flows of prior periods into their present values at the time of determining the efficiency is expressed by formula 4:

$$K = (1 + r)^i \quad (4)$$

where  $r$  – accumulation rate.

When calculating cost-effectiveness of implementation of the new system for property assessment, the author suggests calculating the following parameters:

- *absolute efficiency*, which is represented as the ratio of local budget revenues for the entire period of taxation under the new system accrued at time of calculation to total costs associated with the transition to the new system of real property taxation;

- *efficiency of specific types of costs* – the ratio of local budget revenues for the entire period of taxation under the new system received by the time of calculation to the total cost of implementing a particular type of work;

- *annual efficiency* – the ratio of increase in the annual revenue of local budgets resulting from the new system of taxation to the annual costs associated with the implementation of the new tax system.

The new system of immovable property taxation has been implemented in Moldova since 2007, when ad valorem tax system was first applied to residential property in cities: apartments and other housing, individual houses with land, and vacant land in urban areas designated for housing construction.

Since 2010, the new system of ad valorem taxation has been applied to commercial and industrial buildings, suburban areas, and garages in the garage-building cooperatives. Analysis of the generalized data on the payment of property tax by economic agents shows that due to the ad valorem taxation of commercial and industrial properties alone, annual revenues of local budgets have increased by about MDL 22-28 million. The market value of these objects is much higher than the depreciated replacement cost of buildings and structures. The tax based on the market value of land is much higher than the property tax calculated based on the area of the land. Thus, the idea of Arthur O'Sullivan (2000) that city land is where taxes are usually grown is highly relevant to the country.

We determined the effectiveness of the new system of property taxation for the end of 2012. At the same time, we took into account costs associated with the establishment of the property cadastre, assessment of property, creation and maintenance of the fiscal cadastre, and assessment of new housing units that have been constructed after the mass assessment of this type of property. In 2012, total revenue generated by local budgets as a result of taxation of residential property based on its appraised value was MDL 98 958 000 adjusted for inflation. Total amount of all costs associated with the introduction of the new system of property taxation was MDL 66 262 980. The effectiveness of the new property taxation system in 2012 was 149%.

In 2012, the effectiveness of taxation of commercial and industrial property based on the assessed value amounted to 124%. For the period of 2010-2012, local budget revenues from property taxes of economic agents increased by MDL 109 343 thousand (accounting for the time factor), and costs of associated with the increase amounted to MDL 88 391 thousand.

Absolute performance, which reflects the ratio of the increase in revenue of local budgets for the entire period of ad valorem taxation by the end of 2012 to the total cost of transition to the new system of taxation is 119%.

Thus, the effectiveness of the new system of taxation in relation to the assessed property is obvious. The synergistic performance indicators calculated above clearly demonstrate the need to continue working on the property cadastre and to complete the assessment of property for tax purposes. Revaluation of property will increase the effectiveness of ad valorem real property taxation in the country.

## 6. Conclusions

To sum it up, we would like to state the following:

1. A new system of property assessment for tax purposes was introduced in the Republic of Moldova.
2. Institutionally, this system is developing in conjunction with the property cadastre.
3. The resulting institutional structure, with property assessment being a part of the multi-purpose cadaster, has organizational, technological, and economic advantages. However, in this case, the influence of subjective factors on the quality of the system greatly increases.
4. Implementation of the new assessment system creates a number of problems, the most significant of which is the backlog in registration of property in relation to the property assessment, which creates operational delays for the assessors.

5. Slowing down the pace of implementation of the cadaster program to implement a new property assessment system creates a number of economic and social issues: aging of assessment results, need to update cadastre data, deepening of contradictions associated with the violation of the principle of equitable distribution of the tax burden, and the shortfall in tax revenues of local budgets.
6. Unified operations of the property cadastre and the fiscal cadastre in the process of implementation of the new system of real property taxation produce a synergistic effect which multiplies the effects of each of the structures that make up the system.

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