Graphic Model Regulating the Application of Land Site Taxation Deductions

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Existing conditionally sizeable possibility of interpretation of tax legislation and covering regulations of the Republic of Lithuania, abundance of practical employment subtleties and concretization makes extremely important the knowledge of taxpayer regarding which specific deductions, when and how can be applied while calculating the payable sum for one or another tax. Employment of provided taxation deductions not only provides proper environment for tax system existentialism, but also creates added value for the taxpayer. Deficiency of economic and accounting knowledge of the latter enables a legitimate overpay of the taxes payable for the state, though, not registering this fact with any economic operation.

Reform of taxation for persons engaged in agricultural activities and real property trade, recently performed in Lithuania, conditions new scientific research in this area of tax system. Land site taxation, seems such a narrow profiled field of tax system, becomes more and more important tax within Lithuanian tax system. As the carried out statistical analysis of national budget administration data reveals, collection scope of taxes, where taxable object is real property, during the last decade is only increasing both in Lithuania and all EU countries. One of the most significant reasons determining such changes is micro economic condition of the country, however, state fiscal policy also plays quite a considerable role in this field.

Lately, when budget becomes the basis for the stable state finance, debates, regarding both land site and other real property taxations are more frequent. Though, before initiating an exhaustive analysis of taxes, where a taxable object is the latter, it is important to emphasize that extremely wide range of application of taxation deductions exists in this field. Every municipality, in turn and on the budget account, may reduce the tax or even relief from the tax payable. As a performed empirical research shows, the latter taxation deductions, frequently applied in practice, do also increase demand for allocation while conditioning the lesser municipality budget income. Hereby, from the first sight, even pretty simple and insignificant taxes become more and more important, especially when national budget deficit and its control become the most important task both in the state and global financial market.

Application of econometric models is being propagated for few decades now, however, in the field of the usage of taxing laws and regulations such models are not applied in worldwide practice. Adaptability of a graphic model is considered to be a real revolution in the field of tax system efficiency evaluation.

A formed graphic model, in which taxable object is a land site, proves that even such a small taxable sector exhibits a lot of confusion, which can be exploited by the taxpayer to receive his fiscal benefit. Whereas the main purpose of laws, regulating the taxes, is calculation of the amounts payable and regulation of payment itself, construction of a graphic model allows us to evaluate not only budget and target funds fiscal income, but also influence of the latter on macro economic indicators of the country.

Keywords: tax system, graphic model, fiscal policy, land site taxation.

Introduction

Subject to present economic conditions, discussions regarding the optimization of taxes payable into national budget and various target funds, specifically speaking – minimization, become more relevant both to business subjects and natural persons. Minimization depends on many aspects – pursued fiscal policy, taxpayer competence or knowledge, etc. As being one of the major tax minimization means, currently existing in the Republic of Lithuania, there can be emphasized the imperfection of laws and regulations governing taxes, and specifically – a conditionally large number of deductions and a lot of possibilities of their employment interpretation.

Global scientific practice cultivates and develops empirical research of tax systems; though, they do not define specific employment limits of tax deductions due to existing quite wide interpretation possibility of laws, regulating payable taxes, and other regulations. Composition of graphic models and their practical application in the field of fiscal policy is a new and unique method, allowing not only to understand tax system, but also enabling to optimize the amount of taxes payable by the taxpayer both into national budget and various target funds.

Tax systems, perspectives of their enhancement from the point of view of taxpayer deductions employment were analyzed by a small number of foreign scientists. As the foremost can be named the following: McNulty (1973), Bauman et al (2000) and others. Fiscal policy, more from national than from individual taxpayer point of view and benefit it provides, in Lithuania was and is still being analyzed by a large number of scientists and market experts. As few of the most known may be named Staciokas (2004), Butkevicius & Rimas (2005) ant others. Some years ago the research done by the latter researches
has already become insignificant due to both conditionally extensive change of state laws and regulations, governing taxes, and the existence of conditional indetermination of deductions possible to apply to taxpayers.

The object of research is the tax system of the Republic of Lithuania.

The aim of the research is to carry out the research of taxes, regulating the land site taxation, from the aspect of employment of taxpayer deductions.

Tasks of the scientific research:
- to evaluate the possibilities of graphic model application during the evaluation of tax system;
- to create a graphic model comprised of laws and other regulations governing land site taxation in Lithuania;
- to carry out the analysis of functionality and practical application efficiency of created the graphic model.

Methods of scientific research. Research of Lithuanian and foreign scientific works, empirical surveys and economic literature was carried out, and practical study regarding tax deductions and their evaluation was used in this scientific article. Pursuant to the taxes, where the object is a land site, governing laws and other regulations, presently valid in the Republic of Lithuania, the analysis of deductions, applicable to taxpayers, is carried out. This analysis performs the role of foundations of the graphic model. With the help of the created graphic model, determining the land site taxation, its practical substantiation of application during the evaluation of tax system is demonstrated.

Functionality of a graphic model during the evaluation of tax system

The evaluation of tax system and its efficiency is one of the most important tasks for a modern-day economy. There are a lot of evaluation indicators existing; some of them are difficult to evaluate from the quantitative point of view; some, like Ciegis et al (2009) states, with certain conditions and wide interpretation form, manage to evaluate tax system from the qualitative point of view; yet, they are particularly suitable while making international comparisons of tax systems. The basis of national budget income in Lithuania and many other foreign countries consists of value-added tax, profit tax and income tax, and wealth taxes remain in the second, if only not in the third plan of fiscal system. To perform a land site taxation efficiency research from the qualitative or quantitative aspect, the employment of models, evaluating the tax system, is not expedient because you cannot evaluate the tax system from the aspect of few taxes; and, moreover, adaptation of evaluation models applied in practice in the field of taxes which have only one taxable object, is not easily mastered and adapted.

According to Brauers & Ginevicius (2009), various and distinct econometric models may also be applied not only while evaluating national fiscal income, but also while determining the areas of different tax systems, which require corrections and improvements, in different countries. The latter problem, according to Ciegis et al (2009), emerges due to the difficulty degree of the analysis of laws and regulations governing the taxes in the Republic of Lithuania and wide spectrum of interpretation of possibilities on the state level. However, exceptionally the creation of econometric models and practical adaptability in the field of tax system evaluation would let analyzing the latter from the different aspects, for example, from the point of view of taxes where the taxable object is assets. Internationally analyzing the tax system from the different aspects would be quite complicated, because the employment of econometric models in every country should be adjusted according to specific and individualized requirements raised for them.

Exactly here, in this area, taxpayers face the employment of fiscal policy. Fiscal policy is so called accounting and taxing methods and techniques chosen by the taxpayer which condition the application of certain long-term taxation standards and create appropriate conditions required to calculate minimal taxation value, to declare and to pay. The latter, according to Kaklauskas et al (2009), is not only one of the means to create the added value to the taxpayer, but, according to Cekanavičius & Kasnauskienė (2009), it is also one of the reasons for such social indicators of the country like emigration. Thereby, while generalizing, it is possible to state that the creation of tax deductions and their practical application deliver benefit not only to the taxpayer, independently of his status, but also to the state. Yet, certain provisions originate. First of all, you should take into consideration cultural and taxing existing in the country tax and political consequences which were formed as the results of the latter. Land site taxation system does not provoke noticeable elegies – it is fairly difficult to conceal the taxes paid in accordance with the cadastre register, whereas the amounts of taxes are also not substantial. Thereby, the volume of shadow economy growth in this field of tax system is not evident. Therefore, we can state, that problematic area is a wide range of deductions application.

Too wide spectrum of application of tax deductions, according to Jakstonyte (2006), creates situations which aggravate their purposeful employment. Due to the low tax culture, the following means applied to handle the economy, according to Tamosiunas & Lukošius (2009), become one of the most popular and the most accessible tools used to profit from the state budget. Many taxpayers due to their indiscretion, weakness in scholarship or other, usually substantive reasons, never take advantage of some of tax deductions, though, from the other point of view, their practical application is very intricate. According to Navickas & Malakauskaite (2009), employment of cluster or other empirical methodologies on the state level contribute to the creation of both technological and innovative superiority. Graphic model, enabling to combine both fiscal policy and technologies, may become a real revolution tool not only in the tax system but also in the field of information technologies. Girdžiauskas et al (2009) states that when a graphic model, enabling to analyze any economic process, is created, we will be able to use the forecasts of the latter and transfer them into appropriate computer programs. Creation of such program
would facilitate tax administration and reduce the expenses incurred for the latter for account of the state.

The creation of a graphic model regulating the land site taxation as well as deductions and practical adaptability of the latter in the field of tax system efficiency evaluation would allow evaluating the taxing benefit delivered by deductions from the point of view of households. Households as being stated in global scientific economic literature, are the main holders of state tax burden. Scientific research, carried out by the authors of the article, proves that even 85% of all the taxes paid into the state budget come namely from the households and the residual part of 15% is from foreign capital. Therefore, it is possible to state that deductions regulating the taxation of land site, like any other taxes where the taxable object is assets, and their efficient realization from the point of view of households and state finances is an extremely important economic phenomenon which requires an exceptional attention of economists.

Identification of principled aspects of graph modeling

In general, a graph is a corpus of points and lines connecting them. A graph is not a type of graphical representation, as, for example, in analytical geometry arrangement of points, length of the lines, leaning which bear a fixed sense.

According to Boguslauskas (1999), the most important thing in a graph is whether the points are interconnected and what is the order of connections. Graph is a set of

\[ G = (V, \Gamma), \]

where:
- \( V \) – set of peaks,
- \( \Gamma \) – mapping of \( V \) into \( V \).

Modeling of a graph of taxes regulating the land site taxation depends on whether the taxpayer has a right to use appropriate deductions, allowed by the laws and other regulations, and what value do the latter have.

A generalized graph will be composed of all the peaks and bends, subject to legal base regulating the land site taxation and its interpretation possibilities. It should be noted that in the graphs composed there should be no “loops”, i.e. reversible recycles. If under practical conditions of declaration graph composition they appear, additional fictitious peaks of squares are introduced. They receive numbers and the loops are eliminated (Boguslauskas, 1999). This measure should also be applied while composing a model of graph identifying land site taxation deductions, because situational conditions emerge.

### Graphic modeling of land site taxation in the Republic of Lithuania

There are a lot of confusing laws in Lithuania; however, there is a number of laws, regulating land site taxation, which look quite simple from the first view. Four closely interconnected taxes are presented in Figure 1.

With the help of the created model, it is possible to see that tax laws have conditionally many common calculation and evaluation nuances. It is extremely important to emphasize that in order to calculate the income tax, which is paid by the residents into national state budget, taxpayer should calculate and evaluate other taxes, in this case the ones like land tax and land lease tax, and to ascribe them to permissible settlements.

<table>
<thead>
<tr>
<th>PAYER</th>
<th>OBJECT</th>
<th>DEDUCTIONS</th>
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<tbody>
<tr>
<td>X1</td>
<td>X2</td>
<td>X3</td>
</tr>
<tr>
<td>Land tax</td>
<td>&lt;( x &gt; = 18)</td>
<td></td>
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<tr>
<td>Income tax</td>
<td>&lt;( x &gt; = 5)</td>
<td></td>
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<tr>
<td>Land lease tax</td>
<td>&lt;( x &gt; = 9)</td>
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</tr>
<tr>
<td>Inherited asset tax</td>
<td>&lt;( x &gt; = 12)</td>
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Figure 1. Graphic model of taxes, regulating the land site taxation
According to Bauman et al (2005), a proper and optimal evaluation of the latter or permissible settlements, from the point of view of taxpayer, allows to minimize one or another payable tax. According to Strumickas & Valanciene (2009), accounting and tax accounting habits in the companies are continually changing due to originating strategic planning or fiscal policy which is formed by tax laws and other governing regulations.

Policy formed by the laws regulating the land site taxation and tax collection in the tax system environment conditions is the birth of new research in the field of presentation and application of deductions. As it may seem from the first sight, application of the latter is not simple, but financially highly sensitive and quite delicate object not only in Lithuanian, but also in foreign tax systems. In the field of deductions application we usually confront with the fact, that a single tax-payer may use not one, but even a few deductions of taxation. But that is not the main problem; it is extremely important to emphasize that financial privileges delivered by deductions system are usually being employed by not eminently financially sensitive tax-payers, but those, who are aware of both tax-payer duties and rights. Thereby, a question of expedient and financially efficient application of deductions arises.

Deductions for taxes, the taxable object of which is land site, are subject not to one factor, commonly thought to be the taxpayer's status, but even to five factors (See Figure 2), which severely aggravate the selection of the most optimal employment possibilities.

**Figure 2.** Spectrum of applicable deductions for taxes regulating the land site taxation

As the practice shows and Tampere et al (2009) states, taxing deductions are commonly applied by those tax-payers and their groups to whom he latter were not intended. Even after constituting a graphic model and performing efficiency evaluation at the level of state finances, it is quite difficult to change the fiscal policy which was formed and nurtured by taxing culture. However, such a graphic modeling really provides practical benefit and enables to realize tax deductions in a way the tax-payers would apply them only once. Since in the tax systems in Lithuania and many other foreign countries, no matter how strange it could be, multiplex taxation still exists, a composed graphic model would allow to avoid not only multiplex application of tax deductions, but also would become a preventive tool in order to avoid and prevent the multiplex taxation. Though, on the other hand, it is difficult to evaluate what added value of taxation deduction of taxes regulating the land site taxation is created and how it influences the state budget and its income.

According to Ginevicius & Podvezko (2009), many national criteria, reflecting the state accounts, evaluate the employment efficiency of European Union structural support funds, programs, which reveal and allow evaluating regional politics and its employment efficiency, run at a national level. Such evaluation is not objective in respect of few simple reasons dominant in Lithuanian tax system. National accounts do not reflect the amount of employment of tax deductions, which creates rather large amount of added value falling on the taxpayer. Employment of a created graphic model, according to Boguslauskas & Kvederaviciene (2009), with contemporary information technologies will allow to evaluate this created value and to evaluate not only efficiency of the state tax system on an international scale more objectively, but also the creation of optimal and exclusively efficient and productive support or deductions system at the social state sector.

**Conclusions**

1. Evaluation of deductions and optimal taxpayer's choice are vital instruments in this sector; they form environment required for proper existence of fiscal policy, therefore, creating added value for the taxpayer.
2. Conjoined subtleties of currently widely applied information technologies and graphic modeling of taxes create graphic model which would allow to evaluate more objectively both functionalism efficiency of state tax system and the creation of optimal and exclusively efficient and productive support or deductions system at the social state sector.
3. Created graphic model of taxes, where taxable object is a land site, proves that even in such a small taxable sector there is enough complexity, which may be exploited by the taxpayer in order to receive his tax benefit. Whereas the main purpose of laws regulating taxes is calculation of the amounts payable and regulation of payment, construction of graphic model allows to evaluate both fiscal income received by the budget and target funds, and influence of the latter on macro economical indicators of the country.

Būtent šioje srityje mokesčių mokėtojai ir susiduria su mokesčių mokėtojo pasiskirstiniu apskaityos ir mokesčių metodai ir būdai, kurie šalyje dažniausiai apmokestinimo normų taikyma ir sudaro atitinkamas sąlygas minimaliai mokesčių sumai apskaičiuoti, deklaruoti ir sumokėti. Pastaroji yra ne tik viena iš pradinės vertės mokesčių mokėtojui kūrimo priemonių, bet ir yra viena iš šalies socialinių rodiklių, tokių kaip emisija, priežiūrų. Taigi apibendrinant galima teigti, kad mokesčių lygavatų kūrimas ir jų praktinės priežiūros naudingas ne tik mokesčių mokėtojui, nepriklausomai nuo jo statuto, bet ir valstybei. 


S. Girdžiauska (2009) teigia, kad sukuręs grafinį modelį, galima analizuoti bet kokius ekonominiaus procesus, jį galima pritaikyti šioms procedūroms prognozuoti ir perkelti į atitinkamas kompiuterines programas. Tokios prognozos sukūrimas pagalvinti mokesčių administravimą ir sumažint dėl pastarajo patiriamus kaštus valstybės sąskaita. 