PROCEEDINGS BOOK

ECONAGRO

3rd

INTERNATIONAL CONFERENCE ON

FOOD and AGRICULTURAL ECONOMICS

25-26th April 2019

Alanya, TURKEY

ISBN: 978-605-81058-1-2

Harun Uçak (Ed.)

Alanya Alaaddin Keykubat University

3rd

INTERNATIONAL CONFERENCE ON
FOOD AND AGRICULTURAL ECONOMICS

PROCEEDINGS BOOK

(Full Texts-Abstracts-Posters)

25 -26th April 2019

Alanya Alaaddin Keykubat University, Turkey

ISBN
978-605-81058-1-2

MUNICIPALITIES REVENUE AUTONOMY IN THE BALTIC COUNTRIES

Neringa Slavinskaitė
Vilniauskolegija/University of Applied Sciences, Faculty of Economics, Accounting Department, Lithuania, Email: n.slavinskaite@ ekf.viko.lt

Aušra Liučvaitienė
Vilniauskolegija/University of Applied Sciences, Faculty of Economics, Insurance Department, Lithuania

Abstract

Fiscal decentralization phenomenon is highly discussed at various levels and aspects, and the Organization for Economic Co-operation and Development (Eng. Organization for Economic Co-operation and Development, hereinafter - the OECD) gives it an extreme attention as well as the World Bank. Fiscal decentralization has become an interesting topic until today because researchers about fiscal decentralization are not only considered from the economic perspective, but also from other perspectives such as politic, geographic, other subjects. The articleobject – localgovernmentrevenueautonomyofBalticcountries. The aim of this article is to analyse the theoretical aspect of fiscal decentralization, calculate theindexofrevenueautonomyinBalticcountries. Three Baltic States similar in their area, number of inhabitants, and governmental peculiarities have been chosen for the analysis. This paper compares the three Baltic countries that formally became independent from the Soviet Union in September 1991: Estonia, Latvia and Lithuania. The research methods employed in preparation of this article are theoretical methods of analysis of scientific literature and sources, SAW method for index, comparative and logical analysis and generalisation. ThelowestrevenueautonomyindexoflocalgovernmentofBalticcountrieshasLithuania (0.27), thehighest – Latvia (0.49).If the revenue autonomy index is near 1, it is mean that local government has a big power to control own revenue.
Keywords: Fiscal Decentralization, Revenue Autonomy, Baltic Countries.

1. Introduction

The Baltic countries (Estonia, Latvia and Lithuania) are often considered as one region with similar economic profiles and common political and social values. They are geographically and historically closely related, particularly during the Soviet era. Also their post-Soviet development has been rather analogous. Nevertheless, there are significant differences with respect to local administrative systems and government finance. During the threedecades the Baltic countries have created new public institutions, introduced a democratized system of local government and provided the foundation for pluralistic and democratic society. However, there are still essential reforms that are waiting for implementation. One of the main problems is limited fiscal autonomy and inadequate revenue bases for local government.

This paper compares the three Baltic countries that formally became independent from the Soviet Union in September 1991: Estonia, Latvia and Lithuania. Local government reform in the three Baltic States has been the subject of earlier publications (Wrobel, 2003; Vilka, 2004, 2012; King, Vanags, Vilka& McNabb, 2004; Vanags&Vilka, 2006; Trasberg, 2009; Linnas, 2011; Mäeltsemees, 2012; Šaperkienė&Lazauskienė, 2012, Groenendijk&Jaansoo 2016), but these publications do not always specifically deal with public finance or local government revenue autonomy. This paper the situation regarding local government revenue autonomy in the three Baltic countries is analysed in 2017 year.

The research methods employed in preparation of this article are theoretical methods of analysis of scientific literature and sources, SAW method for index, comparative and logical analysis and generalisation. Three Baltic States similar in their area, number of inhabitants, and governmental peculiarities have been chosen for the analysis.

The first and second parts of the paper gives a general fiscal decentralization principles and local government revenue autonomy theoretical aspects. In the third part gives methodology of evaluation of Baltic countries local government revenue autonomy. The last part introduces the results of research.

2. Theoretical Aspect of Fiscal Decentralization

The theoretical foundations of fiscal decentralization highlight the efficiency and welfare-maximizing aspects of multi-level governmental structures for society. The widely referenced works of Tiebout (1956), Musgrave (1959) and Oates (1972) articulate a broad rationale for fiscal decentralization and its positive outcomes. Researchers have emphasized several important theoretical aspects of fiscal decentralization.

First, decentralization supports better fulfillment of local residents' needs for public goods. Smaller population and spatial size of local governments provide better opportunities to bring out residents' particular needs more explicitly (Oates 1972). As a result, compared with centralized public provisions, it becomes possible to calibrate more precisely residents' preferences for public goods in local jurisdictions. Second, as sub-national governments are likely to provide residents with a more precisely attuned preference-related set of public provisions than central government, a positive outcome will be better public resource use or allocation efficiency. Despite the difficulty of measuring preference-satisfaction level and the consequential overall allocation efficiency in the government sector, 'the idea that fiscal decentralization leads to allocative efficiency gains has won widespread acceptance' (Rodrıguez-Pose et al. 2007).

Third, fiscal decentralization may enhance competition between sub-national governments. In this context, local jurisdictions are considered as welfare-maximizing institutions for their residents. Municipalities provide various kinds of public goods and collect taxes from their residents. The 'voting with one's feet principle' would suggest that individuals will locate themselves within the particular jurisdiction which maximizes their personal utility (Tiebout 1956). In other words, a person will choose to reside in the municipality where the 'ratio' between the package of public services received and the tax burden is most favorable. The assumptions of the Tiebout model assume perfect mobility of residents and availability of information. As an outcome, one can expect the formation of more homogeneous-preference local governments, i.e. municipalities where more and more residents share similar preferences. Municipalities compete over individual (preferably wealthy) taxpayers, attracting them to reside in their jurisdictions. Municipalities are also interested in attracting businesses to their territories because they create jobs for their population. As an outcome of competition, municipalities search for ways to deliver services at the minimum feasible cost, thus enhancing producer efficiency at the sub-national level (Martınez Vazquez &McNab 2003). These theoretical arguments gave strong support to fiscal decentralization reforms in the Baltic countries following the over-centralization of the Soviet-period.

3. Revenue Autonomy of Local Government

Reviewing the relevant literature, there are studies that have attempted to quantify the degree of revenue autonomy oflocalgovernments (Fossati, Panella 1999; Stegarescu 2005). A revenue source can be categorised as the municipality's own revenue if it fulfils three conditions (Swianiewicz 2003): 1) the revenue source must be given to local governments in full without any additional conditions and for an undefined period; 2) the revenue source must be related to the local economic base, so that economic growth causes the increase of the municipality's own revenues; 3) local governments must be able to exercise at least some discretion over this source of revenue (e.g. they have the right to set the tax rate, at least within the limits set by law).

Among them is the most detailed study is the one made by OECD Taxing Powers of State and Local Government, which provided a methodological framework for classification of taxes sharing between central and local government according to the degree of autonomy in their determination.

Since taxing power better reflects the fiscal decision-making power of local governments, it has filled a gap between theoretical and empirical research on fiscal decentralisation. However, there still

remain challenging issues to be resolved with regard to the measurement of fiscal decentralisation. One such issue is the definition of tax sharing used by the OECD (1999).

In defining taxing power, local revenue from tax sharing is completely excluded. However, in many developed and developing countries, local governments depend significantly on the revenue from tax sharing between central and local governments.

The concept of "tax autonomy" captures various aspects of freedom local governments have over their own taxes. Recognising this problem, the OECD (1999) developed the concept of "taxing power" by categorising local taxes into five types. The OECD's definition of taxing power is viewed by many researchers as a better alternative to the conventional measures of fiscal decentralisation. Criticising empirical studies that use sub-central shares of revenue or expenditure to measure the degree of fiscal decentralisation.Ebel, Yimaz (2003) show that the result of previous studies on the effect of fiscal decentralisation, such as that of Davoodi,Zou (1998), is reversed when instead taxing power is used. Stegarescu (2005) also discusses the problems of using sub-central revenue or expenditure shares as the measure of fiscal decentralisation. He argues that the common spending or revenue shares tend to considerably overestimate the extent of fiscal decentralisation.

Although tax sharing is a system of revenue allocation between the central and local governments used worldwide, the treatment of tax sharing in the taxonomy of local revenue and in measuring fiscal decentralisation is surprisingly simplistic.

Although the possibility of measurement error of the share of sub-central expenditure or revenue is recognised, these measures are still used by many researchers due to the lack of alternatives. Even though the taxing power index might be recognised as a better alternative, the data on taxing power is available only for OECD countries over a limitedtime span. For an empirical study based on a broader sample of countries for a longer period, the share of local government revenue is still the only available data to measure fiscal decentralisation.

Tax sharing is used in many countries as a system of allocating national tax revenues across levels of government. According to the OECD surveys on local governments' tax revenue structure (OECD 1999, 2002; Blöchliger, Petzold2009), it is a dominant source of local tax revenue for several OECD countries. In Austria, the CzechRepublic, Germany, Mexico, and Turkey, the shares of tax sharing in local tax revenue are respectively 89%, 97%, 75%, 84% and 100%. Besides these countries, the shares of tax sharing are also quite significant in such countries as Australia, Belgium and Spain, which are respectively 42%, 46% and 32%.

In sum, the current definition of taxing power developed by the OECD (Blöchliger,Petzold2009) can be modified with the concept of "tax base proportionality", which is defined as tax sharing subtracted by horizontal grants. This approach has two advantages. Firstly, it will prevent the degree of fiscal decentralisation in many federal/regional countries from becoming close to zero. Secondly, the dichotomous nature of the current definition of the OECD (Blöchliger,Petzold2009) can be overcome by calculating the contribution of the local tax base to tax sharing revenue on a continuous basis.

But there are more indicators in scientific literature, but there is not one indicator which could evaluate the revenue autonomy of local government, so multicriteria method (SAW) will help to make index of revenue autonomy of local government. The next section presents the methodology of local government revenue autonomy index.

4. Methodology of Research

Multicriteria evaluation methods have been used in Lithuania for more than 30 years. At first they were used for solving technological problems in construction.Various evaluation techniques beginning with simple (sum of places, geometric average), more accurate ones (SAW COPRAS) and finishing by the most complicated ones – TOPSIS, VIKOR, MOORA, MULTIMOORA, ELECTRE, PROMETEY, PROMETEI II and others) are used.

SAW (Simple Additive Weighting) is the oldest, most widely known and practically used method (Hwang, Yoon 1981; Podvezko*et al.*2010; Nugaras 2014).

Quantitative evaluation methods are based on the matrix of the criteria, describing the compared object, statistical data or experts' estimates $R = ||r_{ij}||$ and thecriteriaweights ω_i, i =1,...,m; j =1,...,n, where m is the number of the criteria, n – the number of the objects (alternatives) compared.

Thequantitativeassessmentof local government revenue autonomy may also be done by applying a multi-criteria model based on the SAW(Simple Additive Weighting) method(Hwang, Yoon 1981):

SAWmulticriteria evaluation method is one of the most understandable and the simpliest ones embodying indexes values and weights connection into a single evaluating size – method criterion. Revenue autonomy by SAW method can be calculate in this way:

$$S_j = \sum_{i=1}^{m} \omega_i r_{ij}, \quad (1)$$

where: *Sj* – the value of the quantitative assessment of local governmentrevenueautonomy ω_i – theweight of indicator of local governmentrevenueautonomy; $\tilde{r}_{ij}$ –thenormalizedvalue of indicator *i* of local government revenue autonomy. The multi-criteria assessment SAW method requires the nature of change of all indicators to be the same, i.e. all of them need to be maximizing or minimizing.

We need to determine of local government revenue autonony of a country, therefore we should perform normalization employingthe ESP method.In this case, the normalization of the initial data can be performed bytheformula(Ginevičius2011):

$$\overline{r}_{ij} = \frac{r_{ij}}{\max\limits_{j} r_{ij}}, \quad (2)$$

wherer_{ij} – the normalized value of indicator *i*; max r_{ij}– the highest value of indicator *i* (obtained from statistical data or established through expert assessment).

Indexes weights can be determined in two main ways: direct and indirect. The first way is suitable when thenumber of evaluated indexes is not big – tillsome (Ginevičius 2011). Experts determine the weights of indexes inparts of a unit at once. This technique is very simple, understandable and convenient to apply. When the number ofevaluation indexes increases, it becomes problematic to apply it. The reason is that it is harder for an expert todetermine the correlated relations of indexes weights from the point of view of an examined phenomenon. At thesame time the incompatibility of opinions grows which often exceeds allowable limits.The best known one is T.Saaty hierarchy analysismethod(Saaty 1980;Aqhdaie*et al.* 2013). In this case the experts compare only two indexes, but not all at once. The other one which is less widespread for the present, named FARE method, is also grounded on reciprocity of indexes (Ginevičius 2011). On the basis of minimal initial information about the main index influence on other system indexes, the interrelations and strength of all the rest indexes are determined by applying an analytical technique. It allows to form completely coordinated matrix of indexes interactions and to calculate the weights of a larger number of indexes considerably more accurately.

The weight values can be used in further multicriteria evaluation, provided that experts judgments are consistent (in concordance). The concordance level can be determined by Kendall's concordance coefficient W (Kendall 1970):

$$W = \frac{12S}{r^2 m(m^2 - 1) - r\sum_{j=1}^{r} T_j}, \quad (3)$$

where*r* is the number of experts, *m* – the number of the criteria considered.

In fact, the concordance degree of experts' estimates is determined by the value χ^2 rather than the concordance coefficient W (Kendall 1970):

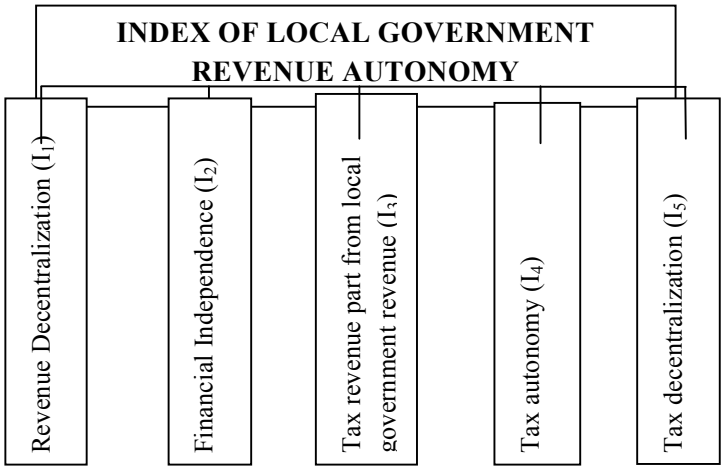
$$\chi^2 = Wr(m-1) = \frac{12S}{rm(m+1)} \quad (4)$$

It has been shown (Kendall 1970) that if the value of χ^2 calculated by formula (4) is larger than its critical value 2 χ^2_{kr} taken from the distribution table of χ^2 with ν = m – 1 degree of freedom and the significance level α chosen to be close to zero, then the statistical hypothesis about expert estimates' consistency is adopted.

5. Local Government Revenue Autonomy Index in the Baltic Countries

The main purpose of this section is to calculate the local government revenue autonomy index in the Baltic countries.

A hierarchical system of indicators has been developed to be assessed simultaneously.



Source: Author

Figure 1. Hierarchical System of Indicators of Local Government Revenue

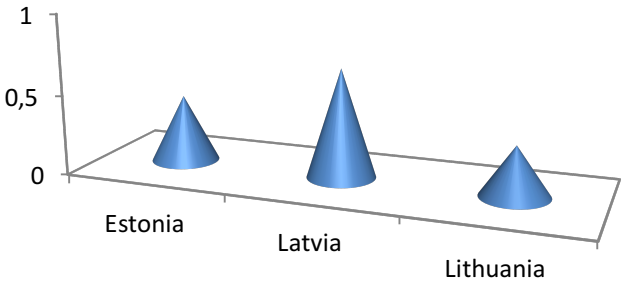
This is necessary because experts are able to assess the weight of indicators. Based on the available statistical information, it has been determined that 5 indicators give an indication of the Revenue autonomy of Local government (1 figure). Data was taken from Word Bank, OECD, Eurostat and calculated (2 Table).

Table 1.Baltic Countries Indicators

Indicators / **Countries**	**I_1**	**I_2**	**I_3**	**I_4**	**I_5**
Estonia	0.36	0.19	0.06	0.42	0.05
Latvia	0,41	0,81	0,92	0,68	0.80
Lithuania	0.36	0.14	0.09	0.31	0.08

Source: Author

Using the calculated structure of tax revenue (OECD) was built an index of tax autonomy for the Baltic countries. The index's values indicate the degree of local and regional governments control over their own tax revenues, ranging from 1 till 0. The degree of tax autonomy of local government in Baltic countries is different.



Source: Author

Figure 2.Tax Autonomy Index of Local Government in Baltic Countries

Latvia has the highest tax autonomy – 0,68, Lithuania lowest – 0,31, Estonia - 0.48. If the tax autonomy index is near 1, it is mean that local government has a big power to control own tax revenue. In second step was calculated weights for local government revenue autonomy index. The weights of local government revenue autonomy indicators of the countries were determined by interviewing experts. A great number of weight determination methods are available. They range from the rating of criteria and direct evaluation to criteria pairwise comparison AHP (Analytic Hierarchy Process) developed by Saaty (Saaty 1980). In the present investigation, a direct method of weight determination was used, when each expert assesses the weight of a particular criterion, expressing it in per cent, so that the sum of criteria weights is equal to 1 (or 100 percent).

The estimates of 5 indicators (figure 1) provided by 10 experts from different countries (such like Austra, Italy, Rumunia, Slovenia and other, see 2 Table).

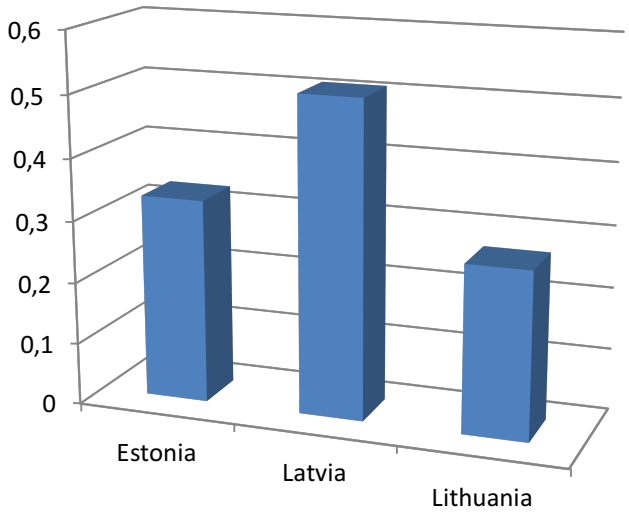
Table 2.Experts by Countries

Expert / Country	1	2		3	4	5	6	7	8	9	10
Austria										+	
Italy	+										
Lithuania					+				+		+
Portugal								+			
Rumunia		+		+							
Slovenia						+					
Turkey							+				

Source: Author

The concordance coefficient W = 0.74 was calculated by formula (3). The value of χ^2 = 33.25 calculated by formula (4) exceeds the critical value χ^2_{kr}= 11,07 with the significance level α = 0.05. It shows that experts' judgements are consistent and the criteria weights, calculated based on expert estimates can be used in multicriteria evaluation.

In the last step (formula 1) was calculated index of local government revenue autonomy in Baltic countries (see 3 Figure).



Source: Author

Figure 3. Revenue Autonomy Index of Local Government in Baltic Countries

Calculation results are shown in 3figure for Baltic countries. As seen in Figure 3, revenue autonomy index range from as high as 0.49 in Latvia and less 0.27 in Lithuania.

5. Conclutions

1. Fiscal decentralisation is influenced by many countries specific factors such as politics, history and culture. Therefore the measurement of fiscal decentralisation with consistent criteria across countries is a challenging task.
2. During the three decades the Baltic countries have created new public institutions, introduced a democratized system of local government and provided the foundation for pluralistic and democratic society. However, there are still essential reforms that are waiting for implementation.
3. Multicriteria evaluation methods have been used in Lithuania for more than 30 years. At first they were used for solving technological problems in construction. Their universal nature allowed to start applying them later in analysing socioeconomic systems, especially in quantative evaluating of the processes which have such nature and for evaluation of expressions position.
4. Local government revenue autonomy index in Baltic countries range from 0,49till 0,27(0.47 in Latvia and less 0.27 in Lithuania). Local government revenue autonomy index in Lithuania is the lowest among Baltic countries.

References

Aqhdaie, M. H.; Zoltani, S. M.; Zavadskas E. K. (2013). Market segment evaluation and selection based on application of fuzzy AHP and COPRAS- G methods, Journal of Business Economics and Management 14(1): 213–233.

BlochligerH.;Petzold O. (2009). Finding the *dividing line between tax sharing and grants a statistical investigation*. OECD Working Papers on Fiscal Federalism.

Davoodi, H.; Zou H. (1998). Fiscal decentralization and economic growth: a cross-country study, Journal of Urban Economics, 43, pp. 244–257.

Ebel, R.D.; Yilmaz S. (2003). On the measurement and impact of fiscal decentralization, in J. Alm and J. Developing and transition countries: essays in honour of Richard M. Bird, Edward Elgar Press, Cheltenham, pp. 101–120

Fossati, A., Panella, G. (1999). Fiscal federalism in the European Union.Routledge studies in the Europe Economy.

Ginevičius, R. (2011). A new determining methot for the criteria weights in multicriteria evaluation, International Journal of Information Technology & Decision Making 10(6): 1067–1095.
Groenendijk&Jaansoo (2016).Fiscal federalism in transition countries: the three Baltic states compared. Public Finance and management. 16(3): 255-280.
Hwang, C. L.; Yoon, K. (1981). Multiple attribute decision making-methods and applications. A state of the art survey. Springer Verlag, Berlin, Heidelberg, New York.
Kendall, M. (1970). Rank correlation methods. Griffin, London.
King, G. J., E. Vanags, I. Vilka& D. McNabb (2004). Local government reforms in Latvia, 1993-2003: Transition to a democratic society. Public Administration 82(4): 931-950.
Linnas, R. (2011). Attempts at local government reform in Estonia. Kunnallistieteellinenaikakauskirja, 2/11: 178-195.
Mäeltsemees, S. (2012). Local government in Estonia, in: A-M Moreno (ed) Local Government in the Member States of the European Union: A Comparative Legal Perspective, pp. 157-184, Madrid: INAP.
Martınez-Vazquez, J. & McNab, R. M. (2003). Fiscal Decentralization and Economic Growth', World Development, 31, 9, pp. 1597–1616.
Musgrave, R. 1959. The Theory of Public inance (NewYork, McGraw-Hill).
Nugaras, J. (2014). Assessment of networking of higher education institution: doctoral dissertation. Vilnius: Technika, 126
Oates, W. (1972). Fiscal Federalism (NewYork, Harcourt Brace Jovanovich).
OECD (1999). Taxing powers of state and local government, Tax Policy Studies, 1, OECD Publishing
OECD. (2002). Fiscal design surveys across levels of government. OECD: Paris.
Rodrıguez-Pose, A., Tijmstra, S. &Bwire, A. (2007) Fiscal Decentralization, Efficiency, and Growth', Paris, 47th Congress of the European Regional Science Association, available at: http://www.ersa.org
Saaty, T. (1980). The analytical hierarchy process: Planning, priority setting, resource allocation. McGraw-Hill, NY.
Šaparnienė, D. & A. Lazauskienė(2012). Local government in Lithuania, in: A-M Moreno (ed) Local Government in the Member States of the European Union: A Comparative Legal Perspective, pp. 389-410, Madrid: INAP.
Stegarescu, D. (2005). Public sector decentralization: Measurement concepts and recent international trends, FiscalStudies, 26(3): 301–333.
Stegarescu, D. (2005). Public sector decentralization: Measurement concepts and recent international trends, Fiscal Studies, 26(3): 301–333.
Swianiewicz, P. (2003). Foundations of Fiscal Decentralization. Benchmarking Guide for Countries in Transition. Local Government and Public Service Reform Initiative, Open Society Institute, Discussion Papers, No 26, 58 p.
Tiebout J. (1956). A pure Theory of Local Expenditures', in Oates, W. (ed) (1998).
Trasberg, V. (2009). Baltic local governments' fiscal situation: Two decades of reform. Journal of Baltic Studies 40(2): 179-200.
Vanags, E. & I. Vilka(2006). Local government in the Baltic States: Similar but different. Local Government Studies 32(5): 623-637.
Vilka, I. (2004). Local Government Reforms and Regional Development in Latvia (Ph.D. Dissertation), Riga: University of Latvia, Faculty of Economics and Management.
Vilka, I. (2012). Local Government in Latvia, in: A-M Moreno (ed) Local Government in the Member States of the European Union: A Comparative Legal Perspective, pp. 365-388, Madrid: INAP.
Wrobel, R.M. (2003). Local administration reform in Estonia: Alternatives from an economic point of view. Post-Communist Economies 15(2): 277-295.