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THE PROPENSITY TO TAX COMPETITION: THE CASE OF IMPLEMENTATION LOCAL TAX POLICY BY POLISH LOCAL GOVERNMENTS

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Abstract

The study is dedicated to identify the main factors determining the propensity of local authorities to compete for the access to the limited as well as mobile sources of local tax revenue. The success of such an activity should be discussed in relation to the stabilization of local budget revenues; hence it seems that the barriers of leaving tax jurisdiction could be better index to evaluate of the efficiency of local tax policy. The theoretical approach is based on the assumption that, if central government provides limitations of the right to improve local tax policy means (the scope of local tax jurisdiction), the local governments should focus on both the efficient acquiring the sources of tax revenues, and the stabilization of tax revenues in the future, in particular by the implementation of the barriers of leaving tax jurisdiction. The paper suggests studying a propensity to tax competition. The article formulates desideratum of the efficiency of spending on acquiring the sources of tax revenue, in particular, the need to identify the barriers to leave tax jurisdiction is suggested. The first and foremost way to build the barrier to leave tax jurisdiction could be reducing tax liabilities by local tax authorities, in particular by introducing local tax reliefs and local tax exemptions, as well as lowering local tax rates. Hence, the model of local authorities' competition for local tax resources could be proposed. The empirical studies are dedicated to identify the actual propensity of Polish local government to execute the legal ability to impose tax policy instruments. The inquiry is based on comparing the fiscal consequences of implementing local tax policy within two groups of local authorities: small towns and countries (gminas) and medium-size towns and big cities (cities with powiat status). The period under investigation contains 14 fiscal years, started 2000 and finished in 2013. The method is based on the analysis of the structure and tendency of fiscal consequences of the decisions of local tax authorities.

Keywords: Local Finance, Local Taxes, Tax Competition

1. Introduction

The phenomenon of competition is an inevitable consequence of the existence of the multiplicity of entities pursuing goals similar to each other, when the availability of resources that are necessary to achieve them are limited. Hence, attempting to satisfy the demands of local community, the multiplicity of local government, which act under the conditions of limited access to public funds, have to be accompanied by tax competition. Consequently, tax competition is therefore a kind of race among many units of the local government, whose object is to reach as much as possible secure access to the compulsory tax revenues.

Taxes, which are the subject of competition, include both centralized in the state budget funds derived from the most fiscally efficient indirect taxes, as well as revenues from the

exploitation of the mobile tax sources, that is such sources of taxation, which have the ability to move in space, e.g. taxes on capital and labor. Both intensity and degree of competition depend on a number of differentiated factors, among which special importance should be assigned to the ability of holding the source of tax revenues within the territory of tax jurisdiction of the local government.

The very aims of study are: firstly, to indicate the factors determining the propensity of local governments to compete for obtain the efficient source of taxation, secondly, to find how it is possible to increase the efficiency costs incurred by local government in connection with acquiring a lasting source of local budget revenues.

2. The Core Model of the Propensity to Tax Competition among Local Governments

The territorial division of state driven by administrative forces implies a number of social, political, as well as economic consequences. The extraction of organizationally and financially independent territorial units will trigger fiscal consequences. First and foremost, it is balancing the expenditures and revenues of local authorities. The fiscal efficiency of local taxes is spatially more diversified than the demand of local communities for publicly provided goods. Essentially, the objective of tax competition results from spatially diversified distribution of tax revenue.

Hence, it seems considerable to take into account the consequences of above relation in both static (spatial) and dynamic (temporary) aspects. In particular, it becomes interesting to look at how much of the administrative territorial division may contribute to increase inefficiency of the provision of local public goods (static dimension), and how the fluctuation of economy influences the fiscal equilibria of separated local governments and the system of public finance. Hence, it would be assumed that the dynamics of economic processes should be a catalyst of tax competition among local authorities. A critical analysis of the literature allows Koch and Schulze (1998) to note that the tax competition models predict the possibility of equilibrium, which would reduce the intensity of tax competition. Albeit, assumptions adopted in discussing models intended to limit the application value of them. Because of it is little possible meeting their assumptions in reality.

The decentralization of public finances produces different types of effects, both socio-political and economic as well as financial. Owsiak (2004) emphasizes the necessity to take into account the following issues:

- a) the division of powers, duties and responsibilities among the central and local authorities;
- b) the determination of the scope of the power to taxation according to particular levels of public authorities;
- c) the definition of the rules of financial alimentation of the different levels of public authorities.

The level of local budget spending reflects the supply of publicly provided goods meeting the demand of local community, but it fails to be regarded as an indicator of actual needs, defining the consumption of local public goods equal to the aspirations of the inhabitants. Hence, it can be assumed that the first source of the inclination for tax competition is the gap between the actual public expenditure and the expenditure that would be required to meet the expected needs of the local communities. In a similar manner, the argument was expressed by Benson (2001), who draws attention to the following sequence of the fiscal process phases: a social pressure on public spending – an increase tax revenue – an increase in the rate of taxation within the tax jurisdiction – an outflow (decreasing) tax base – a growth of competition among local governments for the limited and mobile tax base.

Indicator for the scale of determination of local authorities to tax competition could be level of expenditure per capita in a given unit of territorial division. The indicator allows to determine the level of expenditures necessary to meet the needs of the local community at the expected level, although it would be required to find the reference value. Taking into consideration that the reference has not to be the same for each of territorial unit, it seems very reasonable that in the case of the problem in question, the local societies pressure on local

finance should be compared with an indicator of the highest level of spending per capita in similar units of territorial division.

Taking into account the diversification of local communities' needs, which dependent primarily on the demographic structure, a reference unit can be extracted from the set of territorial units juxtaposed due to the characteristics of the demographic structure (eg, the share of the population employed in services, the number of people with a higher education, the structure of population in relation to age distribution, etc.).

Consequently, we can assume it is very possible to allocate all territorial units on the **K** homogeneous groups **J** = 1,2, ... **K**. For each of **J** group of territorial units, it is possible to indicate the reference unit where spending per capita is maximum – **E_J**. Furthermore, it is possible to take into account that the propensity to tax competition of territorial unit **i**, which is the member of group **J**, will be a function of the difference between **e_i** (spending per capita in the territorial unit **i**) and the maximum amount of the expenditure per capita within group **E_J**. Hence, the propensity to tax competition for territorial unit **i** being the member of **J** group, could be:

$$PTC_i = \pi(E_J - e_i) + \delta_i \quad (1)$$

where:

PTC_i – the propensity to tax competition for territorial unit **i**,
E_J – the highest amount of per capita local public spending in **J** set of territorial units,
e_i – the local public spending per capita for the territorial unit **i**,
δ_i – the specific attributes of financing local budget expenditures for the unit **i**.

The characteristics of **π** are:

$$\forall i \in J: \frac{\partial \pi}{\partial E_J} > 0 \quad (1a)$$

$$\forall i \in J: \frac{\partial \pi}{\partial e_i} < 0. \quad (1b)$$

The specific attributes **δ_i** could depend on the possibility to finance local needs by using resources of other territorial units, especially neighborhoods (so-called the spill-over effect) or thanks to grants transferred from central government. It could be also funds gaining form the financial market (municipal bonds issuing or bank credits). Spill-over effect reduces the inclination for competition, but the cost of capital increases the propensity to look for new tax revenues.

2. Barriers to Leave the Tax Jurisdiction as a Determinant of the Propensity to Tax Competition

The essence of tax competition is to gain the source of taxation. Albeit the essence of effective tax competition is to hold the source of taxation for a long time. Certainly, the restriction for the scope and means of tax competition among local authorities should be taken into considerations. Particulars indicate Wellisch (2000).

Taking into consideration competing local authorities' point of view, the effectiveness of tax competition should be evaluated on the base of some kind of indicator, similar to the rate of return, the index well-known within the theory of investment. In case of the same inputs on gaining the source of local taxes, more effectiveness one is increasing local revenues, or more preciously the right to operate wider local tax base. It should protect growth of tax revenues in long time. Thus, the same expenditures incurred in the course of the local tax policy is able to achieve growth of efficiency, if the source of taxation is more efficient, and efficiency is less exposed to social changes (e.g. aging local community) as well as economic fluctuations (e.g.

recessions or prosperities), and if the source of taxation is able to produce of revenues not in a short period of time.

The case of estimating the rate of return related to the implementation of the means of tax competition allows indicating many different factors, determining the discounted value of future net fiscal benefits from a particular source of taxation. Firstly, a fiscal factor should be considered that the amount of fiscal inflows generated by the acquired source of tax is to calculate. Technically, the growth of tax revenues ΔREV_t in fiscal year t should be extracted from the total local tax revenues. Secondly, it becomes necessary to determine the risk of fluctuation of tax inflows over time; especially it would be important to find comparable rate of return to protect fiscal revenues, due to the deficiency of tax revenues. It seems the rate of return expected by investors for local debt ERR could be considered as well-designed for this purpose. Thirdly, for wider analysis of efficiency of tax competition, the possible expenditure on holding the source of local tax within jurisdiction should be considered. For example, it could be welfare expenditure when previously employed inhabitants are fired. Hence, for fiscal year t , it should be also estimated ΔEXP_t , the publicly financed spending on maintaining source of local tax revenues. Fourthly, the discussed model forces to take into account for each of fiscal year t , the local tax expenditures ΔTEX_t . In particulars, the local tax expenditures occur as loss in public revenues due to lowering local tax rate or providing local tax exemptions and reliefs for taxpayers. Finally, the formula of tax competition efficiency could be suggested:

$$TCE = \sum_t \frac{\Delta REV_t - EXP_t - TEX_t}{(1+ERR)^t} \quad (2)$$

where:

TCE – tax competition effectiveness index;

ΔREV_t – the amount of increasing tax revenues in year t due to implementation of means of tax competition;

EXP_t – the amount of public spending being consequence of keeping source of local tax revenues (the other than **TEX_t**);

TEX_t – the amount of tax revenues losses due to implementation of tax competition instruments (lower tax rates, tax reductions etc.);

ERR – the expected rate of return attributed to local debt.

It is easy to find that (2) shows net present value of tax competition, and it could be the base for evaluating the efficiency of local tax policy. The greater **TCE** for local government tax policy decision is, the more effective local tax competition becomes. The further inquire fails to discuss the influence of local tax policy on the expected rate of return **ERR** as well as the amount of increasing both tax revenues **ΔREV** and public spending on holding tax source **EXP** . The propensity to local tax competition will be discussed, and the fiscal consequences of the inclination for loose tax revenues **TEX** would be treated as the indicator of the propensity to tax competition among self-governed territorial units.

3. The Characteristic of Research

The inquiry is based on the analysis of fiscal consequences being results of local tax authorities' decisions. The population of investigation is divided into two groups of territorial units: cities with status of powiat and gminas. The authorities' bodies of both of them dispose the legal opportunity to decide about the amount of local tax liabilities. Albeit, gminas are located on the lowest level 5 of Nomenclature of Territorial Units for Statistical Purposes (NUTS5) and cities with status of powiat are located on the directly above level (NUTS4). Nomenclature of Territorial Units for Statistic Purposes is compiled on the basis of the common classification of territorial units for statistics in the countries of the European Union according to the Regulation (EC) No. 1059/2003 of the European Parliament and the Council of 26 V 2003. The regulation in question provides five levels of territorial units for statistical investigations, but Polish administrative system is based on three-tier division of the country: voivodships, powiats and gminas. Some largest gminas are cities with status of powiat. Sixteen voivodships are placed on

NUTS2, but their groups allow to fulfill obligation to extract NUTS1. NUTS4 contains 314 powiats and 65 cities with powiat status, but their groups within voivodship (66 subregions) are NUTS3. At least, the smallest local government units are gminas located on NUTS5.

Table 1. Area and population of gminas and cities with status of powiat, 2013

	Area		Population		
	in sq. km	as percentage of total area of Poland	in thousand	per sq. km	as percentage of total population of Poland
GMN	305,500	97.70%	25,838.7	84.6	67.06%
CPS	7,179	2.30%	12,694.6	1,768.3	32.94%

Source: Central Statistical Office (2013)

The reduction of inquiry to gminas and cities with status of powiat is determined by the model of local finance has been developed in Poland since political transformation in the early of 1990s, and the crucial reform of self-government system provided in 1999. Consequently, no one but gminas since 1990 and cities with status of powiat since 1999 have been attributed in the rights to implement own tax policy. Powiats and voivodships participate in tax revenues from personal income tax and corporate income tax. They have no right to manage these taxes, which are administrated by state tax administration, and tax policy instruments are implemented by central government. The paper studies population of 65 cities with status of powiat (hereinafter called CPS) and 2479 gminas (hereinafter called GMN). Table 1 presents the main characteristics of both groups.

The division of survey population into two groups allows to indicate and discuss the difference occurs in relation to the size of local jurisdiction area as well as the characteristics of local tax base. Gmina's finance is based broader on the tax revenues from agricultural and forestry lands, cities with status of powiat finance explore more intensive industrial land and dwelling buildings. Polish model of tax revenues distribution between central government and self-government limits non-central driven tax policy in both objective and subjective aspect. The subjective limitations are executed by providing self-ruled means of tax policy for gminas and cities with status of powiat only. The objective limitations would be separated due to restriction of local tax means, which could be implemented by gminas and cities with status of powiat. The local tax policy could be provided for four taxes: agricultural tax, forest tax, real property tax, and transport vehicles tax. Each of local tax liabilities could be diminished, firstly by lowering tax rate below central-regulated maximum one, secondly thanks to providing local exemptions and reliefs.

Hence, the inclination for tax competition could be calculated by approaching to subjective (division to GMN and CPS) as well as objective (lowering rate and providing exemptions and reliefs) differentiation. The propensity to introduce lower tax rates will be discussed, separately for GMN and CPS. Further, the inclination for providing tax reliefs and exemptions will be indicated. The aim of study introduces two indexes of tax competition ought to be discussed. For evaluating tax competition inclination, the index of dynamic and the index of structure are calculated and discussed, the period of investigation starts from 2000, and finishes in 2013.

The index of tax competition dynamic is calculated for GMN and CPS as:

$$DYN_t^i = \left(\frac{TEX_t^i}{TEX_{t-1}^i} - \frac{REV_t}{REV_{t-1}} \right) \times 100\%, \quad (3)$$

and for fiscal year t , shows in percent points the difference between the rate of the change of tax expenditures TEX_t^i , separately for: lowering tax rate ($i=1$), and tax exemptions and reliefs (where $i=2$) and the rate of the change of tax revenues REV .

It seems the interpretation of DYN is simply and obviously. If DYN is greater than zero, the propensity to tax competition grows, if DYN is less than zero, the inclination for competition

declines. Certainly, the greater **DYN** is, the more intensive tax competition becomes. It is also fruitful to find that greater than zero **DYN** shows expansive local tax policy, in reverse, if negative **DYN** is indicated, restrictive local policy is implemented.

The index of the structure of tax competition is calculated for GMN and CPS as:

$$STR_t = \frac{TEX_t^1}{TEX_t^2}, \quad (4)$$

and simply shows, for fiscal year **t**, the significance of tax rate reduction in relation to tax reliefs and exemption. The index allows indicating the type of fiscal intervention, e.g. the lower index, individually or particularly dedicated means of local tax policy play greater role in tax competition. It is easy to state, that the reduction in tax rate reflects more objective local tax policy, because of its dedication to wider range of taxpayers. In reverse, either tax exemptions or tax reliefs are attributed to specific type of taxpayers or subject of taxation. Hence, the objectivity of local tax policy could be evaluated, and if **STR** decreases, tax competition is less strictly-addressed, but it is dedicated for much wider range of taxpayers.

4. Characteristics of Tax Policy in Gminas and Cities with Status of Powiat

The source of information about fiscal consequences of local tax policy in Poland is quarterly statistics, published by Ministry of Finance. For investigation, annual statistics are taken into account, and two characteristics are presented. The amount of losses in tax revenues estimated for tax rate reduction (Table 2) and tax reliefs and exemptions (Table 3). Additionally, the fiscal losses are calibrated to the amount of collected tax revenues for both types of tax policy means.

Table 2. The reduction in revenues due to lowering rate of local taxes by gminas (GMN) and cities with status of powiat (CPS), 2000 – 2013

Year	GMN		CPS	
	in thousand PLN	as percentage of realized tax revenues	in thousand PLN	as percentage of realized tax revenues
2000	717,973.3	13.51%	89,455.4	3.53%
2001	921,086.3	13.75%	116,374.5	3.72%
2002	1,039,836.9	13.59%	165,571.1	4.62%
2003	1,321,463.8	18.00%	346,847.0	7.98%
2004	1,355,407.9	17.19%	325,786.9	6.90%
2005	1,486,022.2	17.55%	358,436.8	7.21%
2006	1,504,553.3	17.41%	372,020.0	7.16%
2007	1,693,238.7	18.50%	397,462.0	7.29%
2008	2,061,963.6	20.81%	376,264.7	6.52%
2009	2,159,038.0	20.73%	410,152.8	6.80%
2010	1,997,381.8	18.56%	427,833.4	6.71%
2011	2,274,509.9	19.61%	509,895.2	7.51%
2012	2,913,639.2	22.46%	428,503.2	5.86%
2013	3,119,197.8	22.59%	441,336.5	5.69%

Source: own calculation based on data of Polish Ministry of Finance

Table 2 shows the value of tax expenditures being consequences of lowering local tax rates, separately for gminas (GMN) and cities with status of powiat (CPS).

Figure 1 allows easy to compare the fiscal consequences of tax rate reduction for gminas and cities with status of powiat during thirteen years of 21st century. Firstly, the propensity to lower tax rates for gminas is stronger than for cities with status of powiat. It shows the advantage of big cities over small gminas in obtaining more fiscal effective sources. In consequences, it could be expected that gminas would have inclination for competition by lowering tax liabilities owing to reduce tax rates. Social aspects could be also explanation for less fiscal exploitation by local taxation, especially in relation to worse economic situation of their inhabitants.

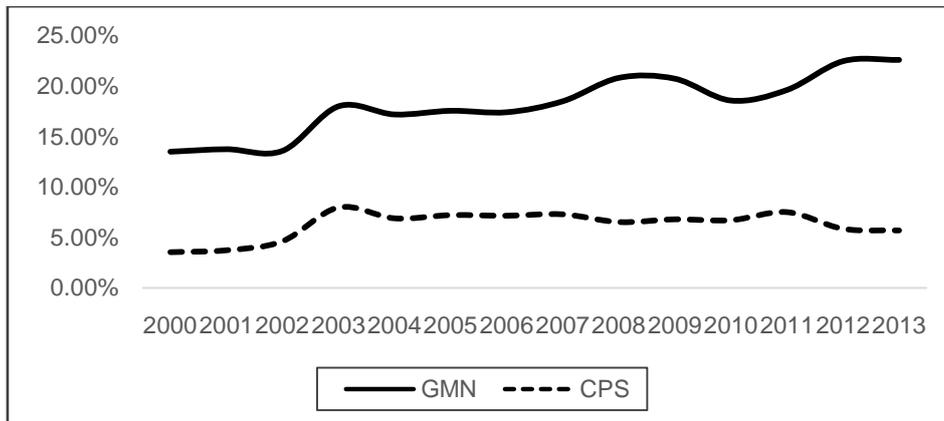


Figure 1. The reduction in revenues due to lowering rate of local taxes as percentage of realized taxes in gminas (GMN) and cities with status of powiat (CPS), 2000 – 2013
 Source: own elaboration based on Table 2

Table 3 shows the value of tax expenditures being consequences of improving local tax exemptions and reliefs, separately for gminas (GMN) and cities with status of powiat (CPS). Fig. 2 certifies greater propensity to tax competition attributed to local tax policy implemented by gminas. The size of tax expenditures being consequences of providing exemptions and reliefs by gminas is consequently greater than the size of these types of tax expenditures in cities with status of powiat.

Table 3. The reduction in revenues due to local tax exemptions and reliefs implemented by gminas (GMN) and cities with status of powiat (CPS), 2000 – 2013

Year	GMN		CPS	
	in thousand PLN	as percentage of realized tax revenues	in thousand PLN	as percentage of realized tax revenues
2000	303,467.4	5.71%	179,477.2	7.09%
2001	419,009.9	6.26%	153,626.3	4.91%
2002	563,593.7	7.37%	225,140.5	6.29%
2003	530,820.6	7.23%	269,544.7	6.20%
2004	575,138.5	7.29%	271,217.1	5.74%
2005	641,989.7	7.58%	239,569.7	4.82%
2006	639,115.1	7.40%	204,543.2	3.93%
2007	655,918.9	7.16%	227,632.5	4.18%
2008	660,458.6	6.66%	184,799.8	3.20%
2009	746,999.3	7.17%	222,592.2	3.69%
2010	921,504.9	8.57%	232,896.3	3.65%
2011	753,612.2	6.50%	206,371.6	3.04%
2012	811,047.6	6.25%	197,681.6	2.70%
2013	843,409.6	6.11%	210,241.8	2.71%

Source: own calculation based on data of Polish Ministry of Finance

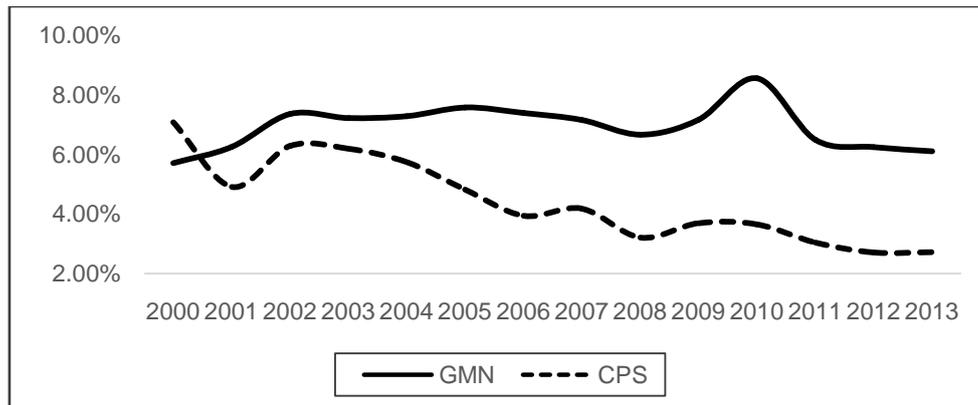


Figure 2. The reduction in revenues due to local tax reliefs and exemptions as percentage of realized taxes in gminas (GMN) and cities with status of powiat (CPS), 2000 – 2013

Source: own elaboration based on Table 3

Additionally, Figure 2 shows decreasing propensity to tax competition in cities. The greater possibilities to private investments thanks to better infrastructures in cities and migration to big cities due to wider local labor market allows to proof tendency to widen the difference between the inclination to tax competition in gminas and cities with status of powiat. The process of divergence is indicated.

5. Dynamic and structure of tax competition among local governments in Poland

The calculation of indexes for dynamic (DYN) and structure (STR) of local tax policy are presented in Table 4. The analysis of dynamic indexes pictures the deficiency of long-time stabilization in size and direction of local tax policy in gminas as well as cities with status of powiat. The deeper investigation of the index of dynamic shows that the rate of tax rates reductions are more frequently greater than the rate of tax revenues.

Table 4. The indexes of dynamic (DYN) and structure (STR) for gminas (GMN) and cities with status of powiat (CPS), 2000 – 2013

Year	GMN			CPS		
	DYN ⁱ		STR	DYN ⁱ		STR
	tax rates <i>i=1</i>	tax reliefs <i>i=2</i>		tax rates <i>i=1</i>	tax reliefs <i>i=2</i>	
2000	-	-	2.37	-	-	0.50
2001	2.28	12.07	2.20	6.64	- 37.86	0.76
2002	- 1.34	20.27	1.85	27.77	32.05	0.74
2003	31.12	- 1.78	2.49	88.01	- 1.75	1.29
2004	- 4.83	0.95	2.36	- 14.71	- 8.01	1.20
2005	2.29	4.28	2.31	4.85	- 16.84	1.50
2006	- 0.84	- 2.54	2.35	- 0.85	- 19.26	1.82
2007	6.61	- 3.30	2.58	2.04	6.49	1.75
2008	13.53	- 7.56	3.12	- 11.18	- 24.66	2.04
2009	- 0.40	7.99	2.89	4.37	15.81	1.84
2010	- 10.77	20.07	2.17	- 1.32	- 1.00	1.84
2011	6.07	- 26.03	3.02	12.69	- 17.88	2.47
2012	16.25	- 4.23	3.59	- 23.77	- 12.01	2.17
2013	0.61	- 2.45	3.70	- 2.95	0.40	2.10

Source: own calculation based on data of Polish Ministry of Finance

For gminas, there are actually only two fiscal year (2004 and 2010), when DYN¹ are significance negatively. In 2002, 2006 and 2009 DYN¹ is negative but very close to zero. For

cities with status of powiat, DYN^1 is negative in five years: 2004, 2008, 2010, and 2012 as well as 2013. These observations allow stating that during investigated period, the propensity to tax competition occurs significantly but a few fiscal years.

The analysis of dynamic index for tax exemptions and reliefs indicates more fluctuation in local tax policy than it occurs for tax rate reduction. For gminas, seven of thirteen fiscal years, DYN^2 is less than zero, the years when the dynamic of tax expenditures are less than the dynamic of tax revenues. And, it indicates domination of restrictive tax policy. For cities with status of powiat, only four of thirteen investigated fiscal years, DYN^2 is greater than zero. It shows that cities with status of powiat prefer strong restrictive fiscal policy decisions, which is proofed that for six fiscal year, when DYN^2 is less than minus 10%.

Comparing the inclination of gminas and cities with status of powiat to introduce different means of local tax competition is displayed in Figure 3.

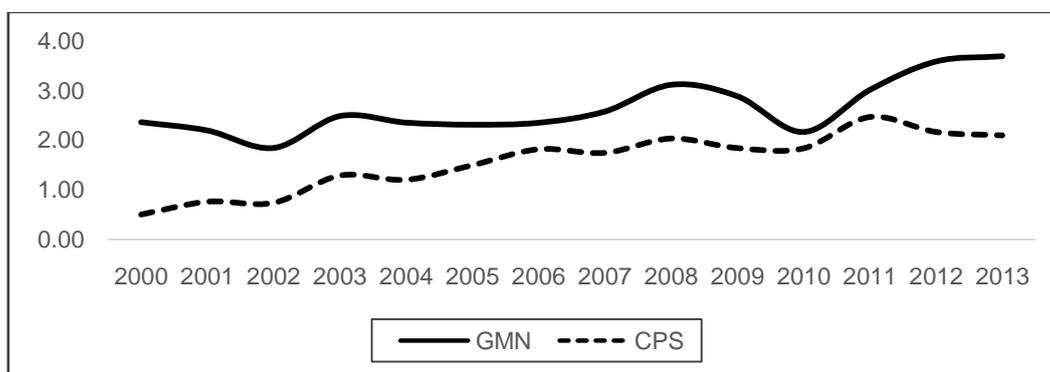


Figure 3. The index of structure of tax policy (STR) in gminas (GMN) and cities with status of powiat (CPS), 2000 – 2013

Source: own elaboration based on Table 4

The tendency of the indexes of structure STR for gminas and cities with status of powiat, in 2000 – 2013, allows to state two main conclusions. Firstly, tax rates reductions dominated in tax expenditures. For gminas, during entire period, STR is greater than 1, for cities, STR is greater than 1 since 2003. It shows that tax exemptions and tax reliefs participate less than tax rate reductions in fiscal losses. Secondly, in long-time analysis, the convergence of STR could be indicated, especially in 2010 and 2011, the index of structure for cities with status of powiat was very close to the index in question for gminas. Divergence has been started from 2012.

5. Conclusions

The model of tax competition among local governments stresses that the propensity is depended on the gap in local budget expenditures per capita on providing local public goods. The study results that greater inclination for tax competition is characterized for smaller and less development gminas. The cities with status of powiat (big cities) reduce tax revenues in smaller scale, the reason is better economic situation of big cities, which impacts on reducing the pressure on tax competition.

Investigation of tax expenditures in relation to tax revenues shows greater inclination for lowering tax rates in gminas than cities with status of powiat. It shows that small towns and villages have to implement tax policy means to make their jurisdiction more attractive for private firms' investment. Big cities are more attractive thanks to well-skilled labor and bigger local demand for goods and services, due to both the number of inhabitants and higher private consumption per capita.

The study of dynamic indexes shows the lack of stabilization in size as well as direction of local tax policy in gminas and cities with status of powiat. The switching between expansive

and restrictive local tax policy is less frequently for tax rate reductions than for tax exemptions and tax reliefs.

The observation of relation between the revenues cutting because of tax rate reduction and the reduction of tax revenues due to local tax exemptions and reliefs (the structure of local tax competition) finds two main tendencies. Firstly, tax rates reductions dominated in tax expenditures. Secondly, in long-time analysis, the convergence of structure could be indicated.

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