

Usage of Coefficients for Real Estate Tax in Regional Cities of the Czech Republic

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Abstract: The paper is focused on municipalities' possibility to use the real estate tax coefficients and increase their budget revenues. Municipal budgets should be balanced and expenditures covered by real expected revenues. Tax revenues represent the most significant part of the municipal budget, while local taxes support a partial autonomy of the municipality. On the basis of the council's decision, municipalities in the Czech Republic may adjust the coefficients amount and thus increase the real estate tax yield. Our paper is aimed to evaluate the use of this power in the regional cities of the Czech republic: Brno (BR), Ceske Budejovice (CB), Hradec Kralove (HK), Jihlava (JI), Karlovy Vary (KV), Liberec (LI), Olomouc (OL), Ostrava (OT), Pardubice (PU), Plzen (PL), Usti nad Labem (UL) and Zlin (ZL). The evaluation covers the period 2009 – 2018. Based on the analyses of the general binding regulations, governing these coefficients adjustments, the coefficients usage in the selected regional cities was compared. During the reviewed period, there occurred some legislative changes affecting the real estate taxes yields in the monitored regional cities. On account of the study performed, we have found that the coefficients usage in the regional cities is higher than in other municipalities.

Keywords: real estate tax; municipality; coefficient; yield; budget

JEL Classification: H7

1. Introduction

The systematic use of property taxes has taken place since the beginning of the 19th century and, according to Kabatova (2015), Provaznikova (2015), it can be classified as the oldest form of tax revenues for public budgets. For municipalities and regions management and development, it is important to know basic principles of financing, financial management as well as tax revenues redistribution. This is also related to tax issues knowledge (Kukalova et al. 2019). Positive aspects of the property taxes, primarily from the view of the municipal budgets financing, are dealt in the paper written by Becica (2014). According to Provaznikova (2015), Janouskova and Sobotovicova (2016), the real estate tax is considered to be one of the stable municipal budget revenues, in the theory of fiscal federalism. According to Drabek (2015), the realization of a conscious tax policy on real estate taxes is also a basic condition for autonomy and financial self-sufficiency of the municipalities. Tax revenues together with grant programs enact a decisive role in municipal budget revenues and have a great influence on their financial stability and autonomy (Janouskova and Sobotovicova, 2016). Moravec and Kukalova (2014) present the impact of the tax burden on investments. Their study deals also with the impact of the direct tax burden, including also the real estate tax, on investments allocation.

In most advanced economies, property taxes represent a very stable public budgets revenue. Real estate tax revenues are an exclusive revenue to municipal budgets, to which cadastral territory the real estate belongs. At the same time, it represents an incentive instrument of the local autonomies. According to the research by Zrobek et al. (2016), this tax yield, except from the other economic factors, depends also on the correct setting of the tax base. Poliak (2016) analysed in his work the importance of local taxes as an instrument for municipal policy in the Slovak republic. On the basis of performed analyses, also Balazova et al. (2016) evaluated the real estate tax development as the most significant municipal revenue in the Slovak Republic. According to Janez et al. (2016), the amount of the real estate

taxation may positively influence internal migration flows. According to Roubinek et al. (2015), the amount of the tax burden can also influence smaller municipalities in decision to ally to a larger city. Blazic et al. (2016) deal with the issue of the local real estate tax introduction in Croatia and emphasize a different perception of this tax introduction effects by qualified professionals and by general public. Huang (2018) solves the importance of the real estate tax as a stable source for local governments, in context of problems connected with this tax collection in China.

In the Czech Republic, the real estate tax consists of two partial taxes: land value taxes and taxes on buildings and housing units. The tax rate on buildings and on most lands is imposed in units, while the tax base is set according to size of or floors area the land area, built-up area. The entire revenue of this tax goes to the municipal budget. Therefore, it is important that municipalities may, within their partial tax jurisdiction, influence the total amount of funds, which become a part of the municipal budget, by adjusting the basic tax rates of both, the land tax and building tax.

With reference to the Czech Republic (Collection of Laws, 1992), § 6, section 4, letter b) and § 11, section 3, letter a), a municipality can increase or decrease the coefficient for multiplying the basic tax rate (the coefficient is assigned to the municipalities based on population). Further, according to the Czech Republic (Collection of Laws, 1992), for specific taxable buildings as defined in § 11, section 1, letter b) to d) and housing units according to the § 11, section 1, letter c) and d), a municipality may introduce the coefficient of 1.5 multiplying the basic tax rate (coefficient 1.5). The municipalities may also set the coefficient under the rule of the Law No. 338/1992 Coll., § 12 (local coefficient). This coefficient is in amount of 2, 3, 4 or 5 and allows to increase the tax liability for the real estates located in this cadastral territory (The Czech Republic, 1992). Thus, the existence of big industrial and recreational areas can significantly increase the revenues of the individual municipalities. According to Kamenickova (2016), the real estate tax revenues take a long-term percentage in amount of 4 - 5 % in the total revenues of the Czech municipalities. The paper written by Becica (2014) deals with the relation between the real estate tax yield and the local coefficient introduction in the Czech municipalities. Sedmihradská and Bakos (2016) state that the local coefficient is used only at 8 % of the Czech municipalities and its setting depends on the political format of their executive bodies and on the total structure of the budget receipts and expenditures.

As proved in the previous studies, increasing the real estate tax coefficients can serve as an option for strengthening financial self-sufficiency of the municipalities. Our research is aimed to evaluate how the individual regional cities use their partial tax jurisdiction in the area of adjustment the real estate tax coefficients.

2. Data and Methodology

The article evaluates the coefficients usage in the Czech regional cities: Brno (BR), Ceske Budejovice (CB), Hradec Kralove (HK), Jihlava (JI), Karlovy Vary (KV), Liberec (LI), Olomouc (OL), Ostrava (OT), Pardubice (PU), Plzen (PL), Usti nad Labem (UL) and Zlin (ZL). From the reason of the specific position, Prague has not been included in the evaluation. The evaluated period 2009 till 2018 also includes the year 2009, i.e. the period before the change in real estate tax rates under the Law No. 362/2009 Coll. (The Czech Republic, 2009).

A comparison of the coefficients used in the selected municipalities (regional cities) is another part of the analyses. For the period 2009 - 2018, an analysis of the general binding regulations concerning the introduction and adjustment of the real estate tax coefficients in the mentioned municipalities was performed. It is the coefficient assigned to the municipalities on the basis of the population, coefficient 1.5 and the local coefficient (Table 1). To get an overview of when the individual coefficients were changed, the general binding regulations were analysed from the chronological point of view.

Table 1. The real estate tax coefficients set in the Czech regional cities. Source: General binding regulations of the mentioned municipalities.

	Effectiveness of the general binding regulation	Coefficient assigned to the municipalities according to the population	Coefficient 1.5	Local coefficient
BR	since 01/01/1997	<ul style="list-style-type: none"> • 3.5 for building lands in the whole territory • for residential buildings and units 1.6 or 2.0 or 2.5 for specific parts of the territory 	for the whole territory	has not been set
CB	since 01/01/2005	<ul style="list-style-type: none"> • 2.5 or 3.5 for specific parts of the territory 	for the whole territory	has not been set
HK	01/01/2009 - 31/12/2019	<ul style="list-style-type: none"> • 4.5 for building lands in the whole territory • 3.5 or 4.5 for residential buildings and units for specific parts of the territory 	for the whole territory	has not been set
	since 01/01/2010	<ul style="list-style-type: none"> • 4.5 for building lands in the whole territory • 2.0 or 1.6 for residential buildings and units for specific parts of the territory 	for the whole territory	3
JI	01/01/2009 - 31/12/2019	<ul style="list-style-type: none"> • 4.5. or 2.0 for residential buildings for specific parts of the territory 	for the whole territory	2
	since 01/01/2010	<ul style="list-style-type: none"> • 4.5. or 2.0 for residential buildings for specific parts of the territory 	for the whole territory	has not been set
KV	03/2008, since 01/01/2009	<ul style="list-style-type: none"> • 4.5 for the whole territory 	for the whole territory	2
LI	01/01/2009 - 31/12/2009	<ul style="list-style-type: none"> • 1.6 or 2.0 or 2.5 or 3.5 for specific parts of the territory 	for the whole territory	2
	01/01/2010 - 31/12/2011	<ul style="list-style-type: none"> • 1.6 or 2.0 or 2.5 or 3.5 for specific parts of the territory • 2.5 or 3.5 for specific parts of the territory 	for the whole territory for the whole territory	has not been set 2
OL	01/01/1997 - 31/12/2009	<ul style="list-style-type: none"> • 1.6 or 2.0 or 2.5 or 3.5 or 4.5 for specific parts of the territory 	for the whole territory	has not been set
	01/01/2010 - 31/12/2010	<ul style="list-style-type: none"> • 3.5 for the whole territory 	for the whole territory	2
	since 01/01/2011	<ul style="list-style-type: none"> • 3.5 for the whole territory 	for the whole territory	has not been set
OT	since 01/01/2013	<ul style="list-style-type: none"> • 2.0 or 2.5 or 4.5 for specific parts of the territory 	for the whole territory	has not been set
PU	01/01/2009 - 31/12/2012	<ul style="list-style-type: none"> • 2.0 or 2.5 or 3.5 or 4.5 for specific parts of the territory 	for the whole territory	2
	since 01/01/2013	<ul style="list-style-type: none"> • 2.5 or 3.5 or 4.5 for specific parts of the territory 	for the whole territory	2
PL	since 01/01/2009	<ul style="list-style-type: none"> • 1.6 or 2.0 or 2.5 or 3.5 or 4.5 for specific parts of the territory 	for the whole territory	has not been set
UL	01/01/2009 – 31/12/2009	<ul style="list-style-type: none"> • 4.5 for the whole territory 	for the whole territory	3
	since 01/01/2010	<ul style="list-style-type: none"> • 3.5 for the whole territory 	for the whole territory	2
ZL	since 01/01/2009	<ul style="list-style-type: none"> • 2.0 or 2.5 or 4.5 for specific parts of the territory 	for the whole territory	has not been set

Table 2 shows the real estate tax revenues in absolute terms for the given regional cities. The real revenues are analysed in the period from 2009 to 2018 and data are drawn from the final accounts of

the individual regional cities. These data have been further analysed in relation to the population of the specific regional city, its total receipts and its tax revenues.

Table 2. Real estate tax revenues in the Czech regional cities (mil. CZK). Source: The final accounts of the mentioned cities.

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
BR	128.879	202.860	212.266	216.237	227.460	233.623	237.110	240.148	245.105	246.125
CB	35.379	34.238	35.282	52.868	57.552	59.554	61.323	61.991	61.600	61.889
HK	132.102	162.010	160.731	169.388	168.609	173.718	171.767	171.016	177.192	178.273
JI	48.768	39.446	42.649	45.451	45.568	46.617	47.099	47.157	48.386	48.630
KV	45.377	69.544	70.794	74.593	73.020	74.612	76.257	77.644	77.128	77.630
LI	71.364	53.435	55.146	125.154	127.762	125.306	132.175	131.915	134.711	136.222
OL	51.325	148.426	72.749	77.914	77.398	81.393	83.770	85.531	88.275	88.097
OT	104.417	161.886	163.455	187.034	210.730	242.452	227.618	231.400	224.970	234.198
PU	80.681	130.142	133.893	138.333	135.652	135.955	138.635	138.642	142.740	140.271
PL	78.508	129.087	130.884	134.906	133.376	134.689	137.641	140.713	140.890	143.372
UL	106.126	96.472	97.844	99.912	105.966	106.071	108.976	108.999	106.883	107.610
ZL	34.200	47.851	45.918	51.410	52.440	51.892	53.835	54.045	54.663	54.429

3. Results

In the reviewed period, the attitude towards usage of the real estate tax coefficients varied in the selected regional cities. In the Table 1, it is apparent that since 2010, the coefficients assigned to the municipalities according to the population have been adjusted at the prevailing number of the regional cities. All the regional cities used the coefficient 1.5 for taxable buildings in the period under review. The local coefficients multiplying the resulting tax liability were used by 7 regional cities during the reviewed period. Most regional cities used the local coefficient of 2; while the local coefficient of 3 was used in Hradec Kralove and Usti nad Labem in some years of the reviewed period. In 2018, the last year of the period reviewed, the local coefficient was used only in 5 out of the 12 regional cities surveyed (see Table 1).

Based on the real estate tax revenues data (presented in Table 2), it can be stated that there was an increase in real estate tax revenues in all the monitored regional cities except Jihlava, in the period under review. Some coefficients have been abolished or adjusted in connection with the increase in tax rates since 1 January 2010 (Table 1). The local coefficient abolition was reflected in the real estate tax revenues in Jihlava. The revenue in 2018 reaches almost the value in 2009.

Further, the real estate tax revenues per one inhabitant in the individual regional cities were compared. The highest yield of the tax revenue per one inhabitant is in: Hradec Kralove, Karlovy Vary, Liberec, Pardubice and Usti nad Labem. In terms of the absolute amount of the real estate tax revenues, the regional capital of Brno ranks among the cities with the highest revenues, however, in terms of the revenues per inhabitant, it ranks among the cities with the lowest revenues (see Table 3). This is mainly due to the fact that Brno does not take the advantage of increasing this tax revenue by setting a local coefficient. The real estate tax revenues are also affected by a reduction in the coefficient allocated to the municipalities according to the population. In 2018, the real estate tax yield per inhabitant in Brno was CZK 646.54 (see Table 3).

Table 3. Real estate tax revenues per one inhabitant (in CZK).

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
BR	338.55	532.89	557.60	568.03	597.51	613.70	622.86	630.84	643.86	646.54
CB	376.32	364.18	375.28	562.34	612.17	633.46	652.27	659.38	655.22	658.29
HK	1,424.41	1,746.89	1,733.10	1,826.44	1,818.04	1,873.13	1,852.10	1,844.00	1,910.59	1,922.25
JI	959.15	775.81	838.80	893.91	896.21	916.85	926.33	927.47	951.64	956.44
KV	935.59	1,433.88	1,459.65	1,537.97	1,505.53	1,538.36	1,572.28	1,600.88	1,284.06	1,600.59
LI	686.20	513.80	530.25	1,203.40	1,228.48	1,204.87	1,270.91	1,268.42	1,295.30	1,309.83
OL	510.58	1,477.54	723.71	775.09	769.95	809.70	833.34	850.87	878.16	876.39
OT	361.14	559.91	471.95	646.89	728.85	838.87	787.26	800.34	778.10	810.01
PU	889.56	1,435.06	1,476.41	1,525.37	1,495.81	1,499.59	1,528.70	1,528.79	1,573.97	1,546.74
PL	455.27	748.59	759.01	782.33	773.46	781.07	898.19	816.01	817.03	831.46
UL	1,141.73	1,037.87	1,052.63	1,074.88	1,140.01	1,141.14	1,172.39	1,172.63	1,149.88	1,157.69
ZL	456.02	638.04	612.27	685.50	699.23	691.92	717.83	720.63	728.87	725.75

In the first year of the analysed period, the percentage of the real estate tax revenues in total revenues of the regional cities was approximately 2 % in Ceske Budejovice, Olomouc, Pardubice and Plzen. On the contrary, the highest percentage of this tax revenues in total revenues was achieved in 2009, namely in Hradec Kralove (6.44%) and Usti nad Labem (6.2%) (see Table 4.). In the period between 2009 and 2011, there occurred fluctuation of the tax yields in relative terms; there was an apparent relation with the coefficient changes set by general binding regulations and with the increase in real estate tax rates since 1 January 2010 (The Czech Republic, 2009). Between 2012 and 2017, the real estate tax yields percentage in the total revenues stabilised namely in Hradec Kralove, Olomouc and Liberec. In 2017 and 2018, the percentage of the real estate tax yields slightly decreased in most of the regional cities (see Table 4).

Table 4. Percentage of the real estate tax revenues in the total revenues of the selected municipalities (%).

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
BR	1.12	1.59	1.67	1.78	2.34	2.38	2.25	2.07	2.05	1.85
CB	1.73	1.54	1.69	2.40	3.14	3.16	3.03	3.19	2.89	2.55
HK	6.44	7.32	7.01	8.15	8.94	8.64	8.67	8.71	8.52	7.87
JI	3.79	3.11	3.62	4.30	3.95	3.60	3.74	4.11	4.23	3.82
KV	3.64	5.42	6.36	7.30	5.74	7.07	6.67	6.20	6.14	6.46
LI	3.88	2.72	2.31	7.67	6.64	8.37	8.38	6.45	5.98	5.81
OL	2.53	6.55	3.31	3.53	3.57	3.86	3.73	4.06	3.76	3.38
OT	0.97	1.48	1.24	1.87	1.93	2.99	2.92	2.67	2.49	2.40
PU	1.47	2.50	2.94	3.36	3.62	3.21	2.69	2.67	2.36	2.34
PL	1.50	2.22	2.43	2.30	2.56	2.33	2.41	2.23	2.22	2.24
UL	6.20	4.35	4.95	6.77	7.08	6.68	5.01	5.55	4.92	4.48
ZL	2.12	2.97	2.92	3.63	3.77	3.29	3.61	3.56	3.42	3.09

Tax incomes represent the most significant part of the municipal budget revenues. They consist of shared taxes, commissioned taxes (real estate tax), local and administrative charges. The percentage of the real estate tax revenues in the tax revenues was the highest in Hradec Kralove. In the regional capital Karlovy Vary, the real estate tax yield is approximately 10% of all tax revenues, with the exception of the years 2009, 2017 and 2018. In the budget of the regional city Pardubice, the real estate tax revenue is also around 10% under the reviewed period. While the lowest percentage of the real estate tax revenues in total tax revenues was recorded in Brno and Ostrava (see Table 5). Since 2016, the percentage of the real estate tax in tax revenues has decreased; this was particularly evident in 2018 (Table 5). This situation is mainly caused by an increase in municipal revenues from shared taxes (part of the national income tax and value added tax revenues). Due to this fact the shared taxes receipts percentage in the total tax revenues of the municipalities has increased, while the real estate tax revenues percentage has decreased, although there has been no decrease in absolute revenues from this tax.

Table 5. Percentage of the real estate tax revenues in the tax revenues of the selected municipalities (%).

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
BR	1.82	2.71	2.80	2.77	2.81	2.84	2.95	2.77	2.60	2.38
CB	3.04	2.71	3.20	4.76	4.61	4.69	4.83	4.47	4.10	3.67
HK	11.18	13.05	13.07	12.87	12.12	12.54	12.00	11.29	10.89	9.98
JI	7.89	6.45	7.16	7.25	6.87	6.67	6.62	6.35	6.07	5.52
KV	7.14	10.80	10.82	11.07	9.53	9.98	10.17	9.67	8.01	8.47
LI	6.21	4.62	4.79	10.57	10.10	10.81	10.09	8.70	8.22	7.73
OL	4.32	11.10	5.54	5.91	5.59	5.56	5.69	5.22	5.04	4.59
OT	1.77	2.68	2.25	3.06	3.34	3.72	3.50	3.28	3.01	2.89
PU	7.57	11.09	11.54	11.87	10.97	10.71	10.43	9.66	9.12	8.26
PL	2.39	3.77	3.85	3.76	3.81	3.69	3.62	3.35	3.01	2.88
UL	9.90	8.83	8.82	8.08	8.96	8.05	8.65	8.25	7.23	6.84
ZL	3.36	5.39	5.14	5.47	5.28	5.10	5.15	4.78	4.53	4.20

4. Discussion

The setting of the real estate tax coefficients affects both the municipality revenue from this tax and its percentage in total and tax revenues. According to Kamenickova (2016), real estate tax yields have a long-term share of 4-5% in total municipal budgets revenues in the Czech Republic. The analyses of the real estate tax revenues in the given regional cities show that this average corresponds to the real estate tax percentage in the total revenues in Jihlava, Olomouc and Usti nad Labem. According to Kamenickova (2019), the real estate tax represented share of 7% in total revenues for all municipalities in 2017. Its amount is influenced not only by the rate and coefficients set by the municipalities, but also by the relation between the real estate intended for permanent living and for recreation, and also by the amount of real estate used for business purposes (Kamenickova, 2019). According to our analysis, this value is almost reached only in Hradec Kralove, where the percentage is around 8% in the reviewed period. Since 2010, this regional city has been using a local coefficient of 3 (see Table 1). According to Kamenickova (2019), the municipalities in the region of Karlovy Vary have a relatively high value of the real estate tax revenues per inhabitant. Also, according to our analysis, the regional capital Karlovy Vary ranks among the regional cities with the highest tax revenue per inhabitant. Since 2009, the regional capital Karlovy Vary has been using all the coefficients to increase the real estate tax revenues (Table 1).

The real estate tax coefficients allow municipalities to increase their revenues without direct costs, since the costs associated with the tax collection are defrayed by the state, or more precisely by the taxpayers. Municipalities can also increase their revenues through non-taxable items; however, these are connected with some related costs (Kamenickova, 2016). Relevant costs related to the real estate tax have rather a political status for municipality. The political parties composing the municipal authorities influence, among other factors, the local coefficient setting (Sedmihradská and Bakos, 2016). As presented by Svihel (2019), a minister Alena Schiller states that city halls do not take the advantage of increasing the real estate tax, even though it is money coming to their budget revenues. As an example of the cities which did not take this advantage, Alena Schillerová named the city Prague. Olomouc, Plzeň, Ceske Budejovice, Brno, Ostrava and Zlín are also at the minimum (Svihel, 2019). All the mentioned cities were part of our analysis, which shows that none of these regional cities has set the local coefficient.

5. Conclusions

In terms of municipal budgets, the real estate tax in the Czech Republic is an exclusive tax which revenues flow into the municipal budget. This is the only tax whose yield may be influenced by the municipality with adjusting or setting coefficients that increase the rate or with using a local coefficient to multiply the calculated tax. The analyses of general binding regulations performed for these regional cities show that the coefficient 1.5 was set in all cities in the reviewed period 2009-2018. The coefficient assigned to the municipalities on the basis of population was increased only in seven regional cities (HK, JI, KV, PL, PU, UL, ZL). The local coefficient was set in seven regional cities for at least one year during the period under review. In 2018, the local coefficient was set only in five regional cities (KV, LI, PU, UL - value 2, HK - value 3).

The real estate tax revenue per inhabitant has always been highest in cities with set local coefficient. In 2018, it was set in five regional cities (HK, KV, LI, PU, UL). The percentage of the real estate tax revenues in the total revenues was 1.12 - 8.94% in the reviewed period. This percentage was the lowest in Brno and the highest in Hradec Králové. In the period, the percentage of the real estate tax revenues in the tax revenues of the monitored regional cities was 1.82 - 12.54%. The percentage of the real estate tax revenues in both, total and tax revenues, is related to the use of coefficients in the reviewed cities, in particular to setting of the local coefficient.

The analysis presented in our research resulted from the set target and available data. Possible extension of the analysis will be subjected to follow-up research, focused on all municipalities in the Czech Republic.

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