TAX AUTONOMY OF SELF-GOVERNMENT UNITS IN SLOVAKIA
DAŇOVÁ AUTONOMIE SAMOSPRÁVNÍCH JEDNOTEK NA SLOVENSKU

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ABSTRACT

Tax autonomy as a form of financial autonomy is one of the key factors of fiscal decentralization. A precondition of tax autonomy is the ability to acquire tax resources in the territory of the jurisdiction and to use them in accordance with socio-economic targets of the jurisdiction. In Slovakia, following the public sector reform in 2001, two types of self-governments exist. Although self-governing municipalities have existed since the change of the regime (1989), regions were established and have been effective since 2002. The ensuing turbulent period of the Slovak economy included a phase of economic expansion, depression and economic recovery. This had several impacts on the tax autonomy of existing self-governing structures in Slovakia. While the system of shared taxes increased the financial autonomy of both structures, changes in the overall tax system, especially after the financial crisis (2009), dramatically reduced their tax autonomy. A special situation emerged in case of regions, where the taxing power regarding the motor vehicle tax (the only own tax source) was shifted to the central level of government in 2015. The aim of the paper is to measure the tax autonomy of regions and municipalities since 2002 and compare it to their financial autonomy, which takes the form of a formal measurement. Additionally, the impact of certain demographic and macroeconomic variables on tax autonomy of self-government units in Slovakia is examined.

Keywords: *sub-national government, local tax, tax autonomy, financial autonomy, fiscal decentralization*

JEL Classification: H77

1 INTRODUCTION

The notion of tax autonomy is linked to the notion of taxing power of sub-national governments (Blöchliger and Nettley, 2015). Taxing power refers to the ability to set tax rates and tax base autonomously and generate own tax resources. It is obvious that taxing power varies according to the type of tax. Consequently, the tax autonomy of sub-national governments varies. Beside the tax autonomy, the term of financial autonomy (or fiscal autonomy) is widely used. In comparison with tax autonomy, financial autonomy usually covers the extended field of revenue items, including non-tax revenues as well as tax revenues (Maličká, 2019). Thus, tax autonomy relies only on tax revenues. They consist of own tax revenue (local taxes and piggyback taxes) and shared tax revenue. A consecutive representation of the abovementioned types of sub-national tax revenues in tax autonomy indicators offers a critical view on the revenue seeking ability of sub-national governments. As Groenendijk (2011) mentions, despite the trend towards the split of decision-making competencies, the power to tax of sub-national governments is rather limited.

In Slovakia, the term of tax autonomy is frequently used in connection with fiscal decentralization. The fiscal decentralization was implemented in 2005 and brought important changes in sub-national government funding. While before 2005 (2002-2004), regions and municipalities were funded via intensive transfer system, since 2005, a wider legislative framework arranged the revenue side of sub-national budgets. Although the structure of their tax revenue changed, the question of higher tax autonomy remained. This might be due to the excessively strong position of shared tax in the tax revenue structure of sub-national budgets. During the monitored period of 2002-2018, regions faced several changes related to their only own tax revenue, resulting in the loss of their tax autonomy. In terms of tax autonomy according to various indicators, municipalities seem to be passive in raising own tax resources, while, in fact, they have increased the piggyback taxes by 180% since 2004 (BAS, 2018).

The aim of the paper is to point out how sub-national governments (self-government units) in Slovakia exercise their exclusive power to tax and reduce types of taxing powers. Similarly, since 2002, the tax autonomy of regions and municipalities in Slovakia is measured and compared to their financial autonomy. Additi-

onally, determinants of tax autonomy of self-government units are investigated, respecting the potential effect of financial crisis covered in the monitored period of 2002-2018.

The paper is organized in the following manner: After the introduction, the current state is presented. Next, the chapter dealing with methods and data explains the research processing. Results and discussion present the main findings. The paper ends with a conclusion and a list of references.

2 LITERATURE REVIEW

OECD (1999) provides a taxonomy of tax autonomy. Taxing powers are divided into six groups, where the "A" category contains taxes with full tax autonomy of sub-national self-governments over their tax rate, tax base and tax reliefs. Taxes of category "B" and "C" represent taxes, where the supervision of central governments is applicable. Taxes in the "D" category are shared taxes. Taxes in the "E" category are central taxes without any taxing power of sub-national governments. In the OECD Fiscal Decentralisation Database (2019), the tax autonomy indicators for OECD countries are available for years 1995, 2002, 2005, 2008, 2011 and 2014. Correspondingly to this database, the sub-central tax autonomy of OECD countries is repeatedly examined by Blöchliger and King (2006), Blöchliger and Rabesona (2009) or Blöchliger and Nettley (2015). Tax autonomy of local governments in the USA is investigated by Reschovsky (2019). His study contains also the comparison of local tax autonomy in the USA and in OECD countries. The connection between local tax autonomy and local fiscal discipline in Poland is stressed in Bukowska and Siwińska-Gorzelak (2019). According to them, higher local tax autonomy is connected with better fiscal discipline. Sollé-Ollé (2013) provides an analysis of regional tax autonomy in Spain. He looks into why Spanish regions have used their tax autonomy more intensively since 2010 in comparison with the situation before 2010. He sees the problem in an inadequate tax mix, central government obstructionism, soft-budget constraints and revenue largesse. Thöne (2016) discusses the importance of tax autonomy increase in German states. In addition, he believes that strong fiscal equalization is much needed. Fiscal autonomy of sub-national government in Turkey, including tax autonomy, is treated by Eroğlu and Serbes (2018). In their findings they conclude that a low

level of local tax autonomy exists in Turkey, because the only authority in the field of taxes is exercised by the Grand National Assembly (Eroğlu and Serbes, 2018: 93). Kopina and Kopin (2019) stress the local tax autonomy in connection with digital economy using the example of Russian Federation. Sedmihradská and Bakoš (2016) evaluate the municipal tax autonomy in the Czech Republic in relation to tax mimicking. They conclude that Czech municipalities rarely use local tax autonomy due to the potential rise of political costs of increasing the taxes. The problem of the formal character of local financial autonomy in Slovakia is accentuated in Maličká (2019). Here, municipalities are strongly dependent on resources shifted from central government level, because the most voluminous tax revenue (shared tax revenue) has a quasi-grant nature. Methods of financial autonomy measurement are mentioned also in Poliak (2016) or Jílek (2008). Additionally, Jílek (2008) deals with tax autonomy measurement, reflecting on the OECD (1999) taxonomy of tax autonomy. The index of revenue autonomy of local governments in selected European countries is calculated in Slavinskaite and Ginevičius (2016). According to them, tax autonomy is the most important part of the revenue autonomy index. Slack (2017) provides an interesting analysis of local fiscal autonomy of eight cities around the world, including also the tax autonomy aspect.

3 METHODS AND DATA

For the purpose of this paper, tax autonomy is compared to more formal indicators of financial autonomy. Tax autonomy (TA) and financial autonomy (FA) of regional and municipal self-governments are calculated in several manners, reflecting on the degree of taxing power. TA indicators are calculated on the basis of following formulas extracted from several research sources, including Fleurke and Willemse (2006), OECD (2019), Maličká (2019) or Bukowska and Siwińska--Gorzelak (2019):

$$TA_1 = \frac{\text{tax revenue}}{\text{total revenue}}, \tag{1}$$

$$TA_2 = \frac{\text{own tax revenue}}{\text{total revenue}} , \tag{2}$$

$$TA_3 = \frac{\text{own tax revenue}}{\text{tax revenue}} , \tag{3}$$

Tax revenue of local governments in Slovakia contains shared tax revenue and own tax revenue. In Slovakia, the shared tax is actually the personal income tax. Before 2005, it was the personal income tax and the corporate income tax. The motor vehicle tax was also a shared tax, but it was itemized in the part of taxes on goods and services (own tax). Own tax revenue includes property tax (immovable property tax) and tax on goods and services. And finally, tax penalties are part of own tax revenue. Total local revenue comprises of tax revenue, non-tax revenue, grants and transfers, revenue from transactions with financial actives and refundable financial resources.

FA is calculated on the basis of the following formulas, proposed also in Stegarescu (2005), Fleurke and Willemse (2006), Ribeiro and Jorge (2015) or Maličká (2019):

$$FA_1 = \frac{\text{own revenue}}{\text{total revenue}} , \tag{4}$$

$$FA_2 = \frac{\text{own tax revenue + nontax revenue}}{\text{total revenue}} , \tag{5}$$

Own revenue of local governments is expressed as sum of tax revenue and non--tax revenue. Non-tax revenue comprises of revenue from entrepreneurship and property ownership, administrative fees, fines and penalties, interest payments received and other non-tax revenues.

Data are collected from reports accessible on the web site of the Ministry of

Finance of the Slovak Republic (finance.gov.sk). In fact, two types of reports were treated. First, in the section of National Reporting, final state budgetary accounts were examined since 2002 up to 2011. In this period, budgets of local governments are itemized as part of the final state budgetary account. Secondly, in the section of Public Finance, reports on local government budgets in the 2012-2018 period were used. Since 2012, final local government budgetary accounts have been itemized separately.

To investigate the TA determinants (and for the purpose of comparison also the FA determinants), regression analysis is used. As the effect of crisis on TA (and FA) is evident, the structural break is examined using a Chow test (Chow, 1960). Thus, the augmented regression for the Chow test is provided and sample is split during crisis (dummy variable). The choice of control variables is motivated by the recent empirical evidence. In fact, beside the dummy variable of crisis (1 in the crisis period 2009-2013, otherwise 0), the unemployment rate, GDP per capita and population size are employed. The data of the variables mentioned hereinbefore were collected from the Eurostat database (European Commission, 2019). The unemployment is based on the annual average of percentage of total population. To express the impact of GDP per capita on TA (and FA), the GDP at market prices is divided by the total population as on 1 January, and its standard logarithm is calculated. Population size is measured as total number of inhabitants as on 1 January. Expectations about the Chow test results account for the presence of a structural break caused by the financial crisis. Correspondingly, the expected impact of crisis variable on TA (FA) is negative. In the crisis period, TA (and FA) decrease. The increase of unemployment rate might decrease TA (and FA) by lowering the total receipts from income tax (shared tax) in those indicators, which comprise of the tax revenue and shared tax revenue. According to Sedmihradská and Bakoš (2016: 88), unemployment rate is a proxy of economic situation. The increase of the population size might decrease TA (and FA) due to an increase in demand for redistribution. It is usually provided by the central level of government and requires more resources on the part of central authorities, at the expense of their shift to local governments. On the other hand, in case of TA (FA) indicators based on own resources, this effect might not be evident, because the item of grant, as part of the total local revenue, might decrease. The

variable of population size is widely employed in this type of research, e.g. in Delgado, Lago-Peñas and Mayor (2015) or Sedmihradská and Bakoš (2016). The increase of the GDP per capita might increase TA (FA), when an increase of all types of tax revenues is expected. However, an opposite effect might be observed in response to the crisis, when arrangements on economic stabilization and redistribution provided by the central government level are required and financed correspondingly, at the expense of local governments.

4 RESULTS AND DISCUSSION

4.1 TAX AUTONOMY OF REGIONS AND MUNICIPALITIES IN 2002-2018

In fact, in 2002-2005, TA of Slovak regions was exactly zero (see Figure 1). In comparison, their FA is a non-zero value and mirrors the amount of non-tax revenue (not grants), which mainly include administrative fees. Since 2005, after the fiscal decentralization, Slovak regions have been operating under the regime of shared tax, so TA1 increased dramatically. Similarly, FA1 increased and the difference between them presents the volume of non-tax revenue. Excluding the effect of shared tax, the TA2 indicator, which comprises only of own tax revenue (motor vehicle tax), also increased. The FA2 indicator behaves in a similar way and the difference between them represents the volume of non-tax revenue. According to TA3 indicator, up to 2014, own tax revenue created approximately 25% of the regions' tax revenue. Since 2015, the motor vehicle tax became a state tax, which led to Slovak regions losing their TA in terms of TA2 and TA3. The increase of TA1 (and FA1) is caused by the increase of receipts from shared tax. A mild decrease of TA2 and TA3 is observed in 2008 with the arrival of financial crisis, while the decrease in TA1 (and FA1) reflects the worsening of economic conditions during the financial crisis.

Fig. 1 » TA and FA of regions in 2002-2018
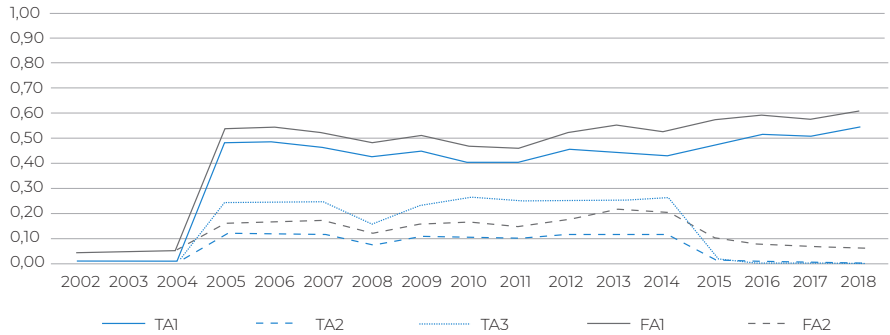
In the case of Slovak municipalities (see Figure 2), tendencies in TA and FA are quite similar to those in regions. The TA1 (and FA1) indicator increased significantly after 2005 for the same reason as in the case of regions. The strong influence of shared tax formally increased TA (and FA) and caused their sensitivity to the change in economic circumstances (e.g. 2010 a decrease in receipts of personal income tax was observed in Slovak economy due to financial crisis). The TA2 indicator, reflecting the share of own tax revenue on total municipal revenue, is relatively stable, without any evident deterioration after the 2005 or in 2009. The TA3 indicator reflects the change in the municipal budget funding. Up to 2004, the share of own tax revenue in municipal tax revenue represents approximately 46%. After the fiscal decentralization it decreased dramatically by 20% with a temporary increase in times of crisis due to a decline in shared tax.

Fig. 2 » TA and FA of municipalities in 2002-2018
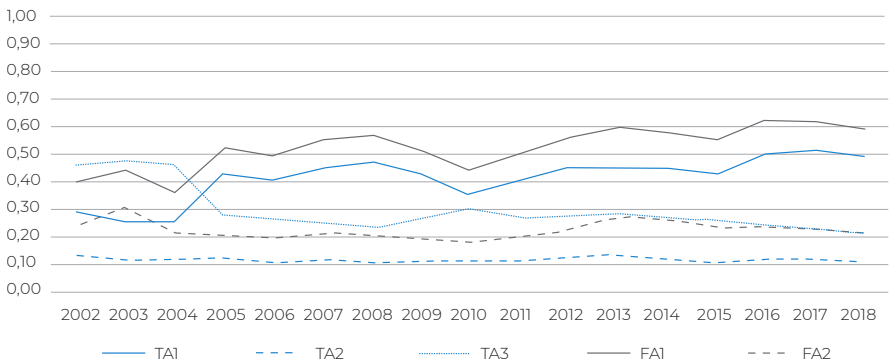
The distribution of data on TA and FA of Slovak regions and municipalities and structure of their total revenues are listed in Appendix.

4.2 TAX AUTONOMY DETERMINANTS

Results of the Chow test show the presence of a structural break in the form of the effect of financial crisis (p-values are lower than 0.05). Thus, the dataset is split (see Table 1, split dummy) and two separate regressions are estimated. One regression is estimated for each type of TA and FA separately for regions and municipalities.

Tab. 1 » Augmented regression for Chow test, sample split during crisis

	Regions					Municipalities				
Dependent variable	TA1	TA2	TA3	FA1	FA2	TA1	TA2	TA3	FA1	FA2
variables										
intercept	11.9	11.4	24.8	10.8	10.2	2.88	-0.88	-6.31	0.52	-3.23
		***	***		***	*	*	**		**
unempl	-0.03	0.01	0.03	-0.02	0.02	-0.01	0.02	0.01	-0.01	0.01
	*				*	***	*	***		
Pop	-2.83	-2.43	-5.35	-2.76	-2.36	-0.65	0.19	1.52	-0.22	0.63
		***	***		***	*	*	**		*
lGDPpc	0.42	0.19	0.43	0.51	0.27	0.13	-0.01	0.19	0.14	-0.01
	***	**	**	***	***	***			***	**
Split dummy	-31.8	-16.5	-25.0	-45.2	-29.9	-23.4	-5.88	4.37	-37.6	-20.0
	***	***	***	***	***	***	***		***	***
cr_unempl	-0.01	-0.01	-0.01	-0.02	-0.02	-0.06	-0.01	0.02	-0.08	-0.03
					*	***	***	***	***	***
cr_pop	7.72	3.77	5.67	11.0	7.06	4.34	1.16	-0.70	7.57	4.41
	***	***	***	***	***	***	***		***	***
cr_ lGDPpc	-1.04	-0.39	-0.57	-1.49	-0.84	0.05	-0.03	-0.08	-0.28	-0.37
	***	***	***	***	***			**	***	***
adjR2	0.59	0.45	0.50	0.62	0.49	0.74	0.49	0.74	0.76	0.20
Chow test	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: *** denotes a 1% significance level, ** a 5% and * a 10% significance level. OLS is estimated using the Heteroskedasticity and autocorrelation consistent (HAC) covariance matrix, which deals with the eventual presence of heteroskedasticity and autocorrelation in the model. The cr prefix stands for crisis and refers to the dataset after crisis. Source: own processing

The results point to certain common findings in the case of regions and in the case of municipalities:

- The relationship between the financial crisis dummy variable and TA (or FA) is negative. In the period of financial crisis, TA (and FA) of both monitored structures, regions and municipalities in Slovakia decreases.

- The impact of unemployment rate on TA1 and FA1 is negative in both samples (regions and municipalities) before the financial crisis. These indicators contain a shared tax revenue and the results emulate the expectation about the inverse relationship between the unemployment rate and tax autonomy defined as TA1 and financial autonomy defined as FA1. The increase of the unemployment rate brings a decrease in personal income tax, which is a shared tax.

- Before the financial crisis, the unemployment rate is more statistically significant in the case of municipalities. This effect might be explained by the dominant share of personal income tax, which is assigned to municipal budgets (currently 70%, with a certain decrease to 65.4% in 2012 because of crisis arrangement provided by central government). This might cause the sensitivity of municipalities to changes in unemployment rate. After the financial crisis, the unemployment rate is not statistically significant in regions.

- The impact of population size on TA and FA in regions and municipalities before the financial crisis is negative in line with the expectation, where the increase population size might decrease TA (and FA) due to an increase in demand for redistribution provided by the central level of government and requires more resources on the part of central authorities, at the expense of their shift to local governments.

- The change in the population size coefficient to a positive one after the financial crisis is to be noted. This result is in accordance with the supposition that the item of grant, as part of total local revenue, might decrease in times of crisis due to a decrease in central government revenue and expenditure. This might increase the TA (and FA) indicator formally.

- The relationship between the GDP per capita and TA (and FA) before the financial crisis is positive, as was expected. The increase of the GDP

per capita might increase TA (and FA), when increase of all types of tax revenues is expected.

- The relationship between the GDP per capita and TA (and FA) after the financial crisis is negative, contrary to results observed before the onset of the financial crisis. A simple explanation, mostly connected with the fiscal decentralization diminishing rate, is provided in literature. The increase of the GDP per capita creates sources needed by central government to restore the economy in the crisis period. In fact, the decrease of the GDP per capita is observed only in 2009.

CONCLUSION

A desirable increase of tax autonomy is usually connected with fiscal decentralization. In Slovakia, certain shifts towards fiscal decentralization were made in the first decade of the 21st century. Administrative decentralization began by establishing the additional element in the public administration structure. Thus, along municipalities, regions have existed since 2002. Since 2005, based on legislative framework, the fiscal decentralization has been implemented. Taxing power was assigned to regions and municipalities (in case of municipalities it represents certain changes, but in fact, they have enjoyed taxing power since 1990) and a fixed system of criteria, affecting the division of shared tax among government levels, was introduced. Hence, the positive effect of fiscal decentralization on financial autonomy, including the tax autonomy, was expected. In times of an economic expansion in Slovakia (2005-2008), the tax autonomy of regions increased. Tax autonomy of municipalities remained unchanged, with the exception of an indicator that includes the shared tax, in receipts sensitive to economic cycle. In period of financial crisis, TA (and FA) of the two monitored structures, regions and municipalities in Slovakia, decreases. The negative effect of financial crisis on TA (and FA) is confirmed also by the regression analysis. In addition, the split of dataset on the basis of the financial crisis variable reveals certain changes in the effect of control variables on TA (and FA). These changes might be explained by the government arrangements adopted to recover the economy after the crisis. Additionally, an arrangement in the field of tax assignment of motor vehicle tax has resulted in the decrease of regions' TA to near zero, when excluding the

shared tax revenue. Currently, in times of slowing down of the Slovak economy, further steps towards centralization might become more real.

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REFERENCES

BLÖCHLIGER, H., & KING, D. (2006). Less than you Thought: The Fiscal Autonomy of Sub-Central Governments, OECD *Economic Studies*, No. 43.

BLÖCHLIGER, H., & RABESONA, J. (2009). The Fiscal Autonomy of Sub-Central Governments: An Update, OECD *Network on Fiscal Relations Across Levels of Government*, COM/CTPA/ECO/GOV/WP (2009)9.

BLÖCHLIGER, H., & NETTLEY, M. (2015). Sub-central Tax Autonomy: 2011 Update, OECD *Working Papers on Fiscal Federalism*, No. 20, Paris: OECD Publishing.

BUKOWKSA, G. & SIWIŃSKA-GORZELAK, J. (2019). Can Higher Tax Autonomy Enhance Local Fiscal Discipline? Evidence from Tax Decentralization in Poland, *Publius: The Journal of Federalism*, 49 (2), 299–324.

Bussiness Aliance of Slovakia (2019). Mestá nevyužívajú potenciál daní z nehnuteľností ani poplatku za rozvoj. [online] [cit. 2019-08-05]. Retrieved from: https://www.alianciapas.sk/2019/03/25/dane-z-nehnutelnosti-sa-tento-rok-zvysili--len-v-styroch-mestach-poplatok-za-rozvoj-takmer-vobec/

DELGADO, F. J., LAGO-PEÑAS, S. & MAYOR, M. (2015). On the Determinants of Local Tax Rates: New Evidence from Spain, *Contemporary Economic Policy,* 33(2), 351–368.

EROĞLU, E. & SERBES, H. (2018). Fiscal Autonomy of Sub-central Governments in Turkey. In M. P. Rodríguez Bolívar & M. D. López Subires (Eds.), Financial Sustainability and Intergenerational Equity in Local Governments 2018 (83–100). Hershey PA: Information Science Reference.

FLEURKE, F., & WILLEMSE, R. (2006). Measuring Local Autonomy: A Decision Making Approach, *Local Government Studies*, 32 (1), 71–87.

GROENENDIJK, N. (2011). Federalism, Fiscal Autonomy and Democratic Legitimacy in Europe: Towards Tax Sharing Arrangements. *L'Europe en Formation*, 359(1), 3–19.

CHOW, G. (1960). Tests of Equality Between Sets of Coefficients in Two Linear Regressions. *Econometrica*, 28(3), 591-605.

JÍLEK, M. (2008). Fiskální decentralizace, teorie a empirie. Praha: ASPI- Wolters Kluwer

KOPINA, A., & KOPIN, D. (2019). Fiscal Federalism and Tax Autonomy. Digital Economy Challanges. *Financial Law Review* 14 (2), 15–30.

MALIČKÁ, L. (2019). Formal Dimension of Fiscal Decentralization in the Context of Vertical Fiscal Imbalance and Financial Autonomy of Municipalities in Slovakia. *Politická ekonomie*, 67 (3), 273-290.

OECD Fiscal Decentralisation Data Base. (2019). Tax Autonomy of State and Local Government. [online] [cit. 2019-09-27] Retrieved from: http://www.oecd.org/tax/federalism/fiscal-decentralisation-database.htm.

Organisation of Economic Cooperation and Development. 1999. *Taxing Powers of State and Local Government*, OECD Tax Policy Studies No. 1, Paris, OECD.

POLIAK, L. (2016). Financial Autonomy of Municipalities – microeconomic Backgrounds. *Societa et Iurisprudentia,* 4(1), 122–138.

RESCHOVKSY, A. (2019). The Tax Autonomy of Local Government in the United States. Working paper WP19AR1, Lincoln Institute of Land Policy. University of Wisconsin-Madison.

RIBEIRO, N. A. B., & JORGE, S. M. F. (2015). Political-Ideological Circumstances and Local Authorities' Debt: Evidence from Portuguese Municipalities. *Contemporary Economics*, 9(2), 155–170.

SLACK, E. (2017). How Much Local Fiscal Autonomy Do Cities Have? A Comparison of Eight Cities around the World. IMFG perspectives 19/2017. Toronto: University of toronto, Institute on Municipal Finance and Governance.

SLAVINSKAITE, N. & GINEVIČIUS, R. (2016). Revenue Autonomy of Local Government: Fiscal Decentralization Aspect. 9th International Scientific Conference Business and Management 2016, May 12–13, 2016, Vilnius, Lithuania, 1-9.

SOLLÉ-OLLÉ, A. (2013). Regional tax autonomy in Spain: 'words' or 'deeds'? Prepared for the Workshop Interaction between local expenditure responsibili-

ties and local tax policy, Copenhagen, 12-13 September 2013, KIPF and the Danish Ministry of Welfare.

STEGARESCU, D. 2005. Public sector decentralization: Measurement concepts and recent international trends, *Fiscal Studies* 26(3), 301–333.

THÖNE, M. (2016). An End of Federalism without Revenue-Autonomy? The Effects of Fiscal Equalization and the New Debt Brake for the German Länder.In G. Pola (Ed.) Principles and Practices of Fiscal Autonomy: Experiences, Debates and Prospects 2016 (135–154). London and New York: Routledge.
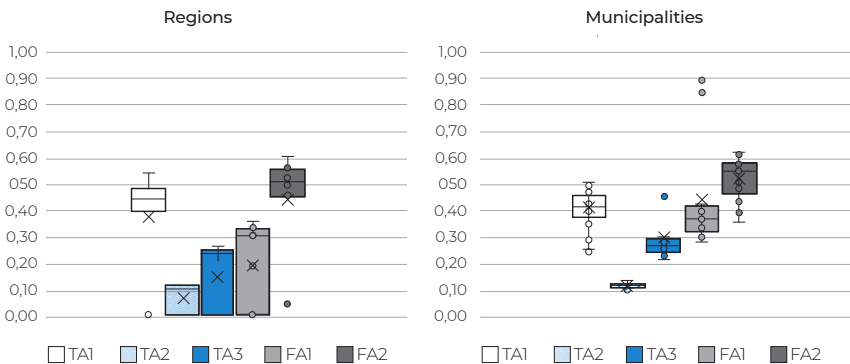
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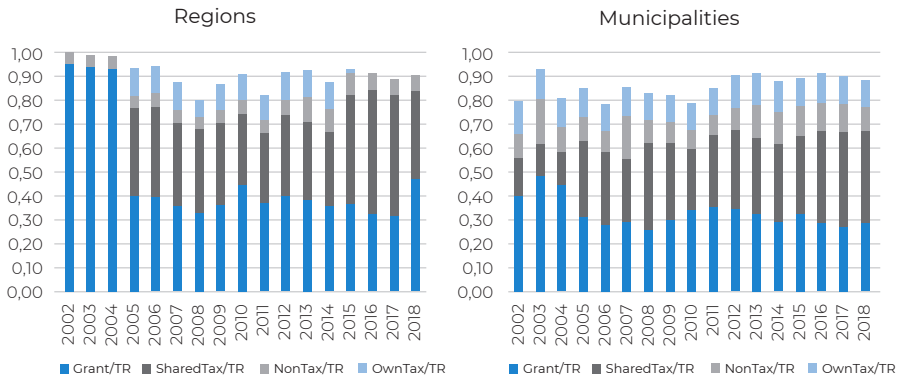
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APPENDIX

The distribution of data on TA and FA of Slovak regions and municipalities and structure of total revenues.

Appendix 1 » Boxplots of TA and FA of regions and municipalities in Slovakia

Source: own calculation

Appendix 2 » Structure of total revenue of Slovak regions and municipalities in 2002-2018

Regions

Municipalities

■ Grant/TR ■ SharedTax/TR ■ NonTax/TR ■ OwnTax/TR

Source: own calculation