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THE DISTRIBUTIONAL OUTCOMES OF ONE-SIZE-FITS-ALL POLICY RESPONSE TO SOCIETAL DISRUPTIONS ON LOCAL GOVERNMENT TRANSFER DEPENDENCE

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Abstract

This research explores how the one-size-fits-all government-led counter-cyclical policy response to societal disruptions, in this case COVID-19, produces distributed fiscal autonomy outcomes across local governments. The Wilcoxon matched-pairs signed-ranks test reveals statistically significant results in a before-after research design. The overall median local authority transfer dependence during the post-intervention year was lower than in the pre-intervention year by 14.2% for Romanian local governments. However, the lower horizontal fiscal gap indicates that counter-cyclical measures were less effective in addressing the adverse effects of disruption on local governments' revenues in larger local economies compared to those in smaller ones.

Keywords: Public Economics, Interjurisdictional Differentials, Intergovernmental Relations, Disaster Aid
JEL Classification: H7, H73, H77, H84.

1. Introduction

Systemic disruptions, such as economic crises, health emergencies, natural disasters, or conflicts, impact the functioning of societies (Britton, 1986; Tierney and Oliver-Smith, 2012; Perry, 2018; Hynes et al., 2020). Besides the immediate shock effects, such disruptions are also likely to result in structural changes that induce fundamental societal transformations (Rocco et al., 2020; Ahmadu et al., 2024). They can alter macroeconomic standings (Boisvert et al., 2012; Ludvigson et al., 2020), can lead to long-term inferior economic steady states (Loayza et al., 2012; Panwar and Sen, 2019), can result in hard-to-recover productivity losses (Kousky, 2014), endowment losses (Markhvida et al., 2020), or can reinforce or deepen existing inequalities in society (Ibarraran and Ruth, 2009). Disruptions can also lead to the emergence of new societal ideas and ideologies that can fundamentally reshape the political consensus about the rules of society (Ofstehage et al., 2022). Structural changes can generate new economic and social inequalities or inequities that, while benefitting some, could systemically deprive others of capabilities and opportunities in various domains of life, such as education, the labour market and political participation (Stanley et al., 2021).

This article studies the possible structural effects of COVID-19-related disruptions on intergovernmental fiscal relations. It seeks to contribute to a better understanding of how policy responses to such disruptions are associated with distributed fiscal autonomy outcomes across local governments. Moreover, insights into possible disruption outcomes can help better understand how policy actions might generate premises for various change pathways leading to divergent social realities.

To explore the above, the article proposes an in-depth evaluation of the specific circumstances of one such possible systemic outcome in a country case-study analysis framework, namely, the emergence of structural change in the intergovernmental vertical and horizontal fiscal imbalance in the context of COVID-19 policy responses in a highly fragmented administrative system of a unitary state. More specifically, the article explores the way in which vertical and horizontal fiscal intergovernmental relations have been affected by the one-size-fits-all COVID-19-related government measures and the overall standing of local fiscal autonomy. Considering the experimental nature of the research and the highly contextualised nature of intergovernmental fiscal relations across countries, this article focuses on a country case study, Romania.

2. Literature review - vertical and horizontal fiscal gap under counter-cyclical policies

Considering the limited evidence for such disruptions, there is a gap in understanding on how society-level disruptions can be associated with both short- and long-term loss of revenues by local governments. Existing studies explore how governments address such disruptions by adopting exceptional measures, which often entail multiple counter-cyclical policies (known as “the scissors effect”). Counter-cyclical policies increase public sector spending to address the adverse societal, economic, and environmental exceptional circumstances despite a decrease in general tax revenues (Francis et al., 2017; Țibulcă, 2021). The OECD’s Fiscal Decentralization Database reports that in 2019, the average consolidated government expenditure across OECD member states was 43.92% of the total combined GDP (OECD, 2022). In 2020, when the average GDP of all OECD countries shrunk by 1.77% compared to the previous year, the consolidated average government expenditure grew to 49.26% (OECD, 2022).

Studying the impact of the 2008 fiscal crisis on public finances, Blöchlige et al. (2010) find that local governments’ fiscal standing was less affected than central government. The authors also present evidence that local governments’ volatile tax base and sizeable social welfare responsibilities result in local governments experiencing a scissors effect. Bartolini et al. (2018), in a comparative study of 19 OECD countries covering 1980–2010, find supporting evidence that larger degrees of fiscal decentralization improve the central budget balance without negatively affecting local budgets even under disaster mitigation policies.

The above findings are complemented by the results of Beramendi and Rogers (2020), who conclude that countries with larger degrees of fiscal decentralization experience lower levels of interregional inequality but are also associated with lower redistribution and increased inter-personal inequality. However, Rocco et al. (2020) find, in the context of the United States, that despite a high degree of fiscal federalism, inadequate policy instruments and institutional arrangements affect negatively the management of health and economic crises. Dougherty and de Biase (2021) present supporting evidence that the fiscal impact of the COVID-19 crisis across levels of government can be associated with differences in expenditure assignments across levels of government and that the central government tends to absorb most of the fiscal shock due to a central government counter-cyclicality and local government tendency towards pro-cyclicality of revenues and expenditures. Jüptner and Klimovský (2022), studying the case of highly fragmented local government systems in the Czech Republic and Slovakia, show that the participation of local governments in intermunicipal cooperation networks plays an important role in implementing general government measures to address the crisis.

Little consensus exists on how different degrees of fiscal responsibility decentralization relate to disaster management outcomes. The central government-led counter-cyclical policy responses to address the effects of societal disruptions through absorbing the fiscal shock also affect intergovernmental relations with the possibility of an overall shift in the vertical and horizontal fiscal gap. Studying the benefits and drawbacks of decentralized public finance systems, Oates (2008) concludes that the risks associated with fiscal decentralization must be addressed so that the benefits of fiscal decentralization outweigh its potential drawbacks. Christoph et al. (2009) find evidence that more significant degrees in fiscal decentralization increase governments' likelihood of successful budget stabilization. However, Allain-Dupré et al. (2020), using a comparison among OECD member states, find no one-size-fits-all approach when choosing between asymmetric or symmetric implementation strategies and conclude that local circumstances are critical for designing an optimal strategy. This is also supported by Chu and Fei (2021), who identify strong interconnectivity among levels of fiscal decentralization, the structure of transfer payments at the local level. Furthermore, Di Liddo et al. (2016), using a fiscal capacity approach on Italian municipality data, find that while the government response to the 2008 financial crisis increased both overall vertical and fiscal imbalance, central government grants managed to balance the emerging inequality of horizontal fiscal imbalances.

Bodways and Eyraud (2018) conclude that countries which implemented fiscal decentralization measures tend to experience a wide variance in the degree to which local spending responsibilities are covered by their own revenues and the extent to which they rely on various forms of intergovernmental redistribution mechanisms. Slavinskaite's (2020) fiscal decentralization index applied across European Union countries, on a scale from zero to one, ranks the actual range from 0.75 in Sweden to 0.28 in Lithuania and Bulgaria. Oates (2005) argues that competition among local governments to generate development results in suboptimal taxation levels that limit public sector income redistribution outcomes. Maksimovska and Stojkov (2019) find that large vertical fiscal imbalances undermine local autonomy and local governments efforts for revenue collection.

This article explores how counter-cyclical policy responses affect the structure of the decentralized system through change in intergovernmental transfer dependence rates. This is relevant because the design of intergovernmental fiscal relations has important macroeconomic and democratic practice-related implications. Systems with more significant levels of fiscal decentralization are associated with effects such as containment of public sector growth (Asatryan et al., 2015; Siwińska-Gorzelak et al., 2020), higher public sector performance (Adam et al., 2014; Goel et al., 2017), enhancement of accountability by bringing taxpayers and decision-makers closer (Sorens, 2016; Salinas and Solé-Ollé, 2018) and economic growth (Eyraud and Lusinyan, 2013; Mitra and Chymis, 2022).

The article is a case study analysis of Romania's local governments. The case study choice is motivated by Romania being a fiscally decentralized system with high local government fragmentation and an overall sizeable central government dependence rate. The following section succinctly describes the institutional background of the Romanian fiscal decentralization system. It is followed by a discussion of the data sources and the method used in conducting the analysis. The fifth part discusses descriptive statistics of local government transfer dependence measures for pre- and post-intervention periods. The sixth section presents the results and the interpretation of the Wilcoxon matched-pairs signed-ranks test by decile and type of local governments. Finally, the relevance of the findings and possible directions for further research are discussed.

3. Institutional Background – Fiscal Decentralization in Romania

This section presents the context of intergovernmental relations in Romania. The country is a unitary state with two sub-national levels: local and county governments. The local sub-national levels provide both self-government and delegated public administration functions. In addition, Stănuș, C. (2021) describes the local public administration as fragmented and further fragmenting.

In 2021, Romania's total government expenditure was 39.9% of the GDP (Eurostat, 2022). The average expenditure across European Union countries was 51,6% of GDP. In this context, Romania's government expenditure is the second lowest after Lithuania. The response to the COVID-19 crisis left the Romanian state budget in 2020 with an estimated deficit of 9.79% of the total GDP, more than double compared to the 4,6% registered in the previous fiscal year (2019). The 2020 Annual Budget Execution Report (Romanian Ministry of Finance, 2021) calculated that the COVID-19 disruptions and response efforts (counter-cyclical policies) amount to 4.45% of the country's GDP. This in the context in which government income decreased by 2% of the GDP, and government expenditures to implement COVID-19 measures added an excess of 2.36%.

The Romanian state system has fundamentally transformed its political, financial, administrative, and service delivery systems. Ordinance no. 57/2019 on the Administrative Code enroots the role of local governments in delivering local public interest services and utilities in the framework of a fiscally federal system. It defines decentralization as "the transfer of administrative and financial competencies from the level of the central public administration to the level of the public administration along with the transfer of financial resources necessary for their exercise" (Art. 5, x). Local councils administer the delivery of public services and utilities of local interest. Similarly, cost standards are used to determine the resources allocated to the local budgets of the local governments to provide public service and public utility.

To perform their exclusive, shared, or delegated competencies, local governments establish local taxes and fees, receive shares of the personal income tax (PIT) and value-added tax (VAT) collected within their jurisdiction, and benefit from intergovernmental transfers. Table 1 below presents local income tax in the annual state budget for the 2018-2022 period. This indicates an increase of the share of PIT retained by local governments (63% in 2020-2022 compared to 43% in 2018).

The total local government revenues in 2019 were equivalent to 7.9% of the GDP, representing 25.9% of all public sector revenues. In terms of expenditures, in 2019, local governments spent 8.21% of the country's GDP, 23.55% of total public expenditures.

Table 1. Share of local income tax in the annual state budget

	2018	2019	2020	2021	2022
Allocated to the County Council budget	11.25%	15%	14%	15%	15%
Personal income tax	43%	60%	63%	63%	63%
County Council balancing funds	0	7.5%	6%	6%	6%
Regional General Directorate of Public Finances balancing local budgets of local governments[1]	17.25%	17.5%	14%	14%	14%
Special financing of public performance institutions subordinated to local governments	0	0	3%	2%	2%

Source: Own representation based on the annual state budget of Romania, years 2018-2022

The gap between local government revenue and expenditure results from central government transfers. In 2020, the total local government revenues increased to 8.77% of the GDP, while the total local government expenditures decreased by over 5% compared to the previous year, representing 7.78% of the GDP. This decrease occurred while total public spending expanded by nearly 15% compared to the previous year. In the following year, 2021, the total local government revenues amounted to 8.37% of the GDP and the total expenditures after transfers were an equivalent of 8.6% of the GDP, representing 22.3 % of total public sector expenditures.

4. Method and data sources

The article uses annual local government budget execution data for 2019 (COVID pre-emergency) and for 2021 (COVID post-emergency) in Romania. Among other aspects, the data published in the annual local government budget execution reports provide detailed information on budget revenues and spending by category and source.

The data cover all local governments in Romania, 3,186 in total, grouped into deciles by the initial transfer dependence rate in 2019. Transfer dependence is calculated as the per-capita share of government transfers in the total local government. Thus, local government transfer dependence scores range from a theoretical 0% to a theoretical maximum 100%. A transfer dependence score of zero means that local government revenues are exclusively own revenues, with no central government transfers, whereas a local government transfer dependence score of one hundred means exclusive reliance on central government transfers and no own local government revenues. To evaluate the impact of one-size-fits-all emergency responses on the structure of subnational government financing,

[1] 85% of the funds are balancing payments to the local budgets of communes, cities, municipalities, and counties at county level, and 15% are allocated to balance the County Council budgets.

the transfer dependence levels are compared in the post- and pre-emergency budget execution years, which results in matched-pair observations.

The hypotheses tested are H0: The median difference between the transfer dependence rates in the pre- and post-emergency budget execution years is zero ($p=0.05$). Ha: The median difference between the transfer dependence rates in the pre- and post-emergency budget execution years is non-zero.

5. Descriptive statistics

The Shapiro-Wilk test indicates that the local government transfer dependence rates are not distributed normally. Therefore, medians are used throughout the statistical analysis, and statistical significance is reported at a level $p < 0.05$. Considering that the database consists of matched pairs of observations and that the exact magnitude of difference in transfer dependence rates at the level of each local government is available, the Wilcoxon matched-pairs signed-ranks test is used. The benefit of applying this nonparametric statistics test is that it does not require an assumption of the normality distributions of the data. In addition, the selected test allows for counting the magnitude of the variation in local government transfer dependence rates for the pre- and post-emergency budget execution years. The statistical analysis was conducted using Stata 17.0.

Table 2. Transfer dependence in 2019 and 2021 by decile

		2021										
		1	2	3	4	5	6	7	8	9	10	Total
2019	1	**191**	73	22	11	5	4	5	4	4	0	319
	2	67	**101**	57	38	15	15	7	9	5	5	319
	3	25	49	**74**	53	38	26	15	20	12	6	318
	4	11	29	57	**54**	40	31	30	22	25	20	319
	5	7	25	30	39	**46**	42	43	26	28	32	318
	6	6	12	24	36	36	**59**	46	29	30	41	319
	7	6	13	20	26	42	39	**39**	59	38	37	319
	8	5	10	17	24	38	28	50	**53**	49	44	318
	9	1	5	12	28	31	33	53	46	**58**	52	319
	10	0	2	5	10	27	42	31	50	70	**81**	318
	Total	319	319	318	319	318	319	319	318	319	318	3,186

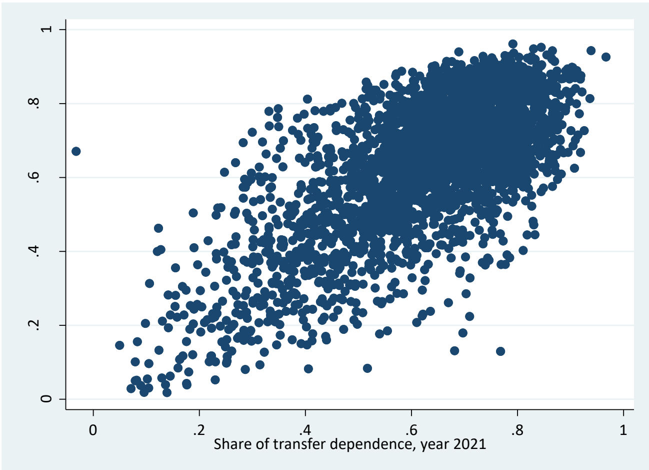
Source: Own data analysis

Table 2, above, presents the grouping of local governments in deciles by local government transfer dependence rate for the pre- and post-intervention years. 756 local governments (23.73%) remained in the same decile for both years, while 1,316 (41,37%) moved upwards and 1,114 local governments (34.97%) moved downwards. Thus, of the 319 local governments in the first decile in

2019, 191 (59.87%) belonged to the same decile in 2021 as well. In the case of local governments in the second decile in 2019, only 31.66% remained in the same decile in 2021. The same rate is 23.20% for the third decile, 16.93% for the fourth decile, 14,42% for the fifth decile, 18.50% for the sixth decile, 12.23% for the seventh decile, 16.61% for the eighth decile, 18.18% for the ninth decile and 25.39% for the tenth decile.

The distribution of transfer dependence across all the 3,186 Romanian local governments is analysed by the matching-pair local government transfer dependence rates for the pre- and post-intervention years. Figure 1 presents the distribution and change in the share of transfer dependence rates, indicating an overall large concentration of local governments with a transfer dependence rate of over 60% for both years.

Figure 1. Local government transfer dependence rates, 2019 and 2021



Source: Own representation based on local government annual budget execution data published by The Directorate for Local Fiscal and Budgetary Policies, available here

Table 3 summarizes the descriptive statistics (mean, median, standard deviations and min-max) of local governments' transfer dependence rates in the pre- and post-emergency budget execution years. For the two years under focus, local government dependence rates varied from as low as 1.79% to as high as 96.86%.

In 2019, the overall median transfer dependence across all local governments was 66.74%; in 2021, it was 65.71%. The almost 1.54% decrease in the combined transfer dependence rate occurred under the condition of an overall 27.03% increase in local government own revenues, while total local government budgets rose by 27.39%. These results indicate similar vertical fiscal balance values for the pre- and post-intervention years. However, the own and transfer revenues of local governments indicate noteworthy variance. The mean and median dependence rates increase with each decile for the pre- and post-intervention years. The most significant increase in transfer dependence is in the case of local governments falling in the first decile, those with the lowest dependence rates (27.48% in 2019 and 31.54% in 2021).

The erosion of local fiscal independence in this first decile is noteworthy because these local governments have nearly half of the country's population (47,18% in 2019 and 46.31% in 2021). In addition, these local governments collect approximately two-thirds of all local government revenues in the country (66.86% in 2019 and 65.75% in 2021).

In the tenth decile, local governments registered a median dependence rate of 86.67% in 2019 and 83.66% in 2021. The overall population of settlements in this group accounted for 3.43% of the total population in 2019 and 3.9% in 2021, while their total revenues represented 6.83% of all revenues by local governments in the country in 2019 and 6.14% in 2021. The ratio between the tenth and the first decile in 2019 indicates a 3.31 times larger transfer dependence rate, while in 2021, this ratio decreases by 14.20%, to a still significant 2.84 times larger difference.

Table 3 also presents the change in per-capita transfer amounts by decile. In 2021, the mean per-capita intergovernmental transfer value across all local governments was 14.05% larger (1,981.34 lei) than that in 2019 (1,737.23 lei). However, in the case of local governments in the first decile, this amount grew by 55.9% (from 536.1 lei in 2019 to 835.77 lei in 2021); in the case of the tenth decile, it decreased by 1.24% (from 4,362.31 lei in 2019 to 4,308.40 lei in 2021). These changes show that while in 2019 the mean per capita transfer in the first decile was 7.62 times lower than in the tenth decile, in 2021, it decreased to a 4.79 lower difference. The narrowing of the per capita transfer dependence among the decile groups of local governments can be principally explained by the larger increase in the rate of dependence in the local governments falling in the bottom five deciles.

These findings indicate that the counter-cyclical policy responses by the central government to address the effects of the COVID-19 disruptions through absorbing the fiscal shock have little effect on intergovernmental relations, as the overall transfer dependence in the year before and the year after the quasi-natural experiment registered only a slight variation.

The change in the structure of transfer dependence across local governments indicates a narrowing of differences, but this occurred to the detriment of larger urban local governments, the fiscal independence of which eroded.

Table 3. Descriptive statistics transfer dependence rates by decile

Decile	Year	Mean dependence rate, %	Median dependence rate, %	Str. Dev.	Min	Max	Total population	Total revenue, millions	Total revenue, per cent	Total own revenue, millions	Transfer dependence rate	Mean, absolute values	Median and absolute values	Str. Dev., absolute values	Min, absolute values	Max, absolute values
1st Decile	2019	26.335	27.477	.0943940	1.797	38.433	10,465,857	22,036.34	46.06%	17,229.04	33.14%	536.10	489.32	287.1565	51.85	1,794.03
	2021	29.712	31.535	.0874345	-3.238	40.741	10,206,339	29,384.24	48.21%	21,521.06	34.25%	835.77	752.53	387.5631	-29.21	3,216.16
2nd Decile	2019	44.901	44.992	.0339952	38.497	50.337	2,218,014	4,157.22	8.69%	2,298.30	91.08%	891.72	777.47	389.5695	384.50	3,057.64
	2021	46.454	46.478	.0319214	40.810	51.462	2,573,996	6,245.07	10.25%	3,356.25	89.75%	1,214.10	1,081.88	451.6003	618.33	4,315.68
3rd Decile	2019	54.055	54.179	.0210469	50.361	57.434	1,645,420	3,020.39	6.31%	1,385.63	94.62%	1,024.93	944.85	372.1469	513.25	3,393.42
	2021	54.695	54.812	.0173785	51.464	57.437	1,542,636	3,751.23	6.15%	1,706.20	94.79%	1,431.73	1,289.46	566.2995	790.65	5,235.65
4th Decile	2019	60.259	60.440	.0152897	57.442	62.711	1,290,098	2,398.40	5.01%	956.29	96.29%	1,196.82	1,067.30	486.0191	614.95	3,831.27
	2021	59.882	60.017	.0135469	57.449	62.152	1466133	3,542.71	5.81%	1,424.86	95.65%	1,533.38	1,397.69	540.1488	820.59	4,042.79
5th Decile	2019	64.824	64.861	.0119721	62.715	66.742	1,357,800	2,691.00	5.62%	948.33	96.32%	1,359.23	1,198.13	638.4061	710.37	5,969.54
	2021	63.999	64.076	.0102946	62.153	65.703	1,168,911	2,782.54	4.57%	1,001.22	96.94%	1,617.76	1,515.86	525.9876	846.02	4,023.59
6th Decile	2019	68.796	68.793	.0122062	66.744	70.866	1,197,947	2,286.60	4.78%	713.73	97.23%	1,514.34	1,286.66	1,120.137	697.89	1,3611.05
	2021	67.435	67.379	.0104557	65.709	69.130	1,168,911	2,752.25	4.52%	897.45	97.26%	1,901.26	1,697.94	989.4015	678.47	1,0520.66
7th Decile	2019	72.795	72.808	.0110984	70.881	74.664	1,158,471	2,427.15	5.07%	661.87	97.43%	1,730.17	1,529.58	692.1394	830.83	5,075.87
	2021	70.734	70.791	.0094848	69.141	72.358	1,101,301	2,845.41	4.67%	833.79	97.45%	1,994.74	1,803.18	856.6465	916.67	9,811.74
8th Decile	2019	76.633	76.484	.0125857	74.665	78.941	1,126,701	2,692.15	5.63%	628.24	97.56%	2,067.60	1,818.13	982.0589	648.75	8,033.37
	2021	74.092	74.121	.0097579	72.362	75.783	1,071,779	2,944.04	4.83%	764.31	97.67%	2,249.56	1,993.61	913.6185	1,140.18	7,253.53
9th Decile	2019	81.186	80.969	.0136502	78.948	83.653	960,679	2,863.30	5.98%	536.54	97.92%	2,694.90	2,470.09	1,133.169	825.81	12,088.58
	2021	77.868	77.731	.0129304	75.797	80.282	939,299	2,959.20	4.86%	652.61	98.01%	2,731.94	2,496.55	1,185.776	806.25	11,095.90
10th Decile	2019	87.167	86.665	.0258820	83.680	96.143	760,201	3,269.38	6.83%	409.46	98.41%	4,362.31	3,729.70	2,302.973	1,780.97	20,687.53
	2021	84.356	83.656	.0318134	80.304	96.681	860,170	3,742.13	6.14%	575.52	98.24%	4,308.40	3,607.11	2,457.503	1,380.53	18,859.13
All (N = 3,186)	2019	63.686	66.743	.1763998	1.780	96.143	22,181,188	47,842.91	100.00	25,767.44	100.00	1,737.23	1,017.03	1,460.314	51.85	20,687.53
	2021	62.915	65.706	.1565198	-0.324	96.681	22,040,810	60,948.81	100.00	32,733.26	100.00	1,981.34	1,518.28	1,406.52	-29.21	18,859.13

Notes: 1. Revenues expressed in millions, in Romanian lei (1 Euro = 4.9 lei); 2. Mean and median absolute values expressed in Romanian lei (1 Euro = 4.9 lei)

Source: Own representation based on local government annual budget execution data published by The Directorate for Local Fiscal and Budgetary Policies, available here

6. Results and interpretation

Table 4 shows the results of the Wilcoxon matched-pairs signed-ranks test and estimates the horizontal fiscal imbalance using the paired-groups design. Comparing the post-emergency budget year to the pre-emergency budget year, of the total 3,186 local governments, transfer dependence ratios were lower in 46.26% (1,474 observations) and higher in the remaining 53,74% (1,712 observations).

Table 4. Wilcoxon matched-pairs signed-ranks test results

		Obs.	Sum ranks	Z	Asymp. Sig. (2-tailed)	Results
All (N= 3,186)	Positive	1,712	2,746,382	4.005	0.0001	Accepted
	Negative	1,474	2,330,509			
Notes: No zero observations were reported.						

Source: Own representation

The *p-score* of the Wilcoxon matched-pairs signed-ranks test results shows evidence against the hypothesis of no difference (H0) between the post- and pre-emergency transfer dependence rates, and the measurements are significant (N= 3,186, z = 4.005, $p< 0.05$). This indicates that the COVID-19-related central government-led counter-cyclical policy responses reduced local government transfer dependence, as the median rate in 2021 (65.706) was lower than that measured in 2019 (66.743). Moreover, it indicates that even if the overall change is of a small magnitude, it is still statistically significant.

As a next step, to evaluate the distribution of transfer dependence variations across local governments, the Wilcoxon matched-pairs signed-ranks test was rerun by decile, the results being presented in Table 5. Except for the seventh decile, the results confirm statistically significant differences in the 2021 and 2019 transfer dependence rates, providing evidence against the hypothesis of no difference between the post- and pre-emergency transfer dependence rates.

For the first decile, the results indicate a statistically significant (Z=11.215, $p<0.05$) 4.06% increase in dependence rates (34.535 in 2021 compared to 27.477 in 2019). In the second decile of local governments, the statically significant (Z=6.883, $p<0.05$) result indicates a 1.49% larger dependence rate in 2021 (46.478) compared to that in 2019 (44.992). The rate in the third decile increased from 54.179 in 2019 to 54.812 in 2021 (Z=7.259, $p<0.05$).

Table 5. Wilcoxon matched-pairs signed-ranks test results by decile

Pairs	Z	Asymp. Sig. (2tailed)	Results
1	11.215	0.0000	Rejected
2	6.883	0.0000	Rejected
3	7.259	0.0000	Rejected
4	6.019	0.0000	Rejected
5	6.415	0.0000	Rejected
6	2.222	0.0261	Rejected
7	-1.779	0.0752	**Not Rejected**
8	-6.069	0.0000	Rejected
9	-10.052	0.0000	Rejected
10	-14.588	0.0000	Rejected

Source: Own representation

In the cases of the fourth, fifth and sixth deciles, while the results are still statistically significant, the differences in median scores for the post- and pre-intervention years decrease. Thus, in the sixth decile, the median decreases from 68.793 (2019) to 67.379 (2021), while $Z=2.222$, and $p<0.05$. In the fifth decile, the median dependence rate decreases from 64.861 to 64.076 ($Z=6.415$, $p<0.05$). In the fourth decile, the decrease is from 60.440 to 60.017 ($Z=6.019$, $p<0.05$).

In the cases of the deciles 8 to 10, transfer dependence rates show significant decreases for the post- and pre-intervention years. Thus, in the tenth decile, local governments registered a statistically significant ($Z=-14.588$, $p<0.05$) dependence rate decrease of 3.01% in 2021 (83.656) compared to the value of 2019 (86.665). Similarly, in the ninth decile ($Z=-10.052$, $p<0.05$), local governments in 2021 (77.731) had a 3.24% lower transfer dependence than in 2019 (80.969). In the eighth decile, the dependence rate decreased by 2.36% in 2021 (70.791) compared to 2019 (72.808), and the change is statistically significant ($Z=-1.779$, $p<.05$).

7. Conclusions

The article proposed to explore the extent to which a country-level counter-cyclical policy response to the COVID-19 system-wide disruption has affected intergovernmental relations through the uneven distribution of transfer dependence across local governments.

The main, statistically significant result is that the overall median local government transfer dependence in the post-intervention year was lower compared to the pre-intervention year, indicating lower vertical imbalance. This result is even more substantial in the context of an increase of 27.39% in local governments' total revenues.

Local governments with lower transfer dependence rates in the pre-intervention year tend to experience larger transfer dependence rates in the post-intervention year, while local governments with more substantial pre-intervention year transfer dependence rates seem to experience a decrease in their transfer dependence rates.

One possible interpretation of a lower horizontal fiscal gap for the country case is that counter-cyclical measures seem to be less effective in addressing the adverse local government revenue effects of the disruption in larger local economies than in smaller local governments. Thus, while local governments in the first decile increased their total own revenues by 24.91%, those in the tenth decile managed to expand their revenues by 40.56%. However, considering that local governments in the first decile account for two-thirds of all local government revenues in the country, their lower expansion rate indicates the emergence of a lower-level economic steady-state, expressed as higher rates of central government transfers. In contrast, the increase of 40,56% in total own revenues for local governments in the tenth decile, which accounts for less than 2% of all local government own revenues, seems to be marginal when considering the dependence rates of all local governments. Overall, the analysis indicates that the decrease in horizontal fiscal imbalance is attributable to the erosion of larger local economies.

The findings suggest that in Romania the one-size-fits-all counter-cyclical policy response to the COVID-19 disruption produced a higher fiscal dependence rate in larger local governments with bigger local economies. The decrease in the horizontal fiscal gap is due to the non-realization of revenues in larger local governments.

The positive vertical and horizontal fiscal outcomes are associated with lower economic growth rates in the most extensive and best-performing local economies. That implies a new and lower steady-state of the overall fiscal standing of local governments. Finally, the relationship between COVID-19 type societal disruption and the related counter-cyclical measures suggests a convergence to a lower level of economic effectiveness across local governments.

There are several limitations to the research. First, the distributional patterns of transfer dependence might be structurally and substantially different in other types of disruptions. In addition, as the article presents a single-country case study, the results could be limitedly generalizable beyond the country under study. A third limitation is methodological: non-parametric tests are known for lower data information utilization, and the sign test does not evaluate the efficiency of the degree of deviation from the median.

Future research could explore the extent to which the erosion of fiscal independence experienced by larger local governments is seasonal or structural in nature. Alternatively, expanding the single-country case study to a cross-country comparative framework would shed light on the extent to which these outcomes are specific to the country’s intergovernmental fiscal relations, or they go beyond.

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