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Territorial revisions to increase cohesion policy funding from the EU: the case of the new member states

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ABSTRACT

This paper argues that some EU member states have been smart, or even dishonest. Splitting off capital cities from existing NUTS2 regions has given them an advantage in the Cohesion Policy funds allocation scheme but worsened the position of others. To explain the reasons and implications, we review the issue of delimiting the NUTS2 regions and the related allocation of financial resources. We evaluate how modifications of NUTS2 regions, carried out by Hungary, Poland, and Lithuania, impacted the allocation of financial resources for the 2021–2027 programming period. The analysis shows the shift of billions of euros towards these countries. We also argue that this experience is and could also be an inspiration for other countries.

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1. Introduction

The borders of NUTS2 regions, i.e. territorial units used as the main basis for the EU's Cohesion Policy, have been relatively stable for many years; specifically, they have merely registered small changes, generally only aligned with changes in the internal organization of the member states (Eurostat, 2022). However, this paradigm was seriously disrupted on 1 January 2018 when Hungary, Poland, and Lithuania split off the areas of their capital cities from existing NUTS2 regions using Commission Regulation (EU) 2066 (European Union, 2016) as their basis. This calculated change gave regions with a population of more than 5.5 million (roughly the population of Denmark or Finland) and more than 91 thousand km^2 (roughly the size of Portugal or Hungary) (Eurostat, 2023) a significantly more advantageous position when establishing conditions for implementing the Cohesion Policy's new programming period of 2021–2027. Specifically, they were given the status of less developed regions (European Union, 2021c), which receive more generosity from the EU's Cohesion Policy, not only from the perspective of fund allocation, but also with respect to the maximum level allowed for co-financing supported projects.

It is necessary to mention that the allocation itself is tied to a fixed volume of resources, which is the result of political agreement on the structure of the EU's multiannual financial framework, i.e. the budget (European Union, 2020) and the principles for the financing of

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the Cohesion Policy (European Union, 2021b). Therefore, the logical result is that if certain countries obtain higher allocations of financial resources by effecting an administrative increase in the number of less developed regions and their populations, then the allocation for other regions, or other countries, must be lowered by this amount of funds. Thus, this is a classic example of rivalry, which economic theory calls a zero-sum game. On the one hand, changing the borders of NUTS2 regions by certain countries is entirely in harmony with valid EU legislation and was implemented as a standard process. On the other hand, however, there is the question of how much this behavior is desirable, because it creates not only 'winners', but also 'losers'.

The impact of European Cohesion Policy in different contexts is highlighted by Fratesi and Wishlade (2017). They point to the specificities of governance under the multi-level governance model and at the same time to the multifaceted nature of Cohesion Policy, where some countries may apply approaches that have implications for other countries. Becker (2019) argues similarly, stressing that there are many links within the Cohesion Policy and the whole system can therefore be described as a path-dependent environment. Furthermore, Dall'Erba and Fang (2017), in their meta-analysis, show that 'interaction terms' are often very important determinants of growth. Therefore, Fratesi and Wishlade (2017) concluded that evaluating the determinants of the Cohesion Policy is more useful than analyses that focus only on quantifying its impacts.

These studies are partly followed up in this paper, turning its attention to the new member states and the potential of changing NUTS2 boundaries to reallocate Cohesion Policy funds, in particular the European Regional Development Fund (ERDF) and the European Social Fund (ESF). The question of splitting the NUTS2 regions arises because of the divergence where the large cities grow rapidly, while other parts of the countries outside these cities grow slowly. If the Cohesion Policy had worked better, such divergence should not have materialized, and countries would have no incentive to adjust regional boundaries.

Also, academics have scrutinized the Cohesion Policy for many years in terms of its effectiveness and the factors that influence it; the issue of splitting the NUTS2 regions to gain advantage in the Cohesion Policy has not yet been addressed. Therefore, this is a research gap. Its examination will provide a number of important implications that will be useful in setting up the parameters of Cohesion Policy in the forthcoming programming periods. In particular, in the area of purposeful (mis)use of the Cohesion Policy framework.

The body of literature that can be followed up due to the novelty of the topic is considerably limited. Nevertheless, we can say that this issue has already been at least partially outlined in the literature. In particular, Giordano (2017) based his research on the recognition of the existence of permanent structural handicaps in the development of specific types of area. Gagliardi and Percoco (2017) noted that the Cohesion Policy operates differently in rural and urban regions. Surubaru (2017) points to the importance of the stability of the set framework and the political support for obtaining EU funds. In general, the EU itself recognizes the specific position of capitals and metropolitan areas in its development strategies (European Commission, 2021).

In conjunction with the above, the goal of this paper is (i) to discuss the issue of delimiting NUTS2 regions and the related allocation of financial resources as part of the EU's Cohesion Policy; (ii) to evaluate how modifying the NUTS2 regions' borders for 1 January 2018 impacted the allocation of financial resources for the 2021–2027 programming

period; and (iii) to moreover start a discussion on the possibility that the process of formally changing regional borders will continue, i.e. identifying other countries for which redrawing the borders of existing NUTS2 regions would increase fund allocation and to propose what these changes could possibly look like. We see the contribution of this paper in explaining the motivation and quantifying the financial impact of redrawing the borders of European regions. Therefore, it is a contribution to the debate on the future of the EU's Cohesion Policy.

In addition to how these changes financially affected fund allocation for various EU countries and their regions, there is also, however, the question of collateral impact, e.g. to what extent is improving one's own position within the zero-sum game compatible with the main ideas of the EU's Cohesion Policy? Does not this indicate a precedent that will be frequently followed by other countries before the start of future programming periods? Won't its influence result in significantly more frequent shifts within regions' development classification, which would undermine the Cohesion Policy's stability and credibility? In this case, wouldn't the EU's Cohesion Policy become unsustainable in its current form?

The relevance of this issue can be seen in the fact that the path taken by Hungary, Poland, and Lithuania has already inspired, at least, Croatia and Bulgaria. Croatia's change of the NUTS2 regional borders did not influence fund allocation for the programming period of 2021–2027, because it became valid only on 1 January 2021. However, it was clearly a pragmatic step aimed at increasing the absorption of resources from EU structural and investment funds in the future, as stated by the government officials (Government of the Republic of Croatia, 2019). Similarly, Bulgaria is seriously considering reforming the arrangement of its NUTS2 regions. It declares that this is due to the imbalanced development of population (Ivanov, 2017) and the ineffective organization of development (OECD, 2021). Likewise, its minister of local development has acknowledged that one of the main objectives of this activity is to increase the absorption of resources from EU funds (Okov, 2018).

2. Background and literature

At the beginning of the twenty-first century, there has been a wide-ranging discussion on the direction, implementation, and future of the Cohesion Policy that has been significantly influenced by three documents. The OECD report (2009) emphasized the undesirable importance of territorial disparities with an emphasis on the necessity of primarily directing policy in favor of less developed regions. The World Bank report (2009) highlighted the importance of policy accentuating the spatial dimension of development. And the 'European' Barca report (2009) argued in favor of using a 'place-based approach' – interventions that support the potential of defined territories in the long term by using local knowledge, while responsibility for the general form and implementation of the policy is distributed at various levels of government. Therefore, the three documents specify the need to link developmental interventions to the spatial aspects of a territory.

However, none of the documents or the main topics of discussion on the future of regional policy assume that this emphasis on spatial aspects should consist of formal reconfiguration – in other words, intentionally modifying regional borders so that certain regions receive more generous financing from the EU's Cohesion Policy, for

example. However, this 'risk' is not entirely unfamiliar in the academic literature. On this subject, Maza and Villaverde (2011) warned against evaluating and establishing the Cohesion Policy primarily based on the administrative limitations of NUTS2 regions more than ten years ago. They used analysis to confirm that the essential determinant of development is primarily the structure of functional metropolitan regions and the intensity of their interaction with rural areas.

Royuela and López-Bazo (2020) emphasize the importance of the Cohesion Policy, as it significantly influences the socioeconomic conditions of a population and thus becomes one of the things that define the attitude toward the 'European identity' held by the populations of different countries and regions. These populations, however, benefit from the resources for Cohesion Policy to differing degrees. The change in the method of distributing resources from European funds is a subject dealt with by Zimakov and Popov (2021), who think that it would be counterproductive to solving unfair benefit levels if the spectrum of social factors included in the formula being used (the so-called Berlin formula) were expanded, this being the main innovation that modified the allocation mechanism for resources from the main European funds for the 2021–2027 programming period.

Solís-Baltodano et al. (2022) believe that the distribution of resources intended for achieving the convergence goals of the Cohesion Policy is an issue of conflicting requirements, so they call for creating an intuitive initial allocation mechanism that would make it possible to distribute funds more fairly and more effectively as part of political negotiations. They emphasize that there is often insufficient interconnection between the EU's Cohesion Policy and national regional policies. This is also confirmed by Doran and Jordan (2013), who warn against increasing regional disparities at the same time as national convergence increases, which could lead to overlooking regional differences. In this context, territories whose support national regional policy is considered desirable for creating territorial development do not show evidence of higher financing from structural funds (Komorowski et al., 2021). On the contrary, Italian academics conducted an analysis of 20 administrative regions to present the positive impact European Union funds have on regional GDP per capita and the less significant impact that national grants have on the same (Coppola et al., 2020).

At the beginning of this century, De Rynck and McAleavey (2001), who primarily criticize the measure of GDP per capita because it complicates the ability to direct financial resources towards actual deprivation, were very critical of the foundations and mechanisms for negotiating the Cohesion Policy's budget allocations. However, research revealed that regional lobbying in Brussels does not lead to a larger volume of funds or to easier disbursement of funds for regional development (Rodriguez-Pose & Courty, 2018).

In connection with the very diverse results of previous research on the impact of financing through structural funds (Bachtler & Gorzelak, 2007), attention has been devoted to interventions that would ensure that the invested resources were more efficient (Bachtler et al., 2017). In the given context, the attempt to eliminate the so-called X-inefficiency steps into the forefront, primarily resulting from low motivation to minimize costs (Leibenstein, 1966). Actually, aspects of X-(in)efficiency are inherent in decision-making situations where someone who does not own certain resources decides on how these should be used for the benefit of another person, i.e. how the public sector itself acts when implementing various types of policy, including cohesion.

Jackson and Brown (2003) consider the main cause of this type of inefficiency to be high transaction costs, which are an effect of establishing contractual relationships between individual actors. Here, this means complicated relationships between the EU, the member countries, and the recipients of Cohesion Policy resources. Hedley (1998) adds that other important elements are the comprehensiveness of standards, the options for monitoring, and in general the expectations for the implemented public policy's results.

In relation to this problem, Mendez and Bachtler (2011) also criticize Cohesion Policy audits for focusing on their adherence to regulations instead of criticizing performance audits, which never lead to the intended improvement of performance and responsibility for achieving Cohesion Policy goals, but on the contrary weaken their strategic performance and threaten their sustainability. There are even calls to reevaluate the management of the EU's Cohesion Policy, along with the statement that this could play a renewed role in periods of uncertainty (Sielker et al., 2021).

All at all, the Cohesion Policy has adapted to actual needs and circumstances (McCann & Ortega-Argilés, 2021), it has learned from its previous mistakes (Rodriguez-Pose & Novak, 2013), but primarily it has recently become a 'do it all' policy (Scotti et al., 2022), whereby its narrative has been undergoing significant changes (Sielker et al., 2021) and weakening the ties to its original goal, i.e. reducing the disparities between the EU's regions (European Union, 2008). In addition, it seems that the Cohesion Policy is confronted with a compromise between long-term convergence and short-term economic performance (Jestl & Römisch, 2020).

Even despite this fundamental shift, however, certain of its basic elements are relatively stable and easily predictable; for example, the foundation for allocating resources from the main European funds to individual countries has so far been the Berlin formula, which was adopted in 1999. This uses the following criteria for allocating funds: 'eligible population, regional prosperity, national prosperity and the severity of structural problems, especially the level of unemployment' (European Council, 1999). However, it was adopted during the period when the EU had only 15 members who were not so diverse, expenses on agricultural policy significantly surpassed expenses for cohesion, and the Mediterranean countries were the largest recipients of aid (European Commission, 2009).

These conditions fundamentally changed after the EU expanded to include Eastern European countries (Ashmarina & Murzagalina, 2021) – which have differing perspectives on many problems, prioritize different values, and therefore come with new methods for resolving issues (Sielker et al., 2021) – as well as after the exit of Great Britain from the EU (Giordano, 2021). Researchers from the Vienna Institute for International Economic Studies have even stressed the very different positions of the 'old' (EU-15) and 'new' EU countries, warning of the necessity to modernize the EU's budget and its related principles for allocating funds, even though this actually falls under the auspices of multilateral negotiations, primarily of the old EU member states (Mrak et al., 2015).

3. Methodology

In the first place, it is necessary to explain the methods for defining and classifying the NUTS2 regions, as well as the algorithm for distributing Cohesion Policy funds as established in the EU. The research model data will be described next. Finally, the

methodology section is closed with a model comparison of the initial individual allocations of funds.

3.1. Definition of NUTS2 regions and their classification

The requirements for the single market to function properly and for European polity to be implemented effectively have created the need to coordinate the establishment, collection, and expansion of statistical data to ensure that the data can be compared within the EU framework. Regional statistics, which are based on the NUTS classification, are the basic component of this system (Vukovic et al., 2011); however, NUTS2 regions are the primary level used to allocate most of the Cohesion Policy funds (Becker et al., 2010). The definition of NUTS units (regions) is governed by Regulation (EC) No. 1059 (European Union, 2003). It has also established that the first criteria for defining these units are their existing administrative units; however, if there are no such units in the required range, the country must group together a suitable number of contiguous administrative units to establish 'non-administrative regions'.

To guarantee the required ability to compare regional statistics, the classification to be used should be relatively stable (International Labour Office, 2018). Therefore, the EU has established that changes to classification cannot be adopted more often than once every 3 years; moreover, for each non-administrative unit, the change can be made only if the change in the given NUTS level lowers the standard deviation of the population sample of all EU territorial units (European Union, 2003, Article 5).

The potential to utilize resources from EU funds is closely tied to the definition of NUTS2 regions. The limits for EU project co-financing as well as allocations of available funds are based on whether a region is classified as less developed, transition, or more developed. Therefore, for each programming period, it is necessary to determine which regions should be preferentially targeted by the available funds and to what degree. The essential criteria for determining region type have become regional prosperity, with the main indicator regarded to be GDP per capita based on purchasing power standards (GDPpc). The benchmark for determining the level of regional prosperity is then the EU average.

Table 1 shows the evolution of the maximum level of project co-financing from structural funds. From the data, it is clear that the approach to co-financing levels has changed over time; specifically, in an attempt to capture developmental trends and simultaneously to meet the EU's convergence goals more effectively, the number of limits has increased, which is related to the increase in the number of defined regional types. The attempt at a differentiated approach is more clearly visible in the development of co-financing limits. In the case of less developed regions, these limits have an upward tendency. As to the

Table 1. The development of maximum co-financing levels according to region type.

Region/Period	2000–2006	2007–2013	2014–2020	2021–2027
Less developed (GDPpc < 75% of EU avg.)	75%	75–85%	80–85%	85%
Transition (75% of EU avg. < GDPpc < 100%[a] of EU avg.)			60%	60%
More developed (GDPpc > 100%[a] of EU avg.)	50%	50%	50%	40%

Notes: GDPpc means GDP per capita in purchasing power standards.
Transition is defined from the 2014–2020 programming period.
[a]For the 2021–2027 programming period; for 2014–2020, the value is 90%.

question of the degree of Cohesion Policy support, the importance of the category into which a region is placed has thus increased.

3.2. ERDF and ESF fund allocation algorithms

The system for classifying regional development has an even stronger influence on individual countries' allocations of resources that are obtained from European funds, mainly the European Regional Development Fund (ERDF) and the European Social Fund (ESF). Here, it is necessary to mention that the ERDF and ESF allocations are quantified for each region separately according to their level of development. However, the total amount is intended for a given country and is not subsequently limited to being used in the region that acted as the basis for its allocation. This is a different principle of allocation compared to, for example, the Cohesion Fund (CF), where the volume of allocation is not based on the development of particular regions, but on the level of national income. In fact, the allocation principles of the CF are not dependent on the structure of NUTS2 regions, and therefore this important Cohesion Policy fund is not dealt with in our analysis.

The allocation algorithm for ERDF and ESF funds, i.e. the amount of the aforementioned Berlin formula, comprises a certain number of steps with principles for establishing allocated amounts that are very different for individual types of regions. Generally, an initial individual allocation (*IIA*) is established for each region first. For selected features representing the region's weaker aspects, which should be taken into account and thus eliminated, the *IIA* is subsequently increased by a possible premium. The result of these modifications is then the region's individual allocation (*IA*) for the programming period.

For less developed regions, the initial individual allocation (*IIA*) per capita and year in EUR is determined according to (1), where *GDPpc(EU)* presents the average GDP per capita in the EU, and *GDPpc(R)* is the average GDP per capita in a particular region.

$$IIA = [GDPpc(EU) - GDPpc(R)] \cdot c \tag{1}$$

The value of *IIA* also depends to a marked degree on the country's relative prosperity, which is taken into account in calculating *IIA* by the coefficient of country prosperity (*c*). Its development is depicted in Table 2. Integrating the coefficient of country prosperity was a reaction to the EU's expansion in 2004, which was accompanied by a greater disparity between national economies; it's use began only with the 2007–2013 programming period. Similarly to co-financing development trends, the attempt for greater differentiation is visible here – in favor of regions in less prosperous countries. Specifically for the period of 2007–2013, the coefficient of country prosperity values between individual levels of prosperity differed by roughly 25%; for the period of 2021–2027, the difference in

Table 2. Allocation percentage according to degree of relative national prosperity.

	Coefficient of country prosperity (c)		
Country's GNIpc of EU avg.	2007–2013	2014–2020	2021–2027
GNIpc < 82%	4.25%	3.15%	2.85%
82% < GNIpc < 99%	3.36%	2.70%	1.25%
99% < GNIpc	2.67%	1.65%	0.75%

Notes: GNIpc means Gross National Income per capita in purchasing power standards.

coefficients between the less prosperous and intermediately prosperous countries more than doubled.

Using the example of the 2021–2027 programming period, for which the specific format of the Berlin formula was modified in Regulation of the European Parliament and of the Council (EU) 1060 (2021, Annex 26), it holds that *IIA* per capita and year is calculated for transition regions on the basis of a linear interpolation between the minimum (15.2 EUR) and maximum levels of support (60% of the allocation that the regions would obtain if they were classified as less developed) according to the level of relative GDP per capita compared with the EU average. In the case of calculating *IIA* for more developed regions, the procedure is more complicated; it starts with the amount of 15.2 EUR per capita per year, which is further modified on the basis of seven socio-economic criteria. It is therefore impossible to generalize on amounts related to the value of support for developed regions. Nevertheless, the value of 15.2 EUR per capita per year is an average from which, as one can consider, actual amounts do not differ dramatically – it is therefore used in these model comparisons (see Table 3 below).

It holds for all regions that *IIA* is subsequently multiplied by the number of residents in the region. However, this allocation is then increased by possible premiums intended to help more intensively eliminate regional disparities, which negatively influence meeting the Cohesion Policy's goals. For the 2021–2027 programming period, the principles used to grant premiums are defined by Regulation of the European Parliament and of the Council (EU) 1060 (2021, Annex 26), but these are not critical for achieving the goals of this article. However, it is necessary to mention that even here the classification of a region's development plays a specific role. For example, the premiums for unemployed individuals and the premiums for young, unemployed individuals amount to 570 EUR per capita per year for less developed regions, whereas a transition region receives only 560 EUR.

Finally, the amount increased by the premiums is multiplied by the number of years of the programming period, i.e. seven. The result of these modifications is then the region's individual allocation (*IA*) for the programming period (2), where *IIA* is the initial individual allocation, *POP(R)* represents the population of the region, and *P(1, 2, … X)* are premiums for weaknesses.

$$IA = \{IIA \cdot POP(R) + [P(1) + P(2) + \ldots + P(X)]\} \cdot 7 \tag{2}$$

However, achieving political goals, which also include Cohesion Policy goals, is understandably politics. Therefore, in the end these amounts can be increased even more by a so-called transitional form of support acknowledged to specific countries or regions.

3.3. Research model data

Using the 2021–2027 programming period as an example, a comparison model was created for the initial individual allocation funds per capita of more developed, transition, and less developed NUTS2 regions based on Annex 26 (European Union, 2021b) and data from Eurostat (2023).

Using data from the European Court of Auditors (2019) and the European Union (2021a), the impact of splitting off metropolitan regions in Hungary, Poland, and Lithuania is quantified for individual EU member states, naturally with emphasis on these three countries.

Moreover, other potential examples of countries that could also attempt to change the delimitation of their NUTS2 regions to intentionally obtain greater support from ERDF and ESF have been identified. A new possible NUTS2 partitioning was modeled for these selected cases, which includes their classification and their impact regarding the size of their eligible population and which additionally verifies whether these follow the established rules for acceptable changes for NUTS2 borders as defined by Regulation (EC) No. 1059 (European Union, 2003). For this purpose, we used information from the Regional Economic Accounts by NUTS classification database for the period 2016–2020 (Eurostat, 2023). Specifically, we applied data on GDP and average annual population at the NUTS2 and NUTS3 levels of regions.

In addition, in order to show the topicality of the problem at hand, we also used data on changes in NUTS classification, in particular changes in regional boundaries, from the History of NUTS and NUTS Maps database (Eurostat, 2022).

3.4. A model comparison of the initial individual allocations of funds

The impact of the fund allocation method described in Section 3.2 can be demonstrated practically using Table 3. This table depicts the model, which was constructed under the assumption that the average GDP per capita in purchasing power standards (GDPpc) for the EU member countries is EUR 28,333, i.e. the average value for the years 2015–2017 (Eurostat, 2023). In other words, this is the period used to calculate the allocation of funds for the programming period of 2021–2027.

Table 3. The model of IIA funds per capita per year according to classification by development level (in EUR).

	More developed region	Transition region		Less developed region	
Country's GNIpc of EU avg.	Fixed support (100% of EU avg. < GDPpc):	Max. support (GDPpc = 75% of EU avg.):	GDPpc growth by 1%:	Min. support (GDPpc = 74% of EU avg.):	GDPpc decrease by 1%:
<82%	15.20[a]	121.13	−4.85	209.96	+8.08
82%–99%	15.20[a]	53.13	−2.13	92.08	+3.54
>99%	15.20[a]	31.88	−1.28	55.26	+2.13

Notes: GNIpc means Gross National Income per capita in purchasing power standards.
GDPpc means GDP per capita in purchasing power standards.
[a]Avg. value for more developed regions.

From the model in Table 3, it can be seen relatively clearly that *IIA* indeed differs diametrically between variously developed regions. Thus, if relatively less prosperous countries such as Hungary, Poland, and Lithuania (all have a GNIpc < 82% of the EU average) manage to have populations in the millions newly calculated as populations of less developed regions, they caused their individual allocation for the period of 2021–2027 to be increased by billions of euros.

4. The impact of splitting off metropolitan regions: the case of Hungary, Poland, and Lithuania

At the beginning of this section, we should point out that the rules for delimiting NUTS borders should guarantee that individual countries' leaders will not take a calculated

approach to defining NUTS regional borders nor at the same time use unsystematic techniques such as penciling in borders on a map. Such approaches actually create a range of problems for future development, which has been proven through great experience with compromising border demarcation in the aftermath of war (MacMillan, 2003). Other studies focusing on the impact of artificially created borders have come to similar conclusions, i.e. that ad hoc region definition is a source of political and economic problems and therefore also a significant barrier to development (Alesina et al., 2011; Easterly & Levine, 1997; Englebert et al., 2002).

It should be mentioned that between the integration of the NUTS classification into EU legislation in 2003 and the turning point of 2018, there were only 16 cases where regional borders changed at the NUTS2 level and the most active in this respect were the most populated countries with the largest number of regions, i.e. Germany and Great Britain (Eurostat, 2022, 2023). In particular:

- Germany shifted the boundaries of some regions in the area of former East Germany.
- Great Britain made some minor boundary shifts in northern England and Scotland; moreover, it divided the London area.
- Finland and Bulgaria made major changes in the administrative division of the territories.
- Denmark and Slovenia delimited the boundaries of NUTS2 regions.
- Italy made some minor boundary shifts in northern Italy.
- France established a new NUTS2 region after Mayotte joined France.

The advantages gained by Hungary, Poland, and Lithuania as a result of the conditions they entered into the allocation mechanism are entirely and explicitly evident from Table 4. This summarizes the assumed fund allocation based on the report by the European Court of Auditors (2019) that was calculated on the basis of the regions' configuration before the NUTS classification was updated in 2018, i.e. primarily by splitting off the NUTS2 regions of Hungary, Poland, and Lithuania's capital cities. Furthermore, it summarizes the actual allocation of funds (European Union, 2021a), which has already been realized on the basis of the updated NUTS classification. One should point out, we consider only two main funds – ERDF and ESF, whose resources are directly linked to the above-discussed Berlin formula, which was influenced by changes in the NUTS classification. By comparing these values, it can be deduced how splitting off the capital city regions has influenced the allocation of funds for individual EU member states.

We also have to mention that the report of the European Court of Auditors (2019) is derived from the working proposal of parameters, which underwent a number of minor changes in the final regulation. However, the changes were usually very minor, in the range of a few percent. Therefore, it can generally be assumed that these partial parameter modifications did not fundamentally influence the allocated amounts or their distribution among countries.

From Table 4, it is very clear that even though the total volume of actually allocated funds practically did not change in comparison to the estimations, the actual fund allocations were lower than the estimated ones for an outright majority of countries. Only a few countries deviated from this general rule. Specifically, Hungary recorded a growth of nearly 15%, Lithuania more than 10.5%, and Poland 3.5%. Malta and Estonia

Table 4. Comparison of the allocation of ERDF and ESF before and after the change in NUTS2 regional borders (in EUR mil.).

Country	Estimated	Granted	Difference
Austria	1205	931	−22.74%
Belgium	2335	2120	−9.21%
Bulgaria	8231	8166	−0.79%
Croatia	7921	7339	−7.35%
Cyprus	641	489	−23.71%
Czechia	13,261	13,127	−1.01%
Denmark	394	261	−33.76%
Estonia	2143	2146	**0.14%**
Finland	1669	1493	−10.55%
France	16,848	15,745	−6.55%
Germany	16,551	16,520	−0.19%
Greece	17,428	17,297	−0.75%
Hungary	16,430	18,867	**14.83%**
Ireland	1029	904	−12.15%
Italy	42,422	41,150	−3.00%
Latvia	3309	3204	−3.17%
Lithuania	4156	4600	**10.68%**
Luxemburg	42	30	−28.57%
Malta	436	448	**2.75%**
Netherlands	1225	920	−24.90%
Poland	59,597	61,730	**3.58%**
Portugal	19,157	18,694	−2.42%
Romania	25,708	25,309	−1.55%
Slovakia	10,826	10,521	−2.82%
Slovenia	2466	1915	−22.34%
Spain	37,461	34,693	−7.39%
Sweden	2067	1570	−24.04%
Transitional forms of support		2700	
Commission[a]	1850	2430	
Total	**318,658**	**317,749**	−0.47%

Notes: Estimated is allocation derived from the configuration of the regions before the borders changed in 2018.
Granted is allocation derived from the configuration of the regions after the borders changed in 2018. Individual countries cleaned of the transitional form of support.
[a]Specific funds whose use is decided by the European Commission, e.g. Technical Assistance, European Urban Initiative, etc.

also had allocations higher than the estimated funds, although in all cases these differences are smaller than for the three previous countries. For certain countries, the decrease is quite distinct and amounts to tens of percent. This primarily concerns the most developed countries, such as Denmark, the Netherlands, Sweden, Luxembourg, and Austria, although surprisingly Cyprus also falls into this group. However, it is necessary to mention that, expressed in absolute numbers, the allocated amounts for these countries are relatively low; therefore, even small changes mean large differences in their percentages.

It is also interesting to see how these values relate to national GDP in particular countries. In the case of Hungary, the difference is more than 1.5% of annual GDP, and more than 0.75% in Lithuania. On the other hand, Croatia and Slovenia, for example, lost financial support amounting to 1% of their annual GDP. See the Appendix for more details.

Table 5 clearly clarify the changes in allocation mentioned above. Considering that the metropolitan regions had not been divided, the Hungarian (HU10) and Polish (PL12) regions would have been classified as more developed, because their GDPpc expressed as a percentage of the EU27 average would exceed 100 (see Table 1 above). Although

Table 5. GDPpc as a percentage of the EU27 (from 2020) average.

NUTS2 region/TIME	2016	2017	2018	2019	2020
HU10 – Kozep Magyarorszag (discontinued)	104	105	108	112	113
HU11 – Budapest (new, metropolitan)	138	141	145	151	153
HU12 – Pest (new)	56	55	56	58	59
PL12 – Mazowieckie (discontinued)	110	111	113	118	123
PL91 – Warszawski stoleczny (new, metropolitan)	150	152	155	160	167
PL92 – Mazowiecki regionalny (new)	59	60	60	62	64
LT00 – Lithuania (discontinued)	76	79	81	84	87
LT01 – Sostines regionas (new, metropolitan)	110	113	118	122	126
LT02 – Vidurio ir vakaru Lietuvos regionas (new)	63	66	67	68	71

the value of the GDPpc indicator increased significantly for the new metropolitan regions (HU11 and PL91) after being split off, the position of these regions essentially remained unchanged when seen as a key to fund allocation, because they were still classified as more developed. Conversely, the newly separated non-metropolitan areas (HU12 and PL92) did not even register a value of 75; therefore, they fell into the category of less developed regions, which meant acquiring an enormously more favorable position for co-financing and fund allocation in comparison with their previous status (see Tables 1 and 3 above).

In the case of both the Hungarian and Polish regions, a territory with approximately 45% of the original region's population achieved a more advantageous status, with population actually being the second most essential factor for determining the volume of allocation – next to classification according to development (see (2) above). In particular, the new region HU11 counts ca 1.7, while the less developed HU12 ca 1.3 million of inhabitants. Likewise in the Polish case, PL91 counts ca 3, and the less developed PL92 ca 2.3 million of inhabitants (Eurostat, 2023).

Although slightly different, the situation is similar in the case of Lithuania. After having been split off, the metropolitan region (LT01) with ca 0.8 million of inhabitants found itself in the position of being a more developed region and the non-metropolitan region (LT02) in the position of a less developed one. However, considering that the non-metropolitan region unites 70% of the population, i.e. ca 2 million (Eurostat, 2023), it can be assumed from the modeled values in Table 3 that the benefits of the non-metropolitan region's classification as less developed outweighed the metropolitan region's classification as more developed. Otherwise, the truth of this conclusion as derived from the model was also confirmed by the actual change in allocations (see Table 4).

5. Hypothetical changes in the NUTS2 regions to increase fund allocation: selected cases

In conjunction with how advantageous it is to split off capital city regions, as demonstrated above, the question logically arises as to which other countries could be inspired by this practice, because it would also mean that their fund allocations would increase during the next programming period. By analyzing the development of GDPpc as a percentage of the EU average between 2016 and 2020 (the latest available data to allow modeling), we selected countries with regions that generally tend to be considered less developed even though their metropolitan NUTS2 region actually deviates from this rule, i.e. Bulgaria and Romania. Moreover, we also chose countries composed of

only one NUTS2 region that have recently exceeded (Estonia) or within a few years will likely exceed (Latvia) the limit of 75% of GDPpc as a percentage of the EU average, which divides less developed regions from transition regions.

From Table 6, it is clear that in the case of the Bulgarian metropolitan region (BG41), the existing trend indicates that it will soon exceed the 100% limit, which means that the region will be classified as more developed. If, however, it was divided, i.e. split off from the existing NUTS3 region BG411, it would become a new region with a population of approximately 0.8 million classified as less developed, i.e. ca 40% of BG41's population. A similar conclusion can be made for the Romanian metropolitan region (RO32), whose formal division along the lines of the already existing NUTS3 regions RO321 and RO322 would mean improving the position of the independent region of Ilfov (RO322), which has a population of approximately 0.5 million, i.e. ca 22% of RO32's population (Eurostat, 2023). Despite this, it would be classified as 'only' transitional for the 2021–2027 programming period.

In the case of Estonia (EE00), splitting off the NUTS3 metropolitan region (EE001) would place this region among the more developed. Nevertheless, the rest of Estonia – with approximately 55% of its population, i.e. 0.7 million people – would find itself among the less developed regions. Similar argument can be made for Latvia (LV00) even though it has not yet reached the limit of 75% of the EU's GDPpc average; however, it can also be expected to reach this within the period of a few years if the trend of its GDPpc's development is taken into consideration. Therefore, it could consider splitting off its metropolitan region (LV006), which would result in only ca 33% of inhabitants (ca 0.6 million) would be 'settled' into the more developed region. However, approximately two-thirds of the population would be assigned to a region classified as less developed (Eurostat, 2023).

However, if the changes were not caused by reforming the territory's administrative structure, changes in the borders of the existing regions can only be made if the change at the respective NUTS level lowers the standard deviation of the population count of all EU territorial units. For the NUTS2 level, it is necessary to add that the average size of this class of units in a given country must be between 0.8 and 3 million people (European Union, 2003). Table 7 summarizes how the above variations for changes to the selected NUTS2 regions would meet these conditions on the basis of

Table 6. Comparison of existing NUTS2 regions with a hypothetical separation of capital city regions using GDPpc in percentage of the EU27 (from 2020) average.

NUTS2 region/TIME	2016	2017	2018	2019	2020
BG41 – Yugozapaden (actual)	80	81	83	89	92
Sofia stolitsa (proposed metropolitan – actual BG411 NUTS3 region)	107	107	110	120	125
Rest of actual BG41 NUTS2 region (proposed)	35	37	37	37	40
RO32 – Bucuresti – Ilfov (actual)	140	147	149	160	164
Bucuresti (proposed metropolitan – actual RO321 NUTS3 region)	157	166	169	182	131
Ilfov (proposed – actual RO322 NUTS3 region)	70	75	76	77	75
EE00 – Eesti (actual)	77	79	81	82	84
Põhja-Eesti (proposed metropolitan – actual EE001 NUTS3 region)	114	116	117	118	121
Rest of actual EE00 NUTS2 region (proposed)	48	50	52	53	53
LV00 – Latvija (actual)	66	67	69	69	70
Riga (proposed metropolitan – actual LV006 NUTS3 region)	109	110	118	112	117
Rest of actual LV00 NUTS2 region (proposed)	45	46	45	49	50

Table 7. The feasibility of changes on the basis of legislatively defined requirements.

Condition	Required	Bulgaria	Romania	Estonia	Latvia
Reduces the standard deviation of the size in terms of population of all EU territorial units	**Negative value**	−1.61	−1.27	−0.13	−1.06
Average size of NUTS 2 regions in the country (in mil)	**0.8–3**	1.00	2.15	0.66	0.96

the latest available data, i.e. 2020. It is clear that except for Estonia, which is too small to create at least two regions that meet the legislative criteria, the changes in all three countries are feasible and nothing is formally preventing them from deciding to modify the structure of the NUTS2 regions in their territories.

6. Discussion

With regard to the fact that on average one-third of the EU budget has been spent on Cohesion Policy since 2000, attention paid to fund allocation for eliminating regional disparities appears to be quite justified. From this analysis, it is evident that Hungary, Poland, and Lithuania have approached fund allocation as a strictly competitive endeavor, thus provoking an obvious conflict. The pitfall of this conflict is that all its results are Pareto-optimal, meaning that whatever one party acquires, another must lose. The natural strategy actors use when engaging in this type of contest is to attempt to maximize their own profit in the future, despite simultaneously provoking a reaction in competitors, who try to attempt the same, i.e. to emulate the successful strategy in order to minimize their losses.

Nevertheless, the crucial issue is that this competitive approach harms the basic philosophy of the Cohesion Policy, which is a so-called community policy. This means that member countries implement the policy on their own territory, even though the harmonization and coordination policy, under which the issue of fund allocation also falls, should be the exclusive domain of supranational bodies of the EU. The parameters and principles of the allocation mechanism are modified by the European legislature (European Union, 2021b, 2021c), so member countries do not have the right to interfere in them, which doubtlessly happened in this case – however indirectly – thanks to changes in NUTS classification.

Hungary, Poland, and Lithuania found a loophole and used it, which means that they may have opened a notional Pandora's box, thereby inciting other EU countries to react, i.e. provoking a sequence of events that could lead to making the Cohesion Policy unstable and unsustainable in its current form. Examples of these include not only additional countries possibly profiting on the next allocation by splitting off their metropolitan or other distinctly well-developed areas into new NUTS2 regions, but also other member countries, primarily sincere payers into the EU budget, becoming willing to tolerate such a dishonest approach for significantly influencing fund distribution.

In fact, Hungary, Poland, and Lithuania could create a precedent that other countries would emulate. The data presented on the results of potentially splitting off capital city regions into separate NUTS2 regions in the four selected countries demonstrates that even in these other examples, it would be possible to optimistically expect an increase in allocated funds. Essentially, this would be analogous to the scenarios described above. Larger countries, i.e. Bulgaria and Romania, could repeat the experience of

Hungary and Poland, because making a metropolis into its own independent region for the next programming period would not harm its position in practice, but conversely, it would acquire a region in the remaining territory that the Cohesion Policy would treat distinctly more generously.

In the case of Latvia, it could also contemplate copying Lithuania's experience, i.e. degrading the position of a smaller metropolitan region in order to significantly improve the position of the rest of the country. However, the question remains as to whether this change would be advantageous for Latvia already during the next programming period. In regard to the dynamic of GDPpc's development (see Table 6), we believe that it would not and that the appropriate time for splitting off the metropolitan NUTS2 region will only come during the 2030s.

In contrast, Estonia does not meet the legislative conditions and therefore cannot de jure emulate the Lithuanian scenario. However, because history has shown that the Cohesion Policy can be 'bent' variously for political reasons, and Regulation (EC) No. 1059 (European Union, 2003) actually does allow for deviation from the rules in justifiable cases, it is difficult to imagine that Estonia would be prevented from enacting the same measure if Latvia decided to follow the Lithuanian example. Specifically, Estonia would be left as the only Baltic country not allowed to use this optimization technique.

Moreover, the examples of potentially splitting off the capital city region under discussion are not the only ones possible. In the following years, a number of other European countries will also face attempts to improve their own position in the interest of increased channeling of European funds. These considerations could be relatively attractive, especially due to the expected uncertainty related to the impact of the war in Eastern Europe, the cooling economy, and the expected drop in the standard of living of the population (Sielker et al., 2021). For example, in Czechia, three of eight NUTS2 regions were reclassified from less developed to transition for the 2021–2027 programming period. Some others can also be expected to lose their less developed status during the next programming period. Poland, however, could also find itself in a similar situation.

A critical perspective on these changes in NUTS2 regions, as seen by Solís-Baltodano et al. (2022), emphasizes the perception of the contentiousness of the demands on the available Cohesion Policy resources. When resource allocation is Pareto-optimal, an intentional change by one country means intentionally taking away these funds from another member country. The question stands as to what degree this individual act by a single country is in accordance with the community concept of a Cohesion Policy.

On the other hand, however, it can be said that splitting off a developed metropolis from a larger, less developed region is desirable for attaining Cohesion Policy goals because it allows more targeted support for a disadvantaged area. If the socio-economic conditions of a metropolitan population are different from those in their near vicinity (in the case of larger countries) or from those in the rest of the country (in the case of smaller countries), as this research has shown, then when the status quo is maintained, differences in the population's standard of living persist. This could lead to the degrading of the European identity of the population, as argued by Royuela and López-Bazo (2020). It is also appropriate to consider whether, after making changes to the NUTS2 regions, the lagging regions will be able to effectively absorb the potentially higher funds that were obtained (Charron, 2016).

7. Conclusions

To achieve its research aim, this paper draws attention to the fund allocation rules meant to achieve Cohesion Policy goals and to the related demarcation of NUTS2 regions. It points out the acts of Hungary, Poland, and Lithuania, which entailed splitting off capital city regions from existing NUTS2 regions and which were implemented in 2018, thus having consequences for all EU member countries regarding the allocation of the available Cohesion Policy funds.

The comparative analysis that was conducted confirms that this step caused a shift in fund allocation of billions of euros, and its clear winners are, indeed, Hungary, Poland, and Lithuania. The amounts involved are not small; in the cases of Hungary and Lithuania, the gain represents more than 10% of the amount allocated in the European Regional Development Fund and the European Social Fund. However, the vast majority of the other countries paid for this step with a drop in the volume of their allocated funds. Also, the only question is whether this step can be described as smart or even dishonest.

This reality is and could also be an inspiration for other countries. Four Eastern European countries were used as examples to model possible changes and their consequences have been discussed. We argue that it would make sense for Bulgaria, Latvia, and Romania to repeat the scenario of splitting off capital city from the existing NUTS2 region, as this would most likely mean an increase in the financial allocation of European funds for them in the upcoming 2028+ programming period. These countries meet all the requirements, and nothing prevents them from using the scenario under discussion. In addition, as we indicated in the introduction, Croatia has already made some adjustments to the borders of its regions to gain a better position for the future. Therefore, it is questionable whether the purposeful change in borders could become a 'new tool' for some EU member states to improve their position in benefiting Cohesion Policy funds at the expense of other members.

The existing issue of the territorial dimension of the EU's Cohesion Policy points to a new reality whose acceptance on a small scale means a big question mark for the future. It is possible to see the core of the matter in diametrically opposite ways, with critics and advocates. Critics will certainly emphasize the scarcity of resources in which one party's increased benefit means a decrease for another and the arbitrariness of a country implementing changes to its NUTS2 regions that do not respect the community conception of the EU's Cohesion Policy, even though they follow established rules. On the other hand, supporters will say that when Cohesion Policy fund allocation makes it impossible to eliminate the undesirable disparities at the regional level, it must be seen that the final results for a region's population have been classified in a way that is 'correct in form but unjust in reality.'

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Appendix. Comparison of the allocation of ERDF and ESF before and after the change in NUTS2 regional borders (in % of national GDP in 2021)

Country	Estimated	Granted	Difference
Austria	0.30%	0.23%	−0.07%
Belgium	0.46%	0.42%	−0.04%
Bulgaria	11.58%	11.49%	−0.09%
Croatia	13.60%	12.60%	−1.00%
Cyprus	2.67%	2.04%	−0.63%
Czechia	5.57%	5.51%	−0.06%
Denmark	0.12%	0.08%	−0.04%
Estonia	6.82%	6.82%	0.01%
Finland	0.66%	0.59%	−0.07%
France	0.67%	0.63%	−0.04%
Germany	0.46%	0.46%	0.00%
Greece	9.59%	9.52%	−0.07%
Hungary	10.69%	12.27%	**1.58%**
Ireland	0.24%	0.21%	−0.03%
Italy	2.38%	2.31%	−0.07%
Latvia	9.82%	9.51%	−0.31%
Lithuania	7.40%	8.19%	**0.79%**
Luxemburg	0.06%	0.04%	−0.02%
Malta	2.91%	2.99%	0.08%
Netherlands	0.14%	0.11%	−0.04%
Poland	10.37%	10.74%	**0.37%**
Portugal	8.93%	8.72%	−0.22%
Romania	10.66%	10.49%	−0.17%
Slovakia	10.99%	10.68%	−0.31%
Slovenia	4.72%	3.67%	−1.06%
Spain	3.10%	2.87%	−0.23%
Sweden	0.38%	0.29%	−0.09%

Notes: Estimated is allocation derived from the configuration of the regions before the borders changed in 2018. Granted is allocation derived from the configuration of the regions after the borders changed in 2018. Individual countries cleaned of the transitional form of support.