ASSESSING DISPROPORTIONATE TERRITORIAL DEVELOPMENT: INSIGHTS FROM 10 COUNTRIES

Davit Hakhverdyan[1], Gagik Badadyan[2*]

[1]Armenian State University of Economics - Yerevan, Armenia https://orcid.org/0000-0003-3224-2461 ✉ dhakhverdyan@yahoo.com
[2]Armenian State University of Economics - Yerevan, Armenia https://orcid.org/0000-0001-6026-6204 ✉ gagikbadadyan@gmail.com

Abstract: *Territorial development disparities are an undeniable reality for all the countries of the world, which implies that no country can practically avoid them. However, how different countries respond to these disparities is another matter. The effectiveness of policies in overcoming territorial development disparities depends significantly on how deeply these disparities are recognized and studied. In this context, assessing disparities in territorial development is necessary, and the article proposes a methodology for its implementation. The methodology examines territorial development indexes and their relative standard deviation. In the article, the developed methodology was also applied to 10 countries, as a result of which the levels of territorial development disparities in Canada, Poland, Bulgaria, Hungary, Finland, Serbia, Georgia, Moldova, Kazakhstan, and China were evaluated. Based on the assessments, general conclusions are also presented for each country in the article.*

Keywords: *Territorial Development Disparities; Disparity Assessment Methodology; International Experience; Territorial Policy; Modeling*

INTRODUCTION

Territorial development is a phenomenon significantly determining the general development of a country, which is often identified with progress and socio-economic improvements in territorial units. However, territorial development is characterized by geographical disparities, which implies the existence of inconsistencies in the development rates between territorial units (Medeiros 2022). Such asymmetry is an important factor hindering the country's development, for the elimination of which it is necessary to implement actions aimed at ensuring proportionate territorial development. Disparities in territorial development exist in all countries (Grigoryan et al. 2014), and these disparities are caused by many factors affecting geographical, climatic, demographic, and economic development (Movsisyan et al. 2023). In practice, there is often a need to assess the degree of those disparities in a particular country. For this very purpose, the article developed a methodology for assessing territorial development disparities, which was used to evaluate disparities in 10 countries.

LITERATURE REVIEW

Uneven territorial development includes and reflects disparities at the territorial level with unequal economic, social, political, cultural, and environmental conditions and cumulative outcomes (Pike, Rodriguez-Pose, and Tomaney 2011). Uneven territorial development is most often identified with differential levels of economic efficiency and well-being among territorial units (Kutscherauer et

al. 2010). In the narrowest sense, it has traditionally been viewed as an unequal distribution of income and outcomes (Widuto 2019). Uneven territorial development can lead to social tension and political polarization, increasing dissatisfaction with political authorities and threatening the stability of the social structure and national cohesion formed in the country (Floerkemeier, Spatafora, and Venables 2021). The uneven socio-economic development of countries not only disrupts the foundations of sustainable development but also rejects the fundamental principle of human equality - democracy (Tadevosyan et al. 2015).

The object of territorial development is the region, the territorial unit. There are two types of territorial units: operational and administrative. Operational regions are formed based on some common feature or homogeneity, and administrative regions are the units formed by the administrative-territorial division of the country (Edwards 2017).

Disparities in territorial development are characteristic of all the countries of the world. However, the degree of these disparities varies from country to country. Objectively, there is a need to identify the degree of territorial development disparities in different countries because it is possible to identify countries with an effective territorial development policy under other equal conditions. The article aims to complement the existing series on the subject.

METHODOLOGY

The assessment of territorial development disparities implies the extraction or calculation of discrepancies in territorial unit development levels based on several indicators determining the socio-economic development. With the first step in assessing territorial development disparities, there is a need to assess the development levels of territorial units because only on their basis is it possible to identify the degree of disparities. The evaluation of the development levels of the territorial units will be carried out by calculating an index, the calculation formula of which is presented below (Eq. (1)).

Eq. (1) $$DI_{nj} = \sum(W_i * (X_{nij}/\max(X_{nij}))) \, / \, \sum(W_i)$$

Where:
DI_{nj} - the development index of the n-th territorial unit in the j-th year,
W_i - the weight of the i-th index,
X_{nij} - the i-th indicator in the j-th year of the n-th territorial unit,
$\max(X_{nij})$ – the maximum value of the series, including the i-th indicator in the j-th year of the territorial units of the country.

Nine indicators were used to evaluate the development levels of territorial units, which are in a direct comparative relationship with the level of development. Therefore, their high level indicates a high level of development of the territorial unit, and vice versa. All indicators are relative. In particular, they are calculated according to some base (for example, according to the number of the population, area of the territorial unit, etc.). Indicators were standardized in the range of 0-1 in calculating the development level. For standardization, the indicator of the given year of the territorial unit was divided by the maximum value of the series of that indicator in the given year. Such standardization is conditioned both by the difference in the measurement units of the applied indicators and by the

deep differentiation of the absolute values of the indicators. In this way, an opportunity to combine and compare indicators was created. In order to calculate the weights of the indicators included in the index, an expert survey was conducted, the sample of which included PhDs in economics, employees holding managerial positions in the Ministry of Territorial Administration and Infrastructure of RA, in the Ministry of Finance of RA and the Ministry of Economy of RA. One hundred thirty-one (131) specialists participated in the survey, of which 106 were PhDs in economics, and 34 were representatives of the listed ministries (9 representatives from the ministries also held PhD degrees in economics). Survey participants rated each indicator on a 1-9 point scale, after which the average scores of the indicators were calculated. Based on the average scores and using the "Analytic Hierarchy Process" method, the weights of the indicators were calculated (the method involves extracting the importance in the model according to the ratios of the calculated average scores). Weights were summed to 100 points for research and analysis purposes. This implies that the indexes of development levels of territorial units will be in the range of 0-100. The 9 indicators and their weights used to assess the development levels of territorial units within the research are presented in Table 1.

Table 1: The Indicators and Their Weights Used for Evaluating the Developmental Levels of Territorial Units (Source: Authors' calculations)

Indicators	Weights
Gross output per capita	12.719
Average consumer spending of households	11.373
Averagenominalsalary	10.802
Share of the population not considered poor	11.145
Employment rate	11.335
Population density	9.507
Share of the population considered young	9.622
Access to educational services: number of educators	11.691
Access to medical services: number of medical personnel	11.805
Total	100.000

Based on the evaluations of the development levels of the territorial units, the research will assess territorial development disparities for different countries of the world. Territorial development disparities will be assessed both by observing the maximum, minimum, and average values and trends of the series and by calculating the territorial development disparities index, for which the following formula will be applied (the formula is based on the calculation of the relative standard deviation, which shows the degree of deviation from the average) (2).

$$\text{Eq. (2)} \quad \boldsymbol{DDIj} = \left| \sqrt[2]{\left(\sum (\boldsymbol{DInj} - mean(\boldsymbol{DInj}))^2\right)/\boldsymbol{n}} \right| / (mean(\boldsymbol{DInj}))$$

Where:
DDI_j - in year j, the country's territorial disproportionate development index,
DI_{nj} - the development index of the n-th territorial unit in the j-th year,
$mean(DI_{nj})$ - development indexes' average of territorial units of the country in year j,
n – the number of territorial units.

It should also be noted that the countries are not directly comparable in terms of territorial disproportionate development indexes, as they are relative indicators for a specific country, which leads to an objective deviation of the indexes between different countries (for example, if two countries have 5 and 10 territorial units, respectively, and one of those territorial units in both countries has the same progressive position compared to the others, and the other territorial units are at the same level of development, then the territorial disproportional development index in the first country will be higher than in the second, but, in terms of content, the situation is the same in both countries, the reason is that the calculation is averaged). However, general conclusions can be made regarding whether the index is high or low. Each country's territorial disproportionate development index is considered independent of other countries' indexes. However, the trends in dynamic change are comparable.

The article will consider 10 countries, which are presented in Table 2.

Table 2: Countries to be Considered in the Framework of the Article and Their Groupings According to Classifications (Source: United Nations 2023; World Bank n.d.; International Monetary Fund n.d.)

The Country	UN Classification	World Bank Classification	IMF Classification
Canada	Developed	High income	Developed
Poland	Developed	High income	Developing
Bulgaria	Developed	Upper middle income	Developing
Hungary	Developed	High income	Developing
Finland	Developed	High income	Developed
Serbia	In transition	Upper middle income	Developing
Georgia	In transition	Upper middle income	Developing
Moldova	In transition	Upper middle income	Developing
Kazakhstan	In transition	Upper middle income	Developing
China	Developing	Upper middle income	Developing

Ten (10) countries were included in the sample, which, according to the results of the United Nations classification, the World Bank classification, and the International Monetary Fund classification, are at different levels of development. Such a sample will allow us to observe the experiences of countries with different levels of development.

Based on the presented methodology and the sample of countries, a study of international experience was carried out, referred to below, according to individual countries.

ANALYSIS

Canada

The average of the range lengths of the territorial development indexes in Canada (Figure 1) for the period of 2012-2021 is only 12.3, which suggests that the disparities of territorial development in Canada are relatively not high (relativity is determined by the objective features of Canada's territorial inclusion). Territorial development levels of the ten territorial units considered are arranged close enough, and there is no separated territorial unit whose development index deviates significantly from all the others. Looking at Figure 1, it becomes clear that the variation range of regional development indexes in Canada has a decreasing trend, as the minimum indicators of the series have an increasing trend, and the maximum indicators have a decreasing trend. This suggests a positive situation in Canada, at least in terms of reducing the variation range of development indexes, which may indicate a reduction in regional development disparities.
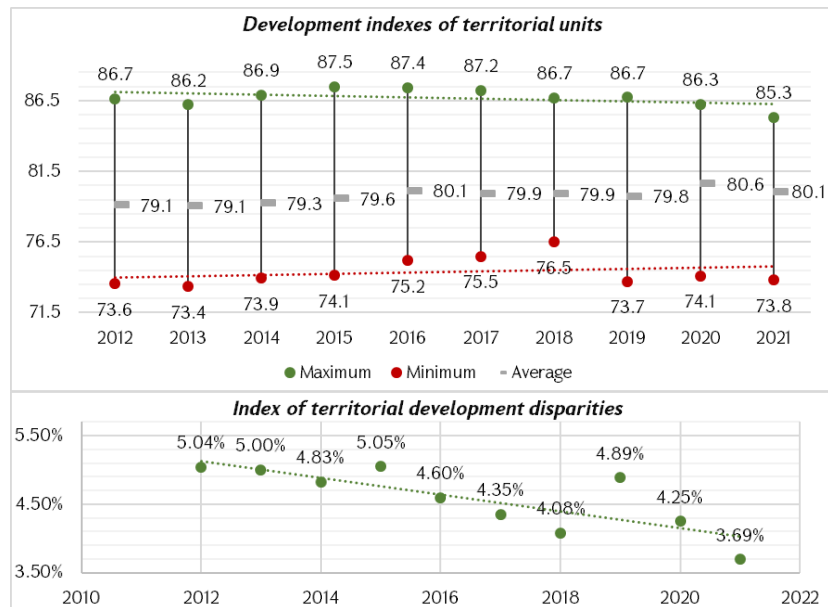

Figure 1: Disparities in Territorial Development in Canada
(Source: Statistics Canada. n.d.; Authors' calculations)

Examining the indexes of disproportionate territorial development, it becomes clear that territorial development disparities in Canada have a decreasing trend, as the trend of the relative standard deviation of the actual indicators in the series is a curve with a negative slope. In other words, regional development disparities in Canada are relatively not high, and their change has a regressive nature.

Poland

In Poland, the average length of the fluctuation range of the indexes of territorial development is 21.6, which may indicate the presence of asymmetries in territorial development, but since the sample includes 16 territorial units. The indexes of the latter change gradually in order without major deviations (that is, any territorial unit does not have a progressive position), so it is challenging to consider territorial development disparities to be of a high degree (Figure 2). The trend of changes in the ranges of territorial development indexes is also subject to observation. Both trends of maximum values and trends of minimum values are positive-sloping curves, and the degree of curvature is the same in both cases, which suggests that the length of the fluctuation range has no changing trends.
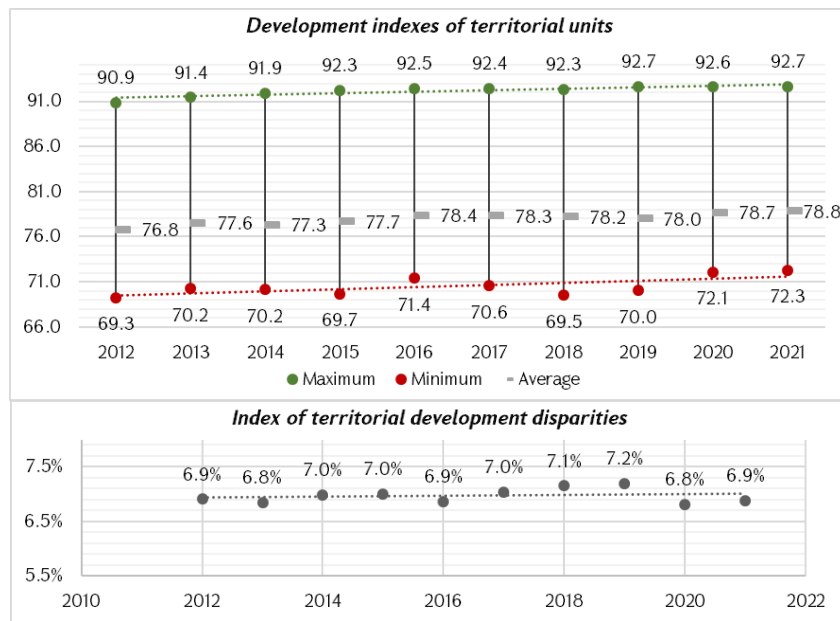

Figure 2: Disparities in Territorial Development in Poland
(Source: Statistics Poland n.d.; Authors' calculations)

The situation is almost the same concerning the territorial development disparity index. The territorial uneven development index remained cumulatively unchanged between 2012 and 2021, amounting to 6.9% in 2012 and 2021. As a result, the degree of regional development disparities in Poland is stable and not high, and it is neither regressive nor progressive.

Bulgaria

In 2021, Bulgaria's average territorial development index was 62.2 points (Figure 3). In 2021, the range of the indexes was 55.7-95.5; that is, the average indicator is quite close to the minimum threshold. Such a situation is characteristic of countries with a large number of territorial units, one of which has an apparent progressive development compared to the others. As a result, there is a

medium to high level of territorial development asymmetry characterized by only one socio-economic pole. However, the range length of territorial development indexes has specific decreasing trends because the trend of the maximum values is a curve with a negative slope. The trend of the minimum values has a small but positive slope. In this case, the amplitude of the fluctuation will have a decreasing trend, which may indicate the mitigation of territorial development disparities.
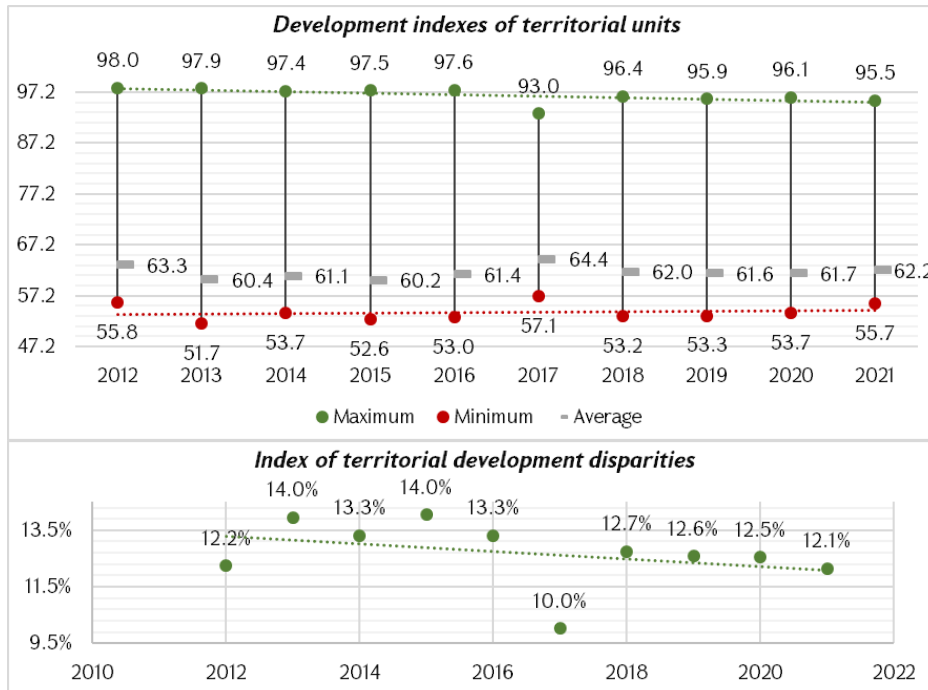

Figure 3: Disparities in Territorial Development in Bulgaria
(Source: National Statistical Institute the Republic of Bulgaria n.d.; Authors' calculations)

The reduction of disparities is also supported by the fact that the territorial disproportionate development index has clear downward trends. In general, territorial development disparities in Bulgaria are above average and unipolar in appearance, but these disparities are characterized by narrowing.

Hungary

In Hungary, a total of 8 territorial units were considered, of which the capital, Budapest, has a reasonably high level of development compared to other territorial units, and the others are arranged relatively close to each other (Figure 4). Due to this situation, the territorial development indexes in Bulgaria in 2021 ranged from 56.0 to 89.3 (range length: 33.3), and the average was 64.5. A similar situation was recorded in 2012-2021. In other words, there is a higher than average level of territorial development disparities, in which case the only locomotive is the country's capital. However, it is a positive fact that the fluctuation range tends to decrease at the expense of an increase in the minimum threshold of the range.

It is also interesting to note that the disproportionate development index in Hungary is decreasing year by year, forming a clear trend with a negative slope. This indicates that while the territorial development disparities in Hungary are not low, they still exhibit a decreasing trend.
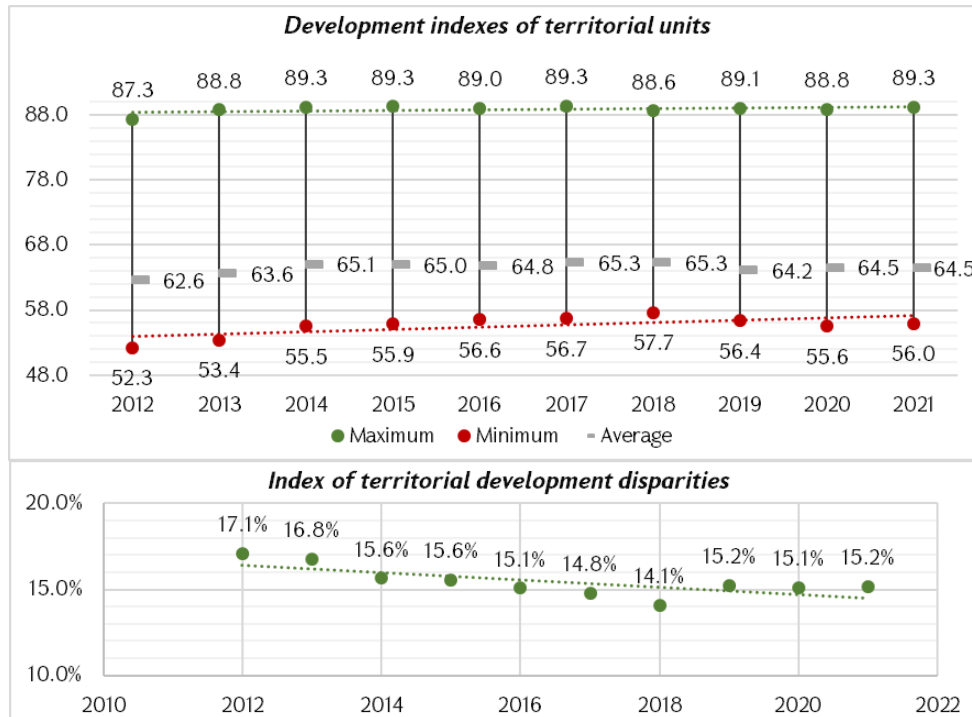

Figure 4: Disparities in Territorial Development in Hungary
(Source: Hungarian Central Statistical Office n.d.; Authors' calculations)

Finland

In Finland, specific disparities in territorial development are expressed by the differentiation of the indicators of 2 of the 19 observed territorial units, which have progressive development (Figure 5). The development levels of the remaining territorial units are close enough. It can be noted that there are disparities in territorial development in Finland: the length of the fluctuation range of the development indexes in 2012-2021 was 25.8 on average. It is a positive circumstance that the variation range of territorial development indexes has a slightly decreasing tendency, as the minimum threshold has an increasing tendency and the maximum threshold has a decreasing tendency. The fact that the index of the regional development disparities in Finland has a decreasing trend (it was 10.6% in 2021, compared to 11.3% in 2013) proves that disparities in territorial development tend to reduce. Against the background of the decline of the indicators, a trend with a negative slope was formed. As a result, it turns out that there are disparities in territorial development in Finland, and the differentiation of the development levels of territorial units is continuously decreasing.
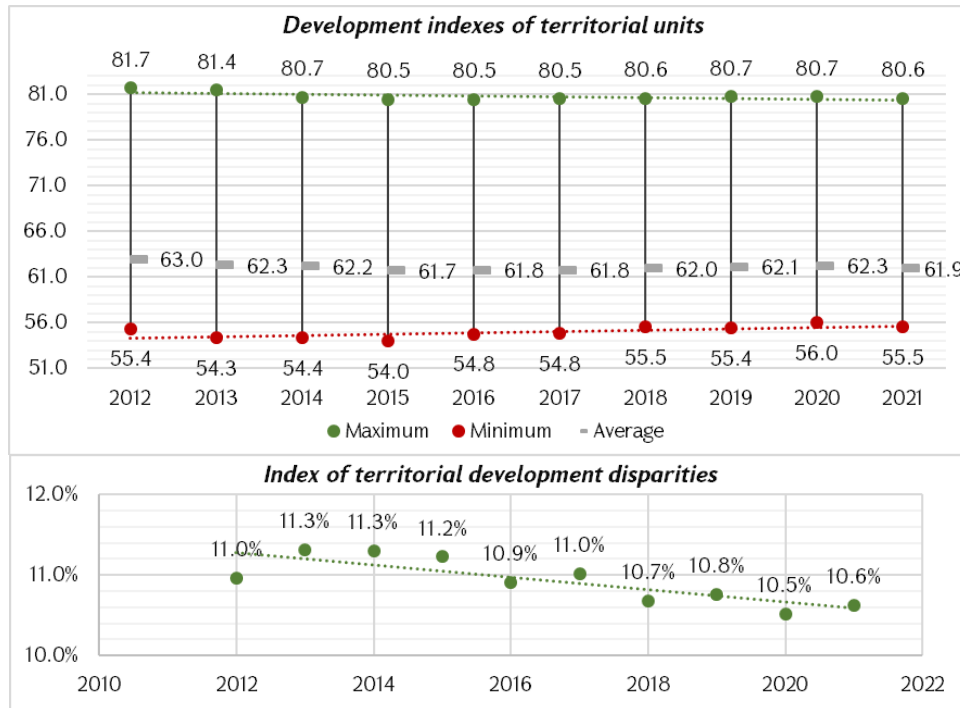
Figure 5: Disparities in Territorial Development in Finland
(Source: Statistics Finland n.d.; Authors' calculations)

Serbia

In Serbia, one of the 4 territorial units has progressive development, and the development indexes of the remaining regions are close enough, which proves that there are almost no disparities in territorial development in those 3 regions (Figure 6). Therefore, by and large, the only source of disparities is the high level of development of the Belgrade region. However, considering the length of the variation range of development indexes (22.1 on average), it can be stated that development disparities are not high; this is also reflected in the relatively small level of territorial development disparities index, which was 10.4% in 2021. Territorial development disparities in Serbia show declining trends. The index of territorial development disparities declined in 2012-2021, reaching 10.4% in 2021 compared to 12.9% in 2013. Such a situation proves that 3 out of 4 regions around one locomotive in Serbia have balanced development, and the inconsistencies between the development of the locomotive and those 3 regions are decreasing.
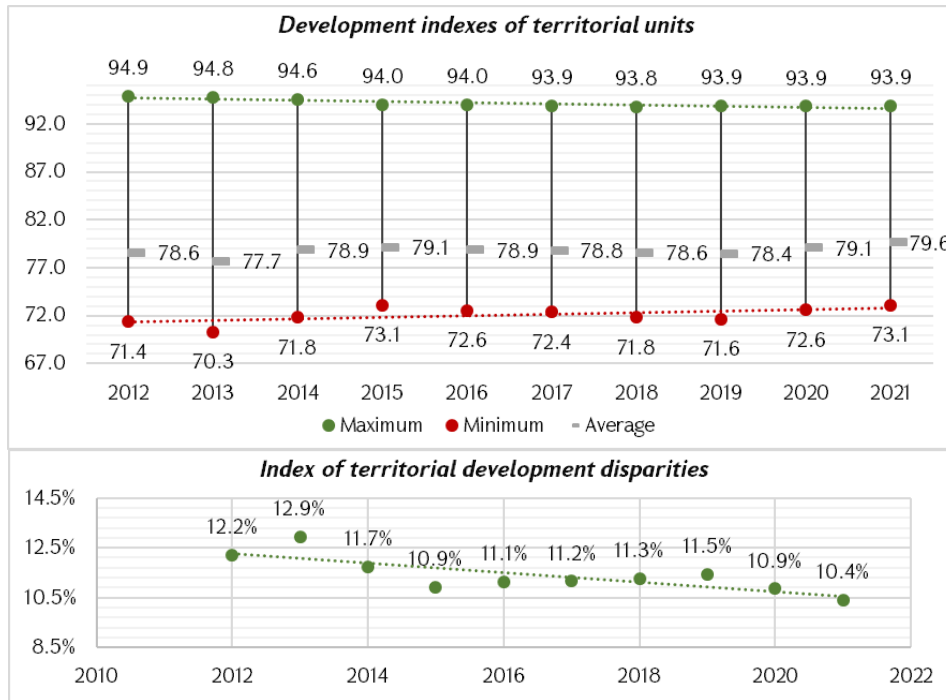
Figure 6: Disparities in Territorial Development in Serbia
(Source: Statistical Office of the Republic of Serbia n.d.; Authors' calculations)

Georgia

There is unipolar territorial development in Georgia, as the average of territorial development indices is close to the minimum of the variation range, and the only pole of development is Tbilisi, the capital of the country, whose development index exceeds the second most developed region by 1.3 times (Figure 7). As a result, it turns out that the average length of the index's fluctuation range in 2012-2021 was 34.7, which may indicate that the disparity of territorial development in Georgia is higher than average. It is a positive circumstance that the length of the fluctuation range of the indicator decreased in the considered years, from 35.5 in 2012 to 32.5 in 2021.

The index of territorial development disparities in Georgia was calculated for 11 territorial units, making 13.2% in 2021, which is not a small value compared to the sample of that size, which may suggest that territorial development disparities in Georgia are significant. However, this indicator has clear decreasing trends. It can be noted that despite the above-average level of regional development disparities, territorial development disparities are shrinking in Georgia.
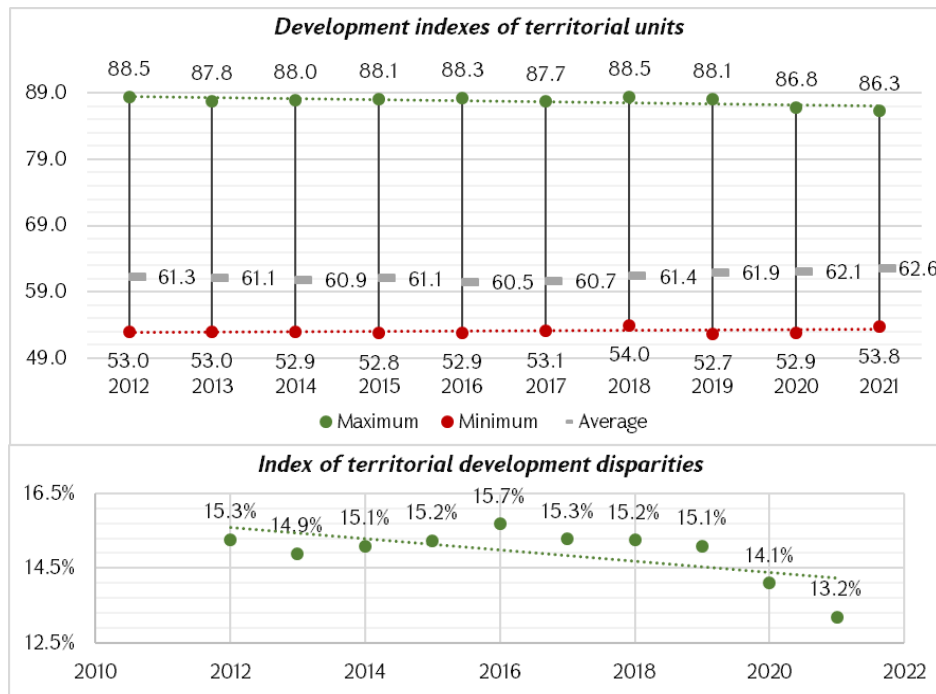
Figure 7: Disparities in Territorial Development in Georgia
(Source: National Statistics Office of Georgia n.d.; Authors' calculations)

Moldova

The ratio of maximum and minimum thresholds of territorial development indexes in Moldova is 1.6, which indicates not low disparities in territorial development (Figure 8). Chisinau, the capital of Moldova, is relatively highly developed compared to other territorial units, as the development index in Chisinau is 96.6 out of a possible 100 points. In contrast, the index ranges from 58.7 to 65.5 in other territorial units. The length of the variation range of development indexes has no decreasing trends, as the range spectrum has expanding trends, which to some extent indicates a slight expansion of regional development disparities.

The regional development disparity index showed a specific downward trend in 2012-2018, but the changes in 2019-2021 indicate that the degree of disparities in development has risen by one level again, and it is impossible to distinguish a trend based on 2019-2021 alone. As a result, the asymmetries of territorial development in Moldova can be characterized by a high level to a certain extent, and the existing disparities, according to the ranges of development indexes, have slight expansion tendencies.
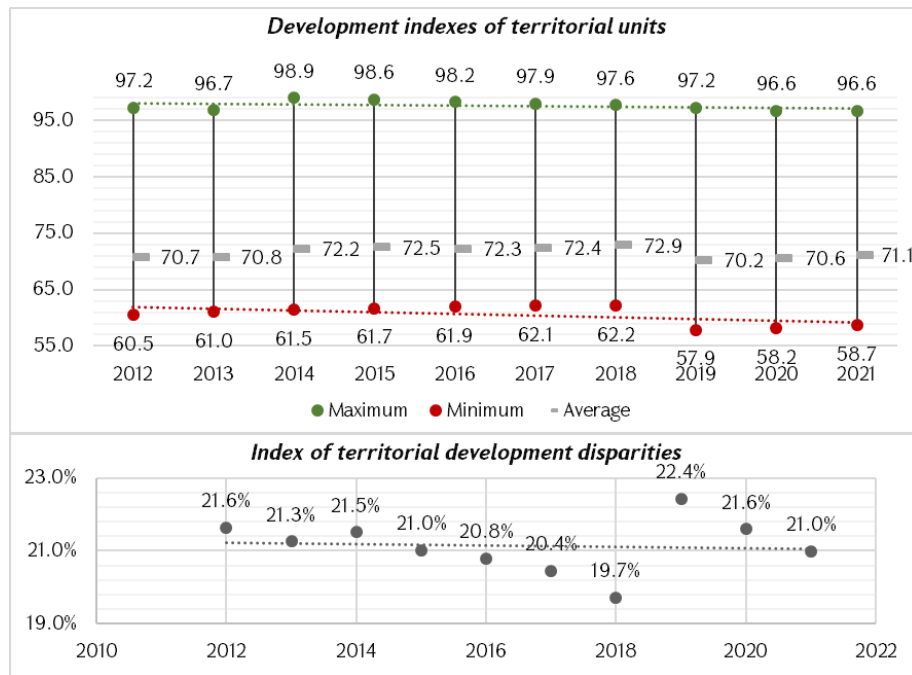
Figure 8: Disparities in Territorial Development in Moldova
(Source: National Bureau of Statistics of the Republic of Moldova n.d.; Authors' calculations)

Kazakhstan

As for the fluctuation of development indexes of territorial units in Kazakhstan, a noticeable decrease in the length of the range was recorded in 2012-2021 (Figure 9). For comparison, it should be noted that the length of that range was 27.2 in 2012 and only 18.7 in 2021. The decline in the length of the specified range has formed clear trends, according to which a decline characterizes the asymmetries. The change in the index of territorial development disparities also indicates the alleviation of regional development disparities. This indicator shows a sharp downward trend, decreasing by 4.4 percentage points from 2016 to 2021 and reaching only 8.5% in 2021. As a result, Kazakhstan, at the expense of the formed 2-3 locomotives, has the opportunity to overcome the existing disparities of territorial development, which have clear tendencies of decline.
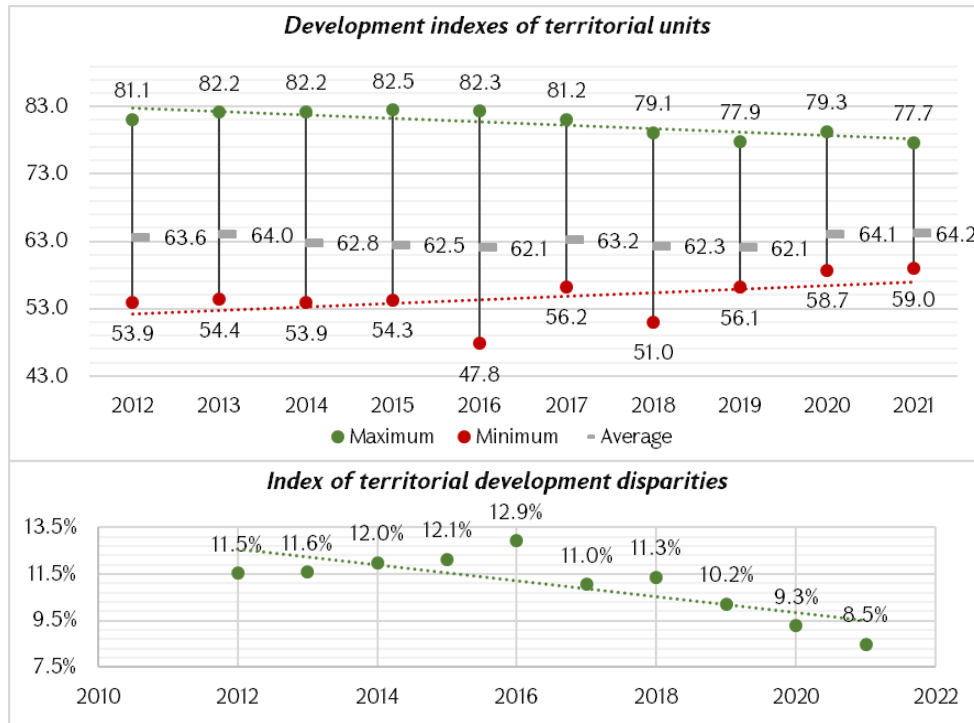
Figure 9: Disparities in Territorial Development in Kazakhstan
(Source: Bureau of National Statistics of Agency for Strategic Planning and Reforms of
the Republic of Kazakhstan n.d.; Authors' calculations)

China

Thirty-one (31) territorial units were considered to assess territorial development disparities in China (Figure 10). Two regional units, Beijing and Shanghai, have advanced development compared to the other territorial units. The length of the index fluctuation range in 2021 was 27.7, which was only 23.8 in 2012. This indicates that the disparities in territorial development in this country are growing. Considering that there are 31 territorial units in the sample, the index of territorial development disparities is also relatively high. Due to the large number of territorial units, it is difficult to predict an evident change in the index of regional development disparities; however, the trend of that index has a particular positive slope. Based on Figure 10, it is possible to notice that there are average or higher regional development disparities in China, which are progressive.
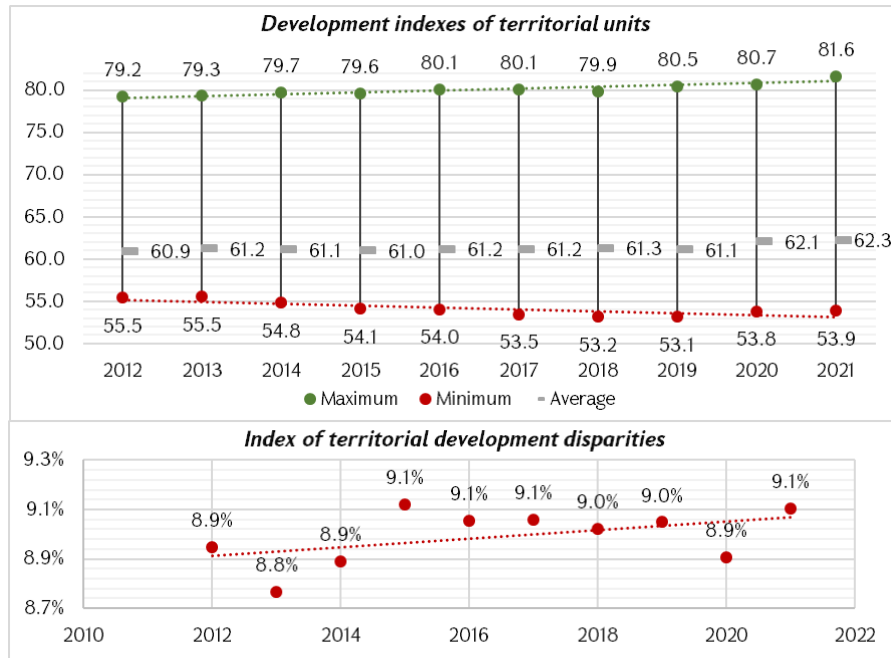
Figure 10: Disparities in Territorial Development in China
(Source: National Bureau of Statistics of China n.d.; Authors' calculations)

CONCLUSION

Disparities in territorial development exist in all countries of the world. The governing bodies of each country are trying to develop and implement such policies that will enable not only the neutralization of the consequences of the development disparities but also create conditions that will contribute to the reduction of those disparities.

The policy to ensure balanced territorial development is based on the results of the assessment of disparities in territorial development, which has always been one of the most important issues in the context of filling the existing gaps in the field.

The analysis made in the article is aimed at the solution to that problem. In particular, based on the analysis, an attempt was made to develop a methodology by which the degrees of disparities in regional development can be measured.

The developed methodology is based on the following principles:

1. With the developed methodology, first of all, the development levels of the territorial units included in the country are measured. However, these development estimates are relative; that is, they are calculated in comparison with the development levels of the territorial units of a specific country; therefore, the development levels of the territorial units of different countries are not comparable.

2. The evaluations of the development levels of territorial units are based on the weighted average score of 9 relative indicators, the weights of which were calculated by means of an expert survey conducted among sector specialists. However, in future research, the number of independent variables included in the model can be expanded to include a wider range

of indicators. However, the 9 indicators of the model can already interpret the degree of the social and economic development of territorial units in sufficient detail.

3. In order to assess the degree of disparities in the development of territorial units in a country, it is recommended to calculate the relative standard deviation index of the development estimates of the territorial units in the country, which will show how many percentages the development estimates deviate from the average. That indicator is considered in the article as an index of the disparities in regional development. However, the estimates of the disparities in the regional development using this method are not comparable between different countries because depending on the number of territorial units in the countries, the indicator may deviate due to the fact that the relative standard deviation is broadly an averaged indicator according to the number of territorial units in the countries. As a result, it is preferable to consider the calculated indicator for the countries separately, taking into account the trends of changing the indicator in the given country. In other words, the model reveals the changing tendencies of the asymmetries in the territorial development of a country.

4. The article also proposes a graphical approach for the observation of the development disparities, when the trends of the expansion of development disparities are revealed by constructing the trends of the maximum, average, and minimum indicators of the development levels of the territorial units.

To ensure the applicability of the model developed in the article, the obtained tools were applied to 10 countries of the world for the years 2012-2021. In addition to the application of the model and the method developed in the article, general conclusions about those countries were made, which can be a reference for studying the experience of other countries.

As a result, it was recorded that the regional development disparities of Canada, Bulgaria, Hungary, Finland, Serbia, Georgia, and Kazakhstan have decreasing trends, which is expressed both by the narrowing of the fluctuation ranges of the development levels of the territorial units of those countries and by the decreasing trend of the index of the disparities in territorial development. Such a situation may indicate that the territorial development policies aimed at overcoming the disparities of territorial development in these countries are effective enough, as they create the conditions through which it becomes possible to overcome the disparities between the levels of development of territorial units. Based on this conclusion, it is possible to extract basic principles or tools from those policies, which, if successfully implemented, can also be effective in other countries. However, we should also note that the existing positive dynamics do not mean that the disparities of territorial development in all these countries are small. This claim implies that regardless of the degree of the disparities, they have a decreasing trend in those 7 countries. Among the remaining three countries, regional development disparities in Poland are static, while the degree of regional development disparities in China and Moldova has clearly expanding trends. The situation recorded in the cases of China and Moldova is quite worse because the expansion of territorial development disparities in those countries can be a factor hindering the general socio-economic development, the lack of countermeasures for which can even lead to social disagreements or conflicts.

The developed methodology is applicable to all countries of the world. Moreover, given the nature of the independent variables in the model, it can be calculated practically without restrictions if

the statistics are available. Moreover, since the results of the model are not comparable between countries with different numbers of territorial units, the indicators included in the model can also be replaced by other indicators of the same content.

The model can be a prototype for the development of other models with the same content. The list of the variables included in the model can be expanded. The expansion may involve the inclusion of other social and economic indicators, as well as the inclusion of historical, cultural and environmental factors in addition to socio-economic ones. Another change by which the model can become qualitatively better involves improving the methodology for calculating the weights of the indicators used to determine the level of development of territorial units. In addition to expert evaluation, certain econometric methods can also be used to calculate the weights.

Summarizing the article, it can be recorded that the developed and applied methodology is universal and can be applied to study the experiences of other countries. Such applications can contribute to enhancing territorial development policies in different nations.

CRediT AUTHOR STATEMENT

Davit Hakhverdyan: Conceptualization, validation, writing - review and editing, project administration.
Gagik Badadyan: Methodology, software, formal analysis, investigation, resources, data curation, writing - original draft, visualization.

All authors have read and agreed to the published version of the article.

COMPLIANCE WITH ETHICAL STANDARDS

Statement of Human Rights:

This article does not contain any studies with human participants performed by any authors.

Statement on the Welfare of Animals:

This article does not contain any studies with animals performed by any authors.

Informed Consent:

Not applicable.

Disclosure statement:

No potential conflict of interest was reported by the author/s.

PUBLISHER'S NOTE

The Institute for Research and European Studies remains neutral concerning jurisdictional claims in published maps and institutional affiliations.

REFERENCES

1. Bureau of National Statistics of Agency for Strategic planning and reforms of the Republic of Kazakhstan. n.d. *Database*. Available at: https://stat.gov.kz/en/ (17 September 2023)
2. Edwards, M. E. 2017. *"Regional and urban economics and economic development: Theory and methods"*. Boca Raton: Routledge, p. 4
3. Floerkemeier, H., Spatafora, N., Venables, A. 2021. *"Regional Disparities, Growth, and Inclusiveness"*. IMF working paper, IMF February 2021, p. 3
4. Grigoryan, K., et al. 2014. "Տարածական զարգացում" [Spatial development]. Yerevan: Economist, p. 6
5. Hungarian Central Statistical Office. n.d. *Database*. Available at: https://www.ksh.hu/?lang=en (17 September 2023)
6. International Monetary Fund. n.d. *"World Economic Outlook Database, Groups, and Aggregates Information"*. Available at: https://www.imf.org/en/Publications/WEO/weo-database/2023/April/groups-and-aggregates (17 September 2023)
7. Kutscherauer, A., et al. 2010. *"Regional disparities: Disparities in country regional development – concept, theory, identification, and assessment (Shortened English version)"*. Ostrava: VŠB-Technical University of Ostrava Faculty of Economics, p. 7
8. Medeiros, E. 2022. *"Border cities and territorial development"*. Abingdon and New York: Routledge, p. 8
9. Movsisyan, M., et al. 2023. *"Լիազորությունների ապակենտրոնացումը որպես տեղական և ինքնակառավարման արդյունավետության բարձրացման ուղղություն"* [Decentralization of authorities as a direction for increasing the efficiency of local self-government]. Yerevan: Economist, p. 18
10. National Bureau of Statistics of China. n.d. *Database*. Available at: https://www.stats.gov.cn/english/ (17 September 2023)
11. National Bureau of Statistics of the Republic of Moldova. n.d. *Database*. Available at: https://statistica.gov.md/en (17 September 2023)
12. National Statistical Institute the Republic of Bulgaria. n.d. *Database*. Available at: https://www.nsi.bg/en (17 September 2023)
13. National Statistics Office of Georgia. n.d. *Database*. Available at: https://www.geostat.ge/en (17 September 2023)
14. Pike, A., Rodriguez-Pose, A., Tomaney, J. 2011. *"Handbook of local and regional development"*. Abingdon and New York: Routledge, p. 2
15. Statistical Office of the Republic of Serbia. n.d. *Database*. Available at:https://www.stat.gov.rs/en-US/ (17 September 2023)
16. Statistics Canada. n.d. *Database*. Available at: https://www.statcan.gc.ca/en/start (17 September 2023)
17. Statistics Finland. n.d. *Database*.Available at: https://www.stat.fi/index_en.html (17 September 2023)
18. Statistics Poland. n.d. *Database*. Available at: https://stat.gov.pl/en/ (17 September 2023)

19. Tadevosyan, Z., et al. 2015. ''*ՀՀ տարածքային համաչափ զարգացման սոցիալ-տնտեսական հիմնախնդիրները*'' [The socio-economic problems of balanced regional development of RA].Yerevan: Economist, p. 5-6
20. United Nations. 2023. *"World Economic Situation and Prospects".* p. 117-118
21. Widuto, A. 2019. *"Regional inequalities in the EU"*. European Parliamentary Research Service, Members' Research Service, PE 637.951 – May 2019, p. 2
22. World Bank. n.d. *"The World by Income and Region"*. Available at: https://datatopics.worldbank.org/world-development-indicators/the-world-by-income-and-region.html (17 September 2023)