Cohesion or In-cohesion of Economic and Social Development of the UK's Regions

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Abstract:

Purpose: The aim of the article is to determine the directions and assess the dynamics of changes in the level of socio-economic development of British NUTS 2 regions in the years 2000-2019.

Design/Methodology/Approach: The following methods were used in the study: literature analysis, descriptive statistics, dispersion and taxonomic analysis. The analysis covered such variables as GDP per capita, disposable income per person, the employment and employment rate.

Findings: The results of the analysis show that in the period 2000-2019, disparities in GDP per capita and in the amount of disposable income per person increased among the British regions, despite the fact that the differences in the level of employment and unemployment decreased. The improvement of the situation on the labour market due to the high share of marginal work, but having little importance in terms of economic profit, did not result in a similar increase in public and individual income in poorer regions.

Practical Implications: Regional development disparities may pose a threat to the territorial integrity of the United Kingdom. To avoid this scenario, it is crucial to continue efforts for regional economic and social cohesion.

Originality/Value: The study contributes to the discussion on the spatial differentiation of the level of development in the United Kingdom. The results of the research and recommendations may be useful in the search for ways to more fully use the potentials of all regions, and thus the development of the entire country.

Keywords: Economic and social, regional development, NUTS 2 regions of the United Kingdom.

JEL Classification: A10, J01, O10, O11.

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1. Introduction

The United Kingdom is ranked among Europe's (Eurostat, 2019) and the world's (International Monetary Fund, 2020) leading countries in terms of wealth, measured by GDP per capita. This indicates and involves high quality of life, reflected in the UK's top positions in world rankings of social development published by the United Nations (2020). However, the UK's high level of GDP per capita goes alongside the uneven distribution of income across its regions. When the UK was still a member of the European Union, the richest region in the country and in the EU was Inner London-West, with Inner London-East also ranking the top among the most prosperous regions. The opposite end of the wealth spectrum included the regions: Southern Scotland, West Wales and The Valleys and Cornwall and Isles of Scilly.

A detailed diagnosis of the level of regional inconsistencies, taking into account the most up-to-date statistical values possible, justifies the purposefulness of undertaking this study. Its main aim is to assess the direction and dynamics of change in the level of socio-economic development of UK regions between 2000 and 2019. An attempt has been made to address two research questions:

- what was the pace of these changes and which elements were affected,
- has it resulted in a higher economic and social cohesion of the UK's regions, or
  has it widened the developmental inequalities?

The paper consists of four parts. The first theoretical part presents the essence of cohesion, its main forms and measures, and the conclusions of previous research on the issue in the UK. The second part provides an overview of the UK's NUTS 2 regions, particularly important in drawing up the European cohesion policy[3]. The third part presents the research methods and the statistical data used, whereas the fourth part includes empirical results along with their interpretation and discussion. The study concludes with a summary of the considerations along with more important conclusions and recommendations.

2. Theoretical Framework and Previous Studies

Cohesion usually implies similarity of certain objects to a pattern, compatibility of the course of processes leading from one state of an object to another one, or merging into a whole, i.e. integration through the formation of correlations. Since the adoption of the Single European Act (OJ L 169, 29.6.87), cohesion has become an objective of the European Union's regional policy and a benchmark for assessing its effectiveness. It has been recognised that the pursuit of cohesion implies an effort to achieve convergence, i.e., to reduce development differences between countries, regions or sub-regions. For over two decades, economic and social cohesion has remained a central concern of the European Union.

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[3]*At the end of 2018, in the United Kingdom there were 41 NUTS 2 regions (Eurostat, 2020).*

Economic cohesion means changing economic structures, leading to sustainable development with a high level of economic competitiveness. Typically, economic cohesion analysis looks at how the level of economic activity in regions compares to national and EU averages, and its basic measure is the gross domestic product per capita. In addition, salaries and individual income are analysed, measured at the place of residence rather than at the location of work, as is the case for GDP.

They have a direct impact on accessibility to various goods and services, on people's quality of life and sense of personal accomplishment. The income situation of households is a consequence and - on the other hand - a cause of the development of the economy and society. A higher level of development of a country or a region indicates a more stable situation on the labour market, better organisational and remuneration standards.

Social cohesion is an expression of development that ensures socially and spatially reasonable living and working conditions for all inhabitants. It can be achieved by eliminating obstacles to horizontal and vertical mobility of the population, overcoming differences in the level of education, in opportunities for professional and material advancement. The most common way to evaluate the level of social cohesion is to analyse the employment and unemployment rates.

However, being employed but at low wages often fails to ensure meeting of basic needs. As indicated by Eurostat data (In work at risk of poverty rate by sex), there is a relatively high proportion of the employed population in some EU countries whose income is below the threshold considered sufficient to maintain a decent standard of living and achieve their professional and social ambitions. Therefore, the evaluation of social cohesion is supplemented by an analysis of the at-risk-of poverty- rate, whose level depends on the average disposable income per person.

The importance of cohesion was formally extended and reinforced in the Article 3 of the Lisbon Treaty (OJ C 306, 17.12.2007) by introducing the territorial component of cohesion. The European Commission believes that territorial cohesion should be manifested in equal access to basic infrastructure as well as basic services and knowledge for the inhabitants of all regions, regardless of where they live.

Cohesion studies in the UK generally take the view that there are inequalities in the level of economic development between UK regions, resulting in a lack of social cohesion. These inequalities stem from a number of factors, the key among them being interpersonal disparities in wealth and income. According to the authors of the Report of the National Equality Panel (2010), these disparities have persisted for more than 30 years and occur between different social groups, ethnic groups, inhabitants of less and more developed areas, men and women.

Similar findings are presented in Atkinson and Jenkins' (2020), study of the financial situation of households, where they show that high income inequality has persisted

for a much longer period, since 1937. The researchers argue that the position one holds, as well as opportunities for advancement (intergenerational mobility) within and between groups of the class structure in the UK are largely determined by the economic status of parents providing their children with good opportunities in all aspects of development, especially access to elite education and health care. The issue of unequal access to high quality education and training was emphasised by Lee, Sisson and Jones (2016). The researchers showed that, out of the 60 cities analysed, the widest pay gaps were found in the generally affluent cities in the south east of the UK.

Differences in income levels are related to the differences in labour productivity, and the researchers indicate that the latter disparities in the UK were the lowest in 1950s and 1960s, only to quickly increase after 1970, with the highest pace recorded in 1990s and at the beginning of 2000s. During the global financial crisis of 2008-2009, the growth dynamics of inequalities decelerated; once the crisis subsided, however, they began to rise more rapidly again. In 2017, out of 19 countries included in Zymek and Jones' (2020) analysis of the regional variation in labour productivity, the UK was ranked a distant 17th, ahead of Poland and Romania.

According to the researchers (Carrascal-Incera *et al.,* 2020), the most prosperous areas include the regions in the south-east of England, particularly the small and medium sized towns, whereas most regions with low productivity and low growth are found in the central, western and northern parts of the country.

McCann (2016; 2019; 2020) considers the problem of income disparities between UK regions to be very significant, and argues that the UK is one of the most developed countries in the world with the largest inter-regional inequalities. The scale of these inequalities is similar to that in Italy, where the southern regions are facing long-standing development problems, but greater than in Germany, despite disproportions between its eastern and western parts. According to McCann (2016), the British economy has become too dominated by London and the South-East, while the rest of the country is failing to exploit its full potential.

It is evident from the research discussed above that the experts in the UK's economic development recognise regional inequality as an important issue. Such inequalities hamper economic and social cohesion, block the possibility of making better use of the resources of the whole country, which has an adverse effect on the country's GDP growth rate, especially in relation to the GDP of other countries.

3. Research Methodology

Of the various statistical indicators referenced in the literature (Barry, 2003; Stiglitz, Sen, and Fitoussi, 2009), two indicators have been used to assess the change in the level of economic cohesion: gross domestic product per capita and income per person in a household. Although GDP per capita is the most widely used and the

most synthetic measure of the level of economic development, it fails to fully reflect economic and social reality (European Committee of the Regions, 2016), which is why the study also included the disposable income of the household. Its level depends not only on the salaries, but also on the redistribution scale of the tax system and the social policies implemented.

The assessment of social cohesion is based on the analysis of basic labour market measures: the employment and unemployment rates. The scale of the employment rate reflects the capacity to adjust the economy towards generating demand for labour and providing human resources that are suitably qualified and motivated to work, while the unemployment rate illustrates the extent to which labour resources are underutilised.

The numerical quantities of the variables analysed (expressed in pounds) were taken from the resources of UK's Office of National Statistics[4] (and converted at constant 2019 prices using CPI). Regarding the employment and unemployment rates, since no data for the years 2000-2004 by NUTS 2 regions are available in the ONS database, they were retrieved from the Eurostat database for the entire analysed period[5]. In addition to the method of describing changes in statistical quantities, the study used the variation coefficient V_S (the ratio of the standard deviation of the analysed variable to its arithmetic mean value), which allows to determine the degree of diminishing spatial differentiation of a given variable over time, and thus for sigma convergence.

The selected variables were synthesized into a single taxonomic measure of the level of socio-economic development. The stimulants of the synthetic measure are GDP per capita, disposable household income and employment rate, whereas the unemployment rate is a destimulant. These variables were made comparable by standardising (normalising) them, i.e. reducing their values to a range between 0 and 1. A value of the standardised variable equal to 1 means that the j-th variable in the i-th region in year t has the maximum value among all the observations included in the analysis, whereas when it is equal to 0, it means that the j-th variable in the i-th region in year t has the minimum value among all the observations in the sample.

The stimulants of economic development were standardised using the equation (Kościelniak, Szewczyk, and Tokarski, 2014):

$$s_{ijt} = \frac{x_{ijt} - \min\left(x_{ijt}\right)}{\max\left(x_{ijt}\right) - \min\left(x_{ijt}\right)}$$

(1)

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whereas the destimulant was standardised using the equation:

$$s_{ijt} = \frac{\max\left(x_{ijt}\right) - x_{ijt}}{\max\left(x_{ijt}\right) - \min\left(x_{ijt}\right)}$$

(2)

where:

s_{ijt} – the standardised value of j-th attribute in i-th region in year t;

x_{ijt} – the value of j-th attribute in i-th region in year t;

max (x_{ijt}) – maximum value of j-th attribute in analysed years and group of regions;

min (x_{ijt}) – minimum value of j-th attribute in analysed years and group of regions.

At the subsequent stage, taxonomic development indexes for individual regions were constructed be means of the formula for distance in Euclidean space:

$$d_{it} = \sqrt{\frac{\sum_{j=1}^{n}(1-s_{ijt})^2}{n}}$$

(3)

where:

d_{it} – the value of the synthetic development index in the i-th region in year t;

n – number of diagnostic variables.

The calculated taxonomic development indexes of individual regions range from 0 to 1, and represent the distance between the given region and a theoretical model region, i.e. the most developed one. Lower value of the region's taxonomic index implies its higher level of development, and vice versa - higher value of the index reflects lower level of development.

4. Empirical Results and Discussion

4.1 Economic Situation

In the period 2000-2019, the levels of GDP per capita between the NUTS 2 regions varied significantly. As shown in Table 1, in 2000, the highest value of this indicator was recorded in Inner London-West (£122 100) which represented over 443% of the national average. It has one of the world's largest concentrations of major banks, including the Bank of England, large international institutions and businesses, the London Stock Exchange for securities, non-ferrous metals, fuels and CO_2 emission allowances. The area concentrates an enormous amount of tangible wealth: Buckingham Royal Palace, Parliament, government buildings, luxury hotels and the shopping area around Oxford Street.

This region was followed in the ranks by: Inner London and Berkshire. The eastern part of Inner London, in particular the business district of Canary Wharf in the area

of the former royal docks, is home to numerous international corporations providing services such as banking, consulting, media, rating, legal (Mendoza, 2017). Region Berkshire, Buckinghamshire and Oxfordshire is located close to London-Heathrow Airport and has good transport links with it. The economic centres Reading, Slough, Bracknell, Oxford, Newbury, near the Oxford University along with non-academic research facilities, are the location of multinational companies, mainly from the IT sector. Business parks (Thames Valley Park, Green Park Business and Arlington Business Park) provide excellent opportunities for the growth of enterprises. The high GDP per capita in these regions is driven by both the large capital assets of the corporations operating there and the high productivity of daily commuters.

Table 1. *Five NUTS 2 regions with the highest and the lowest GDP per capita*

No.	Regions with the highest GDP per capita in relation to the national average		Regions with the lowest GDP per capita in relation to the national average	
	2000	2019	2000	2019
1.	Inner London – West (443,3%)	Inner London – West (532,8%)	West Wales and The Valleys (65,4%)	West Wales and the Valleys (66,4%)
2.	Inner London – East (141,1%)	Inner London – East (150,5%)	Cornwall and Isles of Scilly (66,6%)	Tees Valley and Durham (66,9%)
3.	Berkshire, Buckinghamshire and Oxfordshire (141,0%)	Berkshire, Buckinghamshire and Oxfordshire (135,9%)	South Yorkshire (70,2%)	South Yorkshire (69,3%)
4.	Outer London - West and North West (129,2%)	Outer London - West and North West (120,3%)	Tees Valley and Durham (71,4%)	Cornwall and Isles of Scilly (70,2%)
5.	North Eastern Scotland (114,0%)	North Eastern Scotland (118,1%)	Merseyside (72,0%)	Lincolnshire (72,1%)

Source: *Authors' calculations based on ONS data.*

The fourth most affluent region was Outer London - West and North West, comprising neighbourhoods with strong economic and institutional links to Inner London - West. The fifth place was occupied by North Eastern Scotland, the first region outside of England. Its main economic centre is the port city of Aberdeen, an important economic and commercial centre and a service centre for North Sea oil and gas platforms. Along with Edinburgh, it is ranked among the top 10 best cities to live and start a business in the UK (Findlay, 2018).

The poorest regions in 2000 were West Wales and Cornwall (Table 1). These regions are peripheral to the rest of the country and the cities with the highest potential. Their economies are characterised by low labour productivity, unfavourable employment structures, with a relatively high proportion working in agriculture and, in West Wales, also in the traditional mining and steel industries (Airey and Fyans, 2018). In 2000, the GDP per capita in those regions was 1.5 times lower than the national average and 6.7 lower than that of Inner London.

Low levels of GDP per capita were also recorded in the post-industrial regions of Northern England. Their economies were closely linked to the mining, shipbuilding, metalworking and textile industries that had been dominant until the mid-20th century (Tees Valley Economic Assessment, 2018).

Between 2000 and 2019, all analysed regions recorded an increase in GDP per capita, with varying average growth rates and fluctuations. The largest aggregate increase in GDP per capita was achieved by Inner London-West and other historically wealthy regions: North Eastern (by 38.9%). According to Sivaev's (2013) analysis, these regions had the highest investment per capita overall, several times higher than the regions with the lowest investment volume.

In London, particularly in its eastern boroughs of Newham and Tower Hamlets, a significant amount of capital expenditure has gone into converting former industrial land into a modern business and commercial centre and establishing a range of sports, cultural, housing and technical infrastructure for the 2012 Olympic Games. London, the South-East regions of England and North Eastern Scotland have seen relatively large investments from overseas investors, funding projects mainly related to research and development (EY, Centre for Towns, 2018).

A high growth of GDP per capita was also achieved in Cheshire (38,3%), a region in north-western England, which was outside the group of the top five wealthiest regions in 2000. As a result, Cheshire was ranked sixth on the list of the regions with the highest GDP per capita in 2019. A diverse economic structure of this region includes agricultural sector with its well-developed cattle and sheep farming, but also the automotive industry (Bentley and Vauxhall) as well as biotechnology and aerospace industries. The lowest growth in GDP per capita was recorded in: Outer London - East and North East, Outer London – South, as well as in Dorset and Somerset. Consequently, the GDP per capita of these regions has decreased in relation to the national average, and in 2000 was respectively: 81.9%, 101,5% and 86,3%, whereas in 2019 r. – 72,6%, 89,6% and 79,2%.

The faster rate of economic growth has led to the Inner London – West having the highest GDP per capita in 2019, increasing its already significant lead over the poorest West Wales and the Valleys to eight times, compared with 2000. This means between 2000 and 2019, that regional disparities in GDP per capita have widened.

In terms of average monthly income per capita, its value increased in all regions between 2000 and 2019, with the growth being uneven, as in the case of GDP. The highest real income growth was recorded in the Inner London - East (by 39.1%) and Inner London – West (37.8%). Income rose the least in West Midlands (4,6%), West Yorkshire (6,6%) and West and South Yorkshire (9,6%), significantly lower than the national average (18.2%). In 2019, they were among the regions with the lowest levels of average disposable income in the UK (Table 2). Researchers (Carascal-Incera, McCann, Ortega-Argilés, Rodríguez-Pose, 2020), prove that the

major cities of these regions, despite their level of development, have insufficient potential to stimulate a progress impulse for their regional hinterlands.

Table 2. *Five NUTS 2 regions with the highest and the lowest disposable personal income per capita*

No.	Regions with the highest disposable personal income per capita in relation to the national average		Regions with the lowest disposable personal income per capita in relation to the national average	
	2000	2019	2000	2019
1.	Inner London – West (206,9%)	Inner London – West (241,1%)	Northern Ireland (78,6%)	West Midlands (75,0%)
2.	Surrey, East and West Sussex (127,9%)	Outer London - West and North West (136,0%)	Highlands and Islands (80,5%)	West Wales and The Valleys (77,3%)
3.	Outer London - West and North West (125,8%)	Outer London - South (131,3%)	West Wales and The Valleys (83,2%)	South Yorkshire (77,7%)
4.	Berkshire, Buckinghamshire and Oxfordshire (125,2%)	Inner London - East (125,6%)	Tees Valley and Durham (83,4%)	Tees Valley and Durham (78,0%)
5.	Outer London - South (124,1%)	Surrey, East and West Sussex (124,5%)	South Yorkshire (83,8%)	Northern Ireland (80,9%)

Source: Authors' calculations based on ONS data.

Until the late 1970s, the economies of these regions were marked by the presence of large and medium-sized industrial plants operating in the mining, metallurgical and textile industries. Currently, small businesses make up the majority. They rely on low production costs, they are not very successful at creating new and attractive jobs, and - compared to large companies - they invest less frequently in new technologies and the improvement of management processes. This is reflected in lower labour productivity than the national average, and consequently in low levels of wages and disposable income (ONS, 2019). In 2019, just like in 2000, the five regions with the highest income levels included three London boroughs, headed by Inner London - West, and London South, ahead of the regions: Surrey, East and West Sussex, Berkshire, Buckinghamshire and Oxfordshire.

As in the case of GDP, the gap between the regions with the highest and lowest levels of personal income widened between 2000 and 2019, from 2.6:1 to 3.2:1. The disposable income per capita in the south-western regions of the country was higher compared to GDP per capita due to social benefits compensating for income inequalities.

The widening of regional disparities in the level of economic development is also evidenced by changes in the variation coefficient. Between 2000 and 2019, the size of this indicator for GDP per capita increased from 58.6% to 71.4%. The variation coefficient of disposable income increased to a lesser extent, from 21.7% to 27.6%.

4.2 Social Situation

Between 2000 and 2019, almost all the regions surveyed have seen an improvement in the labour market situation, reflected by an increase in the proportion of employed people and a reduction in the size of unemployment. The largest employment rate increase was in Cornwall and Isles (up by 12.4 p.p.) and also in Inner London – East (10.9 p.p.). Much of the employment growth in Cornwall and Cumbria is attributable to the high proportion of part-time, seasonal or self-employment work typical of the tourism-related services that predominate there (ONS, 2020). There was a minimal increase in the employment rate in: West Yorkshire and Hampshire and also in Isle of Wight (0.1 p.p. each).

As a result of changes in the employment dynamics across regions in the period 2000-2019, the gap between the regions with the highest and lowest employment levels has narrowed from 18.4 p.p. to 11.3 p.p. In 2019, as shown in Table 3, the highest employment rates were recorded in three regions, including the two regions west of London – Berkshire, Buckinghamshire and Oxfordshire, Gloucestershire, Wiltshire and Bristol/Bath area. The third region with the highest employment rate was Cumbria. The lowest employment rate, below 70%, was recorded in the West Midlands, and also in Tees Valley and Durham.

Table 3. *Five NUTS 2 regions with the highest and the lowest employment rate*

No.	Regions with the highest employment rate		Regions with the lowest employment rate	
	2000	2019	2000	2019
1.	Berkshire, Buckinghamshire and Oxfordshire (80,4%)	Berkshire, Buckinghamshire and Oxfordshire (80,7%)	Northern Ireland (62,0%)	West Midlands (69,2%)
2.	Gloucestershire, Wiltshire and Bristol/Bath area (79,5%)	Cumbria (80,5%)	West Wales and The Valleys (62,8%)	Tees Valley and Durham (69,4%)
3.	Bedfordshire and Hertfordshire (78,2%)	Gloucestershire, Wiltshire and Bristol/Bath area (80,0%)	Northumberland and Tyne and Wear (63,0%)	West Central Scotland (70,0%)
4.	Surrey, East and West Sussex (77,6%)	Dorset and Somerset (79,4%)	Cornwall and Isles of Scilly (63,6%)	Northern Ireland (70,9%)

5.	Hampshire and Isle of Wight (76,5%)	Surrey, East and West Sussex (79,0%)	Inner London - East (64,4%)	Northumberland and Tyne and Wear (71,0%)

Source: *Own study based on Eurostat data.*

The majority of jobs available in these regions are in public administration, education and health care (Employment and skills in the Tees Valley. Tees Valley Combined Authority). Entrepreneurship remains at low levels and thus the importance of the private sector is relatively small. A high proportion of employment is found in agriculture, construction and retail. In the West, an important reason for the poor employment rate was also the inactivity of women, the youngest people up to the age of 24, and ethnic minorities, in particular from Muslim countries (Joly, 1987; The Employment Gap in the West Midlands, 2019). In Tees Valley, migration to other regions is a serious problem for the labour market, with a shortage of local labour force, its low skills and the deteriorating age structure of the population (Tees Valley Economic Assessment 2018).

The increase in employment rate in all regions was matched by a decrease in unemployment, with the highest drop of the latter in the region of a significant unemployment levels in 2000, i.e., Highlands, Southern Scotland, West Central Scotland, Inner London – East, Northern Ireland and also Cornwall and Isles of Scilly. There were slight reductions in the unemployment rate in Cheshire and Essex, while in Greater Manchester it remained at the same high level as in 2000. Over the entire 2000-2019 study period, similar to the employment, the gap between the highest and the lowest levels of unemployment has narrowed from 7.1 p.p to 4.0 p.p.

The data in Table 4 shows that in 2019, the highest unemployment rates were recorded in West Midlands, Tees Valley and Durham and also in Northumberland and Tyne and Wear (Table 4).

Table 4. *Five NUTS 2 regions with the highest and the lowest unemployment rate*

No.	Regions with the highest unemployment rate		Regions with the lowest unemployment rate	
	2000	2019	2000	2019
1.	West Central Scotland (9,3%)	West Midlands (6,0%)	Berkshire, Buckinghamshire and Oxfordshire (2,2%)	Cumbria (2,0%)
2.	Northumberland and Tyne and Wear (9,2%)	Tees Valley and Durham (5,7%)	Surrey, East and West Sussex (3,1%)	Dorset and Somerset (2,1%)
3.	Tees Valley and Durham (9,1%)	Northumberland and Tyne and Wear (5,6%)	Bedfordshire and Hertfordshire (3,1%)	Cornwall and Isles of Scilly (2,1%)

4.	Inner London - East (8,4)	Outer London - West and North West (5,2%)	Gloucestershire, Wiltshire and Bristol/Bath area (3,2%)	Highlands and Islands (2,1%)
5.	West Midlands (8,2%)	South Yorkshire (5,1%)	Cheshire (3,3%)	North Yorkshire (2,7%)

Source: Own study based on Eurostat data.

Notably, unemployment in various London boroughs, particularly in the Waltham Forest, Westminster, Barking and Dagenham, Hillingdon and Lambeth (Unemployment rate by London borough) was at similar or higher levels than the UK as a whole. The changes in London's economy structure were the most probable causes of an increased demand for highly skilled labour force and a decline in the traditional industry. People with lower qualifications are mostly employed in hotels, cleaning, care and construction services, often working as unregistered employees (Gordolan, Lalani, 2009). This problem affects in particular the migrants from Arab and African countries, with greater barriers to qualification and socio-occupational integration (Migrants in London: Policy Challenges, 2011).

The process of achieving regional social cohesion is demonstrated by the decrease of the variation coefficient of the employment rate from 7.2% to 4.3% and of the unemployment rate: from 32.8% to 28.4%.

4.3 Synthetic Indicator of Socio-Economic Development

The economic and social development indicators analysed in the study were used to calculate a synthetic development index for NUTS 2 regions in the UK. The drop in the value of this taxonomic indicator means that there has been an improvement in the socio-economic situation in all regions studied between 2000 and 2019, with the greatest improvement reported in the wealthiest regions: Inner London-West by 59.5% and Inner London-East by 32.1%. There was also a marked improvement in the socio-economic situation in Cornwall and Isles of Scilly, by 21.2%, and Northern Ireland, by 19.3%.

As shown in Table 5, in 2019 consistently since 2000, Inner London-West and Berkshire, Buckinghamshire and Oxfordshire were the highest ranked regions in terms of development index. Among the next four most developed regions, three were the same as in 2000, the only difference being their ranking order. East Inner London has joined this group, having achieved a high growth in GDP per capita and individual income. West Midlands were ranked lowest due to its worst labour force participation and the lowest income per capita. Three out of the subsequent four underdeveloped regions were the same as in 2000, namely: Tees Valley and Durham, West Wales and The Valleys, Northumberland and Tyne and Wear (table 5). These were joined by South Yorkshire. They record some of the lowest GDP per capita and disposable income figures, particularly in Tees Valley and West Wales,

while both Northumberland and Yorkshire have low employment levels and high unemployment rates.

Table 5. *Five NUTS 2 regions with the highest and the lowest levels of socio-economic development as measured by the taxonomic indicator*

No.	Regions with the highest levels of socio-economic development as measured by the taxonomic indicator		Regions with the lowest levels of socio-economic development as measured by the taxonomic indicator	
	2000	2019	2000	2019
1.	Inner London – West (0,466)	Inner London – West (0,189)	Northumberland and Tyne and Wear (0,799)	West Midlands (0,677)
2.	Berkshire, Buckinghamshire and Oxfordshire (0,522)	Berkshire, Buckinghamshire and Oxfordshire (0,483)	Northern Ireland (0,787)	Tees Valley and Durham (0,676)
3.	Surrey, East and West Sussex (0,543)	Inner London – East (0,490)	Tees Valley and Durham (0,782)	Northumberland and Tyne and Wear (0,650)
4.	Bedfordshire and Hertfordshire (0,559)	Surrey, East and West Sussex (0,505)	West Wales and The Valleys (0,779)	South Yorkshire (0,650)
5.	Gloucestershire, Wiltshire and Bath/Bristol area (0,575)	Outer London - South (0,518)	West Central Scotland (0,773)	West Wales and The Valleys (0,644)

Source: *Authors' calculations.*

During the study time frame, the variation coefficient of the synthetic indicator fluctuated insignificantly, from 12.1% in 2000 to 9.6% in 2004, 14.5% in 2016 and 13.8% in 2019. Thus, the previously-observed regional inequalities in the level of socio-economic development were eventually deepened.

5. Conclusions and Policy Implications

Based on the analysis carried out, the following conclusions can be formulated:

1. Between 2000 and 2019, all NUTS 2 regions in the UK recorded an increase in GDP per capita. Two boroughs of Inner London, with their concentration of banking activities, international financial institutions, insurance and trade, were the ones with the highest growth and development levels. The third region with the strongest growth rate in GDP per capita is North East Scotland, which is a home to a thriving oil, petrochemical and gas industry based on North Sea deposits exploitation, as well as shipbuilding, and engineering.
2. Since 2000, the same four post-industrial regions located in different parts of the country (West Wales and the Valleys, Cornwall and Isles of Scilly, Tees Valley

and Durham, South Yorkshire) have continuously remained the weakest ones economically, following the closure of numerous industrial plants in the mining, metal and textile sectors, and with insufficient development in other, more modern sectors of economy. As a result of the above and due to particularly low levels of employment in the West Midlands and Northern Ireland, residents in these regions have the lowest individual incomes.

3. Between 2000 and 2019, there was an increase in the regional economic inequality: the ratio of GDP per capita between the poorest (West Wales and The Valleys) and the richest region (Inner London West) increased from 1:6.8 to 1:8. The scale of these disparities is similar to that in Italy, between the northern and southern regions, which is widely recognised as a pathological situation. These differences were smaller in the levels of disposable income per capita as a result of the social benefits system in place. In 2019, the highest levels of disposable income were recorded for households in four London boroughs. The following two places were occupied by regions neighbouring and well-connected to London: Surrey, East and West Sussex Sussex oraz Berkshire, Buckinghamshire and Oxfordshire.

4. Despite rising regional inequalities in GDP per capita and individual income, the gaps in employment and unemployment have narrowed. The most positive changes in the labour market occurred in Inner London – East, Cornwall and Isles, Cumbria, and also in Highlands and Islands. In the three latter regions, however, the statistical level of employment was significantly influenced by the high proportion of part-time, seasonal and self-employed workers - the forms of employment often found in the tourism sector, which is growing in importance in these region's economies. Berkshire, Buckinghamshire and Oxfordshire offers a relatively largest number of diversified jobs, resulting in the region achieving the highest levels of employment since 2000.

5. The greatest increases in the level of socio-economic development, as measured by a synthetic taxonomic indicator, were achieved by the regions with the highest GDP per capita and the highest individual incomes, in particular the Inner London regions. In this respect, they have increased their lead over the group of regions where traditional mining and heavy industries, which used to provide numerous jobs in the past, are losing importance. These regions did not manage to restructure industry effectively and to recreate enough jobs in modern sectors of the economy, which prevents a more comprehensive use of their local human potential.

6. The conducted analysis as well as the results of previous studies suggest that the historical dominance of London and its neighbouring regions in economic development over the rest of the country is being strengthened. The exception is Eastern Scotland, with its oil and gas industry being a major contributor to the economy and labour market. These adverse trends were not halted between 2000 and 2019, even despite the implementation of the European Union's cohesion policy. It is questionable whether national regional policy will be more effective after Brexit. Its possible weaknesses will have a negative impact on the use of the material and human resources of the poorest regions, and it is therefore

reasonable to assume that the gap between them and the richest areas will continue to grow. Allowing this to persist might have negative economic, social and political consequences in the future, affecting adversely the territorial and national integrity of the UK. This legitimises the need for a comprehensive national policy intervention, in cooperation with regional and local authorities, aimed at solving the specific problems of the areas identified, creating a new development path for them by modernising the existing ones and developing new economic branches. The common denominator of this intervention should be the economic strengthening not only of regional but also sub-regional urban centres (development poles) and the improvement of the communication and functional links between these centres and the surrounding areas. In doing so, it is important to reinforce specific endogenous resources, which are probably varied in different areas, in particular human and institutional resources.

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