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The Level and Dynamics of Socio-Economic Development of Great Britain Regions in 2012-2020

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Abstract:

Purpose: *The main aim of this article is to investigate the assessment of the conditions and dynamics of socio-economic development of British regions in the years 2012-2020.*
Design/Methodology/Approach: *The methods of literature analysis, descriptive statistics and clustering analysis were used.*
Findings*: The socio-economic development of regions in Great Britain has a polar-island character and did not change significantly in 2012-2020. The leader in development is London, which, together with neighboring regions, dominates economically over other regions. Apart from the London metropolitan area, Cheshire stands out with an above-average pace and level of development. North Eastern Scotland maintains a high, but weakening, economic position. The development of other highly urbanized regions is stagnating. The most difficult situation remains the peripherally located former industrial regions and rural areas. They have suffered the negative economic effects of the COVID-19 pandemic to a greater extent than many more highly urbanized regions with a more diversified economy. They are constantly marginalized and lose distance from more developed regions.*
Practical Implications: *Regional inequalities in the UK are high and growing steadily to a level similar to that in Italy.*
Originality/Value: *Contributes to the discussion on the spatial differentiation of the level of socio-economic situation in the United Kingdom.*

Keywords*: Socio-economic development, regions of growth, peripheral regions, United Kingdom.*

JEL Classification*: A10, I30, J01, O10.*

Paper type: *Research article.*

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1. Introduction

A characteristic feature of European countries are regional differences in the level of economic and social development. The economically strongest and weakest regions remain at opposite poles of wealth. The former are distinguished by the concentration of highly qualified people, the accumulation of material capital, and the activity of many financial, cultural, and scientific and research institutions. GDP per capita in these regions has remained high for years.

Economically weak regions are characterized by poorer spatial accessibility, deficiencies in technical infrastructure, unfavorable economic structure, low competitiveness of enterprises, low level of investment and economic development. The greatest development disparities occur in Italy - between the southern and northern regions, in Germany - between the eastern and western Länder and in Poland - between the eastern and most other voivodeships (Pastuszka, 2019).

According to Philip McCann (2019, 256-267), the UK has slightly less regional economic inequality than in Italy. In his opinion, the British economy has been too dominated by London, while the rest of the country does not use its full potential. From a study by other scientists (Martin, Sunley, Gardiner, Evenhuis, and Tyler, 2018, 539-570; Carrascal-Incera, McCann, Ortega-Argilés, and Rodríguez-Pose, 2020, 4-17) shows that, apart from London, the most prosperous are urban centers in south-eastern England.

In contrast, the majority of economically weak cities are found in the Midlands, northern England and Wales. These cities have low demographic and economic potential and therefore little impact on the development of their regional base.

The mentioned studies do not cover some important economic values and do not take into account the economic effects of the COVID-19 pandemic, which had a significant impact on development processes in various regions. It becomes advisable to supplement the existing research achievements by Pastuszka and Pastuszka (2022) regarding the scope of the analyzed problems and the time of their occurrence. The main aim of that paper was to assess the state and dynamics of the socio-economic development of British regions in 2012-2020. An attempt was made to answer three research questions:

1. *What was the level of economic and social development of regions in the years 2012-2020, and which were the most developed and which were the least developed?*
2. *Which regions and in what aspects have recorded significant changes in the existing socio-economic situation?*
3. *Which regions have seen the greatest deterioration in their socio-economic situation due to the Covid-19 pandemic?*

The present article consists of four parts. At the beginning, the essence of socio-economic development was explained, the second part presented the general characteristics of the studied regions, the third - the research method and the analyzed data, and the fourth - the results of the empirical study. The article ends with a summary and most important conclusions.

2. The Essence of Socio-Economic Development

Socio-economic development is complex and multidimensional. It goes beyond just increasing your income and accumulating material wealth (Nielsen, 2011; Acocella, 2005, 196). According to Kołodko (2008) takes place not only through quantitative changes in the sphere of production, investment and consumption, but also qualitative changes in the sphere of technology and organization, management methods, work culture, institutional solutions, social relations and the state of the natural environment.

Both the material conditions and the socio-cultural living conditions of the population are improving (improving the availability of housing, educational services, health care, culture, social welfare). New work standards and principles of functioning of society are also being developed (Todaro, 1999). Broadly speaking, socio-economic development involves a constant change in the living and economic conditions of the population (Thirlwall, 2006).

It therefore concerns all aspects of society's life, from infrastructure and production methods, through health care, education, culture and politics. In the past, socio-economic development was mainly influenced by geographical and climatic conditions, the abundance of mineral resources and technical infrastructure, including transport.

Currently, factors exposed in endogenous growth models have become crucial (Romer 1990, 71-102; Lucas, 1988, 3-42), i.e., the availability of people with high qualifications and the ability to cooperate, the presence of enterprises using the latest technological and organizational solutions, the activity of business support organizations, educational and scientific research institutions.

Regardless of these factors, at all times, a significant role in shaping the development conditions has been played by well-thought-out and consistent actions of public authorities aimed at full use of all available resources to the extent that it is purposeful and possible. The priority should be to create conditions for the establishment of local enterprises, their operation and cooperation.

It is also important to strengthen the network of connections between enterprises, scientific and research institutions, advisory and training centers and public administration. Network interactions between these entities favor the supply and

transfer of external knowledge and new technologies, the growing demand for innovations, and over time will enable the creation of their own new solutions.

3. General Characteristics of the ITL Regions of Great Britain

In the UK, ITL 2 regions are made up separately of, county groups and district groups in England (33 regions), local authority groups in Wales (2 regions) and Scotland (5 regions), and Northern Ireland as one region. They differ in terms of size and terrain, population intensity and level of economic development. The largest area is occupied by the Highlands and Islands - the northernmost region of Scotland.

Southern Scotland, Eastern Scotland, Northern Ireland, West Wales and The Valleys and East Anglia are also large regions (Table 1). A significant part of the Scottish regions is covered by mountains (in Highland about 40%), and in Northern Ireland - upland and mountainous areas with poor vegetation, heaths, numerous lakes and peat bogs.

The people living there, particularly in the Highlands and Islands, are mostly small towns, villages and isolated farms, making these areas the least populated and least urbanized in Great Britain (Richards, Bryden, 2000, 71-77). North Eastern Scotland and Cumbria, located on the border with Scotland, are also characterized by low population density.

The smallest regions in terms of area are, the city of London, as a separate region, and five other regions of England with large industrial centers and associated suburban zones. Merseyside including the agglomeration of the city of Liverpool, West Midlands with the agglomeration of the city of Birmingham, neighboring Greater Manchester, West Yorkshire with the agglomeration the cities of Bardford and South Yorkshire with the agglomeration of the city of Sheffield, as well as West Central Scotland with the agglomeration of the city of Glasgow.

Table 1. *Area, population, investment of UK ITL 2 regions*

Region	Area [thous. km^2]	Population [thous.]	Total investment in 2012-200 per capita	Region	Area [thous. km^2]	Population [thous.]	Total investment in 2012-200 per capita
Tees Valley and Durham	3,02	1 206	37,7	Essex	3,68	1 847	43,1
Northumberland and Tyne and Wear	5,57	1 464	35,9	London	1,58	8962	78,0
Cumbria	6,82	500	61,3	Berkshire, Buckinghamshire	5,74	2 420	76,7

				and Oxfordshire			
Greater Manchester	1,28	2 836	39,0	Surrey, East and West Sussex	5,46	2 908	46,2
Lancashire	3,08	1 509	34,0	Hampshire and Isle of Wight	4,15	1 992	55,0
Cheshire	2,26	937	56,4	Kent	3,74	1 860	40,6
Merseyside	0,73	1 559	40,7	Gloucestershire, Wiltshire and Bath/Bristol area	7,47	2 516	56,1
East Yorkshire and Northern Lincolnshire	3,52	933	46,0	Dorset and Somerset	6,11	1 336	43,2
North Yorkshire	8,31	829	49,4	Cornwall and Isles of Scilly	3,57	572	36,5
South Yorkshire	1,55	1 409	32,3	Devon	6,57	1 201	39,4
West Yorkshire	2,03	2 332	35,5	West Wales and The Valleys	13,13	1 979	28,2
Derbyshire and Nottinghamshire	4,79	2 221	37,6	East Wales	7,65	1 174	38,6
Leicestershire, Rutland and Northamptonshire	2,48	1 854	45,4	North Eastern Scotland	6,50	490	83,5
Lincolnshire	5,94	761	45,7	Highlands and Islands	41,05	469	75,4
Herefordshire, Worcestershire and Warwickshire	5,89	1 367	58,0	Eastern Scotland	13,39	2 005	44,4
Shropshire and Staffordshire	6,20	1 639	36,1	West Central Scotland	1,98	1 550	43,1
West Midlands	0,90	2 929	38,0	Southern Scotland	15,89	948	35,0
East Anglia	12,58	2 525	61,3	Northern Ireland	14,34	1 894	43,1
Bedfordshire and Hertfordshire	2,88	1865	53,8				

Source: *Own elaboration based on ONS data*.

4. Research Method and Data

The study used descriptive statistics and hierarchical cluster analysis to Ward's agglomeration method. To assess the level of economic development, the amounts of financial outlays, fixed assets and Gross Domestic Product per capita were adopted. These values were calculated in constant prices from 2020 using the CPI index.

GDP, although it is the most frequently used synthetic measure of the level of economic development, does not fully reflect economic reality. Therefore, the analysis also included the amount of investment expenditure. The implementation of the investment provides a development impulse, potential for expenditure on basic infrastructure, direct for production expenditure and prospective for developing technological progress and increasing the level of professional competences.

Thanks to investments, it is possible to increase the existing fixed assets, which determine the productivity of the production potential and the prospects for economic development.

The basis for assessing social development is the analysis of labour market indicators: employment and unemployment rates. The employment rate indicates the ability of the economy to adapt to create demand for labour, while the unemployment rate is a measure of the underutilization of labour resources. The analysis used data for the years 2012-2020, available in the Office for National Statistics database[3].

The adopted variables, excluding investment expenditure due to their variability over time, were used to group regions with the greatest degree of similarity in terms of the level of socio-economic development and to assess changes taking place in the identified groups.

5. The Research Results

5.1 Investments and Fixed Assets

Between 2012 and 2020, capital expenditure in UK regions varied in scope and scale (Table 2). The different intensity of investment activity could be a result of the nature of investments, their changes related to the result of the 2016 Brexit referendum and the resulting final exit of Great Britain from the European Union in 2020, as well as the effect of the Covid-19 pandemic[4].

The highest investment expenditure per capita was recorded in North Eastern Scotland, where attempts have been made to stimulate the British oil and gas industry since April 2016 due to the depletion of available deposits in the North Sea. For this purpose, the Petroleum Revenue Tax was reduced to zero, the additional fee was reduced from 20% to 10% and relief was granted to investors to prevent the closure of fields and the liquidation of infrastructure (Oil and gas taxation: reduction

[3] *https://www.ons.gov.uk/*

[4] *In 2020, compared to the previous year, apart from five regions (North Yorkshire, Highlands and Islands, Hampshire and Isle of Wight, Devon, Northumberland and Tyne and Wear, Lancashire), there was a decline in investment expenditure in all regions (in Great Britain by 8.4%). (ONS, 2020a; Bad Brexit deal for Scotland, 2020).*

in Petroleum Revenue Tax and supplementary charge, 16 March 2016). In the years 2018-2020, investments there decreased significantly.

London and neighboring Buckinghamshire and Oxfordshire are among the leading regions in terms of the investment index. This is due to the high economic potential of the country's capital and its immediate surroundings, as well as the conversion of the investment volume to people permanently living there, without taking into account people commuting to work from outside the London agglomeration. London was the main beneficiary of direct investments made by foreign investors, mostly related to research and development activities (EY, 2018).

High levels of investment spending were also recorded in the northernmost sparsely populated regions of the Highlands and Islands and Cumbria. An important, although not the only, source of financing investment expenditure in these regions were European Union funds available under cohesion policy (Funding of EU structural fund priorities in Scotland, post-Brexit submission from Highlands and Islands European Partnership, Finance and Constitution Committee).

These funds were directed primarily at transport infrastructure (road, air and sea, environmental protection, energy, ICT). Activities related to the development of entrepreneurship, research, training and advisory activities, increasing the share of energy from renewable sources, and access to fast broadband connections have gained great importance (United Kingdom – Operational Programme 2014-2020).

Investment outlays per capita were higher than the national average in another seven regions, and lower in twenty-six regions. The lowest values of this indicator were recorded in West Wales and The Valleys, South Yorkshire and Lancashie, respectively: 56.8%, 65% and 68.6%.

Until the end of the 20th century, coal mining and processing played an important role in the economy and labour market in West Wales, and in South Yorkshire and Lancashie, textile production, which was characterized by a high demand for labour, not necessarily highly qualified.

Currently, in these regions, the majority are small enterprises, which invest less often in new technologies and improvement of management processes than large companies. (ONS, 2020b). The employment structure there is unfavorable, with a relatively high percentage of people working in agriculture, which translates into labour productivity clearly lower than the national average (Airey and Fyans, 2018).

The investment outlays contributed to an increase in the value of fixed assets per capita in Great Britain by 5.6%. However, this process was not spatially homogeneous. The highest percentage increase in the value of this indicator was achieved by Cumbria (44.2%), followed by the Highlands and Islands (33.7%), Large increases were recorded in Herefordshire, Worcestershire and Warwickshire

(29.3%), East Yorkshire and Northern Lincolnshire (28, 9%), Lincolnshire (20.0%), and also in London (18.5%). The decline occurred, especially in the pandemic year 2020, in seventeen regions (Table 2), most notably in Northern Ireland (-7.6%), West Yorkshire (-6.4%), Hampshire and Isle of Wight (-5.7%), West Central Scotland (-4.8%).

In 2020, the highest value of physical capital per inhabitant was recorded in North Eastern Scotland, although it decreased compared to 2012, mainly as a result of the COVID-19 pandemic, followed by London, Berkshire, Buckinghamshire and Oxfordshire, Highlands and Islands, Cumbria and East Anglia. This capital remained at the lowest level throughout the analyzed period in West Wales and The Valleys, South Yorkshire and Lancashire, which was the result of extremely low investments made there.

Table 2. *Fixed capital and GDP per capita in UK regions*

Region	Fixed capital per capita (thous. £)		GDP per capita Great Britain =100		Region	Fixed capital per capita (thous. £)		GDP per capita Great Britain =100	
	2012	**2020**	**2012**	**2020**		**2012**	**2020**	**2012**	**2020**
Tees Valley and Durham	33,8	34,9	72,1	67,1	Essex	41,3	40,0	81,7	81,1
Northumberland and Tyne and Wear	32,4	33,5	81,9	76,6	London	59,8	70,8	170,0	175,1
Cumbria	39,1	56,5	87,1	81,9	Berkshire, Buckinghamshire and Oxfordshire	71,0	70,3	137,3	137,4
Greater Manchester	36,8	36,5	88,8	90,9	Surrey, East and West Sussex	42,6	43,5	106,6	102,9
Lancashire	31,0	31,1	80,3	77,8	Hampshire and Isle of Wight	54,7	51,6	104,5	101,8
Cheshire	49,6	51,2	115,8	120,4	Kent	35,5	37,2	83,6	84,2
Merseyside	33,9	37,0	77,3	77,0	Gloucestershire, Wiltshire and	52,2	52,0	105,8	103,7

					Bath/Bristol area				
East Yorkshire and Northern Lincolnshire	32,7	42,1	77,2	78,6	Dorset and Somerset	35,4	39,8	80,2	78,6
North Yorkshire	46,8	45,8	90,8	86,8	Cornwall and Isles of Scilly	33,6	33,0	69,6	66,2
South Yorkshire	30,4	30,1	72,6	70,1	Devon	36,4	36,1	78,6	74,0
West Yorkshire	35,0	32,8	86,1	84,9	West Wales and The Valleys	26,7	26,4	66,2	66,3
Derbyshire and Nottinghamshire	35,4	34,2	82,1	79,9	East Wales	34,6	35,3	90,4	88,8
Leicestershire, Rutland and Northamptonshire	38,0	41,0	87,9	87,1	North Eastern Scotland	77,6	77,2	143,3	114,8
Lincolnshire	34,9	41,9	72,8	70,3	Highlands and Islands	52,3	69,9	89,5	85,5
Herefordshire, Worcestershire and Warwickshire	40,5	52,4	92,4	93,4	Eastern Scotland	42,1	41,1	97,9	98,62
Shropshire and Staffordshire	31,7	32,8	77,0	75,0	West Central Scotland	42,6	40,6	91,5	92,0
West Midlands	33,9	34,7	81,1	81,0	Southern Scotland	30,7	33,6	74,5	73,2
East Anglia	51,9	56,0	91,1	89,5	Northern Ireland	44,2	40,8	80,0	80,0
Bedfordshire and Hertfordshire	50,6	49,8	98,1	103,7	**Great Britain**	**43,4**	**45,8**	-	-

Source: *Own elaboration based on ONS data*.

5.2 GDP Per Capita

The investments made contributed to the economic growth of individual regions of Great Britain until 2019. In 2020, compared to 2019, as a result of the Covid-19 pandemic, all regions recorded a real decline in GDP per capita, the largest in regions with great importance for the economy of agriculture and tourism: Cornwall and Isles of Scilly o 9,3%, Cumbria (-8,4%), Herefordshire, Worcestershire and

Warwickshire (-8,2%), North Yorkshire (-7,8%), Devon (-7.6%). These regions are likely to have experienced a decline in both foreign and domestic demand related to spending on tourism services, consumption, as well as public investment expenditure.

The smallest declines were recorded in regions with various branches of the economy: Berkshire, Buckinghamshire and Oxfordshire (-4.1%), London and Derbyshire and Nottinghamshire (-4.7% each), as well as West Central Scotland, Southern Scotland, East Wales, Northern Ireland. This means that regions with a less diversified economic base are particularly exposed to the effects of the crisis.

As a result of different growth trajectories, the value of GDP per capita in relation to the national average in 2012-2020 decreased in 27 regions, to the greatest extent in North Eastern Scotland, then in Northumberland and Tyne and Wear, Tees Valley and Durham, Cumbria. In ten regions, the value of this indicator increased. The greatest improvement occurred in wealthy regions: Bedfordshire and Hertfordshire (by 5.6 percentage points), London (5.1 percentage points) and Cheshire (4.7 percentage points) (Table 3) and thus increased their advantage over other regions compared to 2012.

In 2020, by far the highest GDP per capita value in relation to the national average was achieved by London (175.1%), followed by Berkshire, Buckinghamshire and Oxfordshire (137.4%). This is due to both the large capital assets of enterprises operating there, as well as the work of people commuting from neighboring areas every day. A high value of the indicator occurred in Cheshire and in North Eastern Scotland, despite a slower economic growth rate than the average in the country.

Enterprises from the automotive, aviation, chemical, biotechnology and biomedical industries play an important role in the economy of Cheshire, located in close proximity to the agglomerations of Leeds, Liverpool and Manchester. Above-average GDP per capita was also recorded in four regions well connected to the London metropolitan area, Bedfordshire and Hertfordshire, Gloucestershire, Wiltshire and Bath/Bristol area, Surrey, East and West Sussex, Hampshire and Isle of Wight.

A lower level of GDP per capita than the national average was recorded in 29 regions. Cornwall and the Isles of Scilly, West Wales and the Valleys and Tees Valley and Durham were in the worst situation in this respect. A serious problem for the economies of these regions is low labour productivity and low wages (ONS, 2020c).

5.3 Changes in the Labour Market

Progress in the real economy contributed to an improvement in the labour market situation in all regions until the outbreak of the COVID 19 epidemic. In 2020,

compared to 2019, the situation in most regions significantly deteriorated, most notably in Lincolnshire, where a decline in average employment was recorded by 5.1 percentage points, and at the same time an increase in the unemployment rate by 2.2 percentage points, followed by North Eastern Scotland (-4.3 percentage points; 2.2 p.p.), Northern Ireland (-2.6 p. p.; 2.1 p. p.), Dorset and Somerset (-2.3 p.p.; 1.4 p.p.).

Despite the deterioration of the situation on the labour market in 2020, throughout the analyzed period 2012-2020, in all regions, except North Eastern Scotland, the percentage of employees increased. The highest increases were recorded in Merseyside (by 7.2 p.p.) and London (7.0 p.p.), followed by West Yorkshire, West Midlands, Kent (by 6.9 p.p.), Cornwall and Isles of Scilly (by 6.8 p.p.) , as well as Tees Valley and Durham (6.1 p.p.).

The large share of part-time, seasonal and self-employed workers had a significant impact on the statistical level of employment, especially in the last two regions (Labur Market Pofile – Cornwall and Isles of Scilly). Employment increased the least in Lincolnshire (by 0.7 p.p.) and North Yorkshire (1.0 p.p.), and in North Eastern Scotland it actually decreased by 2.9 p.p.

The increase in employment was accompanied by a decrease in unemployment. Its level decreased the most in Merseyside (by 6.4 p. p.), West Central Scotland (6.2 p. p.), Tees Valley and Durham (5.7 p. p.), East Yorkshire and Northern Lincolnshire and South Yorkshire (5.5 p. p. each), i.e. regions with large unemployment rates in 2012. The unemployment rate remained almost at the same level (decrease by 0.7 p. p.) in Dorset and Somerset, and in North Eastern Scotland it even increased slightly (by 0.3 p. p.).

Table 3. *Employment and unemployment rate*

Region	Employment rate		Unemployment rate		Region	Employment rate		Unemployment rate	
	2012	**2020**	**2012**	**2020**		**2012**	**2020**	**2012**	**2020**
Tees Valley and Durham	64,5	70,6	12,3	6,6	Essex	73,2	76,0	7,3	3,8
Northumberland and Tyne and Wear	67,2	72,1	9,6	6,4	London	68,2	75,2	9,4	6,1
Cumbria	74,4	77,1	5,7	4,1	Berkshire, Buckinghamshire and Oxfordshire	76,3	78,8	6,6	3,7
Greater Mancheste	66,9	72,2	9,6	5,6	Surrey, East and	75,7	78,9	5,7	4,5

r					West Sussex				
Lancashire	70,1	74,7	8,2	3,4	Hampshire and Isle of Wight	74,6	76,8	5,8	4,2
Cheshire	74,5	79,1	6,1	3,8	Kent	71,2	78,1	7,4	4,1
Merseyside	65,7	72,9	10,0	3,6	Gloucestershire, Wiltshire and Bath/Bristol area	74,3	79,2	6,7	3,9
East Yorkshire and Northern Lincolnshire	68,5	73,7	10,6	5,1	Dorset and Somerset	74,8	77,1	4,7	3,9
North Yorkshire	76,4	77,4	5,5	2,3	Cornwall and Isles of Scilly	68,8	75,6	5,6	4,0
South Yorkshire	66,5	71,9	11,0	5,5	Devon	73,6	77,6	6,1	4,4
West Yorkshire	67,9	74,8	9,5	4,7	West Wales and The Valleys	66,2	71,4	8,6	4,1
Derbyshire and Nottinghamshire	70,3	74,9	8,8	5,3	East Wales	69,2	74,9	8,2	3,4
Leicestershire, Rutland and Northamptonshire	73,0	77,9	7,0	4,3	North Eastern Scotland	78,6	75,7	4,6	4,9
Lincolnshire	70,6	71,3	8,3	5,8	Highlands and Islands	76,2	77,6	5,1	2,5
Herefordshire, Worcestershire and Warwickshire	75,3	78,7	5,7	3,4	Eastern Scotland	71,6	73,6	7,3	4,6
Shropshire and Staffordshire	72,0	76,6	6,9	4,9	West Central Scotland	65,3	71,3	11,0	4,8

West Midlands	62,8	69,7	11,8	6,9	Southern Scotland	70,0	73,5	8,7	4,0
East Anglia	75,1	76,6	6,5	4,8	Northern Ireland	67,3	69,8	7,8	4,0
Bedfordshire and Hertfordshire	74,7	78,8	6,6	3,5	**Great Britain**	70,6	75,3	8,1	4,8

Source: *Own elaboration based on ONS data*.

As a result of the changes in 2020, the highest employment rates were recorded in Gloucestershire, Wiltshire and Bristol/Bath area and Cheshire, as well as in Herefordshire, Worcestershire and Warwickshire; Bedfordshire and Hertfordshire, Berkshire, Buckinghamshire and Oxfordshire; Surrey, East and West Sussex, Kent.

The lowest percentage of employees was in the West Midlands, Tees Valley and Northern Ireland (NISRA, 2020). This was primarily due to the insufficient job offer for women and the youngest people up to 24 years of age, and in the West Midlands additionally from the low professional adaptation of ethnic minorities, in particular from Muslim countries (ONS, 2017), and in the Tees Valley - the deteriorating age structure population and shortage of qualified staff (Durham Tees Velley's Strategic Economic Plan).

As for unemployment, the lowest level was recorded in regions with a high importance of agriculture in the economy: North Yorkshire and the Highlands and Islands (below 2.5%), as well as in East Wales, Herefordshire, Worcestershire and Warwickshire and Lancashire (below 3.5 %). Unemployment reached the highest levels in the West Midlands, Tees Valley and Durham, Northumberland and Tyne and Wear and London (above 6%).

Its causes in these regions are different. In the West Midlands and London, this is largely related to the constantly high level of inflow of foreigners and the delayed professional activation of them, especially women, while in other regions it is due to the generally low absorption capacity of the labour market.

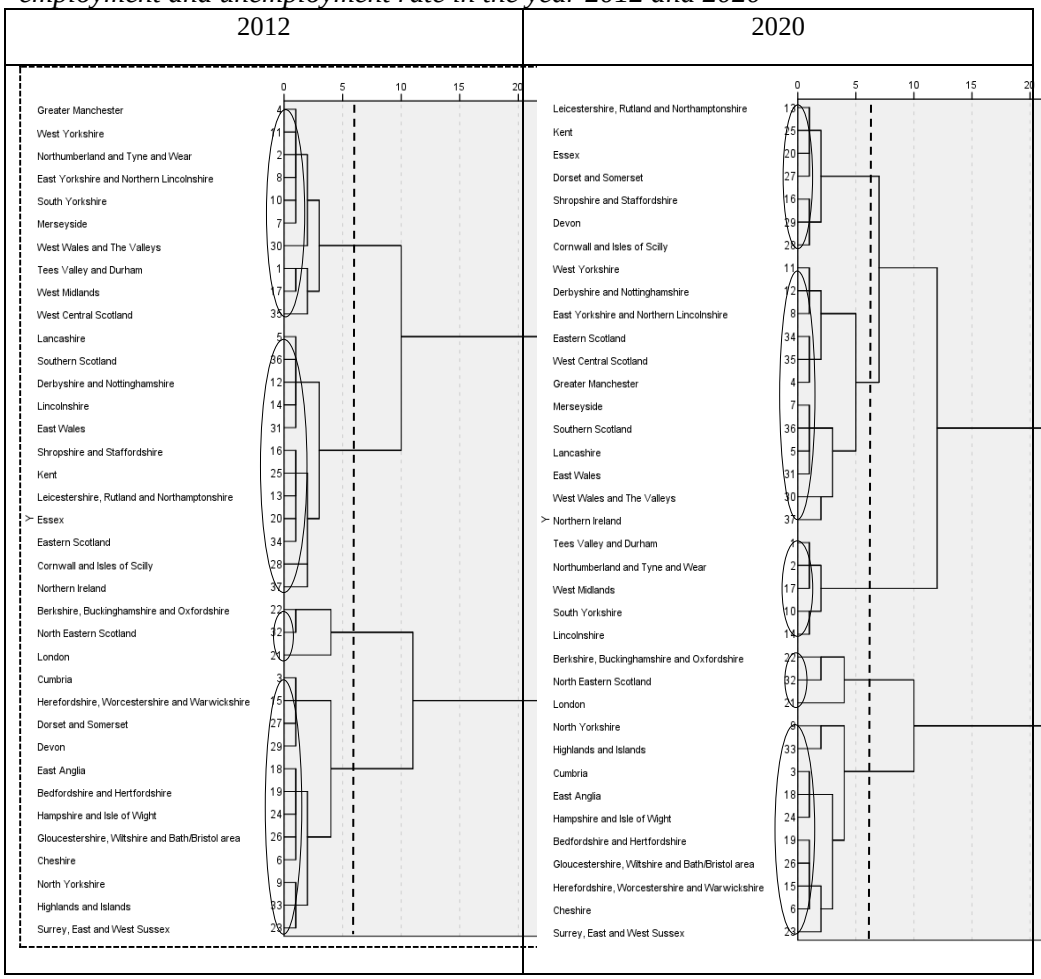
5.4 Regions with a Similar Socio-Economic Situation

The macroeconomic variables used were analyzed using the Ward method, which made it possible to divide regions with similar socio-economic potential into homogeneous clusters illustrated in the form of the tree chart below.

The more closely connected the regions within a cluster, the greater the similarity between them in terms of the analyzed indicators, and vice versa - the less homogeneous a group of regions is in terms of the level of socio-economic development, the lower the degree of connection between them.

In 2012, four clusters were identified: two twelve-element clusters, one ten-element cluster and one three-element cluster. They are internally diverse in terms of geographical location and socio-economic situation. The regions that were most loosely connected with the other regions in the first cluster were West Wales and West Central Scotland, in the second cluster - Cornwall, Northern Ireland, and in the third cluster - London.

Figure 1. *Groups of similar regions in terms fixed assets and GDP per capita, employment and unemployment rate in the year 2012 and 2020*



Source: *Own elaboration based on ONS data*.

In 2020, five clusters of regions were identified, also heterogeneous. Their composition has undergone some changes, which proves the different development trajectories of the regions. The first cluster included two subgroups created by tourist and agricultural regions, despite their location in different parts of the country.

The second cluster consists of twelve regions from the central and northern parts of the country. They form two three-element, one four-element and more loosely related to them: West Wales - due to the lowest level of economic development and Northern Ireland - due to the unfavorable situation on the labour market.

The third cluster included post-industrial regions of England with a relatively low level of development: Tees Valley and Durham, Northumberland and Tyne and Wear, West Midlands, as well as closely located South Yorkshire and Lincolnshire.

The fourth cluster, similarly to 2012, consisted of the economically strongest regions: Berkshire, Buckinghamshire and Oxfordshire, North Eastern Scotland and London.

There were also minor changes in the composition of regions in the fifth cluster. It includes a well-matched four-element and three-element set of regions with good socio-economic conditions, as well as, to a lesser extent, the associated North Yorkshire, Highlands and Islands and Surrey, as well as East and West Sussex, due to their less favorable labour market situation.

6. Conclusions

The following conclusions can be drawn from the analysis performed.

1. The development of regions in Great Britain has a polar-island character. London is the undisputed economic leader, despite the relatively low level of employment, especially among immigrants. This metropolis, together with the neighboring regions, creates a functionally coherent area with large and diversified potential. For this reason, the London metropolitan area, although closely linked to the global economy, has suffered a moderate degree of negative economic consequences due to COVID-19. As a result, it constantly increases its advantage over other regions in terms of the level of investment, the value of fixed assets, the number of research and development institutions and the generated GDP.
2. Cheshire can also be considered an economically strong region. Despite the negative economic effects caused by the coronavirus pandemic, it is characterized by an above-average rate of investment and level of overall development, which results from the activity of enterprises operating in the region of modern industries: aviation, automotive, biotechnology and biomedicine.
3. North Eastern Scotland remains in a specific situation, which, despite the highest negative dynamics of GDP per capita growth in the country, is still an economically strong region. The condition of the numerous oil and gas companies operating there is of key importance for its economy.
4. Other agglomeration regions in England and Scotland are stuck in development drift. The potential of the largest cities in these regions (Liverpool, Birmingham,

Manchester, Glasgow, Edinburgh) has a positive impact on the development of the immediate surroundings, but is not sufficient to intensify the growth processes of non-urban areas and thus entire regions. Their level of development remains below the average in the country.

5. The least developed are the peripherally located regions, whose economic driving force until the mid-20th century was traditional industry, and now agriculture and tourism play an important role. There are low investment outlays, a low level of material capital, and a low rate of labour force utilization, which translates into a low level of economic development. Despite weak connections with the global economy, these regions have also been clearly affected by the economic effects of the pandemic. Without the intervention of a specifically targeted national development policy, they will lose their distance from the group of more developed regions. As a result, the scale of regional inequalities in Great Britain may be similar to that in Italy

References:

Acocella, N. 2005. Economic policy in the age of globalization. Cambridge University Press, Cambridge.

Airey, J., Fyans, J. 2018. The Delivery of an Industrial Strategy. Raising prosperity across England, Localis.

Bad Brexit deal for Scotland. 25 December 2020. Bad Brexit deal for Scotland - gov.scot (www.gov.scot).

Carrascal-Incera, A., McCann, P., Ortega-Argilés, R., Rodríguez-Pose, A. 2020, UK Interregional Inequality in Historical and International Comparative Context. National Institute Economic Review, vol. 253, 4-17.

EY. 2018. Bridging the Gap: EY's UK Attractiveness Survey, EY November. insights-servfile.cfm (criticaleye.com).

Funding of EU structural fund priorities in Scotland, post-Brexit submission from Highlands and Islands European Partnership, Finance and Constitution Committee. REF NO. FCC/S5/19/RSF/28 28.2_Highlands_and_Islands_European_Partnership.pdf (parliament.scot).

Kołodko, G.W. 2008. Wędrujący świat, Prószyński i S-ka, Warszawa.

Labur Market Profile – Cornwall and Isles of Scilly. https://www.nomisweb.co.uk/reports/lmp/lep/1925185540/report.aspx.

Lucas, R.E. 1998. On the Mechanics of Economic Development. Journal of Monetary Economics, vol. 22/1, 3-42.

Martin, R., Sunley, P., Gardiner, B., Evenhuis, E., Tyler, P. 2018. The City Dimension of the Productivity Problem: The Relative Role of Structural Change and Within Sector Slowdown. Journal of Economic Geography, 18(3), 539-570.

McCann, P. 2019. Perceptions of Regional Inequality and the Geography of Discontent: Insights from the UK. Regional Studies, 54(2), 256-267.

Nielsen, L. 2011. Classifications of Countries Based on Their Level of Development: How it is Done and How it Could be Done. IMF Working Papers, WP/11/31, International Monetary Fund.

NISRA. 2020. Underemployment in Northern Ireland. Underemployment in Northern Ireland | Northern Ireland Statistics and Research Agency (nisra.gov.uk).

Oil and gas taxation: reduction in Petroleum Revenue Tax and supplementary charge, Policy Paper 16 March 2016. Oil and gas taxation: reduction in Petroleum Revenue Tax and supplementary charge - GOV.UK (www.gov.uk).

ONS. 2020a. Coronavirus and the impact on UK households and businesses. https://www.ons.gov.uk/economy/nationalaccounts/uksectoraccounts/articles/coronavirusandtheimpactonukhouseholdsandbusinesses/2020#the-impact-on-businesses.

ONS. 2020b. Earnings and hours worked, work and residence NUTS, 1998 revised 2019 provisional.

ONS. 2020c. Employee earnings in the UK: 2019, Employee earnings in the UK: 2019 - Office for National Statistics (ons.gov.uk).

ONS. 2017. Combined Authority economic indicators, 14 March. Combined Authority economic indicators.pdf.

Pastuszka, S. 2019. Regiony problemowe we Włoszech, w Niemczech, Polsce oraz uwarunkowania ich rozwoju. Uniwersytet Jana Kochanowskiego w Kielcach, Kielce.

Pastuszka, S., Pastuszka, K. 2022. Cohesion or In-cohesion of Economic and Social Development of the UK's Regions. European Research Studies Journal, 25(2), 3-18.

Richards, C., Bryden, J. 2000. Information Technology and rural development in the Scottish Highlands and Islands: preliminary review of the issues and evidence. Geocarrefour, 75(1), 71-77.

Romer, P. 1990. Endogenous Technological Change. Journal of Political Economy, 98(5), 71-102.

Tees Velley's Strategic Economic Plan. https://teesvalley-ca.gov.uk/about/tees-valleys-strategic-economic-plan/.

Thirlwall, A.P. 2006. Growth and Development, with Special Reference to Developing Economies. Palgrave Macmillan, New York.

Todaro, M. 1999. Development in the third World, Third Edition, Longman. New York.

United Kingdom – Operational Programme 2014-2020: Highlands and Islands of Scotland. MEMO/08/235, Brussels, 10 April 2008.