

# SPATIAL AND TEMPORAL DISTRIBUTION OF ECONOMIC GROWTH AND STAGNATION AREAS IN POLAND – - challenges for Polish cohesion policy after 2013

TERRITORIAL COHESION IN EUROPE  
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# INTRODUCTION

## **AIM**

This paper aims at **identifying the current state and dynamics of socio-economic development differentiations in Poland, that may be challenging for the economic policy at both country and regional level in terms of the compliance with the European Union's cohesion policy after 2013**

The results presented constitute the end of the initial research stage realized in the context of the project, Socio-Economic Growth and Emergence Of Growth and Economic Stagnation Areas, financed by the National Centre of Science (N N306 791940). This project is being undertaken by the Research Focus Group, Regional Analysis Department, Institute of Socio-Economic Geography and Spatial Management UAM in Poznań.

**RESEARCH PROCEDURE** is composed of following steps:

1. EU cohesion policy after 2013.

1. Static and dynamic analysis of socio-economic differentiation of economic space in Poland:

1. Methodology
2. Differentiation observed at regional level (NUTS 2 )
3. Differentiation observed at subregional level (NUTS4)

2. **Conclusions and recommendations** for cohesion policy in Poland after 2013 based upon identified differentiations and policy orientation in years 2014-2020.

## *SPATIAL AND TEMPORAL SCOPE OF ANALYSIS, SOURCES*

Analysis is carried out in two spatial dimensions:

- regional - NUTS 2
- subregional – NUTS 4

And is determined by the accessibility of data.

Period of analysis covers years 2000 – 2010.

Data collected by Central Statistical Office were used in analysis.

# COHESION POLICY AFTER 2013

## UNBALANCED GROWTH

Due to various conditions and volatile factors endogenous and exogenous development processes do not appear with equal intensity on each area.

### Theoretical foundations of unbalanced growth:

- Growth pole theory
- Core and periphery theory
- Endogenous growth theory
- New economic geography

## UNEFFECTIVE COMPENSATION MODEL

The compensation model promoted by EU did not contribute to satisfying convergence at regional level. At intraregional level divergence is observed.

Numreous reports and papers deliver evidence conifirming necessity of further reforms historical Jacques Delors', shifting the regional policy paradigm (Green Paper..., 2008; Barca, 2009; Fifth Report..., 2007; Europa 2020, 2010; Cohesion Policy..., 2010; Regional Policy...., 2011; Analysis of errors..., 2011).

Member States being the biggest beneficiaries of EU regional policy suffered the most from the economic crisis. This may indicate improper targeting the funds, lack of effectiveness and relative weakness of economies, unable to adopt to the voltile global conditions (por. Canuto, Leipziger (eds.), 2012).

## **IN SEARCH FOR A NEW PARADIGM**

A new solution seems to be enhancement of traditional dimensions of economic and social cohesion by territorial dimension (as incorporated in the Lisbon Treaty). This together with functional approach to cohesion in general may improve the effectiveness and efficiency of policy. This allows for employing theoretical models on unbalanced growth in practice (Green Paper, 2008).

With these prerequisites this may result with policy reorientation from levelling out the differences towards benefitting from differences with regards to employing endogenous resources, territorial co-ordination and multilevel governance (Territory matters... 2006; Shrinking regions... 2008). This shift from compensation towards polarisation-diffusion model is supported by the OECD and World Bank (Growing Unequal?... 2008; Reshaping Economic... 2009; Regional Development..., 2010).

## CHANGE OF OBJECTIVES

**2007-2013**

- **Convergence**  
(ERDF, ESF, CF)
- **Regional competitiveness and employment**  
(ERDF, ESF)
- **European territorial co-operation**  
(ERDF)

**2014-2020**

- **Investing in growth and jobs**  
(ERDF, ESF, CF)
- **European territorial co-operation**  
(ERDF)

## TERRITORIAL CONCENTRATION

Directed to all regions with preference to economically weaker regions.

### INVESTING IN GROWTH AND JOBS

All regions divided into three categories

- Lagging regions: <75% GDP (85% co-financing, 75% ETC)
- Transition regions: >75%<90% GDP (60% co-financing)
- Developed regions: >90% GDP (50% co-financing)

### INVESTING IN GROWTH AND JOBS

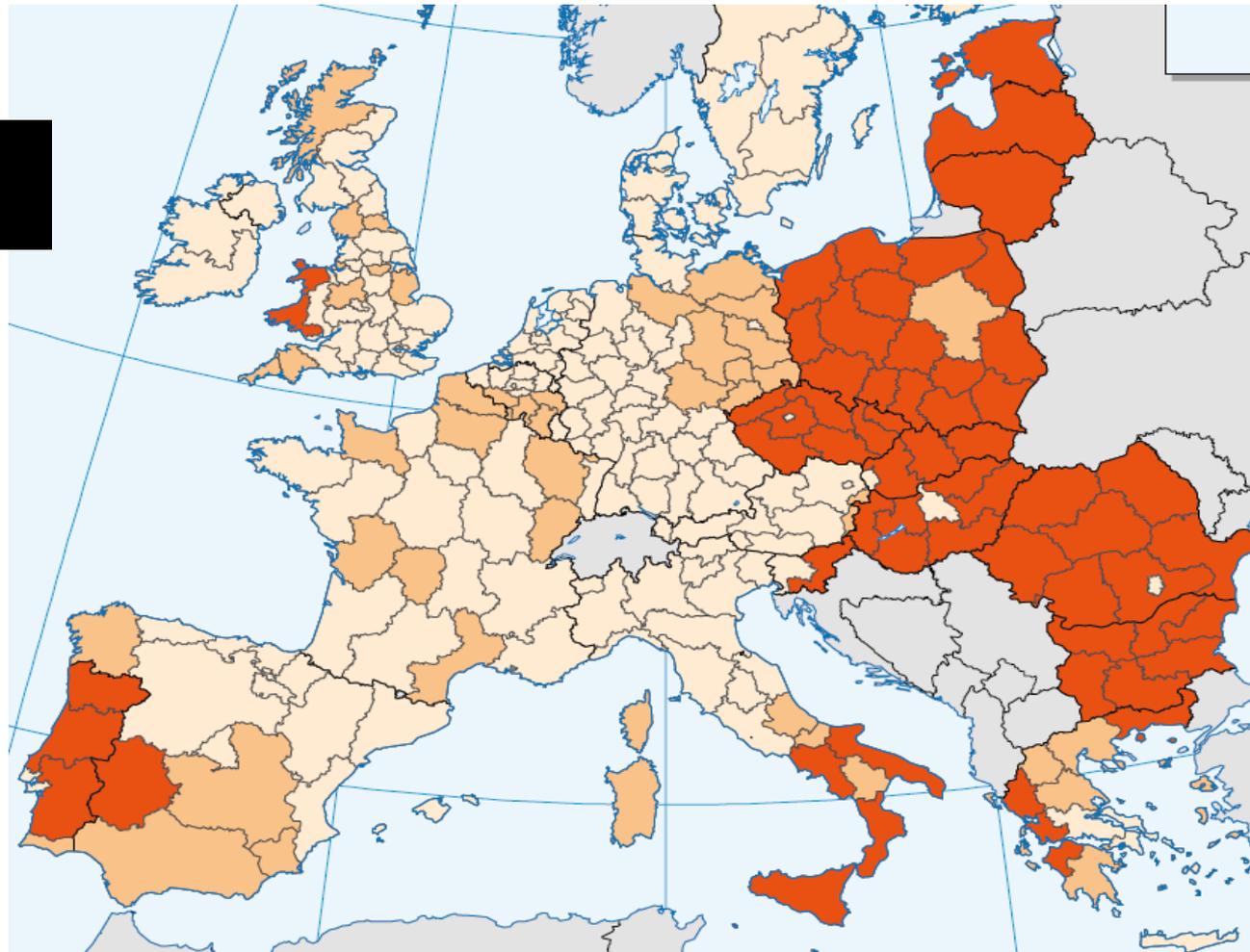
Member States under 90% of av. GDP

### EUROPEAN TERRITORIAL COOPERATION

Cross-border regions, macroregions

SPATIAL DIFFERENTIATION OF ASSISTANCE IN YEARS 2014-2020

GDP per inhab. (PPT),  
index EU27=100



- <75 (regiony mniej rozwinięte)
- 75 - 90 (regiony w fazie przejściowej)
- >=90 (regiony bardziej rozwinięte)

**SPATIAL DIFFERENTIATION OF GROWTH**

(GDP per inhabitant in PPT in 2009, EU 27=100)

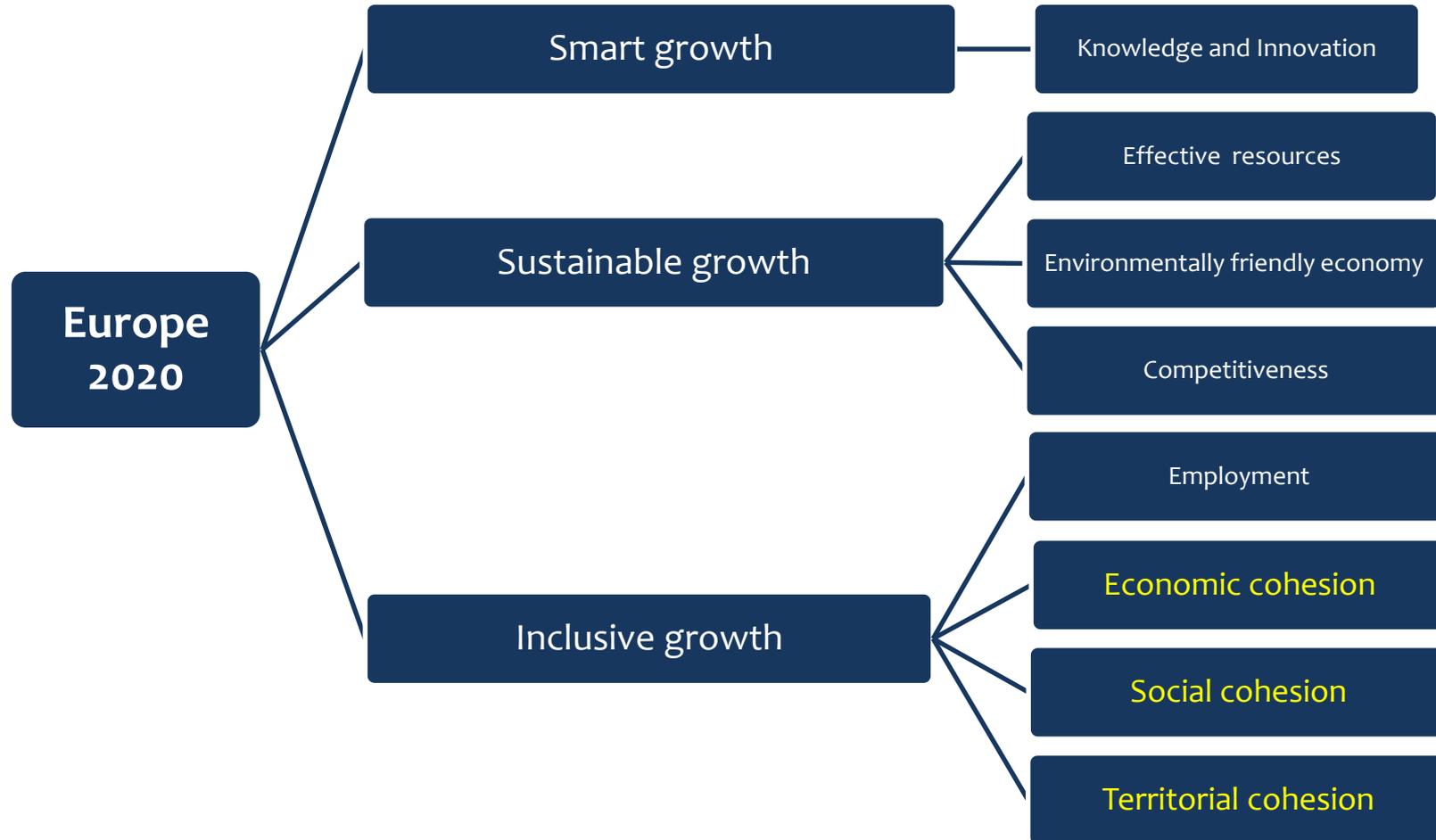
20 regions of highest GDP per inhab.			20 regions of lowest GDP per inhab.		
1	Inner London (UK)	332	1	Severozapaden (BG)	27
2	Luxembourg (LU)	266	2	Severen tsentralen (BG)	29
3	Bruxelles-Cap. / Brussels Hfdst. (BE)	223	3	Nord-Est (RO)	29
4	Hamburg (DE)	188	4	Yuzhen tsentralen (BG)	31
5	Bratislavský kraj (SK)	178	5	Severoiztochen (BG)	36
6	Île de France (FR)	177	6	Sud-Vest Oltenia (RO)	36
7	Praha (CZ)	175	7	Yugoiztochen (BG)	36
8	Stockholm (SE)	172	8	Sud-Est (RO)	38
9	Groningen (NL)	170	9	Észak-Magyarország (HU)	40
10	Åland (FI)	166	10	Sud-Muntenia (RO)	40
11	Wien (AT)	161	11	Lubelskie (PL)	41
12	Oberbayern (DE)	160	12	Podkarpackie (PL)	42
13	Bremen (DE)	160	13	Észak-Alföld (HU)	42
14	North Eastern Scotland (UK)	158	14	Dél-Alföld (HU)	43
15	Darmstadt (DE)	158	15	Nord-Vest (RO)	43
16	Utrecht (NL)	157	16	Dél-Dunántúl (HU)	45
17	Noord-Holland (NL)	151	17	Podlaskie (PL)	45
18	Hovedstaden (DK)	149	18	Warmińsko-Mazurskie (PL)	45
19	Bolzano / Bozen (IT)	148	19	Centru (RO)	46
20	Berkshire, Buckinghamshire & Oxfordshire (UK)	142	20	Świętokrzyskie (PL)	47

Source: Regional GDP Regional GDP per capita in 2009: seven capital regions in the ten first places. European Commision. STAT/12/38. 13 March 2012.  
<http://europa.eu/rapid/pressReleasesAction.do?reference=STAT/12/38&format=HTML&aged=0&language=EN&guiLanguage=en>



# THEMATIC CONCENTRATION

Commitment to EUROPE 2020.



## THEMATIC CONCENTRATION

Cohesion policy being a basic tool allowing for accomplishment of EUROPE 2020 quantified objectives:

1. Smart growth

2. Sustainable growth

3. Inclusive growth

75%  
employment of  
population  
aged 20-64  
(now 69%)

3%  
EU GDP for  
R&D

20/20/20%  
energy and climate

10%  
early school leavers  
(now 15%)

less  
20 Mio people  
threatened by  
poverty

## THEMATIC CONCENTRATION

In order to increase the effectiveness cohesion policy should concentrate on selected thematic objectives:

- 1 • strengthening research, technological development and innovation
- 2 • enhancing access to, and use and quality of, information and communication technologies
- 3 • enhancing the competitiveness of small and medium-sized enterprises, the agricultural sector and the fisheries and aquaculture sector
- 4 • supporting the shift towards a low-carbon economy in all sectors
- 5 • promoting climate change adaptation, risk prevention and management
- 6 • protecting the environment and promoting resource efficiency

## THEMATIC CONCENTRATION

In order to increase the effectiveness cohesion policy should concentrate on selected thematic objectives:



- promoting sustainable transport and removing bottlenecks in key network infrastructures



- promoting employment and supporting labour mobility



- promoting social inclusion and combating poverty



- investing in education, skills and lifelong learning



- enhancing institutional capacity and an efficient public administration

# SOCIO-ECONOMIC DEVELOPMENT IN POLAND STATE & DYNAMICS

### NUTS 2 – voivodeships i.e. regions (16 units)

Developmental aspect	Initial no of characteristics	No of characteristics after reduction
population and settlement	42	16
labour market and economy structure	32	15
technical infrastructure and spatial accessibility	61	15
financial situation and the level of affluence	27	15
innovative economy and business environment	14	13
<b>TOTAL</b>	<b>183</b>	<b>74</b>

### NUTS 4 – poviats (379 units)

Developmental aspect	Initial no of characteristics	No of characteristics after reduction
population and settlement	19	10
labour market and economy structure	16	8
technical infrastructure and spatial accessibility	28	12
financial situation and the level of affluence	26	16
innovative economy and business environment	3	3
<b>TOTAL</b>	<b>92</b>	<b>49</b>

The analysis required to describe the position of objects (units) in multidimensional space (characteristics).

**Objects-** units corresponding to statistical territorial division NUTS 2 – voivodeships; NUTS 4 – poviats.

**Dimensions-** values of characteristics in five partial approaches as well combined altogether in the framework of general systemic approach being a holistic perspective to regional development.

**The econometric analysis** served to detect three groups of objects:

- with relatively lowest values/ lowest dynamics– **stagnation areas**
- with average values- **transition areas**
- with relatively highest values/ highest dynamics– **growth areas**

Procedure employed in the research:

## SELECTION –CLUSTERING- CLASSIFICATION

### SELECTION

characteristics describing the socio-economic development were scrutinized with autocorrelation procedure and subdue to a content-related assessment of their merit. The first assumption underlying this stage was to eliminate all characteristics that displayed the autocorrelation of  $r_2 > 0,5$  in the period of at least 7 years.

All characteristics that were to be removed from further analysis, were also assessed in terms of their actual content-related merit for conditioning the socio-economic development process and their meaning in the process interpreted in general approach. The result of content-related assessment was therefore deciding in the selection procedure. The second assumption underlying this stage was to eliminate at least 50% of the initial number of characteristics collected in the database.

Procedure employed in the research:

## SELECTION –CLUSTERING- CLASSIFICATION

### CLUSTERING

Clustering the objects- being territorial units, referred to its division into three groups according to the relatively highest similarity with k-cluster analysis.

At this stage three methods were tested:

1. k- clustering on modes,
2. smooth k- clustering on three first PCA values,
3. smooth k- clustering on Z-score index .

with averaged clusters' thresholds applied for all 11 observations in time period of 2000- 2010.

Procedure employed in the research:

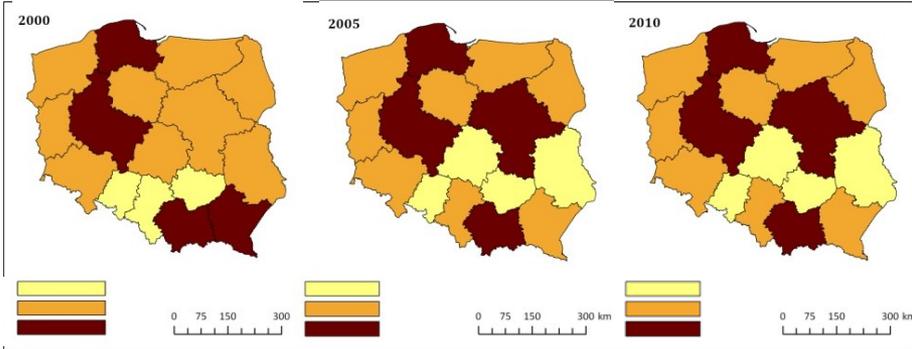
## SELECTION –CLUSTERING- CLASSIFICATION

### CLASSIFICATION

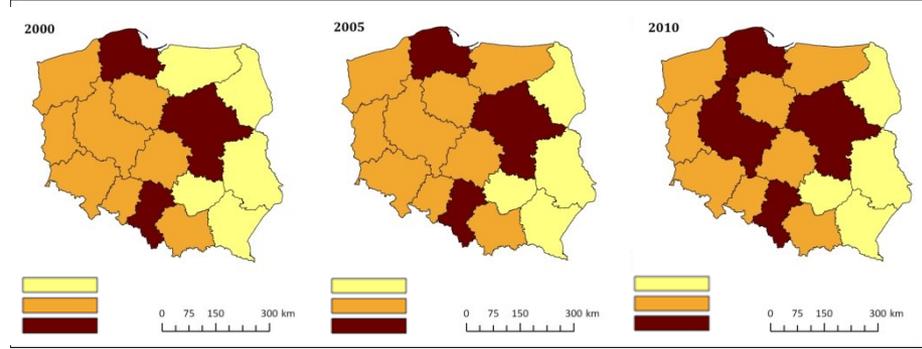
Classification of the objects (territorial units) rested upon interpretation of three indicated groups (clusters) in the context of stagnation and growth areas.

# SOCIO-ECONOMIC DEVELOPMENT IN POLAND STATE & DYNAMICS AT NUTS 2 LEVEL

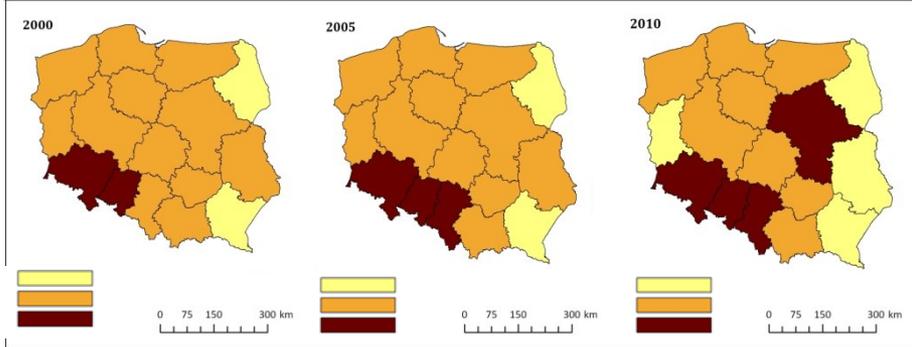
## POPULATION AND SETTLEMENT



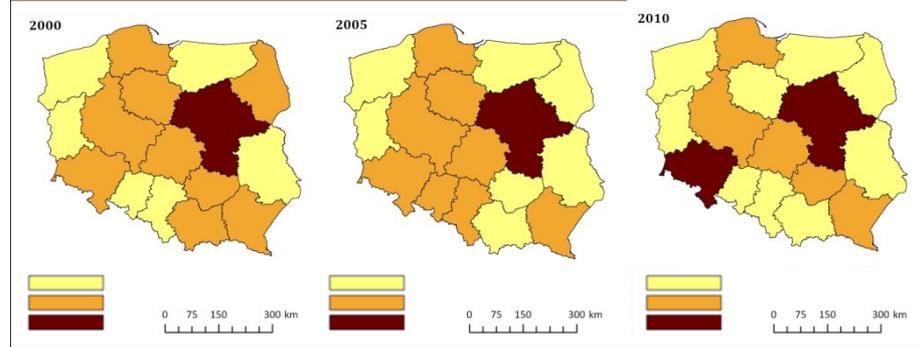
## LABOUR MARKET AND ECONOMY STRUCTURE



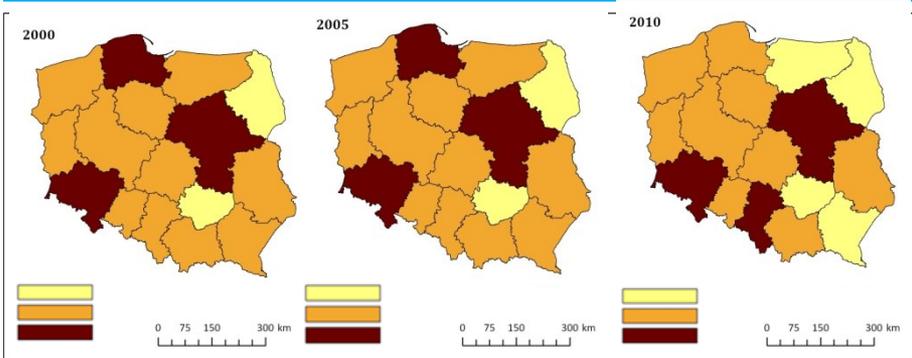
## TECHNICAL INFRASTRUCTURE AND SPATIAL ACCESSIBILITY



## FINANCIAL SITUATION AND THE LEVEL OF AFFLUENCE



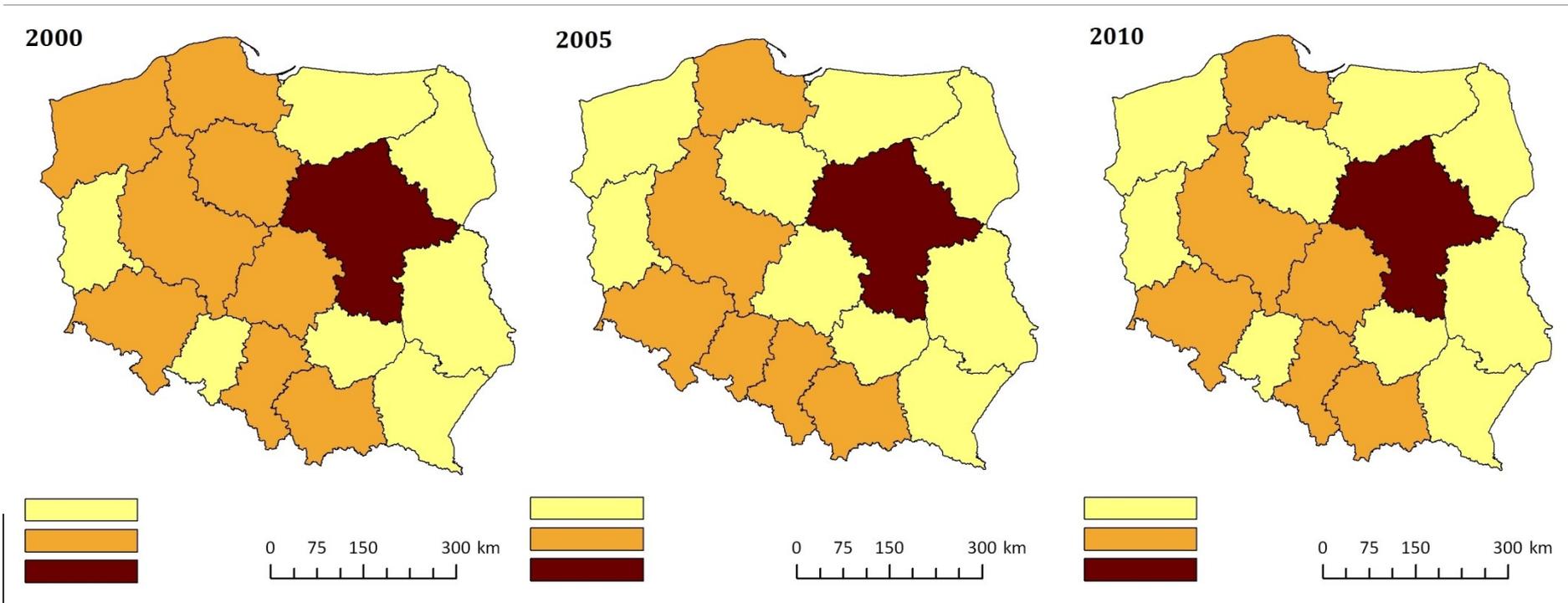
## INNOVATIVE ECONOMY AND BUSINESS ENVIRONMENT



# GENERAL APPROACH

NUTS 2 – voivodeships i.e. regions (16 units)

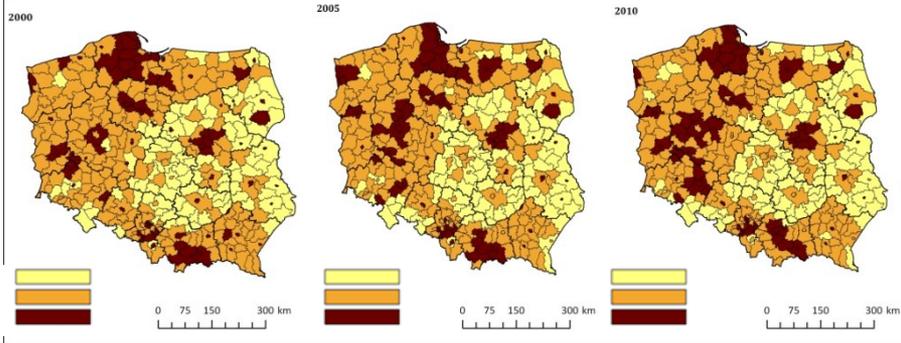
	Initial number	After reduction
<b>GENERAL APPROACH</b>	183	<b>74</b>



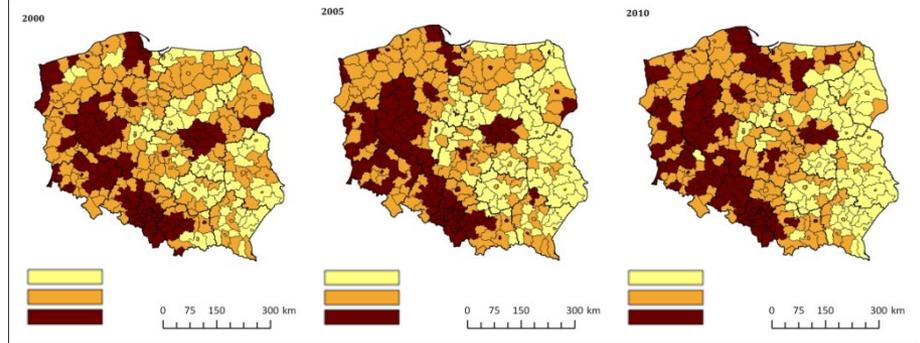
- **Growth areas:** in all aspects mainly Mazovia (with capital city of Warsaw) is a single object clustered in the group corresponding to growth areas, and it is not changing across the analyzed period of 2000-2010,
- **Stagnation areas:** cluster gathering regions characterized by the lowest development level is very little versatile with the constant participation of regions located by the Eastern border, i.e. the poorest regions in Poland and also across the EU and Lubuskie Voivodeship (by the Western border) which despite the convenient location does not benefit from the positive impact of Berlin and Poznan agglomerations;
- General distribution of growth and stagnation areas is **mostly determined by various levels of financial stock and innovation**. A relatively lower degree of determinacy was observed for diversification of labour market and economy structure or technical infrastructure conditioning i.e. spatial availability.
- **highest polarization** among all research issues at regional level was displayed in the framework of financial situation and the level of affluence, in case of which the cluster of growth areas contains capital Mazovia region in years 2000 - 2010 and Lower Silesia only in 2010,
- the **most balanced situation** in terms of balanced spatial distribution was noted for the population and settlement.

# SOCIO-ECONOMIC DEVELOPMENT IN POLAND STATE & DYNAMICS AT NUTS<sub>4</sub> LEVEL

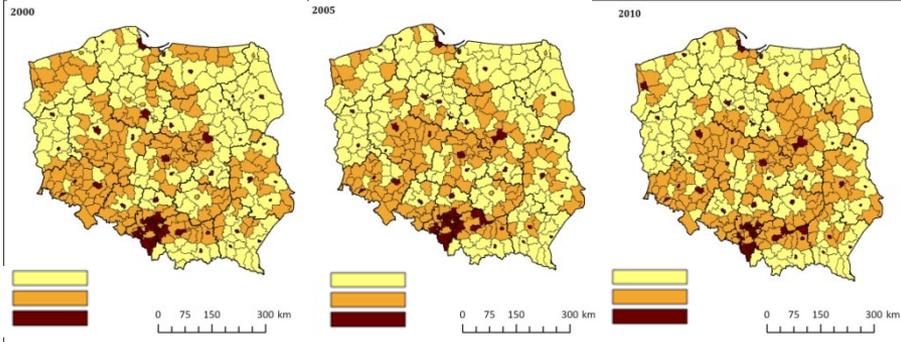
## POPULATION AND SETTLEMENT



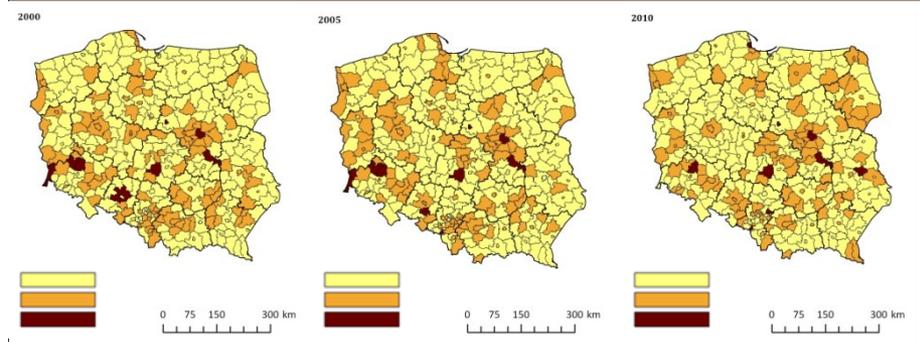
## LABOUR MARKET AND ECONOMY STRUCTURE



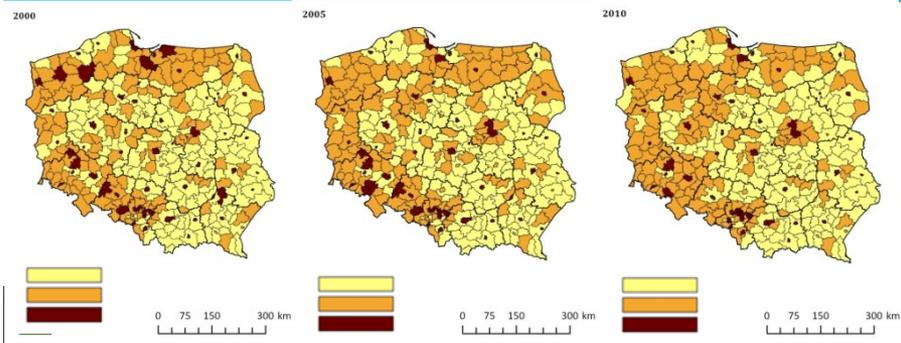
## TECHNICAL INFRASTRUCTURE AND SPATIAL ACCESSIBILITY



## FINANCIAL SITUATION AND THE LEVEL OF AFFLUENCE



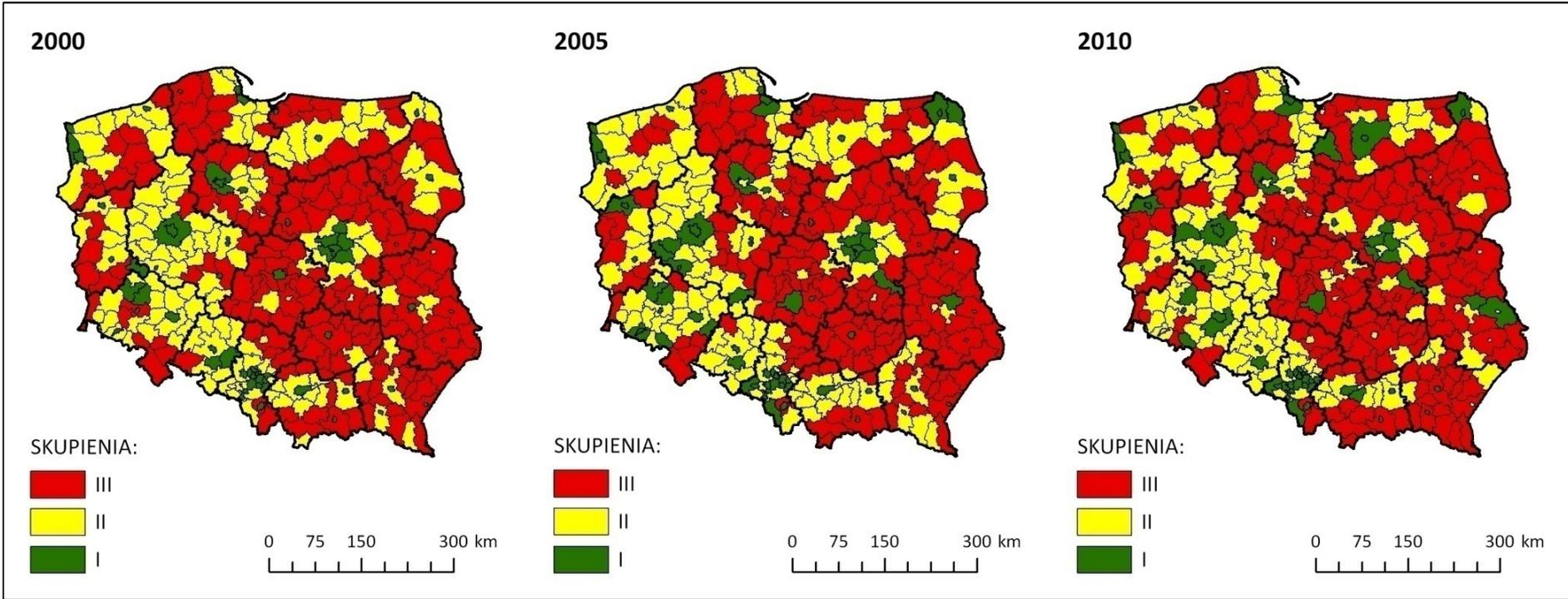
## INNOVATIVE ECONOMY AND BUSINESS ENVIRONMENT



# GENERAL APPROACH

NUTS 4 – poviats (379 units)

	Initial number	After reduction
<b>GENERAL APPROACH</b>	92	<b>49</b>



**Growth areas** are the least numerous and includes basically three categories of units (poviats):

- **urban units** -influence exerted on development of their economic background is clearly visible in the aspects of: population and settlement as well as labour market and economy structure,
- **resource-rich** units (where large plants of mining industry are located,),
- **units with profitable enterprises**, operating especially in chemical industry.
- complementary to these categories are land units located in direct neighbourhood of urban poviats, constituting together **metropolitan areas**,

**Stagnation areas** are far more numerous. In this group dominate:

- units located especially in **eastern and central part of Poland**. The spatial distribution is **bound to relict boundaries** which even now clearly divide the socio-economic space of Poland,
- **units bothered by deep structural problems** former national agriculture farms and monofunctional labour markets,

stagnation areas are versatile depending on the development aspect concerned. The largest number of units classified as stagnation areas occurred while measuring their financial situation and the level of affluence, whereas the lowest while measuring their combined situation in area of population, settlement, labour market and economy structure

# CONCLUSIONS & RECOMMENDATIONS

- a) **all Polish regions** no matter if classified as either growth or stagnation regions are identified in the European cohesion policy 2014-2020 as **lagging or phasing-in** (capital Mazovia) regions, requiring strengthening development incentives and leveling out the divergences,
- b) up - to date interventions in the framework of regional policy in Poland deliver **rather ambiguous developmental effects** at regional and subregional levels (Borowczak, Churski, Perdał, 2012),
- c) **content-related orientation of actions** should be based on identified differentiations of development process impacted by particular aspects of development:
  - strong concentration of means on actions improving networks as well as scope and ranges of **functional linkages both at regional and subregional levels**, what may possibly strengthen **spill-over effects**, now observed only in direct spatial neighborhood of biggest agglomerations,

- in the structure of tree of goals, including the 11 thematic objectives of prospect cohesion policy 2014-2020, special attention should be attracted to **improving the level of innovativeness and developing the business environment, as this factor highly differentiates the economic space of Poland, as well as to developing the financial support for entrepreneurs, who could become a substantial beneficiaries in conditions of growing indebtedness of the sector of public finance and their decreasing absorption potential thereof. The use of non-grant, i.e. recyclable assistance is strongly recommended to boost the effectiveness of this measure;**
- it is recommended to **improve the intervention directed at human capital, as it turns out to deliver a rather ineffective results, what is confirmed by a lowly differentiated situation in area of population, settlement, labour market and economy structure identified in this research**

d) **spatial orientation of actions** should be based on conclusions drawn from spatial distributions of socio-economic development on regional and subregional levels:

- maintaining the **compensation support for East Poland's** regions
- intensifying the support for big urban agglomerations and also subregional centers aimed at strengthening their development capacities with special attention drawn to **shaping the functional linkages of possibly biggest range;**
- supporting rural areas threatened by a permanent marginalization, enabling them **developing endogenous capitals as a base of their multifunctional development** on one hand and **shaping their linkages with growth areas** on the other;

e) new instruments of cohesion policy envisioned for 2014-2020, and especially **integrated territorial investments**, may bring a relevant contribution to shaping the functional linkages between growth and stagnation areas, while creating the efficient conditions for a polarization-diffusion model from a bottom-up perspective.

# Köszönöm!

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