



Instytut Rozwoju

GDP in Mazovia

Conclusions and recommendations for regional policy of the voivodship

Jacek Szlachta

Dorota Ciołek

Tomasz Brodzicki

Warsaw, March 14, 2018

The plan of presentation

- **Introduction**
- **Assumptions**
- **Briefly about the research method**
- **The findings – GDP and GDP per capita of Mazovia**
 - new NUTS 2
 - NUTS 3 subregions
 - LAU1 districts
- **Conclusions and recommendations for the regional policy**

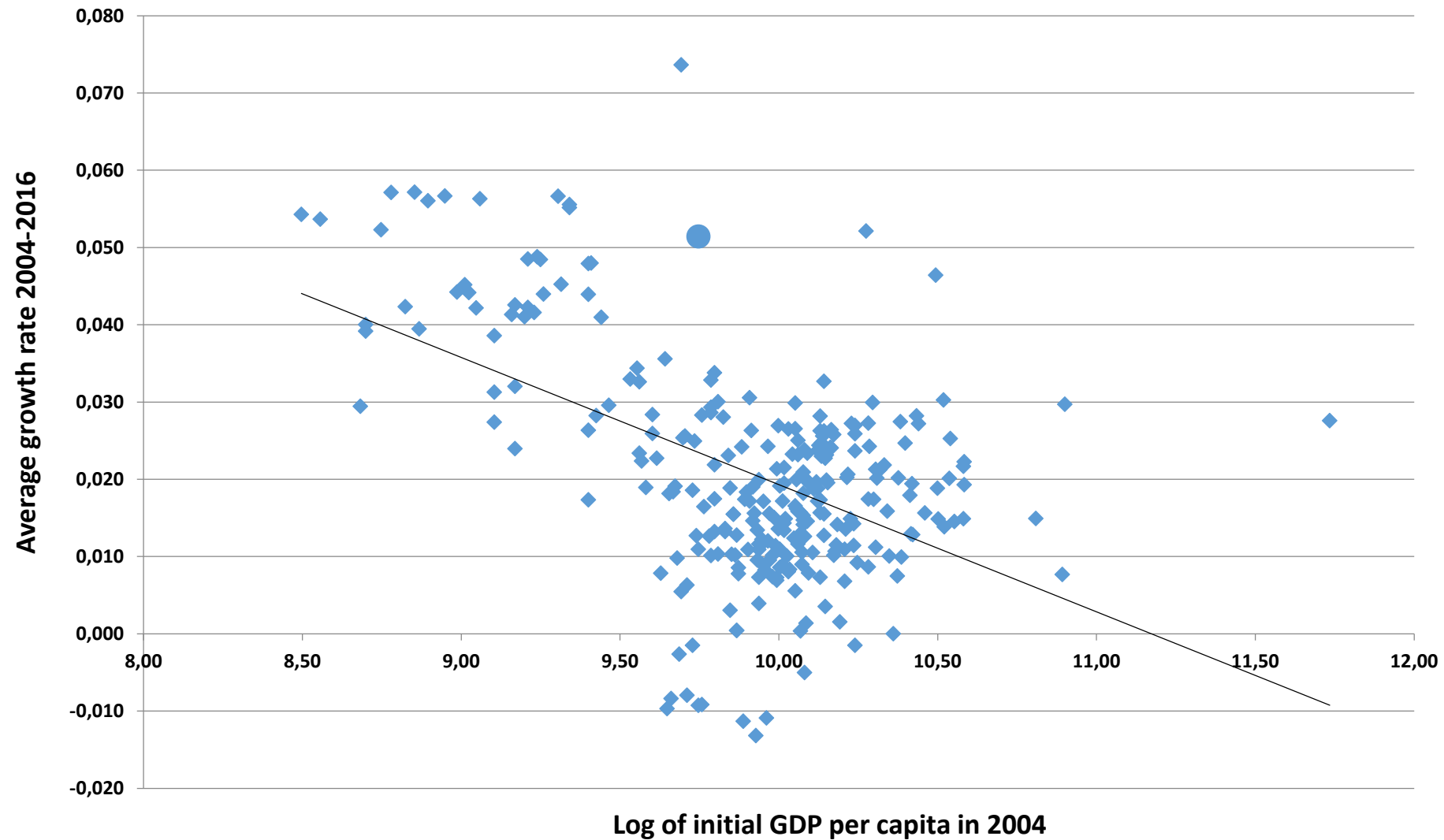
Introduction

The new territorial delimitation

- **From 01/01/2018, we distinguish in Poland:**
 - **7 NUTS 1** regions – macroregions (makroregiony)
 - **17 NUTS 2** regions – voivodeships + the two new regions of mazowieckie
 - **73 NUTS 3** regions – subregions (podregiony) (including the new żyrardowski subregion)
 - 380 LAU 1 regions – districts (powiaty)
- **Two new NUTS2 regions in mazowieckie:**
 - **Warszawski stołeczny (Warsaw capital)**: capital city of Warsaw and 9 powiats: grodziski, legionowski, miński, nowodworski, otwocki, piaseczyński, pruszkowski, warszawskim zachodni & wołomiński
 - **Mazowiecki regionalny (Mazovian regional)**: the remaining powiats of mazowieckie
- **Similar adjustments have taken place in the case of:**
 - Hungary – Budapest
 - Ireland – Dublin
 - Lithuania – Vilnius

Log of GDP per capita in PPS in 2004 and the average growth rate 2004 – 2016 EU28 NUTS2 regions (EUROSTAT)

Capital regions enjoy an advantage



EU Cohesion Policy

The new territorial delimitation

- In the programming period 2014-2020, the distribution of structural funds is carried out according to three baskets:
 - for NUTS 2 regions with GDP per capita in PPS below 75% of the EU average (Group 1)
 - for regions with GDP per capita in PPS, in the range from 75 to 90% of the EU average (Group 2)
 - for regions with GDP per capita in PPS over 90% of the EU average (Group 3)
- In the programming period 2014-2020:
 - 15 Polish voivodships were classified to the poorest areas (Group 1)
 - Only Mazowieckie in Group 2
- After 2020, the Dolnośląskie, Wielkopolskie and potentially Silesian voivodeships may jump to Group 2

Briefly about the research method

- First stage: estimation of the GDP at powiats level
- GUS data on GDP for subregions and voivodships have been allocated to powiats based on tax revenues of communes and cities with powiat rights
 - Ciołek, D. (2017). Oszacowanie wartości produktu krajowego brutto w polskich powiatach. *Gospodarka Narodowa*, 27(3), 55 – 87.
 - Ciołek, D., & Brodzicki, T. (2016). Determinanty produktywności polskich powiatów. *Bank i Kredyt*, 47(5), 463-494.
- Second stage: aggregation of GDP of powiats to the level of new NUTS3 subregions
- Third stage: aggregation of the GDP of NUTS3 regions to the new NUTS 2 regions

Table 1. Population and GDP in the Mazowieckie Voivodeship and in the two new NUTS 2 regions

Variable		YEAR	MAZOWIECKIE	WARSZAWSKI STOŁECZNY	MAZOWIECKI REGIONALNY
Total Population	Number	2004	5 145 997	2 776 522	2 369 475
		2015	5 349 114	2 987 482	2 361 632
Nominal GDP	M PLN	2004	188 118	142 065	46 053
		2015	398 847	302 428	96 419
	PLN per capita	2004	36 949	51 167	19 436
		2015	74 679	101 232	40 827
	Poland=100	2004	151	209	80
		2015	160	216	87
Increase in GDP (constant prices) 2004=100	GDP	2004-2015	168,4	169,1	166,3
	GDP per capita	2004-2015	162,0	157,2	166,9

Source: Estimation by Instytutu Rozwoju based on the GUS data, access to data 10.11.2017.

Figure 1. The share of the two NUTS 2 regions in the total population and the GDP of mazowieckie

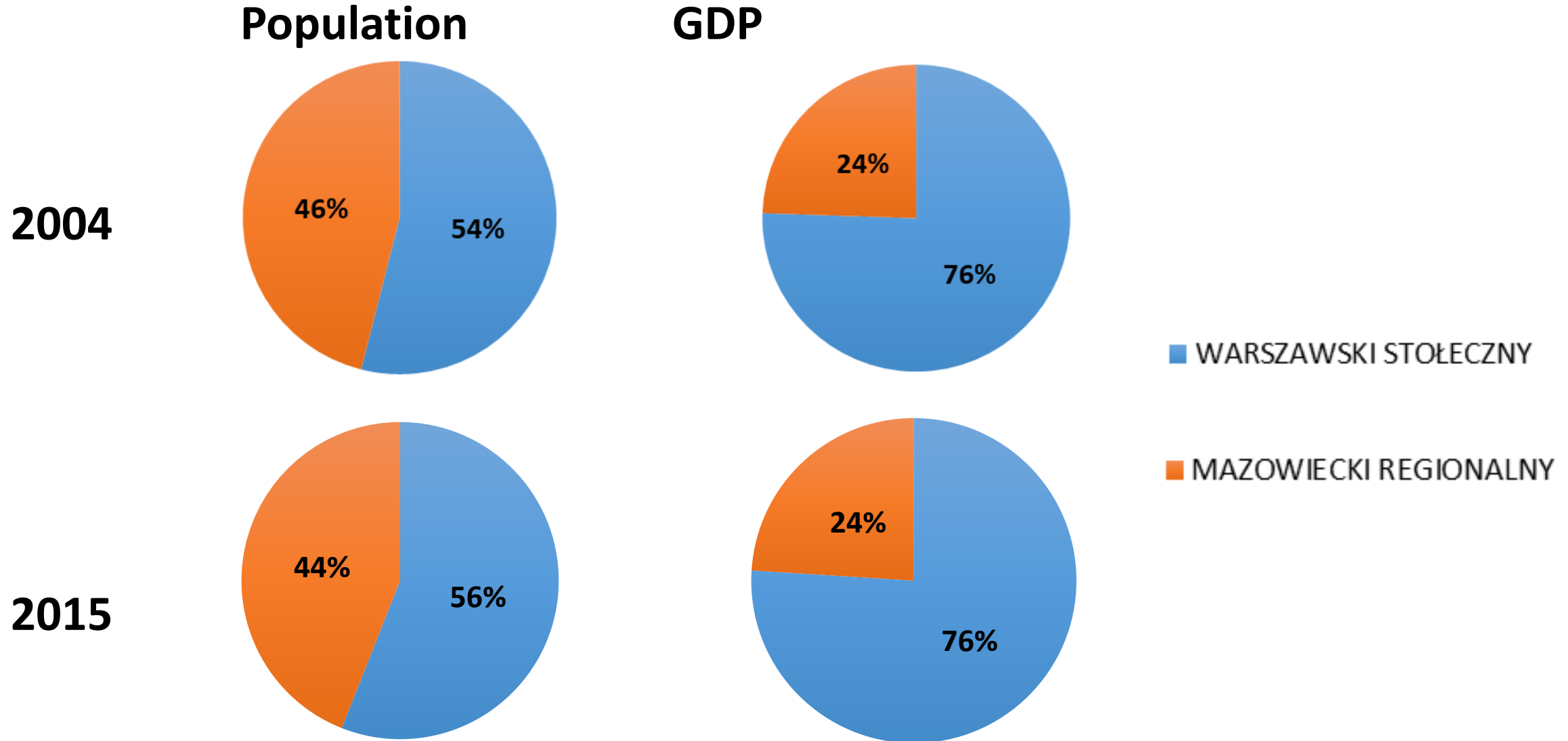


Figure 2. The ranking of Polish NUTS 2 regions in terms of the nominal GDP in 2004 & 2015

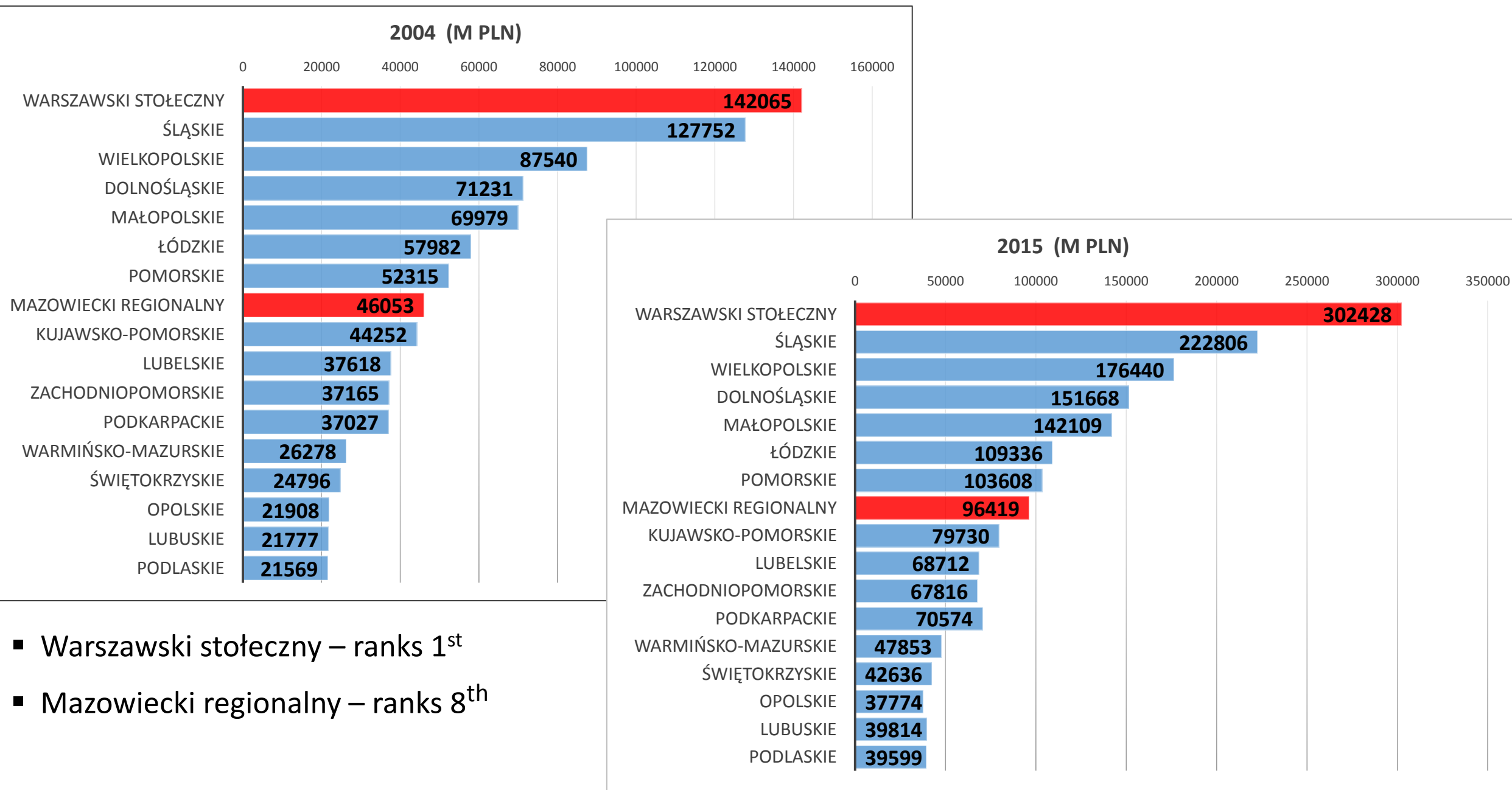


Table 2. Ranking of Polish **NUTS 2** regions in terms of GDP per capita in PPS in comparison to the EU average in 2004 & 2015

No	NUTS 2 regions	2004		2015	
		UE28 =100	Position	UE28 =100	Position
1	Warszawski Stołeczny	106	1	148	1
2	Dolnośląskie	51	4	76	2
3	Wielkopolskie	54	3	75	3
4	Śląskie	56	2	71	4
5	Pomorskie	49	5	66	5
6	Łódzkie	46	6	64	6
7	Małopolskie	44	9	62	7
8	Mazowiecki Regionalny	40	13	60	8
9	Zachodniopomorskie	45	7	58	9
10	Lubuskie	45	8	57	10
11	Kujawsko-Pomorskie	44	10	56	11
12	Opolskie	43	11	55	12
13	Świętokrzyskie	40	12	50	13
14	Warmińsko-Mazurskie	38	14	49	15
15	Podlaskie	37	15	49	14
16	Podkarpackie	36	16	48	16
17	Lubelskie	35	17	47	17

Table 3. GDP in mazowieckie, warszawski stołeczny & mazowiecki regionalny in comparison to the EU28 & EU27 average in 2004 & 2015

VARIABLE		ROK	MAZOWIECKIE	WARSZAWSKI STOŁECZNY	MAZOWIECKI REGIONALNY	
Nominal GDP in relation to the EU average	M EUR	2004	41 814	31 578	10 236	
		2015	95 160	72 156	23 004	
	EUR per capita	2004	8 125	11 373	4 320	
		2015	17 790	24 152	9 741	
	UE 28=100	2004	36,1	50,5	19,1	
		2015	61,6	83,6	33,7	
	UE 27=100	2004	38,2	53,5	20,3	
		2015	65,1	88,4	35,7	
	Real GDP in relation to the EU average	M PPS	2004	87 436	66 031	21 405
			2015	168 526	127 786	40 740
PPS per capita		2004	16 991	23 782	9 034	
		2015	31 505	42 774	17 251	
UE 28=100		2004	76,0	105,7	40,2	
		2015	109,0	148,0	59,7	
UE 27=100		2004	77,6	108,6	41,3	
		2015	110,2	149,6	60,3	

Table 4. GDP in the new **NUTS 3's** in 2004 & 2015

Subregion	Year	Total population	Nominal GDP		Position in the ranking
			M PLN	PLN per capita	
M. st. WARSZAWA	2004	1 692 854	112 372	66 380	1
	2015	1 744 351	233 630	133 935	1
WARSZAWSKI WSCHODNI	2004	548 282	11 452	20 887	4
	2015	622 925	26 558	42 635	4
WARSZAWSKI ZACHODNI	2004	535 386	18 241	34 070	3
	2015	620 206	42 240	68 106	3
CIECHANOWSKI	2004	344 538	5 981	17 359	6
	2015	343 728	12 087	35 164	7
PŁOCKI	2004	335 177	12 025	35 877	2
	2015	331 741	25 265	76 159	2
SIEDLECKI	2004	422 976	7 086	16 752	7
	2015	421 017	14 824	35 211	6
OSTROŁĘCKI	2004	385 255	6 415	16 651	8
	2015	388 078	14 005	36 088	5
RADOMSKI	2004	626 681	10 918	17 422	5
	2015	617 144	21 309	34 528	8
ŻYRARDOWSKI	2004	254 848	3 628	14 238	9
	2015	259 924	8 928	34 349	9

Table 5. GDP in the new NUTS 3 subregions in comparison to the EU28 oraz EU27 average

Subregion	Year	GDP in PPS			
		M PPS	PPS per capita	EU28 = 100	UE27=100
M. st. WARSZAWA	2004	52230	30853	137	141
	2015	98716	56592	196	198
WARSZAWSKI WSCHODNI	2004	5323	9708	43	44
	2015	11223	18015	62	63
WARSZAWSKI ZACHODNI	2004	8478	15835	70	72
	2015	17848	28777	100	101
CIECHANOWSKI	2004	2780	8069	36	37
	2015	5107	14858	51	52
PŁOCKI	2004	5589	16675	74	76
	2015	10675	32180	111	113
SIEDLECKI	2004	3293	7785	35	36
	2015	6264	14878	52	52
OSTROŁĘCKI	2004	2982	7740	34	35
	2015	5918	15248	53	53
RADOMSKI	2004	5075	8098	36	37
	2015	9004	14589	51	51
ŻYRARDOWSKI	2004	1686	6617	29	30
	2015	3772	14514	50	51

Figure 4. GDP per capita in 9 NUTS 3 subregions of mazowieckie in 2004 & 2015

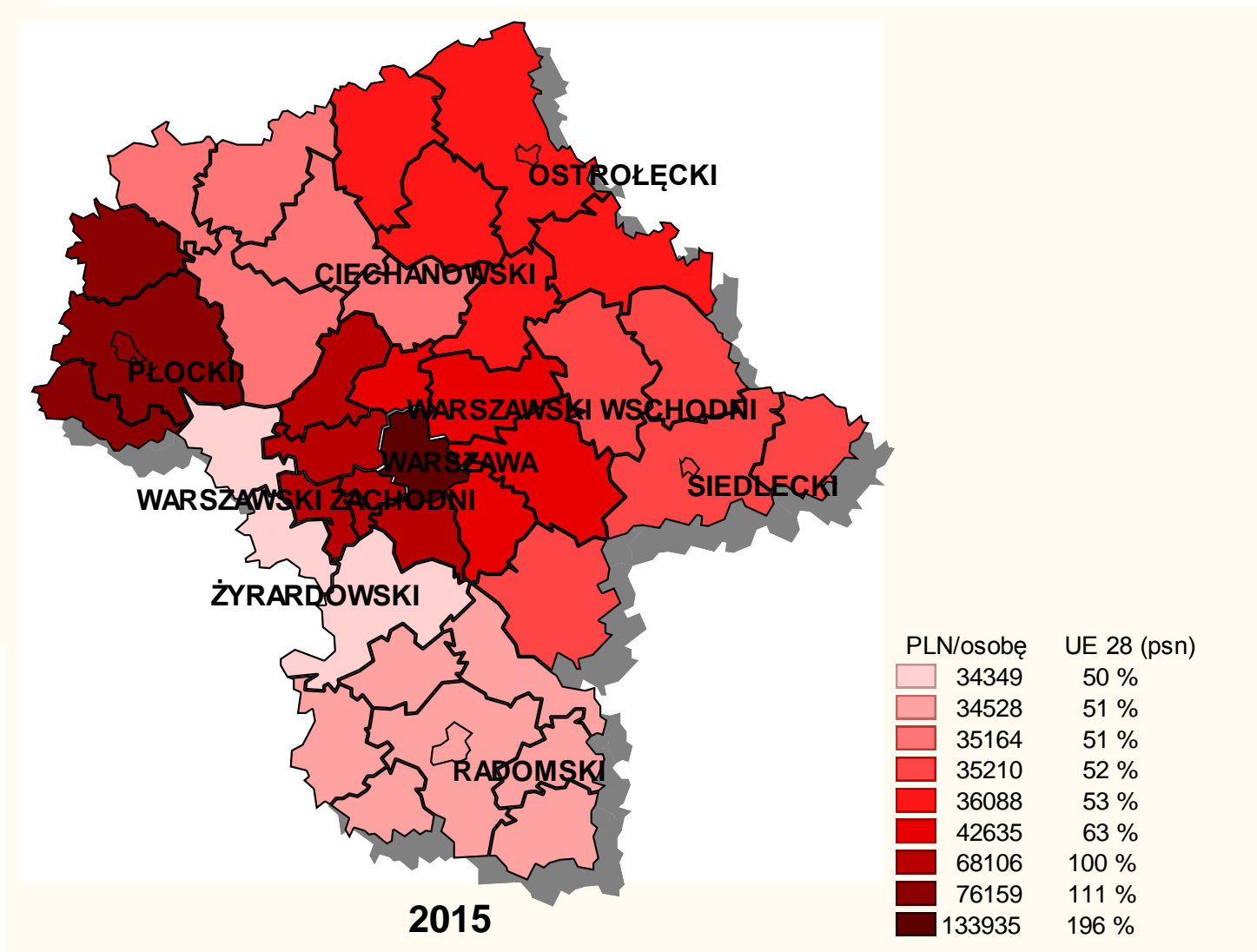
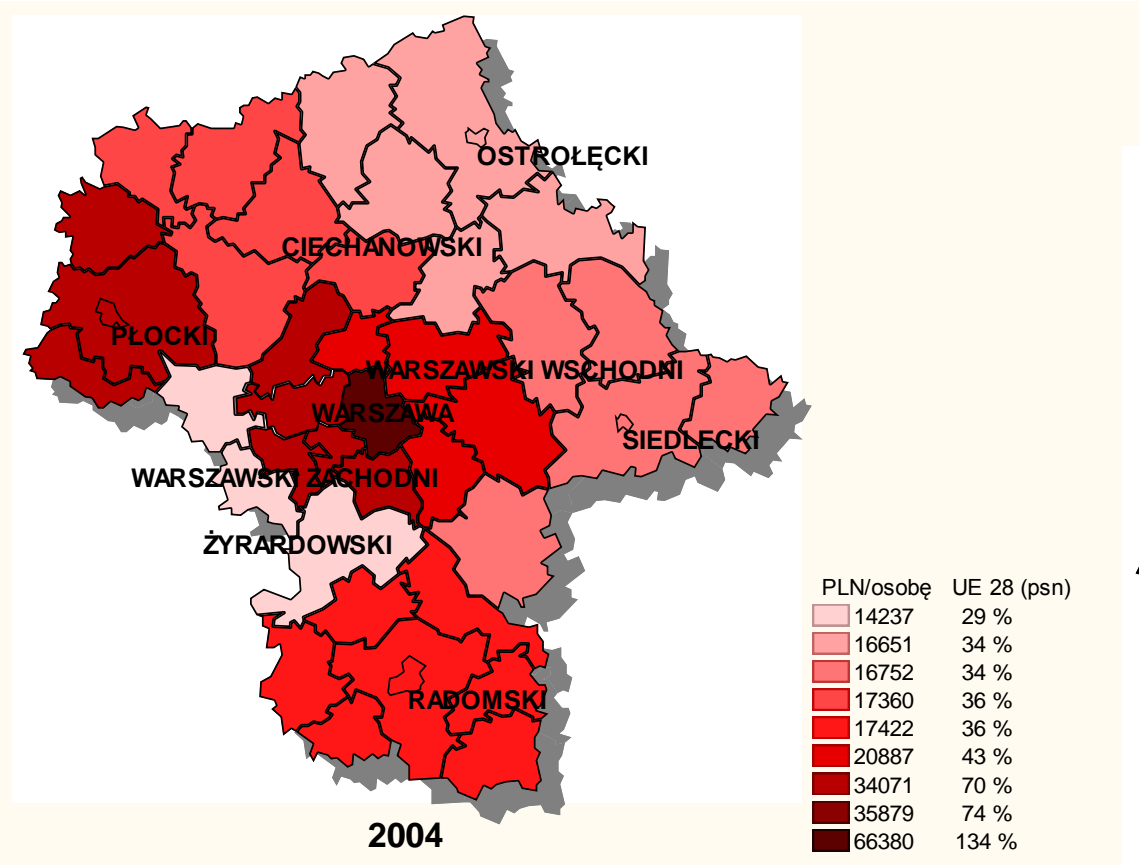


Table 6. Mazovian powiats in comparison to the EU average in 2004 & 2015

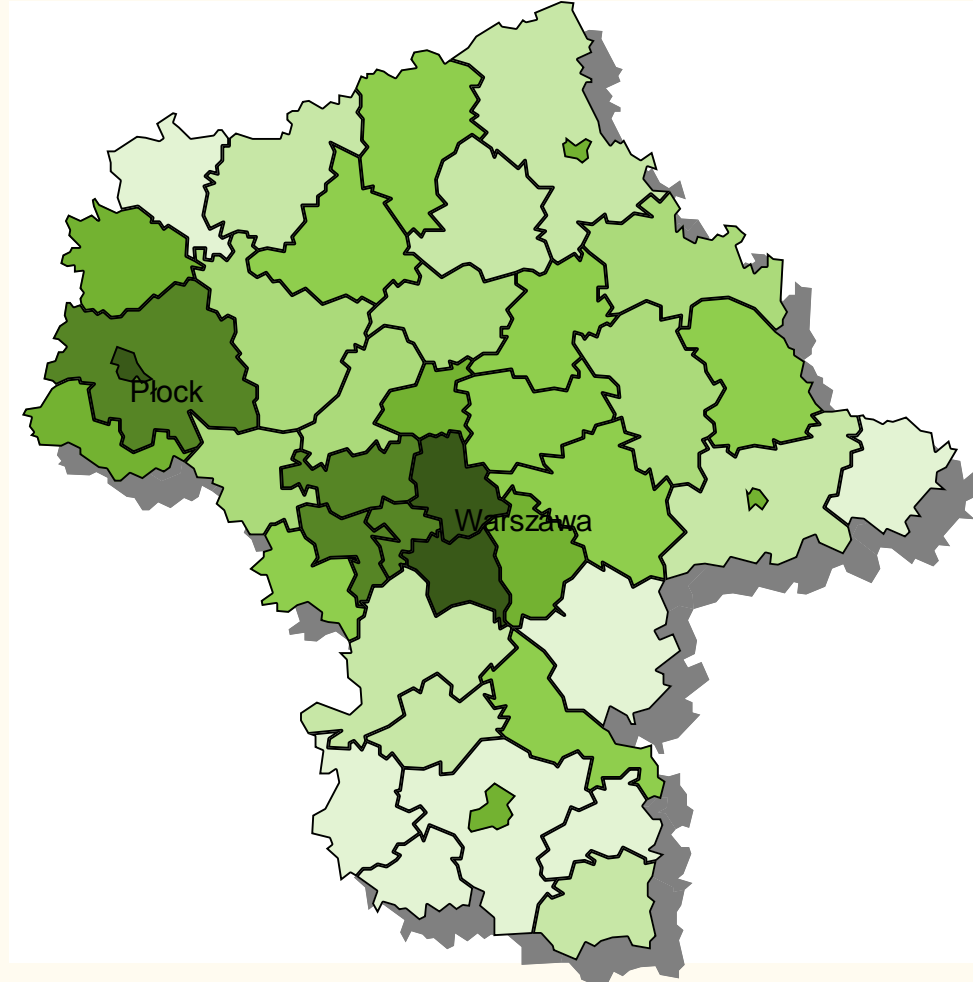
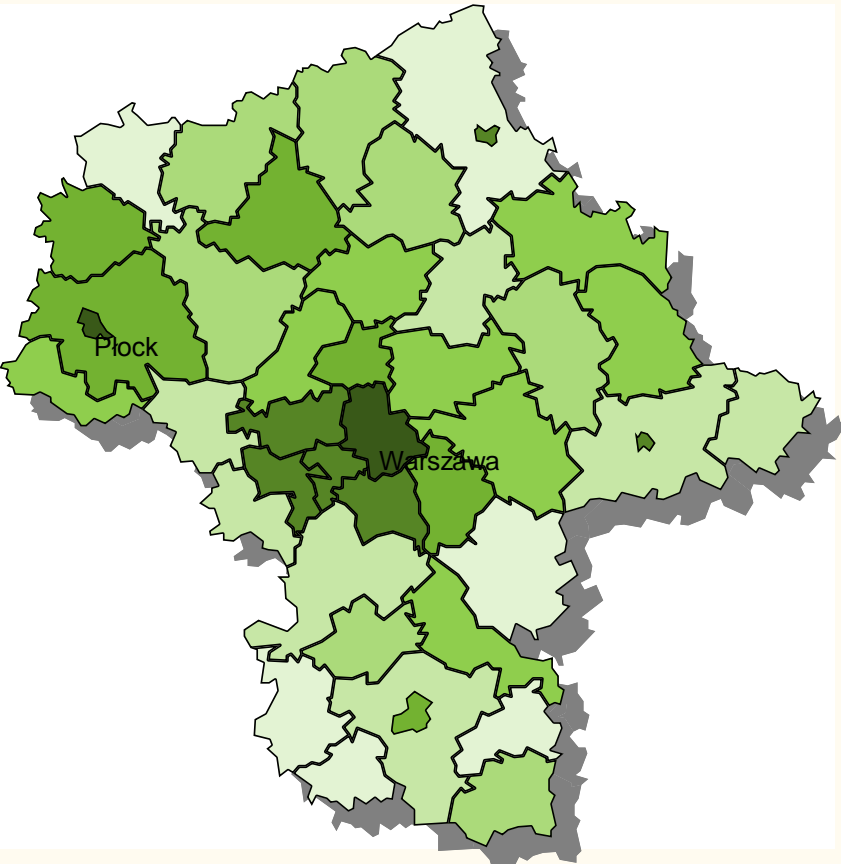
Ranking	powiat	UE 28=100		UE 27=100	
		GDP pc	GDP pc	GDP pc	GDPpc
		PPS	PPS	PPS	PPS
		2004	2015	2004	2015
1	Powiat m. st. Warszawa	137	196	141	198
2	Powiat m. Płock	124	157	128	159
3	Powiat piaseczyński	91	120	93	122
4	Powiat warszawski zachodni	65	110	67	111
5	Powiat pruszkowski	76	100	78	101
6	Powiat płocki	43	94	44	95
7	Powiat grodziski	60	89	61	90
8	Powiat gostyniński	39	75	40	76
9	Powiat m. Siedlce	59	75	60	76
10	Powiat legionowski	52	75	54	75
11	Powiat m. Ostrołęka	53	74	55	75
12	Powiat sierpecki	48	73	49	74
13	Powiat otwocki	49	70	51	70
14	Powiat m. Radom	50	65	51	65
15	Powiat ciechanowski	46	60	47	60
16	Powiat sokołowski	38	59	40	60
17	Powiat wołomiński	39	58	41	59
18	Powiat kozienicki	40	57	41	58
19	Powiat miński	37	54	38	54
20	Powiat wyszkowski	31	52	31	53
21	Powiat przasnyski	35	52	36	53

Ranking	Powiat	UE 28=100		UE 27=100	
		GDP pc	GDP pc	GDP pc	GDPpc
		PPS	PPS	PPS	PPS
		2004	2015	2004	2015
22	Powiat żyrardowski	31	52	32	52
23	Powiat ostrowski	37	52	38	52
24	Powiat płoński	35	52	36	52
25	Powiat pułtuski	36	51	37	52
26	Powiat nowodworski	39	51	40	51
27	Powiat sochaczewski	30	50	31	51
28	Powiat węgrowski	32	50	33	51
29	Powiat mławski	32	49	33	50
30	Powiat grójecki	28	49	28	49
31	Powiat białobrzegi	31	47	32	48
32	Powiat makowski	32	47	33	47
33	Powiat siedlecki	27	45	27	45
34	Powiat ostrołęcki	24	45	25	45
35	Powiat lipski	31	42	32	42
36	Powiat łosicki	28	41	29	42
37	Powiat radomski	26	41	27	42
38	Powiat garwoliński	25	40	25	40
39	Powiat zwoleński	24	40	25	40
40	Powiat żuromiński	23	36	23	37
41	Powiat przysuski	21	36	22	36
42	Powiat szydłowiecki	22	35	22	35

Figure 5. GDP per capita in PLN in powiats of Mazowiecki in 2004 & 2015

2004

2015

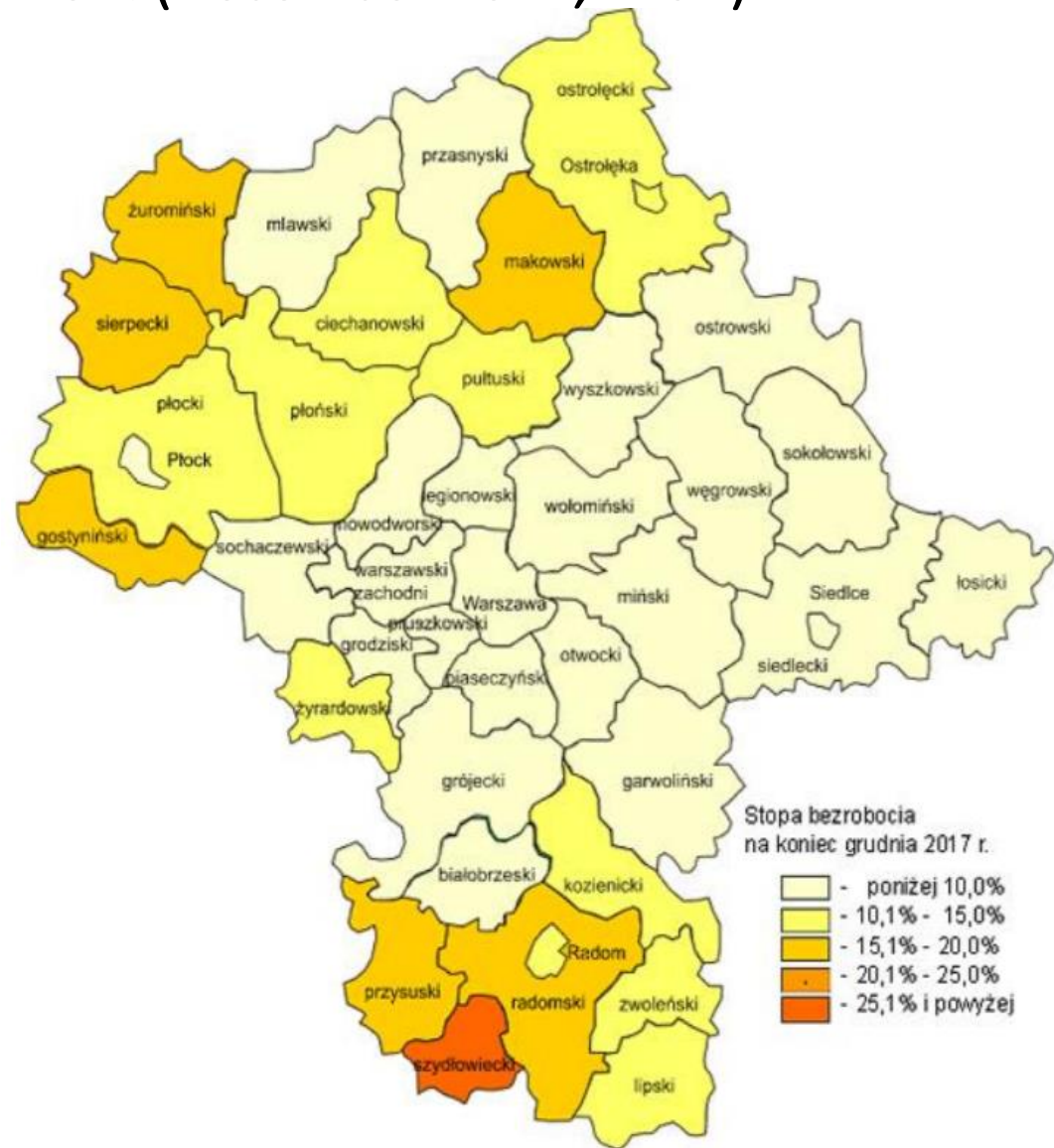


PLN		(% śr. woj.)	
10370 - 12586	(49 - 60)	(7)	
12586 - 14956	(60 - 71)	(7)	
14956 - 17266	(71 - 82)	(7)	
17266 - 19450	(82 - 92)	(7)	
19450 - 25895	(92 - 123)	(7)	
25895 - 44046	(123 - 209)	(5)	
44046 - 66381	(209 - 315)	(2)	

PLN		(% św. woj.)	
23665 - 28173	(54 - 64)	(7)	
28173 - 33659	(64 - 76)	(7)	
33659 - 35486	(76 - 80)	(7)	
35486 - 40768	(80 - 92)	(7)	
40768 - 51431	(92 - 116)	(7)	
51431 - 82276	(116 - 186)	(5)	
82276 - 133936	(186 - 303)	(2)	

It's not only the GDP per capita

The rate of unemployment (December 2017, WUP)



Conclusions and recommendations for regional policy

The impact on the allocation of EU funds

- **GDP per capita** in PPS is *likely to remain the basic criterion for the allocation of EU structural funds after 2020*
- The change in the territorial delimitation of Mazovia into two NUTS 2 areas introduced since January 1, 2018, is **very beneficial for the allocation of Structural Funds to Poland after 2020**
- From 1 January 2018, approx. **2.5 million citizens of the Masovian region can be included in the Structural Funds calculations for areas with GDP per capita below of 75% of the EU average**
- The scale of inflow will depend on the size of the general EU budget and the budget of the cohesion policy, in particular, Poland **may gain an additional EUR 3-4 billion**
- What part of the allocation from the EU will ultimately go to Mazovia will depend on the algorithm for the division of Structural Funds adopted by the Government of the Republic of Poland
- **Brexit will have only a marginal statistical effect on the key decision variables** - however, the exit can lead to a major decline in the EU budget in general

Conclusions and recommendations for regional policy

- The new NUTS 2 **mazowiecki stołeczny** is the key growth pole of Mazovia and Poland in general
- **The main beneficiary of the development impulses it generates is the external region of Mazovia (mazowiecki regionalny)**
- The new statistical delimitation will **better show such effects** at least on two levels of spatial disaggregation – NUTS 2 and NUTS 3 levels
- The significance of regional programming in terms of functional areas, including metropolitan areas, is likely to grow not only in Poland
- From this point of view, it is worth noting that the **Warsaw Metropolitan Area is designated in a different territorial range from the warszawski stołeczny region**. At the same time, the so called - **ZIT WOF has been designated at the level of 40 communes of the Mazowieckie Voivodeship – streamling worth considertation**
- The new delimitation will have significance for definition in terms of statistics, and thus potentially the delimitation of Metropolitan Area of Warsaw – as well as the functional area and ZIT

Conclusions and recommendations for regional policy

- Various analyses have indicated that *the impact of Warsaw on the socio-economic development of Mazovia is only marginal, possibly limited to the suburban area, and the capital city of Warsaw develops at the expense of Mazovia* - **data for 2004-2015 prove the falsehood of these statements**
- The real GDP growth per capita in 2004-2015 in mazowieckie was considerably higher than the average in Poland (GDP per capita in 2004 = 100) in **2015 it was 157.2% in warszawski stołeczny and 166.9% in mazowiecki regionalny**
- Mazowiecki regionalny improved its position in relation to the EU28 average in 2004-2015 from around **40% to approx. 60% of GDP per capita in PPS**. At the same time, 5 Eastern voivodships registered an increase from around 40% to 50% of the EU-28 average
- It implies a **significant improvement in the position of mazowiecki regionalny in the years 2004-2015 from 13 to 8 in the nationwide ranking in terms of GDP per capita**
- This proves the success of diffusion of development processes internally within Mazovia

Conclusions and recommendations for regional policy

- Analysis at the subregional level illustrates **the very strong position of the capital city of Warsaw** in Mazovia's GDP
- Two subregions of intense suburbanization surrounding Warsaw, **warszawski wschodni and warszawski zachodni** have a very strong position in terms of real GDP per capita followed by the **płocki subregion**
- **The development problems of the radomski subregion** and, paradoxically, the newly-established **żyrardowski**, can be clearly seen against this background
- The five sub-regions : **Ciechanów, Siedlce, Ostrołęka, Radom and Żyrardów** in 2015 were slightly above 50% of the EU average, however, over the period 2004-2015 they had significant positive growth rates
- From the policy point of view, we see a clear **need to consistently activate these five subregions, noting the use of the potential of the Warsaw as a growth pole** and the need for the focus on the **radomski subregion**

Conclusions and recommendations for regional policy

- In the study, for the first time we have analyzed the Mazowsze's GDP at the powiat level (LAU1)
- It allowed us to **identify the areas with very low GDP per capita**, which are powiats: **szydłowiecki, przysuski, żuromiński, zwoleński, garwoliński, radomski, łosicki and lipski**. As many as 5 of them are located in the radomski subregion
- **The scale of gap in the level of development between these units and Warsaw is more than 5 to 1, that is from 34% to 194% of the EU-28 average, the most in Poland**
- This requires the use of the **Strategic Intervention Areas (OSI) formula**
- **An important role in shaping the favorable development trajectory of Mazovia should be played by subregional centers (Płock, Siedlce, Ostrołęka and Radom). With exception for Płock, their position is weak**
- **The instruments for strengthening of the potential of subregional centers in Mazovia should be more effective**

Conclusions and recommendations for regional policy

- When analyzing the GDP of Mazowieckie Voivodship one should take into account the distortions resulting from the effect of the so-called the **17th voivodship effect**
- The effect, increasing the GDP level in the Mazowieckie Voivodship as a whole and in per capita terms, has significant consequences for regional policy
- Similarly under the new delimitation, GDP will most probably be included in warszawski stołeczny, increasing its GDP and, consequently leading to a fall in statistical terms of the GDP of mazowiecki regionalny. There is therefore the problem of the 18th NUTS 2. **The accuracy of this estimate will depend on the methodology finally adopted by the Central Statistical Office (GUS)**
- As it has been stated before, the **Mazowieckie voivodship belongs to the regions that are the most internally diversified in Poland. The new statistical delimitation shows this reality to a greater extent at the level of both NUTS 2 (hitherto hidden) and by highlighting the new NUTS 3 at this level.**

Final remarks

- Despite forming one voivodeship, **warszawski stołeczny and mazowiecki regionalny clearly differ in the level and the endogenous determinants of development**
- **The new territorial division makes sense from the point of view of the improved quality of regional governance**
- **The scale of internal divisions becomes clearly more visible, apparent and informative**
- **It should be thus easier to observe and identify the effects of cohesion/regional policy in the future**
- **The cooperation between Ireland, Lithuania, Poland and Hungary – countries, where the new territorial division has been implemented is in the interest of all the parties**
- **GUS and other national statistical offices should calculate the GDP per capita in PPS for the new NUTS 2 regions ASAP and provide the data to EUROSTAT in order for the values of the key variables to be taken into account in shaping the new cohesion policy**

Thank you for your attention!!!

Jacek Szlachta

Dorota Ciołek

Tomasz Brodzicki



Instytut Rozwoju