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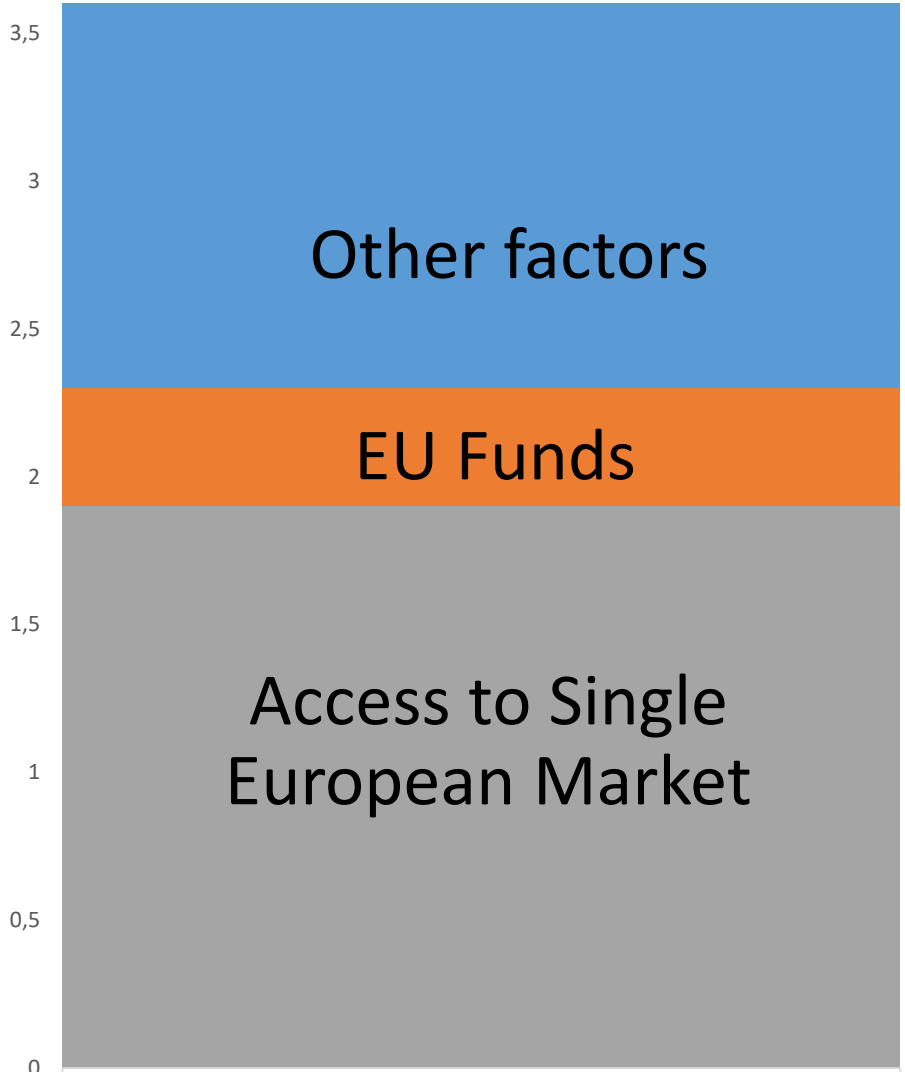
Problems to be discussed:

- The role of EU funds in Poland's development, 2004-2020
- The nature of impact: civilisational effects or economic development?
- The economic drivers: demand or supply effects?
- EU funds and regional differentiations

Methods:

- Economic analyses
- Surveys of local authorities and citizen polling
- Econometric analyses
- Computable General Equilibrium (CGE) modelling

Benefits of Poland's membership in the EU: not only money!



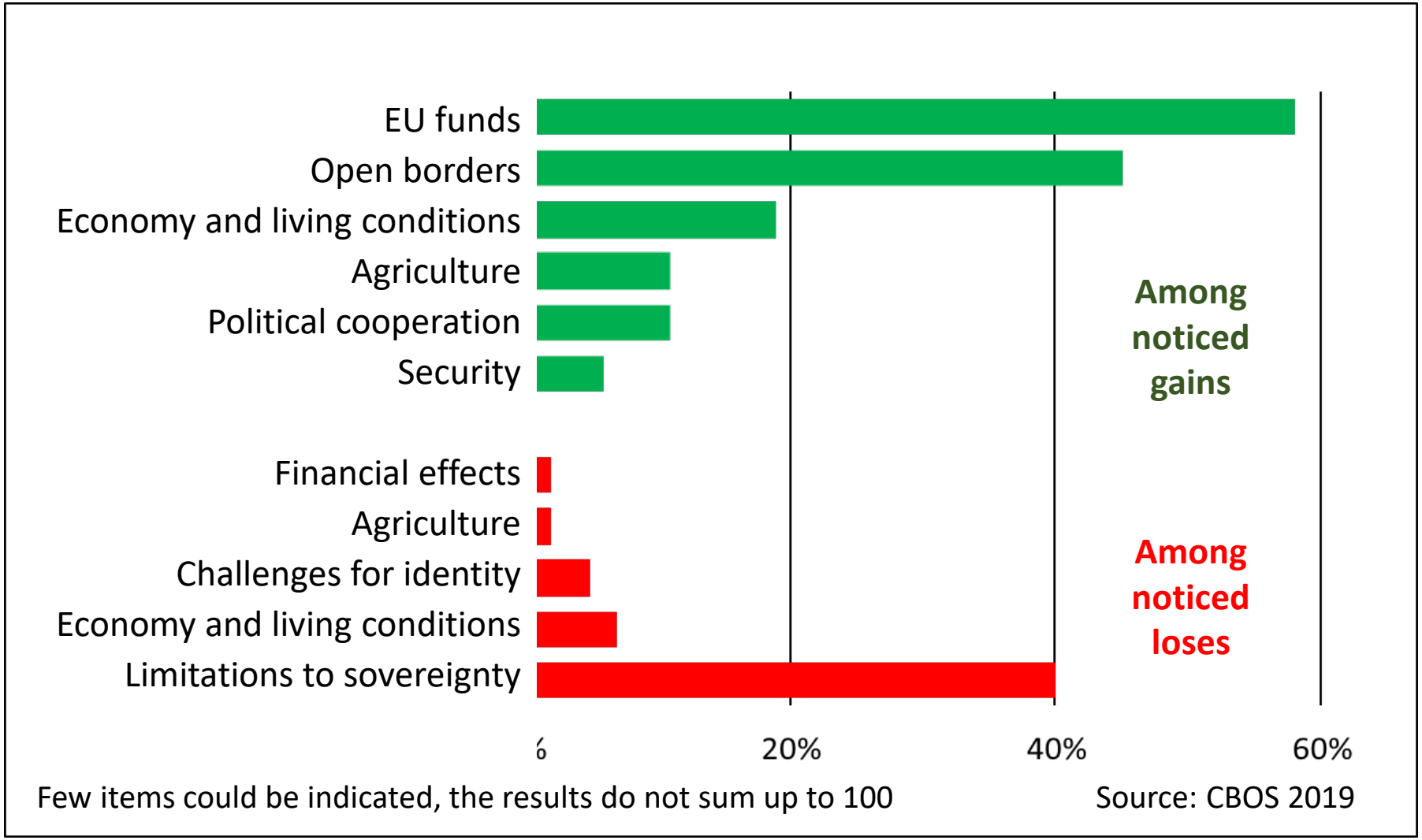
Estimated impact of the effects of EU membership on the average annual GDP growth in Poland, 2004-2020

The EU funds (CP+CAP) are not the main factor of accelerating the economic development of Poland.

Almost half of the rate of growth (3.6% yearly average 2004-2020) can be attributed to the access to the Single Europan Market.

Source: W.Orłowski, Report on the benefits of Poland's UE membership, Schuman Foundation, Warsaw 2021

What Poles think about the effects of EU membership



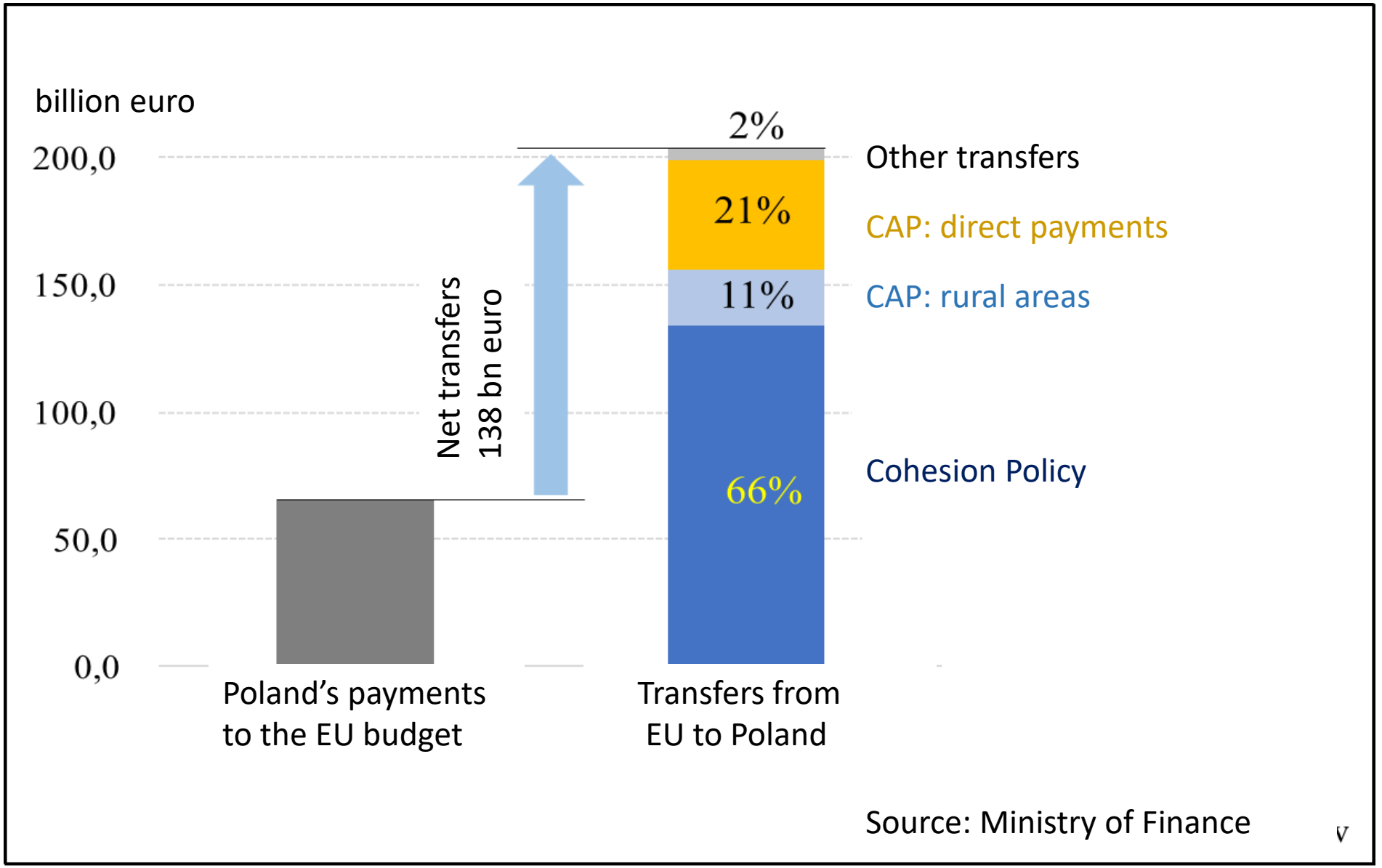
Source: W.Orłowski, Report on the benefits of UE membership, Schuman Foundation, Warsaw 2021

Implementation: Poland the most decentralised among the NMS

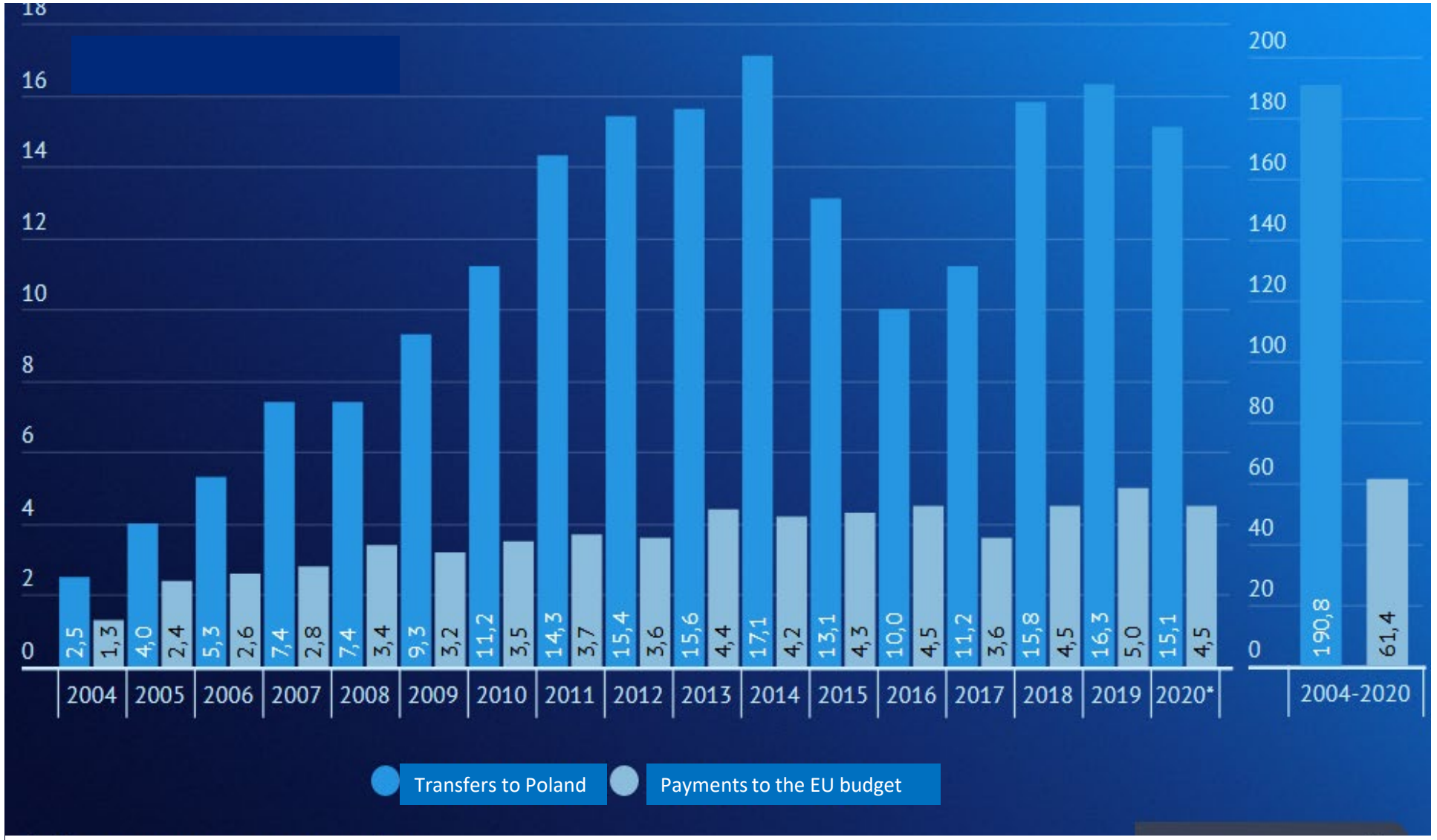
		Regional operational programs (number in brackets)	
		multiple	one ROP
Managed	centrally	Hungary (6+1) Slovakia (1+1)	Bulgaria Romania Poland (2004-2006)
	regionally	Czechia (7+1) Poland (16+1)	

Source: G.Gorzelak, Regional Policies in East-Central Europe in: M.Fisher, P.Nijkamp (eds.), *Handbook of Regional Science*, Springer, Berlin, Heidelberg 2020

But- if we talk money: EU funds, 2004-2020

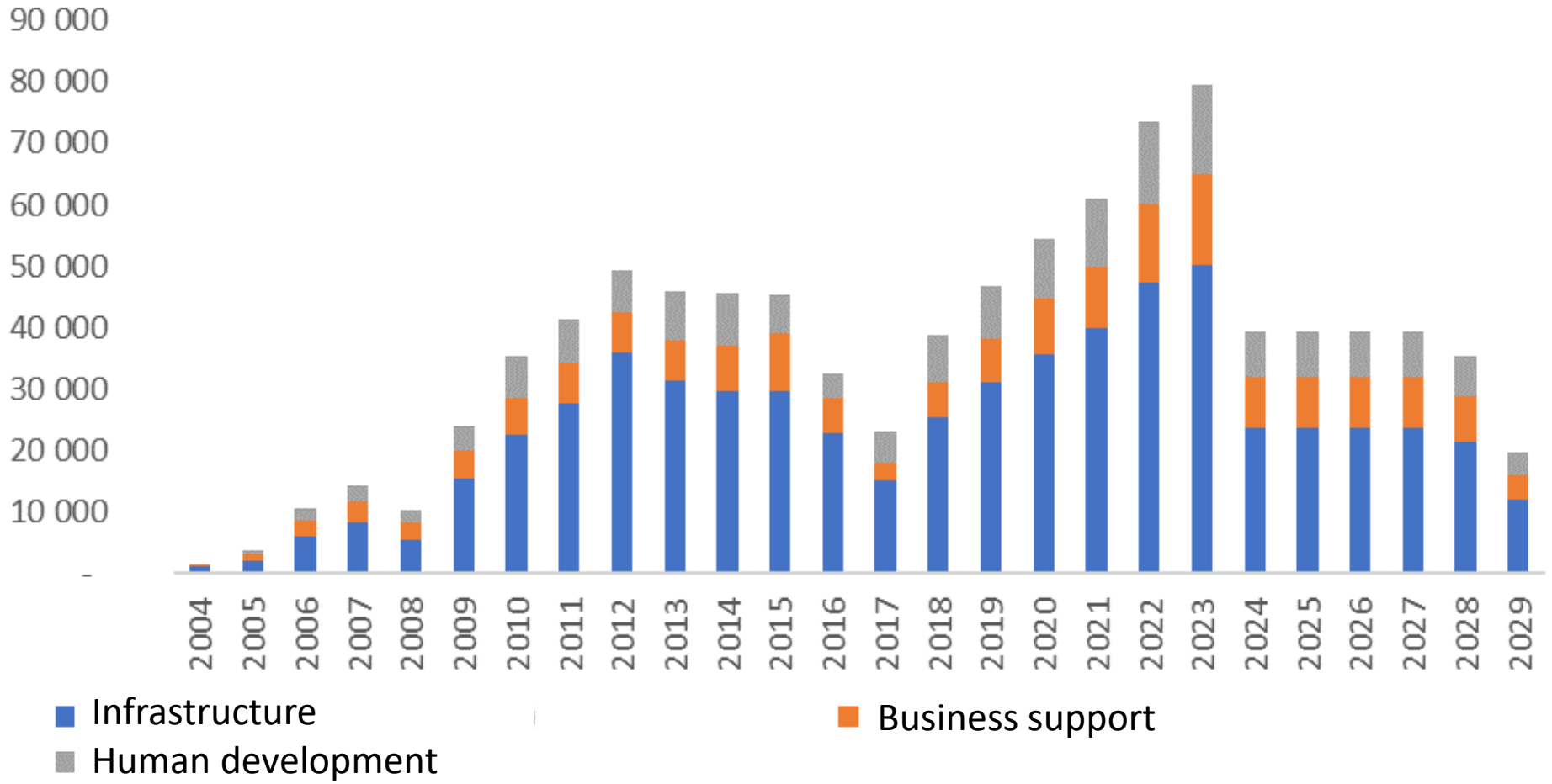


Yearly transfers to and from Poland, bilion Euro



Source: Money.pl

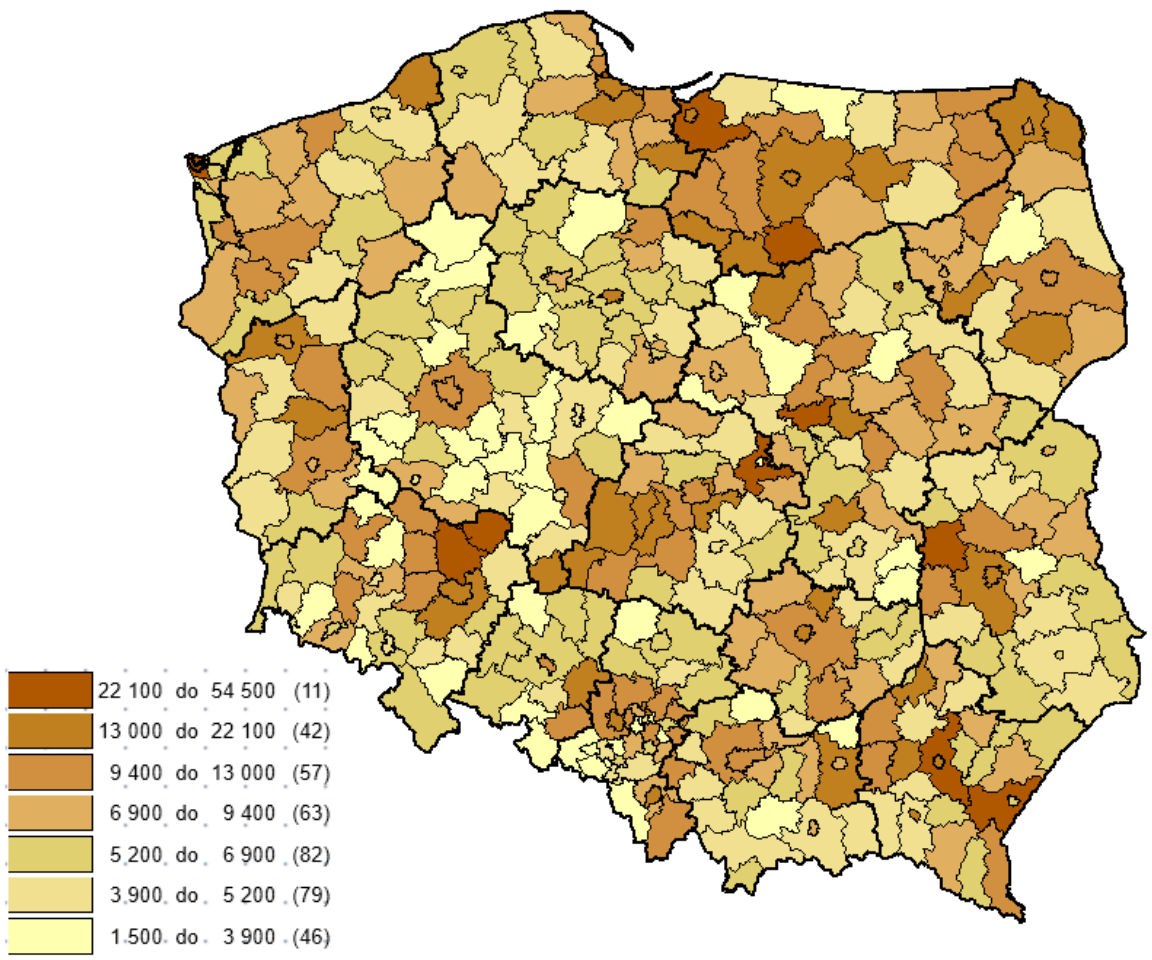
Structure of Cohesion Policy funds in Poland, 2004-2029: a bias towards infrastrucure



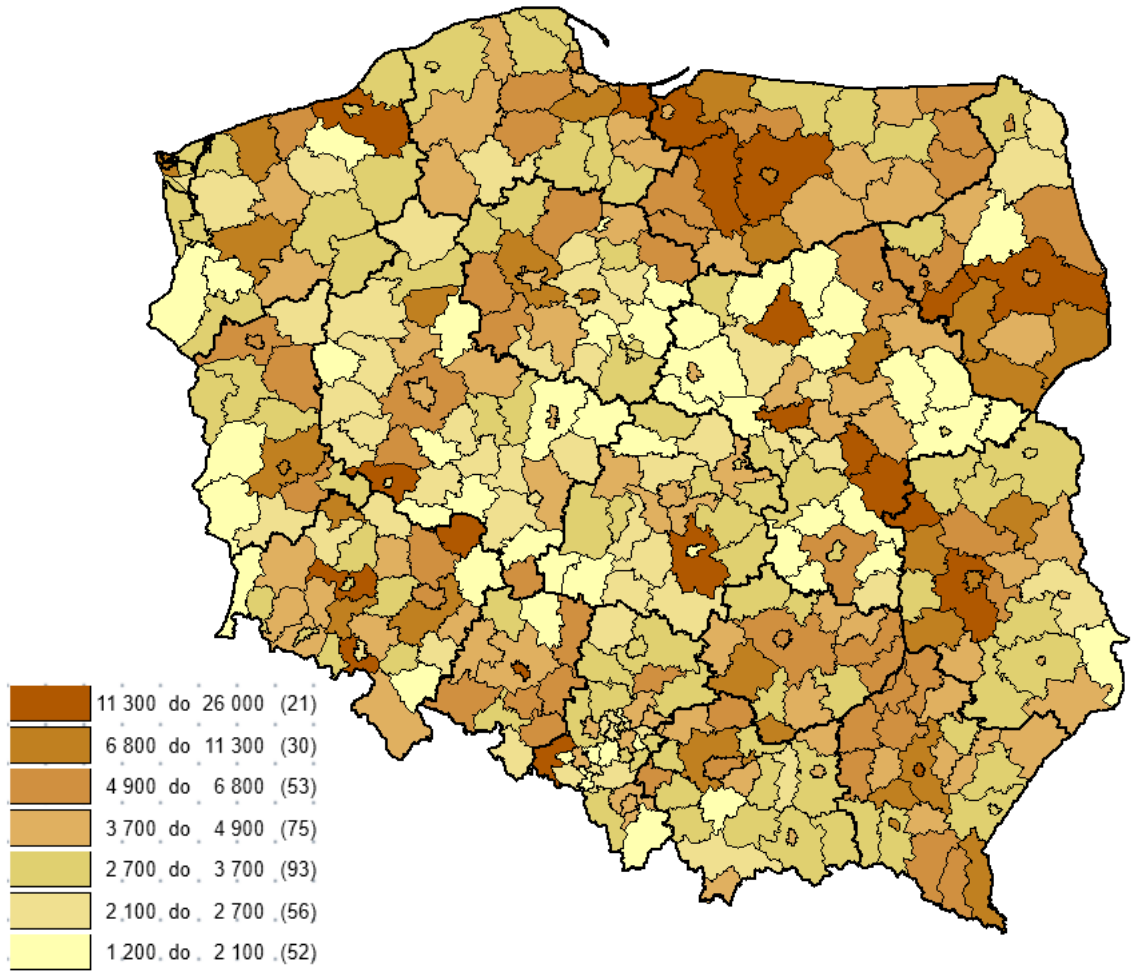
Source: Ocena wpływu realizacji polityki spójności na kształtowanie się wybranych wskaźników makroekonomicznych na poziomie krajowym i regionalnym za pomocą modelu EUImpactMOD, Warszawa, https://www.ewaluacja.gov.pl/strony/badania-i-analizy/wyniki-badan-ewaluacyjnych/badania-ewaluacyjne/wplyw-polityki-spojnosci-na-rozwoj-spoleczno-gospodarczy-polski-i-regionow-w-latach-2004-2019/

Cohesion Policy funds per inhabitant, counties

2007-2013



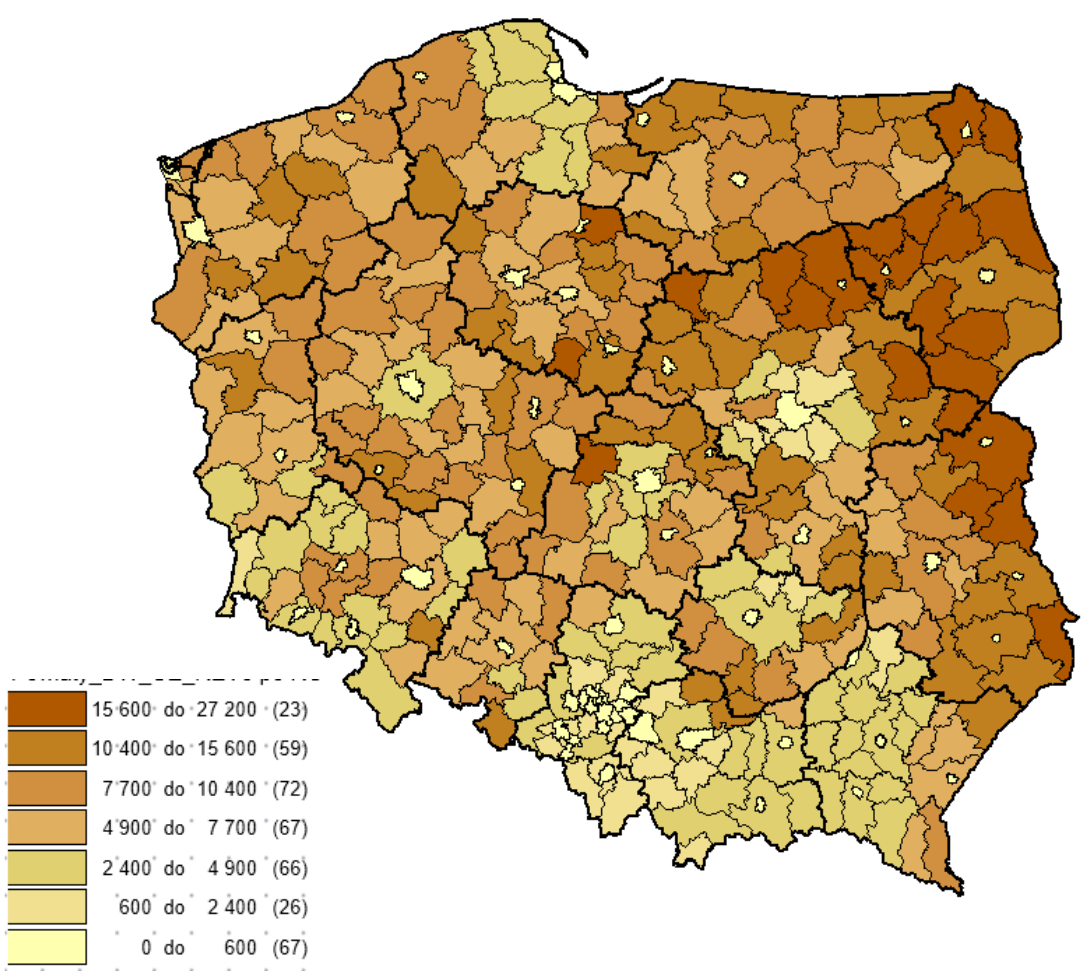
2014-2020



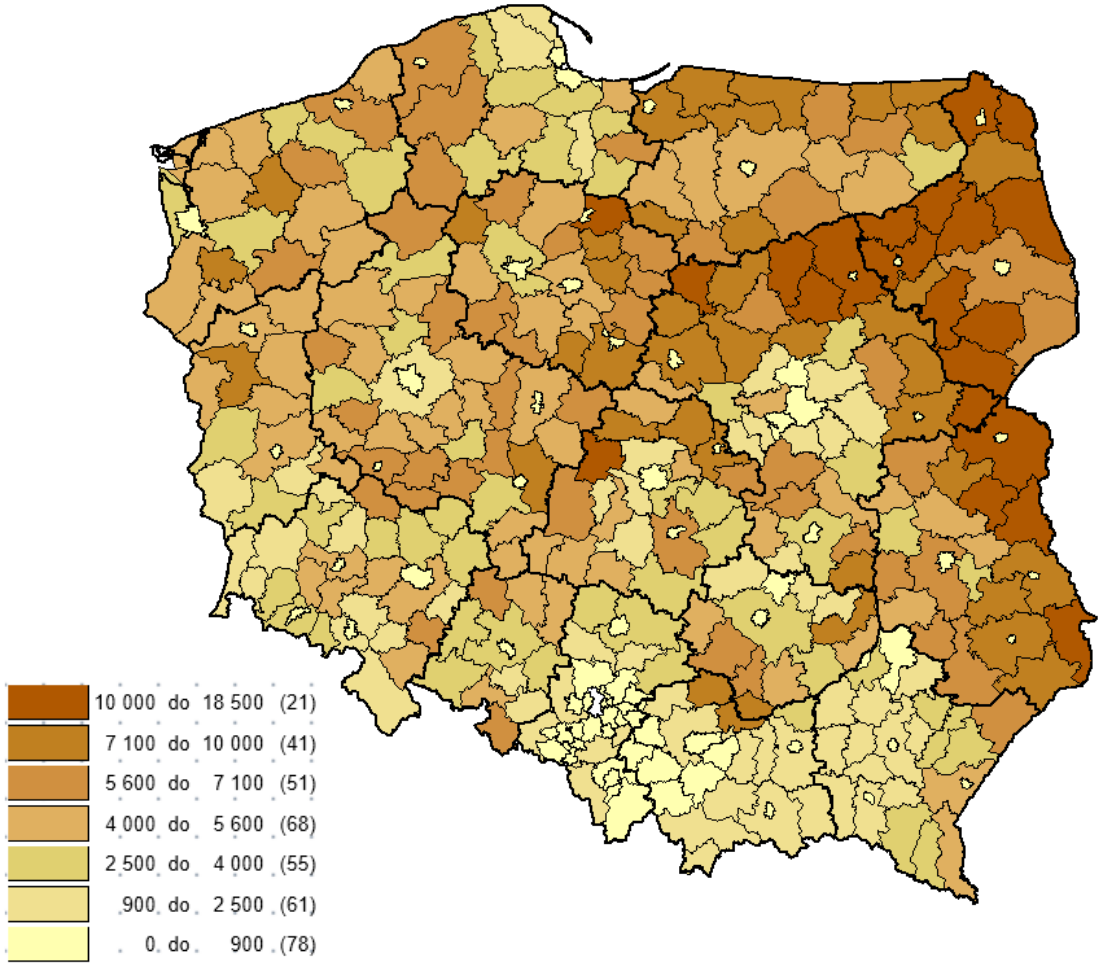
Source: own elaboration based on CSO data

CAP funds per inhabitant, counties

2008-2015



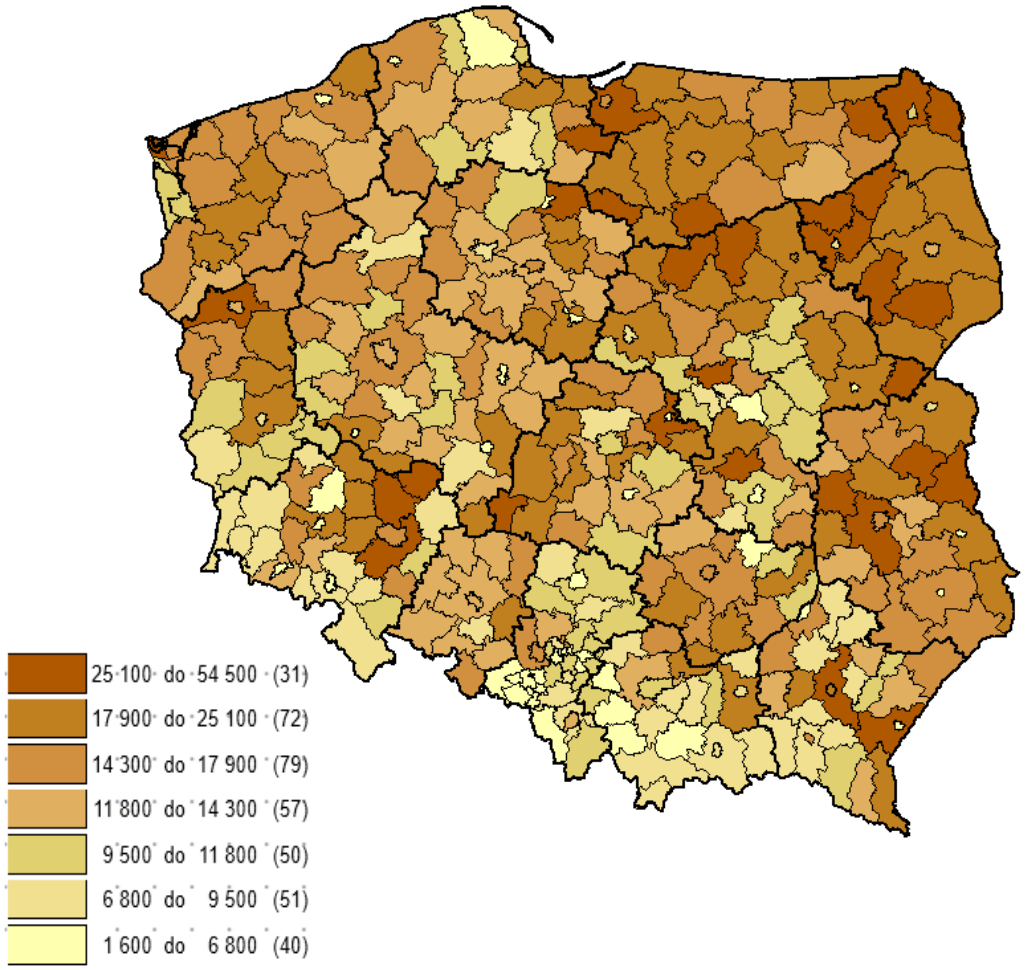
2016-2020



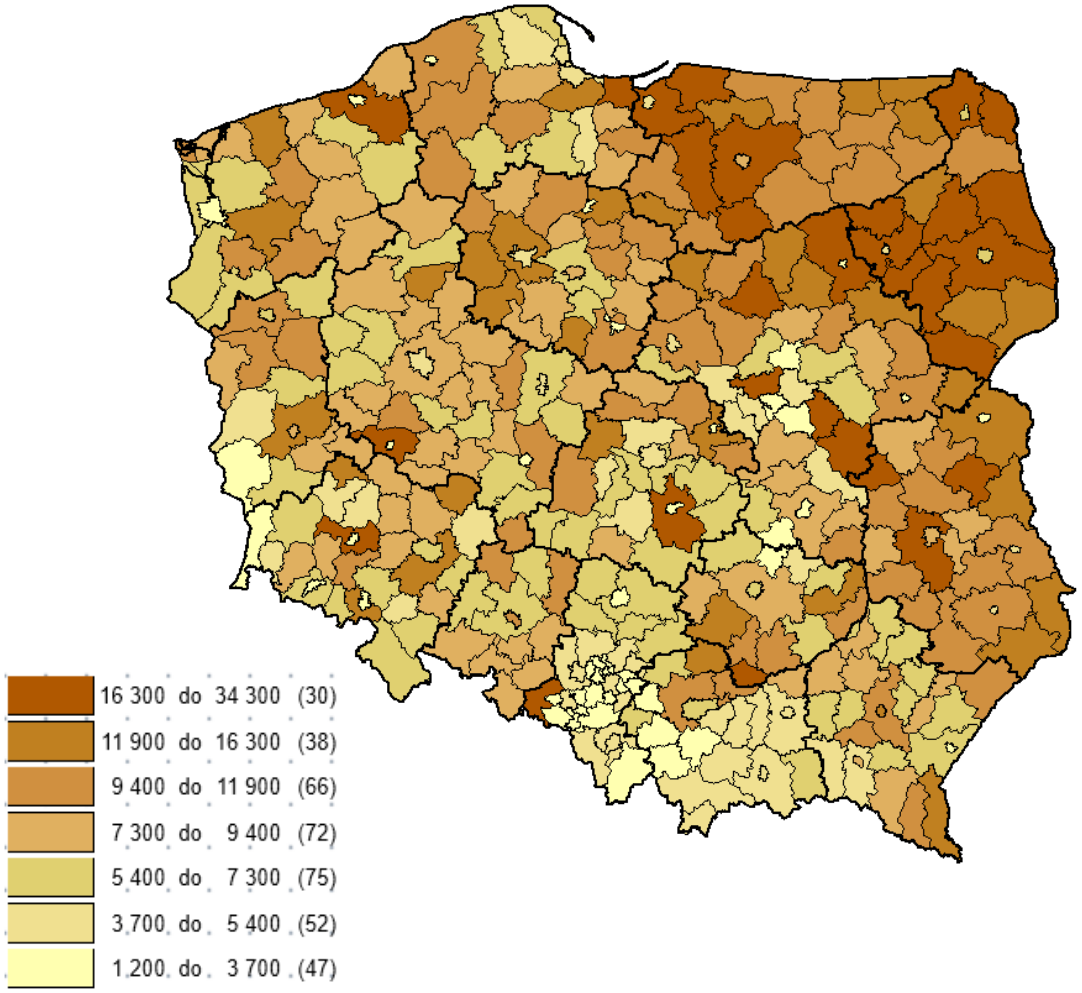
Source: own elaboration based on CSO data

All EU funds, 2004-2020 per inhabitant, counties

2008-2015



2016-2020



Source: own elaboration based on CSO data

Economic development or civilisational progress?

The impact of projects co-financed by EU funds implemented between 2007 and 2019
In the opinions of the representatives of local governments

Questionnaire items	Population			
	below 50,000		over 50,000	
	significant and very sig.	low and very low	significant and very sig.	low and very low
Better healthcare	6.9	42.3	20.6	27.9
Better public transportation	14.6	41.3	**73.5**	5.9
Higher income among citizens	11.4	26.5	10.3	25.0
Better quality of the natural environment	32.6	21.6	**42.7**	13.2
Faster economic growth	18.4	23.0	**32.4**	11.8
New workplaces	13.5	35.6	33.8	13.2
Increased agricultural productivity	13.6	26.5	1.5	22.1
Increased competitiveness of local businesses	10.9	27.9	22.1	20.6
New investors	11.1	**43.6**	32.4	25.0
Decrease of unemployment	16.0	31.2	33.8	19.1
Improved educational and cultural infrastructure	**53.2**	12.9	**70.6**	2.9
Increased bureaucracy	25.3	24.7	17.7	38.2
Improvement of administrative qualifications	24.7	19.9	32.4	13.2
N	1285		68	

Source: G.Gorzelak, E.Przekop-Wiszniewska, European Union funds in Poland: sociological, institutional and economic evaluations, Polish Sociological Review, 4/2021

The impact of projects co-financed by EU funds implemented between 2007 and 2019
In the opinions of the representatives of local governments - conclusions

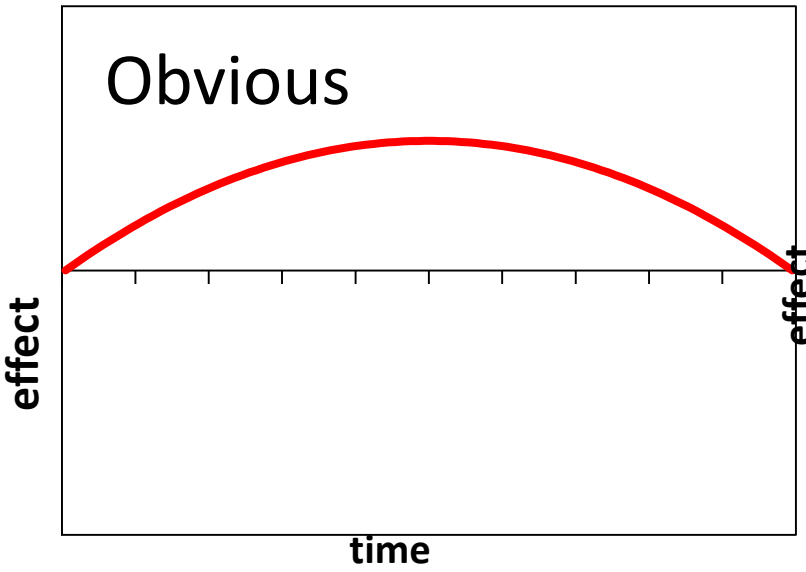
- Only advancements in the **educational and cultural infrastructure** received more favourable than modest evaluations.
- Improvements in **public transportation** received the highest share of positive evaluations in **cities** with more than 50,000 residents. This was the most positively evaluated outcome of EU intervention.
- There is **no evidence** that the EU programmes have led to an increase in the **investment attractiveness** of localities or the **competitiveness** of local entrepreneurs, nor to a decrease in unemployment.
- Also, in spite of the generally high ratings for the Common Agricultural Policy, its impact on the **increase in agricultural production was hardly observed** at all, which points to the predominantly social, rather than economic role of this policy.
- Evaluations obtained from authorities in **cities** of above 50,000 residents were **more favourable** than in smaller units in all these categories. The larger the territorial unit, the greater absorption capacity it has, and the better use of the external funds it can do.
- There were **no major regional differences** in assessments of the overall outcomes of EU programmes.

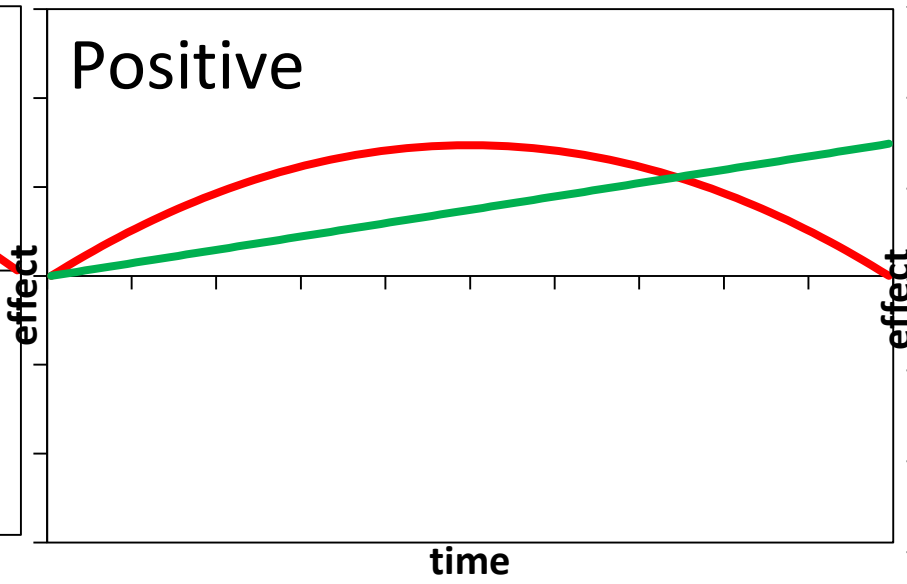
Field studies, June-September 2021

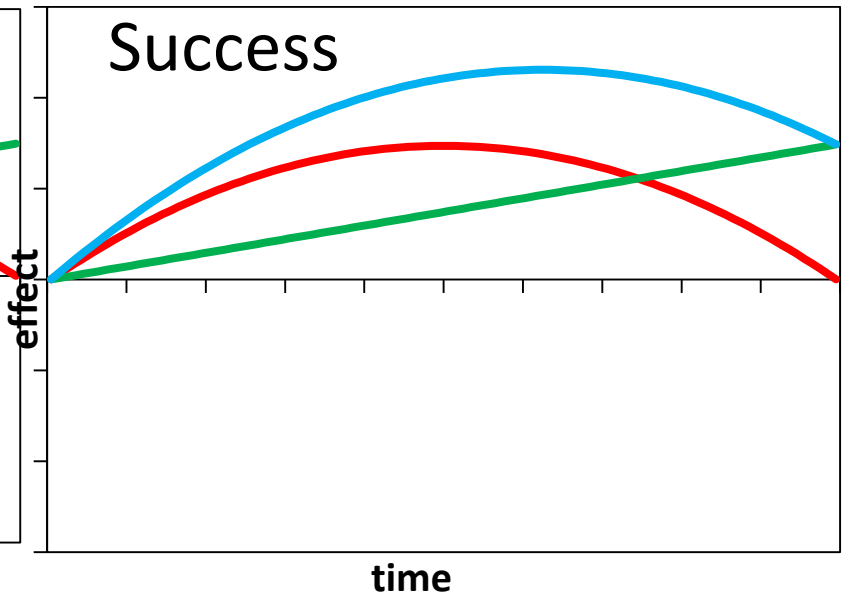
Field studies conducted in 6 localities scattered around the country, with different magnitude of EU funds used and different socio-economic profiles revealed that:

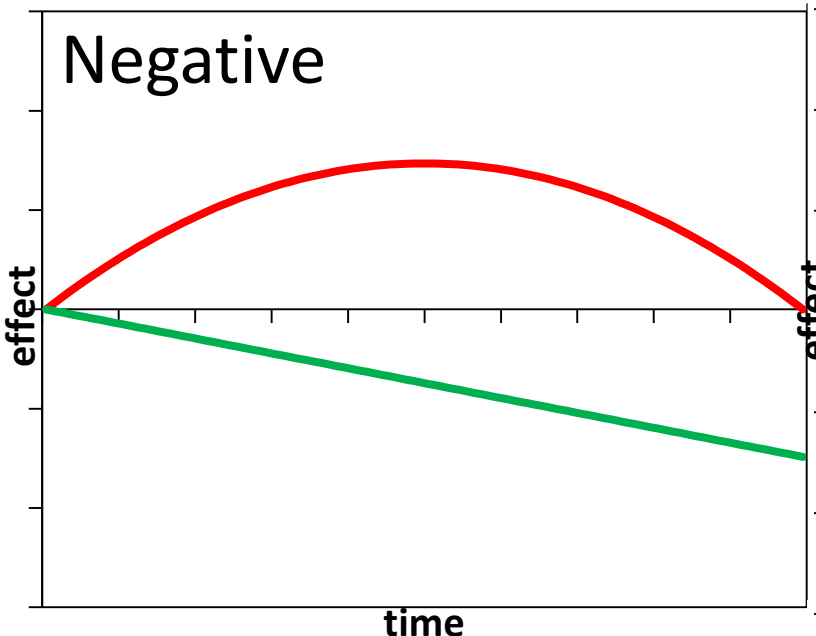
- The purely economic effects of EU interventions can be seen mostly in localities in which some economic potential has already existed.
- In localities in which the local economy is relatively weak, the external funding may induce growth – however dependent on the structure of spending.
- In the general public consciousness roads, cultural, recreational and educational infrastructure, as well as municipal facilities are the most important effects of the use of the EU funds. However, business development and economic growth are also noticed.
- And what has to be stresses – no matter the locality, the general support for the EU membership is very strong, following the ca 80 per cent in national rating!

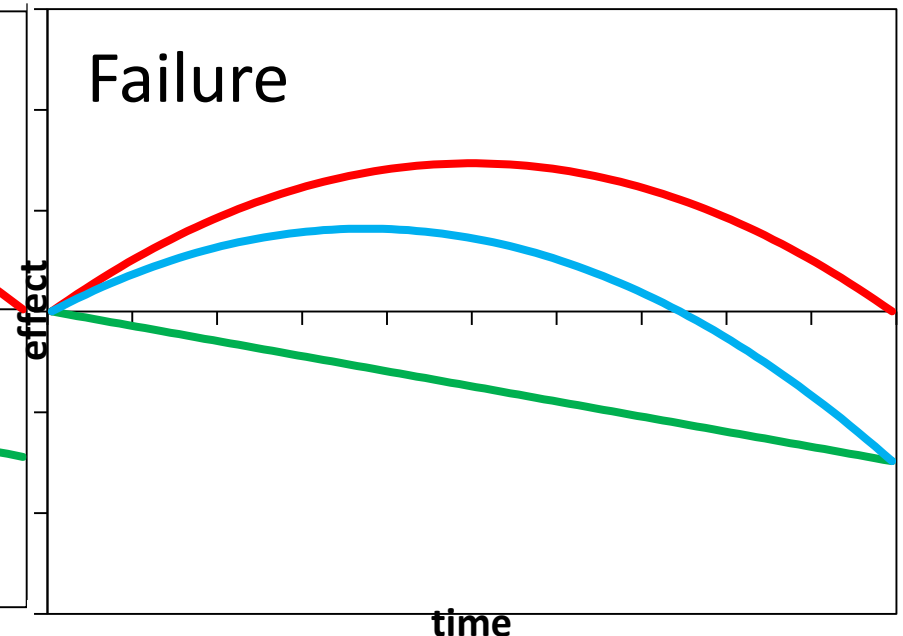
If economic growth induced by the EU funds – then of what type?









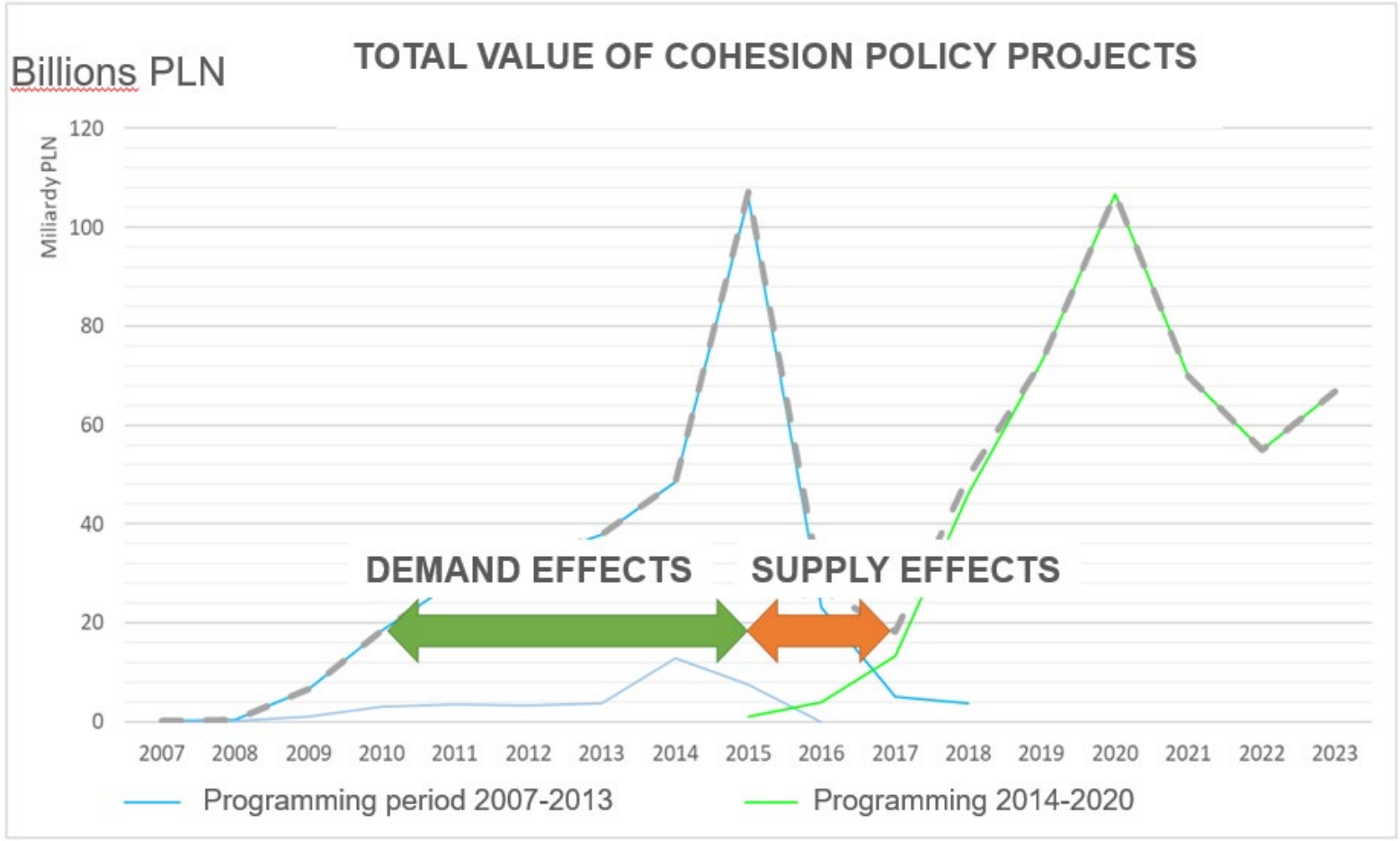


Demand effect

Supply effect

Total effect

Demand or/and supply effects of EU funds and local developement



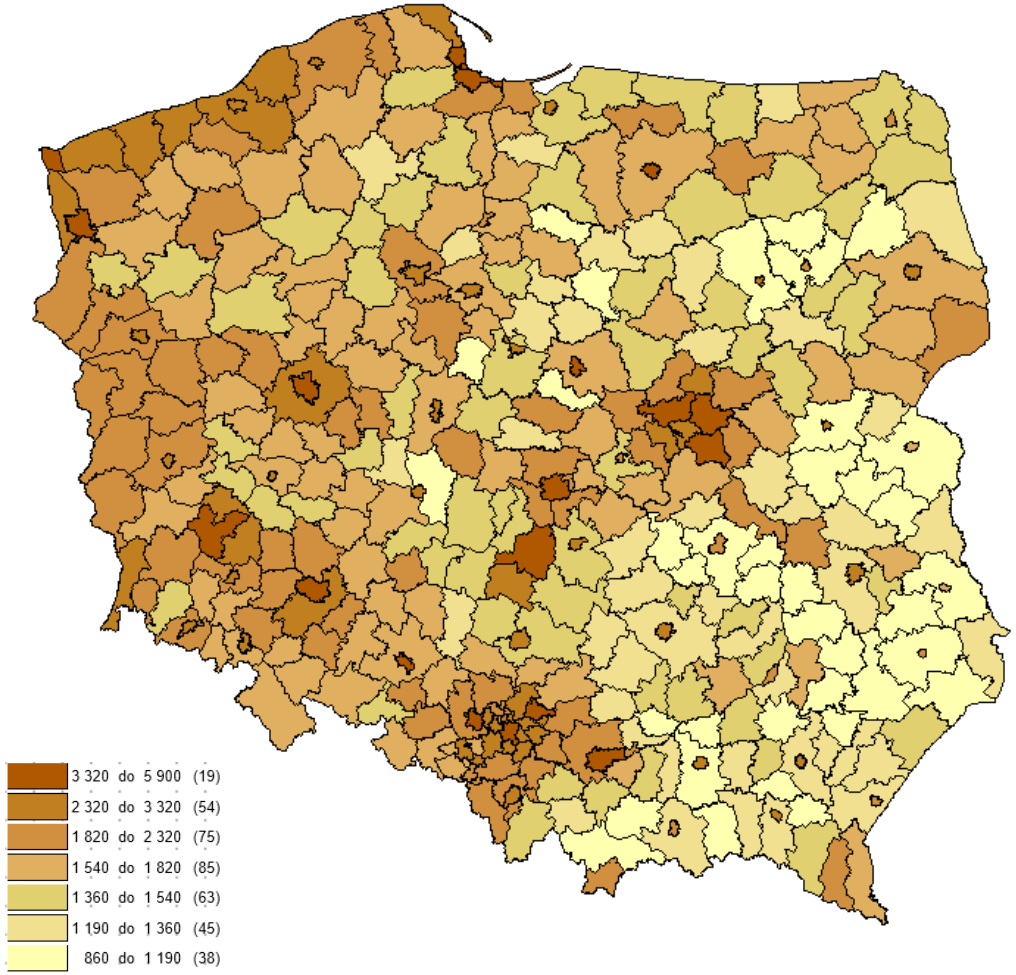
Regression models for two periods

Development context:

(1) Convergence/divergence procesess
(2) Characteristics of local units:
    - demography
    - labour market
    - economic strcture
    - business sector
    - tourism

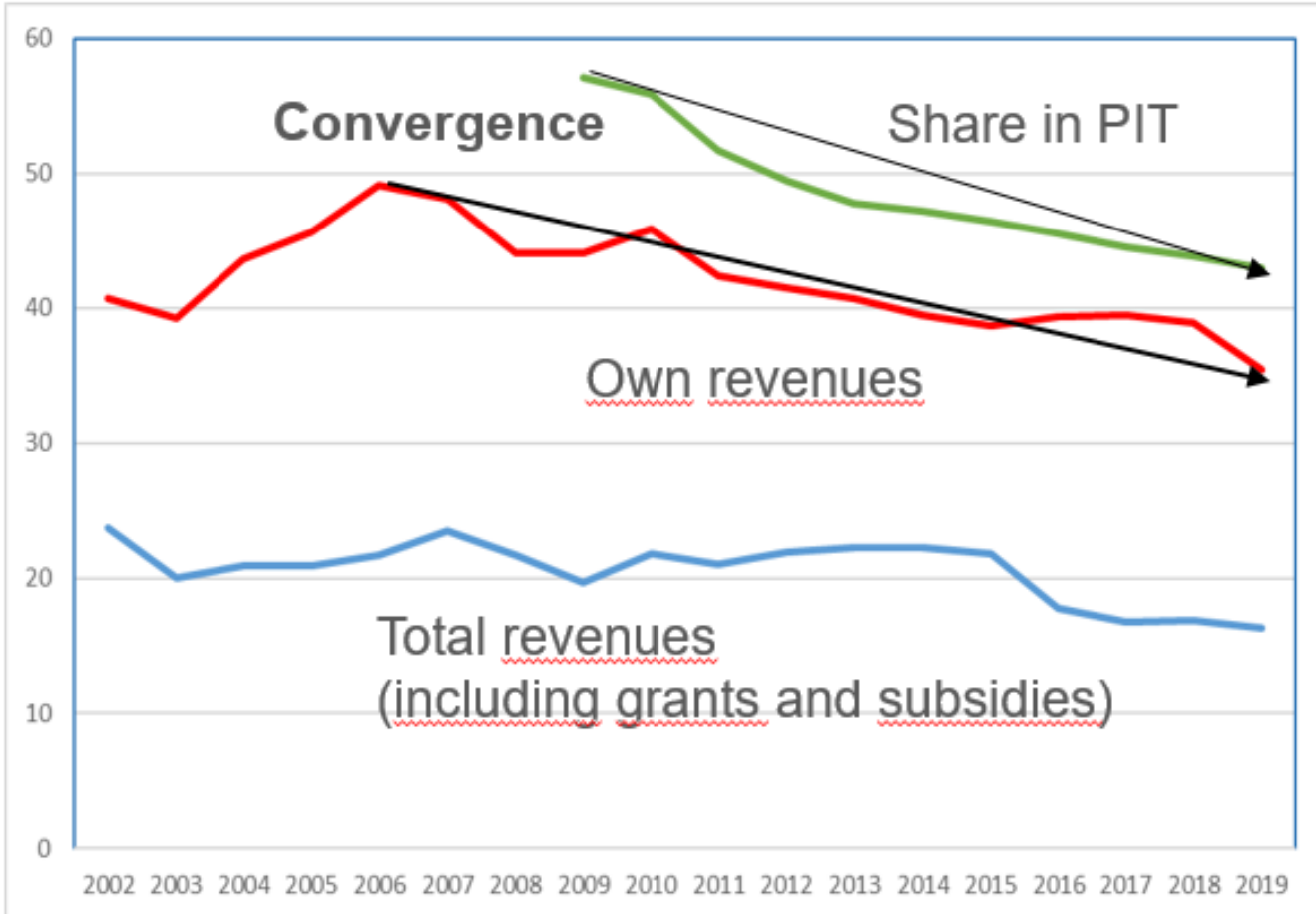
Local development – own revenues of municipalities per capita: dependent variable

Municipalites' own revenues per capita 2015



Coeficient of variation of own revenues per capita

- higher over time = teritorial polarisation
- lower over time = territorial convergence



Local development and EU funds – demand effects 2010-2015

Independent variables	Dependent variable: Municipalities own revenues per capita change 2010-2015			
	Pearson R (bold significant 0,05)	Model A (Policies)	Model B (Convergence)	Model C (Other factors)
EU funds 2010-2015 (1)				
- Cohesion Policy funds per capita	0.04	0.06	**0.16*** **	**0.11** **
- Common Agricultural Policy funds per capita	**0.29**	**0.29*** **	0.04	**0.25*** **
Level of development 2010 (2)	**-0.47**		**-0.49*** **	**-1.02*** **
Context variables (3)				
Population density	**0.29**			**0.24*** **
Migration balance	**0.27**			**0.13***
Population – working age (%)	**-0.21**			0.03
Unemployment rate (%)	**0.17**			-0.06
Non agriculture employment per capita	**-0.21**			-0.09
Employees – agriculture (%)	0.03			-0.04
Employees – industry and construction (%)	**-0.25**			-0.07
Entreprenurship per capita	**0.30**			**0.39*** **
Foreign companies share	**-0.22**			0.09
Fixed assets per capita	**-0.11**			**0.28*** **
Fixed assets in industry (%)	-0.09			0.00
miejsca noclegowe per capita	**-0.25**			-0.04
R square (corrected)		0.08	0.29	0.40

*** <0.001; ** <0.01; *<0.05

(1) **Convergence** steemed **by CAP**

(2) Controlling of convergence and other development factors revealed **significant, but small impact of Cohesion Policy funds**

(3) **Urban and business dimensions** as important factors of development

Local development and EU funds - supply effects 2015-2017

Independent variables	Dependent variable: Municipalities own revenues per capita change 2015-2017			
	Pearson R (bold significant 0,05)	Model A (Policies)	Model B (Convergence)	Model C (Other factors)
EU funds 2010-2015 (1)				
- Cohesion Policy funds per capita	0.06	0.06	0.07	0.09
- Common Agricultural Policy funds per capita	**-0.12**	**-0.11***	**-0.15****	0.09
Level of development 2015 (2)	**-0.14**		-0.07	**-0.76*****
Context variables (3)				
Population density	**-0.11**			0.02
Migration balance	-0.02			-0.01
Population – working age (%)	**0.20**			-0.13
Unemployment rate (%)	**-0.12**			-0.09
Non agriculture employment per capita	**-0.15**			-0.03
Employees – agriculture (%)	**0.13**			**-0.27***
Employees – industry and construction (%)	**-0.18**			-0.08
Entreprenurship per capita	**0.13**			**0.53*****
Foreign companies share	**0.23**			-0.05
Fixed assets per capita	0.09			**0.34*****
Fixed assets in industry (%)	**0.12**			0.00
miejsca noclegowe per capita	0.04			0.09
R square (corrected)		0,01	0,01	0.15

*** <0.001; ** <0.01; *<0.05

(1) **Negative impact of Common Agriculture Policy** (slowing down of restructurisation)

(2) **Convergence proces** (within clubs/types)

(3) Significance of **business sector**

Results based on combination of quantitative methods and case studies analysis

- Convergence proces at local level is a result of country economic development (EU integration), while the impact of EU funds is quite limited
- Temporary demand effects (multipliers<1) dominate over supply effects
- Side efects of CAP is slowing down restructurisation proces in rural areas
- Supply effects are noticable in selected locations via business sector development (human capital, foreign market expansion and R&D)

Equity versus efficiency – is there a trade-off?

Regional policy dilemma

- Theoretical literature (e.g., Kuznets, 1955; Okun, 1975; new economic geography models) highlights the existence of possible trade-off between the equity and efficiency
- Hence, regional policy makers in countries such as Poland should make a choice in allocating scarce resources either to enhance national growth rate of economy to speed up catching up process or to mitigate existing regional income inequalities (within nation convergence)
- Empirical analyses confirm positive impact of structural funding on regional convergence in Poland (e.g., Horridge and Rokicki, 2018). Still, there hardly exist studies that provide an empirical verification of the equity-efficiency trade-off

Structural funds payments in the 2007-2013 perspective

- The 5 richest regions received almost as twice as much of funding than the 5 poorest ones in absolute terms (without rural development and cross-border programs)

Actual payments in PLN million (EU contribution)

Rich	**2007-2016**	**Poor**	**2007-2016**
Dolnośląskie	19,831.4	Lubelskie	15,701.8
Mazowieckie	44,686.3	Podkarpackie	22,018.3
Pomorskie	17,143.2	Podlaskie	8,689.7
Śląskie	29,578.9	Świętokrzyskie	11,079.2
Wielkopolskie	20,216.9	Warmińsko-mazurskie	15,539.0
Total	**131,456.7**	**Total**	**73,028.0**

What would have happened if more funding in poor areas?

- We run counterfactual simulations using multiregional CGE model
- We assume that there is a cut in 5 rich regions payments by 20%. The funding is distributed across 5 poorest regions accordingly to their relative economic size
- The structure of spending is exactly the same is previously

Rich	**2007-2016**	**Poor**	**2007-2016**
Dolnośląskie	-3,966.3	Lubelskie	6,691.1
Mazowieckie	-8,937.3	Podkarpackie	6,582.5
Pomorskie	-3,428.6	Podlaskie	3,921.7
Śląskie	-5,915.8	Świętokrzyskie	4,405.3
Wielkopolskie	-4,043.4	Warmińsko-mazurskie	4,690.7
Total	**-26,291.3**	**Total**	**26,291.3**

The model

- We apply Polish version of recursive TERM model (*e.g.,* Horridge and Rokicki, 2018).
- Our model is calibrated for 16 NUTS2 regions and 59 industries, with the 2005 national supply and use tables published by Statistics Poland. During the calibration process, the above tables were supplemented by data on regional industry shares, regional population, occupation shares, distance matrices, etc. The supplementary regional data used both in calibration and baseline scenario simulations came from Statistics Poland and ESRI shapefiles.
- Our simulations cover the 2007-2018 period.

Real GDP – cumulative difference from the baseline scenario in % change

Rich	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Dolnośląskie	-0.01	-0.07	-0.17	-0.33	-0.55	-0.84	-1.22	-1.56	-1.90	-2.22	-2.51
Mazowieckie	-0.01	-0.04	-0.16	-0.33	-0.56	-0.76	-0.93	-0.94	-1.15	-1.50	-1.77
Pomorskie	-0.01	-0.07	-0.20	-0.39	-0.66	-0.95	-1.20	-1.32	-1.57	-1.92	-2.23
Śląskie	0.00	-0.03	-0.12	-0.29	-0.51	-0.72	-0.90	-1.06	-1.31	-1.58	-1.83
Wielkopolskie	-0.01	-0.05	-0.16	-0.34	-0.58	-0.87	-1.15	-1.41	-1.72	-2.01	-2.28
Poor	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Lubelskie	0.02	0.16	0.54	1.21	2.27	3.55	4.99	6.51	7.45	7.85	8.20
Podkarpackie	0.02	0.17	0.56	1.23	2.29	3.50	4.82	6.06	6.84	7.13	7.35
Podlaskie	0.02	0.16	0.56	1.31	2.51	3.89	5.33	6.75	7.71	7.95	8.14
Świętokrzyskie	0.02	0.17	0.60	1.36	2.55	4.04	5.67	7.32	8.30	8.66	8.94
Warmińsko-mazurskie	0.02	0.15	0.55	1.31	2.53	4.00	5.44	6.81	7.69	8.02	8.33
Poland	**0.00**	**0.00**	**0.01**	**0.03**	**0.09**	**0.21**	**0.34**	**0.50**	**0.50**	**0.36**	**0.24**

Export volume – cumulative difference from the baseline scenario in % change

Rich	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Dolnośląskie	0.01	0.14	0.29	0.36	0.30	0.15	-0.65	-2.02	-2.52	-2.47	-2.62
Mazowieckie	0.01	0.06	0.09	-0.13	-0.67	-1.76	-3.47	-6.04	-6.96	-7.00	-7.30
Pomorskie	0.01	0.15	0.41	0.48	0.43	-0.14	-1.27	-3.30	-3.98	-3.85	-4.04
Śląskie	0.00	0.07	0.22	0.23	-0.05	-0.64	-1.69	-3.41	-3.87	-3.72	-3.82
Wielkopolskie	0.01	0.12	0.28	0.39	0.31	-0.07	-0.89	-2.32	-2.81	-2.75	-2.91
Poor	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Lubelskie	-0.03	-0.40	-1.24	-2.32	-3.71	-5.47	-7.89	-10.86	-10.68	-10.03	-10.00
Podkarpackie	-0.02	-0.30	-0.96	-1.90	-3.25	-4.99	-7.36	-10.11	-10.30	-9.93	-10.03
Podlaskie	-0.02	-0.45	-1.46	-2.85	-4.75	-7.16	-10.60	-14.98	-15.44	-15.01	-15.29
Świętokrzyskie	-0.02	-0.33	-1.05	-2.10	-3.61	-5.66	-8.38	-11.73	-11.91	-11.38	-11.46
Warmińsko-mazurskie	-0.02	-0.34	-1.13	-2.31	-4.05	-6.50	-10.02	-14.60	-15.46	-15.26	-15.45
Poland	**0.00**	**0.00**	**-0.05**	**-0.28**	**-0.77**	**-1.62**	**-3.03**	**-5.10**	**-5.61**	**-5.47**	**-5.62**

Results

- Shift in structural spending from better developed to the least developed regions would speed up convergence proces.
- However, no equity-efficiency trade-off is observed!
- Other observed effects include:
  - lower export volume,
  - higher aggregate employment in poor regions,
  - higher CPI (both in poor and reach regions).

Conclusions

- After accession the EU funds contributed only to some 0.6 percentage points of the overall 3.8 rate of growth of Polish economy.
- Several analyses support the hypothesis that the effects of the inflow of the EU funds to Poland are stronger in the sphere of general civilisational progress than in economic development.
- In the economic sphere the decreasing over time demand effects are also stronger than the lasting supply effects.
- The EU funds contributed both to some convergence on the local level (mostly due to CAP funds) and on the regional level.
- Devoting more assets to poor regions could not only lead to further regional convergence but also accelerate the overall rate of economic growth
- Foreseen changes in Cohesion Policy and Common Agricultural Policy should hopefully induce more economic impulses than it has be the case in the past, and such countries as Poland should benefit from these reforms.