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Investment in human capital at the local level. Absorption and impact of Cohesion Policy funds in municipalities

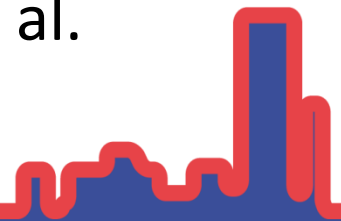
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PRELIMINARY, WORK IN PROGRESS!!!

Context

- Cohesion policy aims at closing the gap between the leading and lagging regions
- Cohesion policy is a large scale intervention, Poland is a large beneficiary
- Human capital is recognized as a major growth factor at national, regional, and local level (Lucas 1988, Del Bo, Lesage&Fischer 2008 Florio&Manzi 2010).
- Spending CP funds on human capital may be more effective than spending on anything else (Rodrigues-Pose&Fratesi 2004; Konopczyński 2014). Fertile soil hypothesis (Chesire & Magrini 2000;Ederveen et al. 2006)



Goal

- To understand and the effect of spending CP funds on human capital on the local development in Poland
- Q1: Who absorbed the funds? Most needing municipalities, or the smartest ones?
- Q2: Did spending contribute to the economic development?
- Q3: Do we observe convergence as a result of investment in human capital?

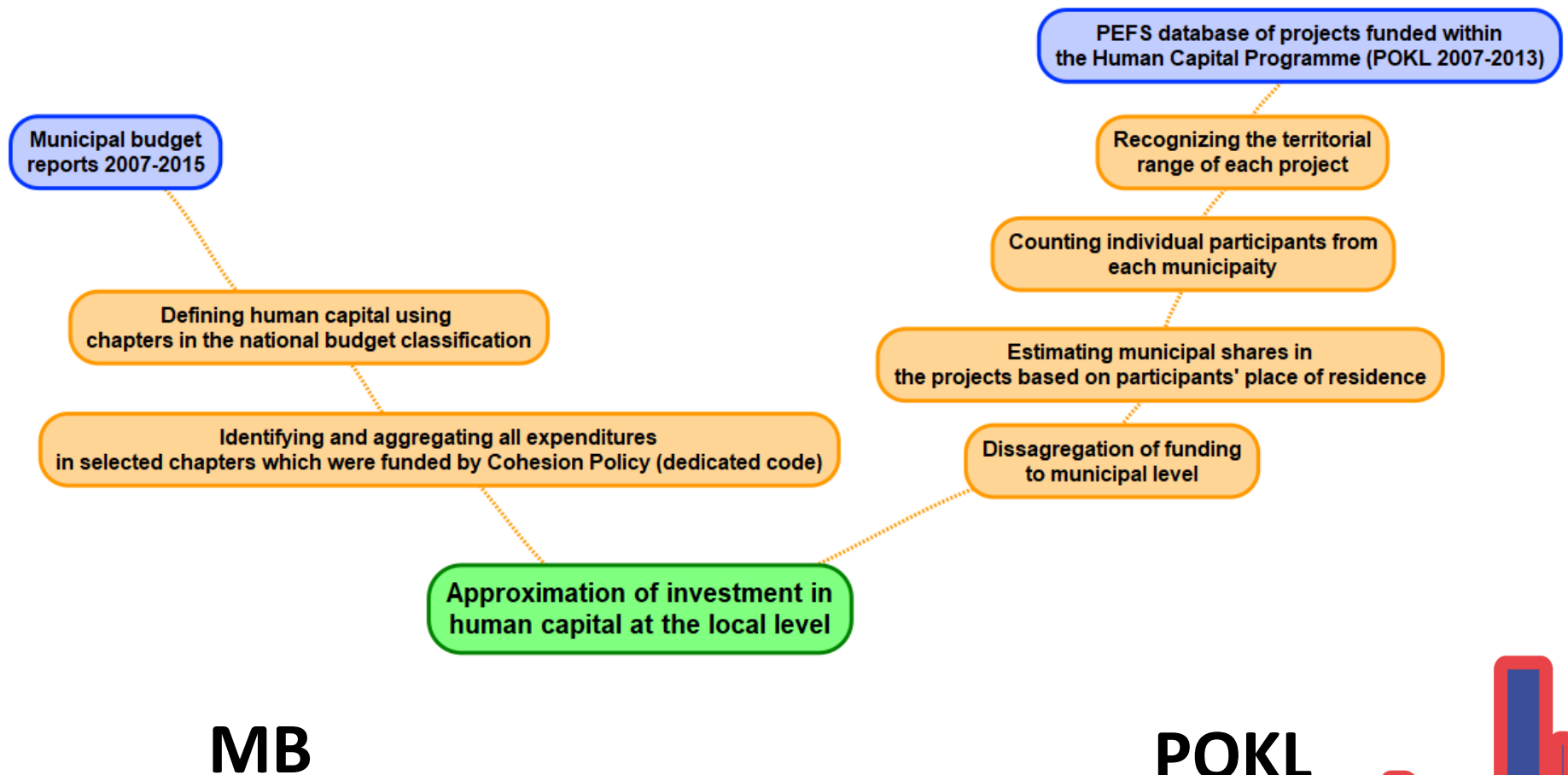


Basic numbers

- Local level analysis (NTS-5), covering 2007-2015
- Poland has 2478 NTS-5 units (municipalities)
- EU Cohesion Policy transfer to Poland in 2007-2013: EUR 67.3 billion
- Programme for Human Capital: EUR 10 billion
- The EU funded municipal spending on human capital: circa EUR 17.9 billion



Operationalization of investment in human capital at the local level



Using POKL versus municipal budget approach. Pros and cons.

- POKL is dedicated to human capital development.
- Unlike MB approach POKL covers projects in which municipal administration is not a direct beneficiary
- Human capital investments are done also outside POKL
- The two approaches are difficult to integrate.
Parallel analyses



Operationalization of local development

- Income oriented: own revenues of local government per capita
- Labour market oriented: local unemployment rate
- Mobility oriented: change in population



Method

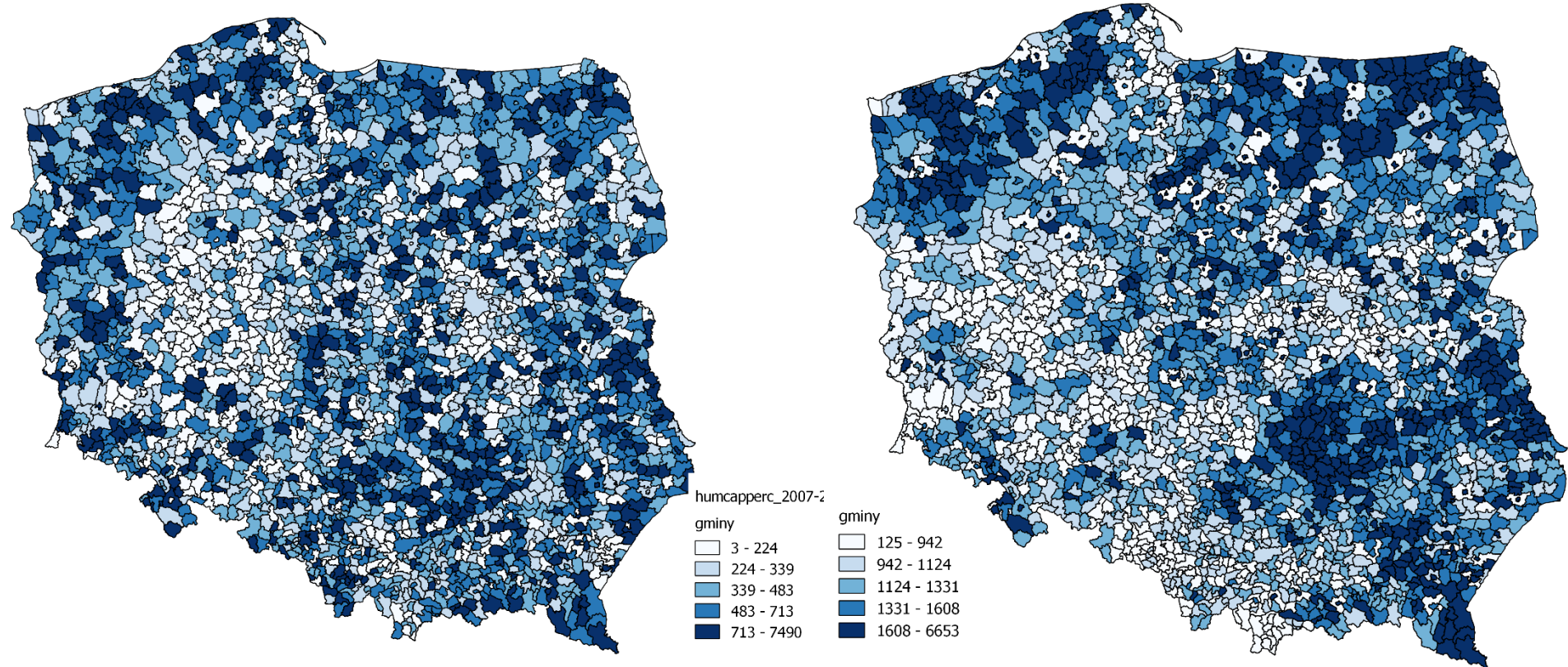
- Three measures of development as explanatory variables, and then as dependent variables
- Cross-section OLS (2007-2015) with clustered SE
- Panel regressions (3-year intervals) with clustered SE
- Distinct regional panel regressions (tbd)



Who got the funds (1)

Local government expenditures
(equal count)

POKL (equal count)



Who got the funds (2)

$$y_{i,t/t-1} = \beta_0 + \beta_1 r_{i,t-1} + \beta_2 l_{i,t-1} + \beta_3 m_{i,t-1} + \beta_4 type_i + \beta_{5-20} v_i + \varepsilon_i$$

y_i – local spending on human capital (CP funded) per capita

r_i – municipal own revenues per capita

l_i – local unemployment rate

m_i – population change (percentage change in 1999-2006)

$type_i$ – dummy indicating municipalities in metropolitan areas

v_i – regional dummies



Who got the funds (3)

	Municipal investment in HC within CP	POKL funds spent on municipal territory	Municipal spending within CP unrelated to HC
log_income_t0	-0.0716 (-1.87)	0.0606 (1.95)	0.120 (1.11)
log_population_t0	-0.108*** (-3.91)	-0.00631 (-0.63)	-0.123** (-2.24)
unemp_rate_t0	1.442** (3.17)	3.048*** (9.12)	-1.245 (-1.08)
d_population_t-1	-1.170*** (-4.90)	-0.171 (-0.85)	-3.990*** (-4.23)
metropolitan area	-0.194** (-2.90)	-0.0535 (-1.07)	0.0193 (0.17)
_cons	7.348*** (18.04)	6.344*** (32.68)	6.321*** (9.63)
N	2477	2475	2477
R ²	0.180	0.250	0.075

* p<0.10, ** p<0.05, *** p<0.01

How did spending on human capital affect income, unemployment, and migration?

$$\begin{array}{l}
 \text{OLS} \\
 \left\{ \begin{array}{l} \Delta r_{i,t/t-1} \\ \Delta l_{i,t/t-1} \\ \Delta m_{i,t/t-1} \end{array} \right. = \alpha_0 + \alpha_1 \left\{ \begin{array}{l} r_{i,t-1} \\ l_{i,t-1} \\ m_{i,t-1} \end{array} \right. + \alpha_2 y_{i,t} + \alpha_3 type_i + \alpha_4 - 19 v_i + \varepsilon_{ri}
 \end{array}$$

$$\begin{array}{l}
 \text{3-year panel} \\
 \text{(Fixed effects)} \\
 \left\{ \begin{array}{l} \Delta r_{i,t/t-1} \\ \Delta l_{i,t/t-1} \\ \Delta m_{i,t/t-1} \end{array} \right. = \alpha_0 + \alpha_1 \left\{ \begin{array}{l} r_{i,t-1} \\ l_{i,t-1} \\ m_{i,t-1} \end{array} \right. + \alpha_2 y_{i,t} + \omega_i + \varepsilon_{ri}
 \end{array}$$

y_i – local per capita spending on human capital (CP funded)/POKL spending

r_i – municipal own revenues per capita

l_i – local unemployment rate

m_i – population change

$type_i$ – dummy indicating municipalities in metropolitan areas

v_i – regional dummies

ω_i – municipal fixed effects

Summary of the results: OLS regressions

Effect of	Effect on Local revenues	Local employment	Local population growth
<i>Municipal spending only</i>			
Direct effect of spending on HC	(+)***	(+)	(-)***
Effect in the convergence specification	(+)***	(-)	(-)
<i>POKL only</i>			
Direct effect of spending on HC	(-)	(+)***	(-)***
Effect in the convergence specification	(-)	(-)	(-)***

Municipalities are converging with respect to all measures of development but migration.

Summary of the results: panel regressions

Effect of	Effect on Local revenues	Local employment	Local population growth
<i>Municipal spending only</i>			
Direct effect of spending on HC	(+)	(-)**	(-)
Effect in the convergence specification	(-)	(-)**	(-)
<i>POKL only</i>			
Direct effect of spending on HC	(+)	(-)**	(-)
Effect in the convergence specification	(+)	(-)*	(-)

Municipalities are converging with respect to all three measures of development, but spending resources on human capital has no effect on the convergence rate.

* p<0.10, ** p<0.05, *** p<0.01

Conclusions (preliminary)

- Spatial patterns of CP absorption are quite different depending on the programme (policy area). Ability play a role
- Investing in human capital within Cohesion Policy has no significant effect on local revenues or migration, and it exerts an adverse effect on local employment (?)
- Nevertheless, municipalities converge with respect to the three measures of development
- Further steps: regional regressions, more control variables at local level, decomposing POKL into policy instruments

