NATIONAL RESEARCH UNIVERSITY

Employment Clubs in Russian Regions

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Motivation

The concept of socio-economic development of the Russian Federation till 2020 states that the priorities of the state regional policy are

- balanced socio-economic regional development and
- the reduction of interregional disparities.

Literature - 1

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- Ketterer, T. D., & Rodríguez-Pose, A. (2016). Institutions vs.‘first-nature’geography: What drives economic growth in Europe's regions?
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Literature - 2

- Pastore and Missuda (2015, introduction) "the Russian case seems to be specific and interesting not only among other transition countries but also in the European perspective".
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- Kapelyushnikov R. et al. (2012). "The role of the informal sector, flexible working time and pay in the Russian labour market model".
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- Demidova O, Marelli E., Signorelli M. (2013). "Spatial Effects on Youth Unemployment Rate: The Case of Eastern and Western Russian Regions".
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Data and weights matrix

Data source: Federal State Statistics Service of the Russian Federation, www.gks.ru

80 Russian regions; period 2005 – 2013;

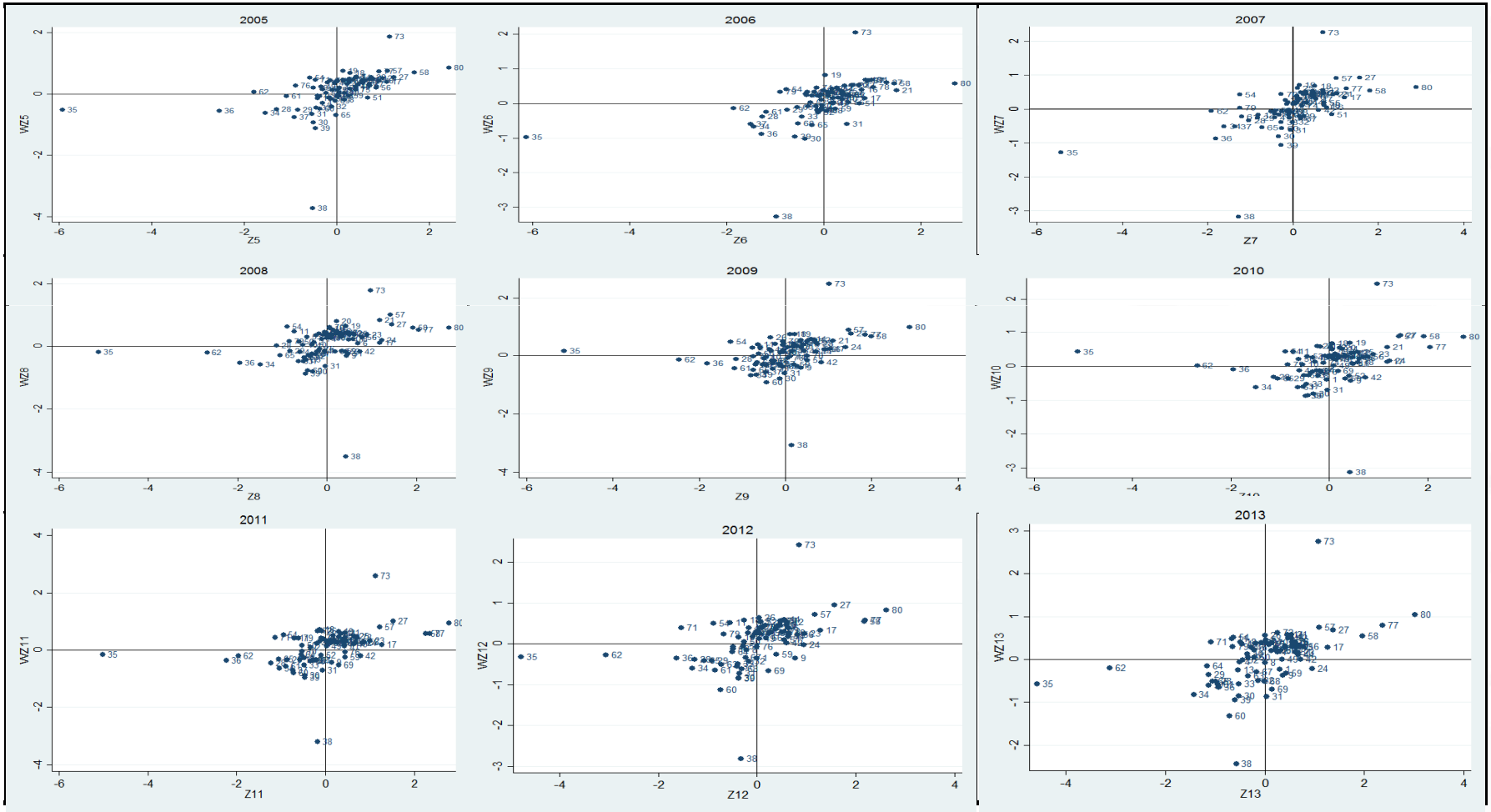
The dependent variable is regional employment rate.

Weighs matrix:

$$W_{len} = \begin{pmatrix} 0 & w_{12}^{len} & \cdots & w_{1n}^{len} \\ w_{21}^{len} & 0 & \cdots & w_{2n}^{len} \\ \vdots & \vdots & \ddots & \vdots \\ w_{n1}^{len} & w_{n2}^{len} & \cdots & 0 \end{pmatrix}$$

$$w_{ij}^{len} = \frac{length\,in\,km\,of\ \ joint\,boundaries\,between\,regions\,i\ and\ \ j}{total\,length\,in\,km\,of\ \ all\,boundaries\,of\ \ region\,i}$$

The Moran plots



Map of Russia

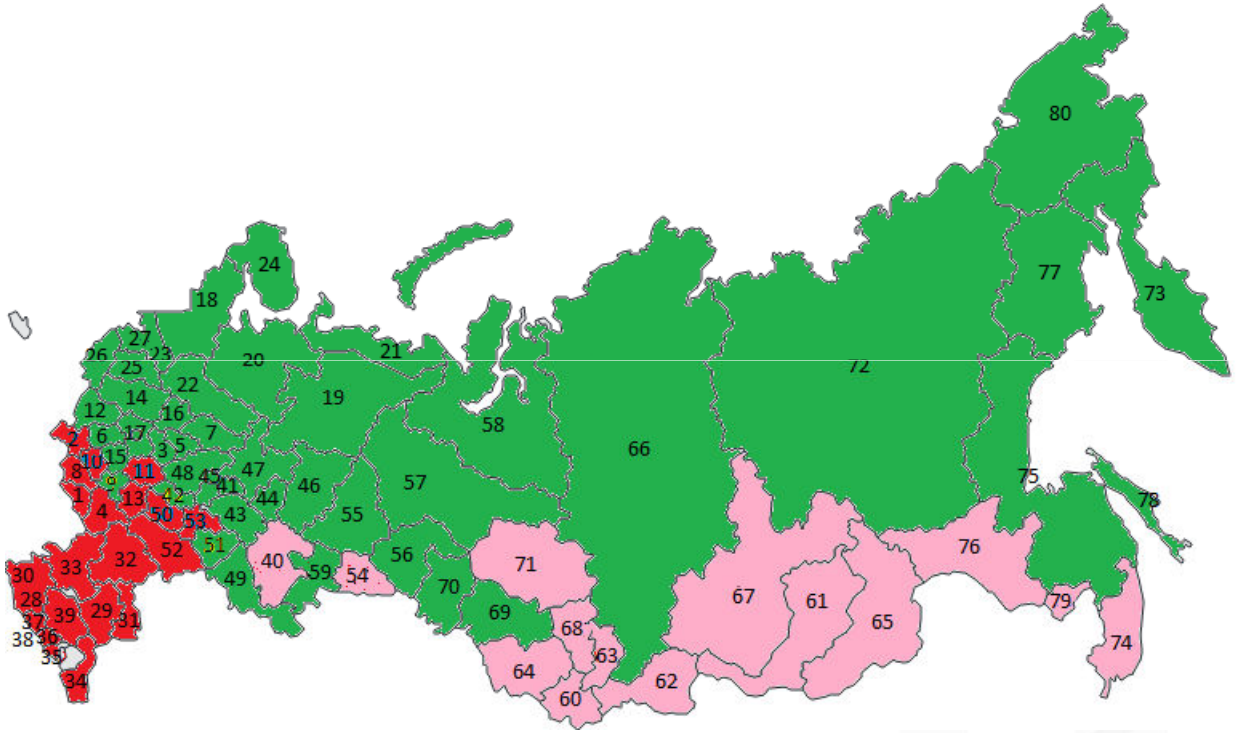
High-High

Low-Low

High-Low

Low-High

Separation of regions by clubs according Moran graphs + “lider-outsider” approach

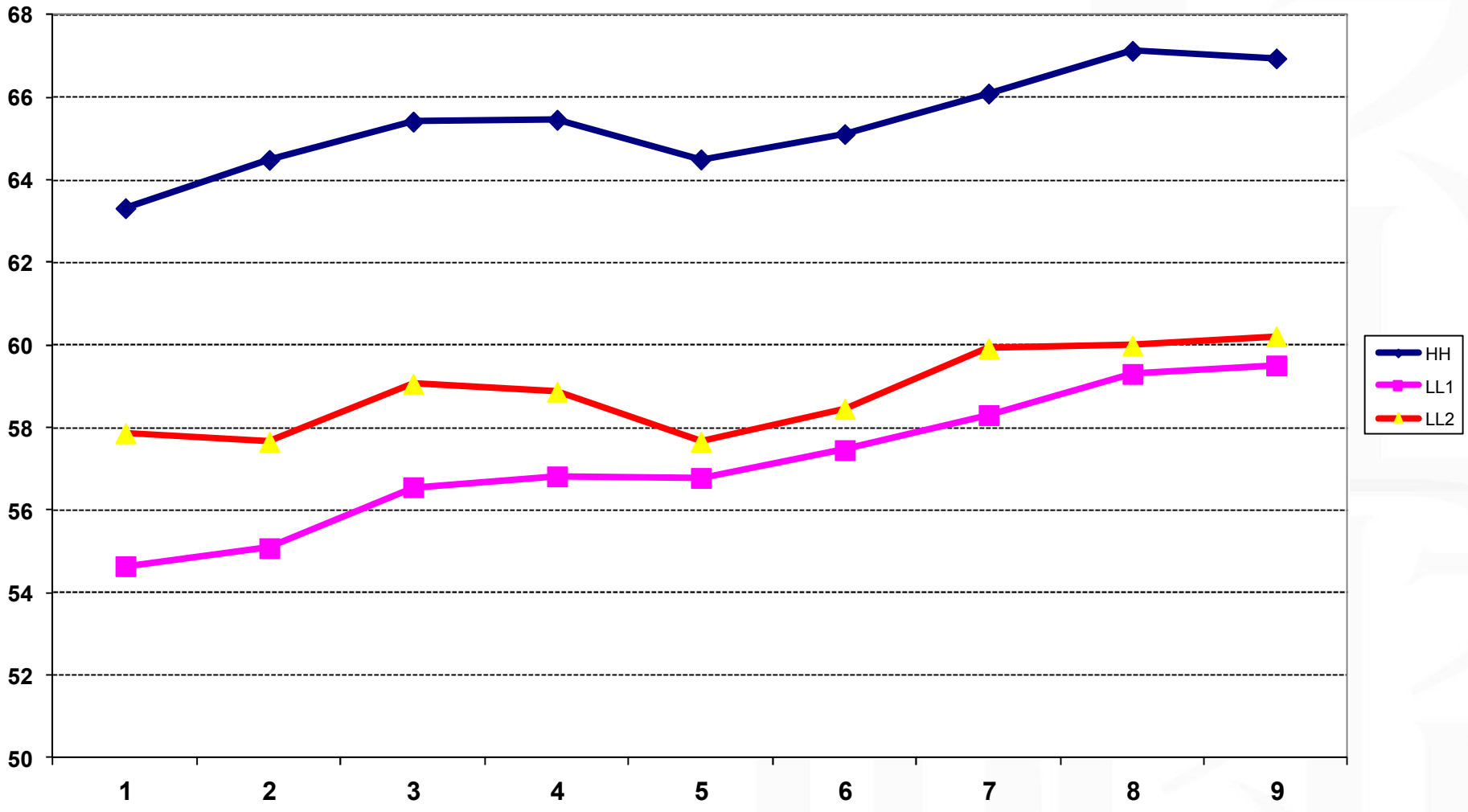


HH

LL1

LL2

Dynamic of employment in 2005-2013



Main hypothesis

Hypothesis1: Spatial effects for the High-High, Low-Low1 and Low-Low2 clubs differ

Hypothesis 2: The determinants of employment for selected clubs in the regions differ

Variables

1) variables of the attractiveness of the region:

GRP per capita (variable gdp), density of population (variable dens), urban share (variable urban)

2) socio-demographic variables:

Proportion of people above / below working age (variables below and above, respectively, in%), proportion of people with higher education (variable highed, in%) and migration growth of the population per 10,000 people (variable migr_t-1)).

3) variables of the industrial structure of the employed population:

Herfindahl-Hirschman index (variable Index H-H)

Mean for explanatory variables in 2013 г.

Club	grp	dens	urban	above	below	highed	migr_1	index H-H
HH	294.98	112.18	76.25	22.78	17.44	28.78	-3.18	0.11
LL1	101.77	46.80	59.50	22.81	18.45	30.59	-8.32	0.12
LL2	116.48	13.41	65.61	21.64	19.89	27.44	-37.82	0.11

Traditional SAR model

$$Y = \rho WY + X\beta + \varepsilon,$$

$$\rho > 0 - positive\ autocorrelation,$$

$$\rho < 0 - negative\ autocorrelation.$$

Modified SAR model

$$\begin{pmatrix} Y_{ih} \\ Y_{il1} \\ Y_{il2} \end{pmatrix}_t = \tau \begin{pmatrix} Y_{ih} \\ Y_{il1} \\ Y_{il1} \end{pmatrix}_{t-1} + \rho_h \begin{pmatrix} WY_{ih} \\ 0 \\ 0 \end{pmatrix}_t + \rho_{l1} \begin{pmatrix} 0 \\ WY_{il1} \\ 0 \end{pmatrix}_t + \rho_{l2} \begin{pmatrix} 0 \\ 0 \\ WY_{ih2} \end{pmatrix}_t +$$

$$+ \begin{pmatrix} X_{ih} \\ 0 \\ 0 \end{pmatrix}_t \beta_h + \begin{pmatrix} 0 \\ X_{il1} \\ 0 \end{pmatrix}_t \beta_{l1} + \begin{pmatrix} 0 \\ 0 \\ X_{il2} \end{pmatrix}_t \beta_{l2} + \begin{pmatrix} \alpha_{ih} \\ \alpha_{il1} \\ \alpha_{il2} \end{pmatrix} + c_t + \begin{pmatrix} u_{ih} \\ u_{il1} \\ u_{il2} \end{pmatrix}_t$$

Method of estimation: GMM

Results of estimation

Variable	Estimate	Variable	Estimate
Time lag	0.307***	migr_h	-0.004**
WY_h	0.083	migr_l1	0.007***
WY_l1	0.118*	migr_l2	-0.001
WY_l2	0.164	index_h	-9.461
Urban_h	-0.019	index_l1	-124.384***
Urban_l1	-0.699***	index_l2	-119.004***
below	-1.202***	d2007	0.179
dens_h	-0.11*	d2008	0.726***
dens_l1	-0.015	d2009	-0.213
dens_l2	0.201***	d2010	0.291
dens_cap	0.102	d2011	1.414***
higheed_h	0.043***	d2012	2.894***
higheed_l1	0.077***	d2013	2.35***
higheed_l2	0.076***	P-v Sargan test	0.6

Conclusions

- Boundary spatial effects for three clubs were different, and only spatial coefficient for LL1 club was significant and positive.
- All regions are affected by the rest of Russia's regions, the degree of this influence is decreasing with the increase in geographical distance between regions
- “Club effect” was found for variable share of urban population, density, the proportion of people with higher education, migration growth, Herfindahl-Hirschman index
- Influence of GRP and proportion of people above working age was insignificant.

Policy implications

- If we increase employment in one of southern regions, we will increase employment in the other southern regions as well

- The increase of higher educated share of the workforce leads to the increase of employment in all regions (particularly in southern regions, South of Siberia and in Zabaikalye region)

- Employment in southern regions, South of Siberia and in Zabaikalye region rises with increase in economic activity diversity

Thank you!

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