



Russian regions in growth and crisis: equalization or stratification?

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Territory 17,075,400 km²

Population 141,9 millions

83 regions in the 7 Federal Lands



The questions

- What is the actual tendency of regional differences?
- Have the disparities any interrelation to economic growth?
- How the modern crisis affects regional disparities?

Data

GRP per capita for 79 Russian regions
The period: 1992 to 2007 (2000-2007).

Methodology

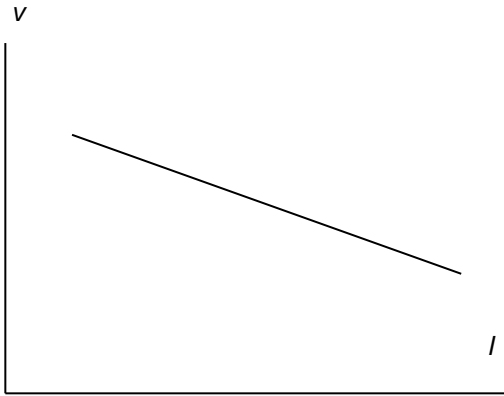
- sigma-convergence
- beta-convergence
- distribution dynamic approach (by D. Quah)



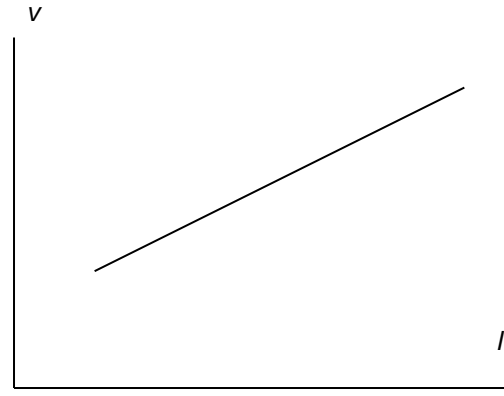
- Tendencies

Tendencies of regional differences in the economic growth: different forms

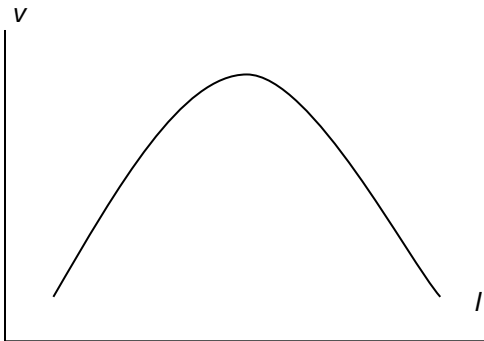
Neoclassic theory



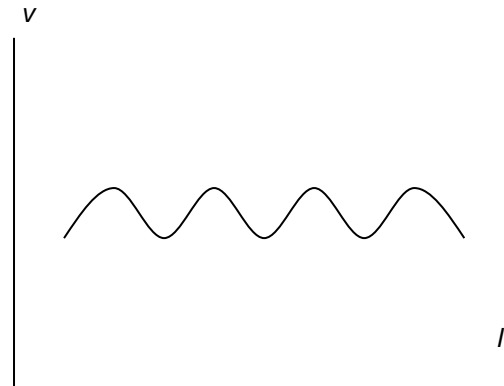
Endogenous growth theory



J. Williamson



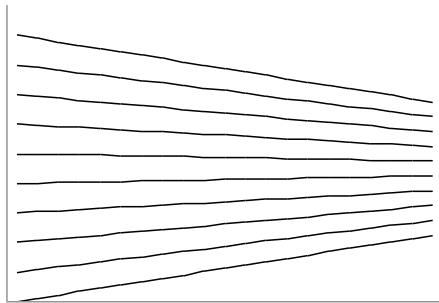
B. Berry, G. Petracos



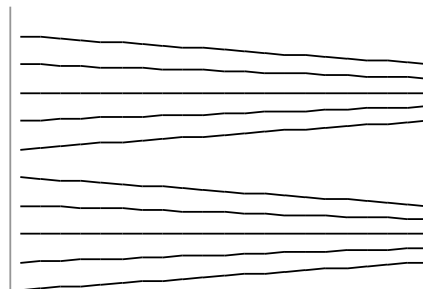
Dynamic of structure of differences: different forms

Types of convergence

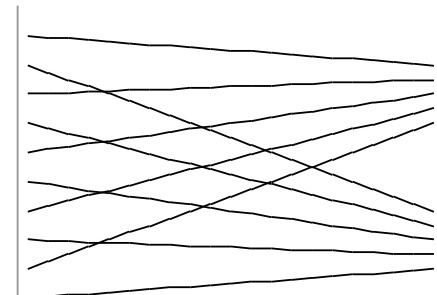
Absolute convergence



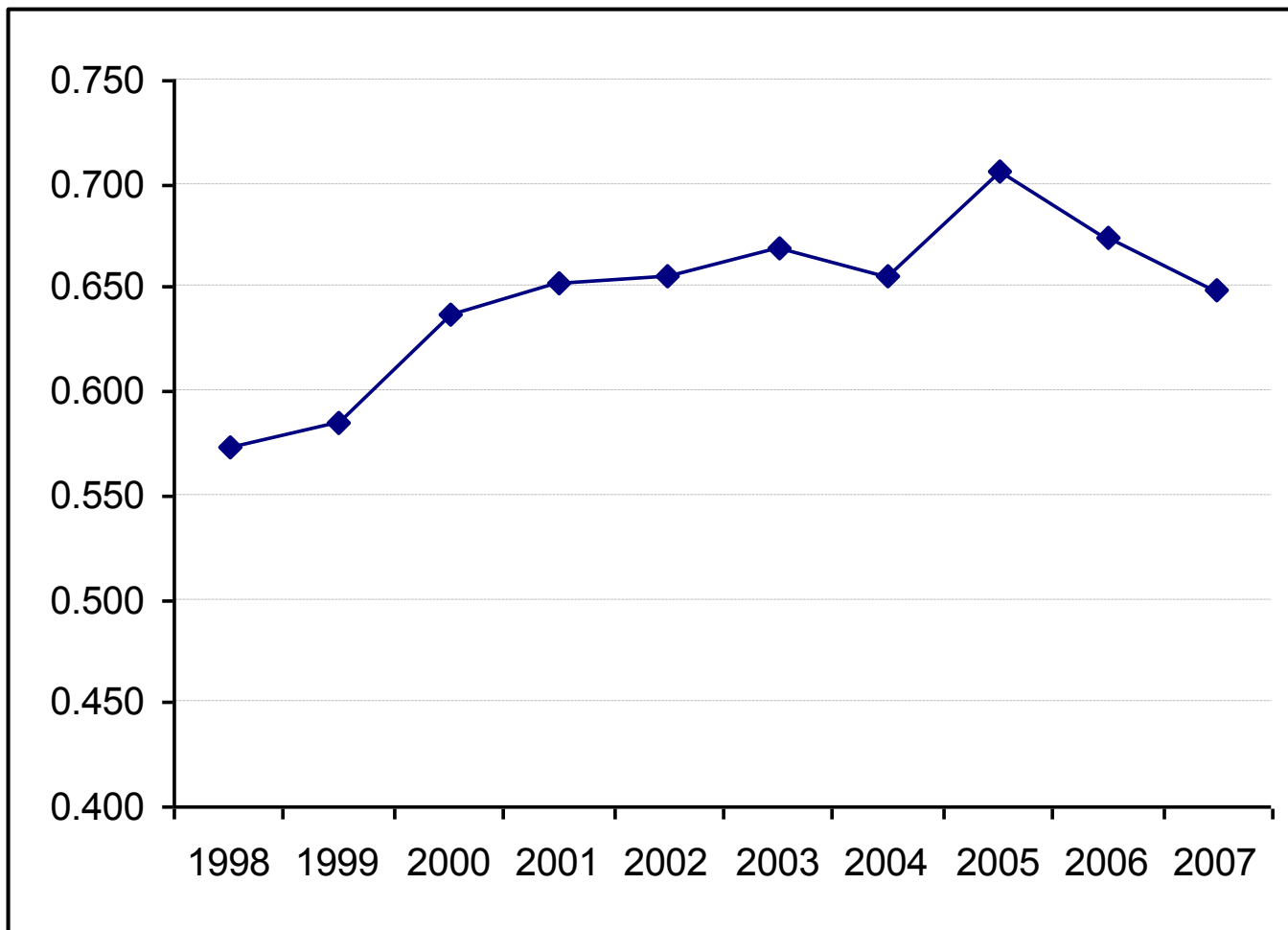
Club convergence



Conditional



The coefficient of variation of GRP per capita for Russian regions



The measurement of a region's contribution to the general level of differentiation

The contribution of a region to the coefficient of variation:

$$d_i = \frac{1}{N} \left(\frac{x_i}{\bar{x}} - 1 \right)^2 : v^2$$

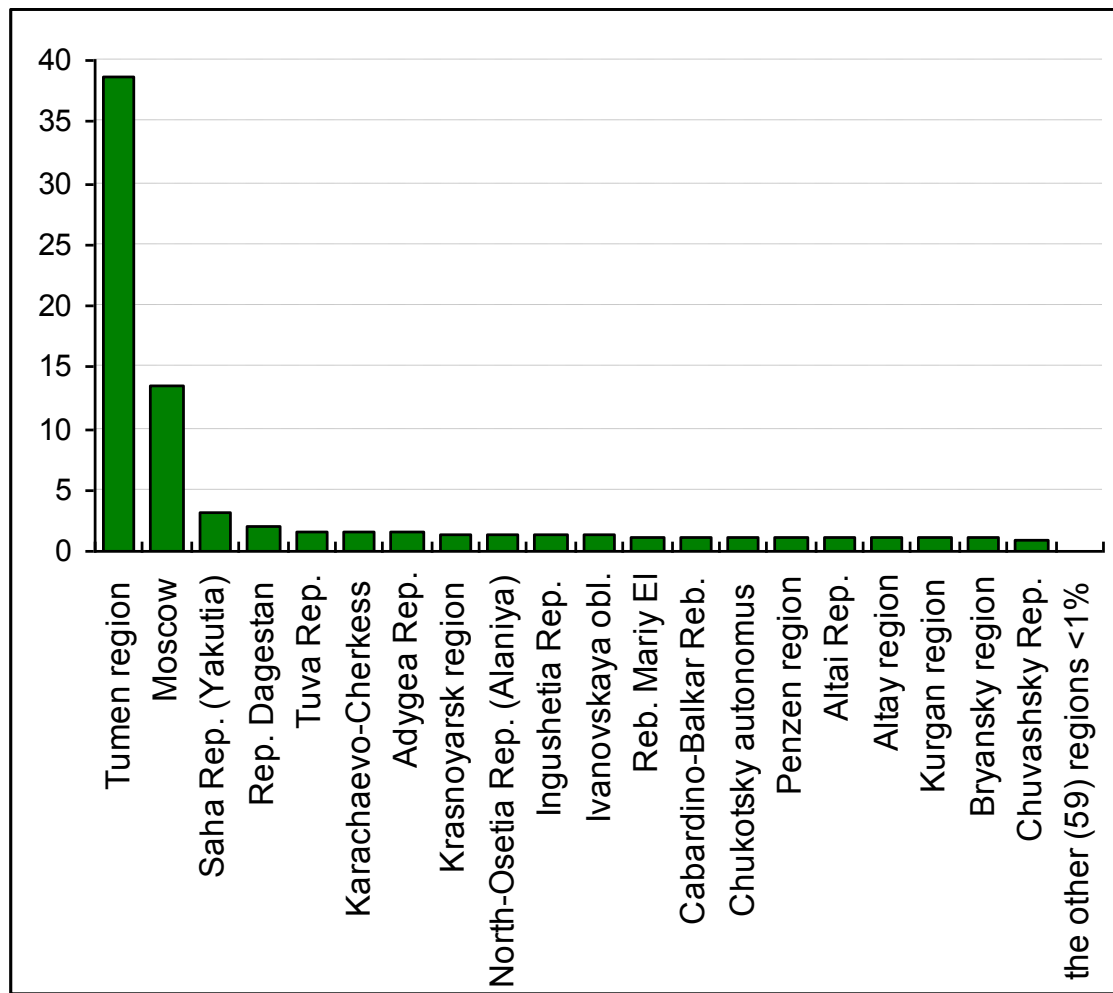
where v – is the coefficient of variation:

$$v^2 = \frac{1}{N} \sum_{i=1}^N \left(\frac{x_i}{\bar{x}} - 1 \right)^2$$

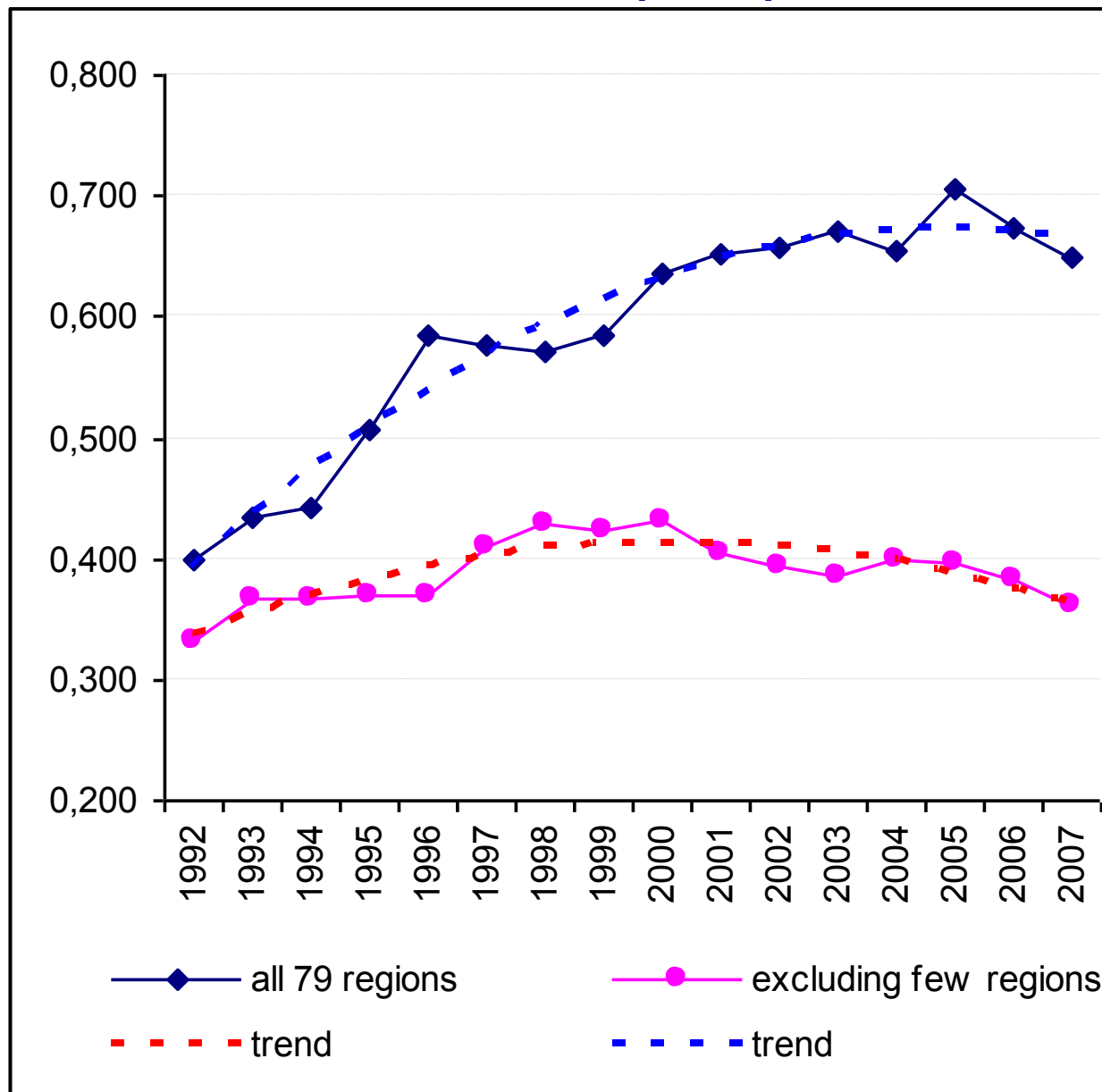
thus

$$\sum_i d_i = 1$$

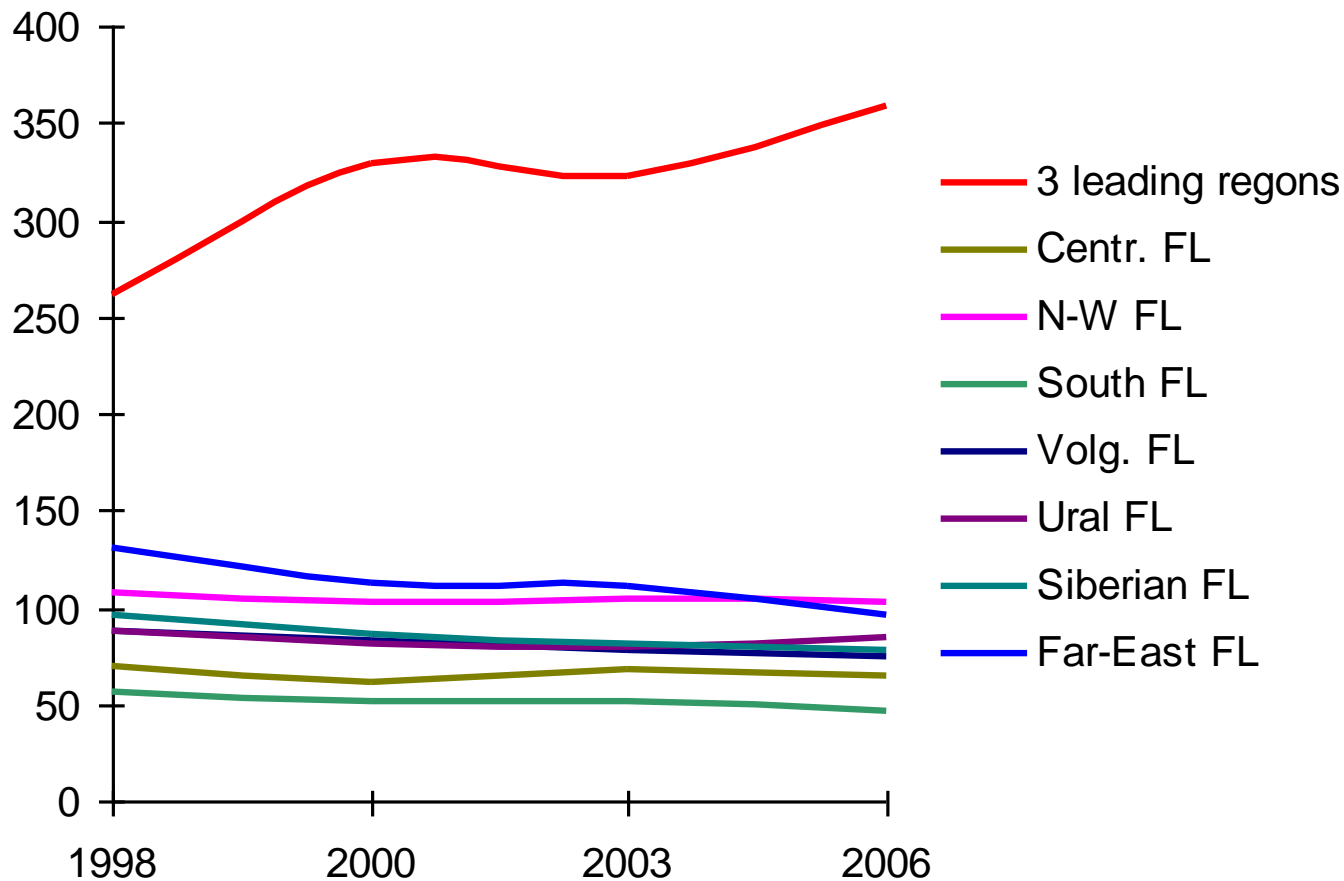
Contributions of regions to the coefficient of variation of GRP per capita in 2000 (20 maximal contributors), %



The coefficient of variation of GRP per capita for Russian regions



The stylized picture of Russian regional differentiation

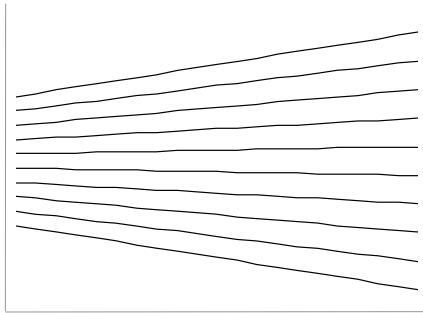


GRP per capita relative to the Russian average (average=100).

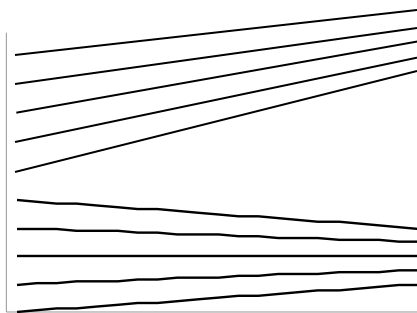
3 leading regions are Moscow, Tumen region and Chukotskiy region

The types of divergence

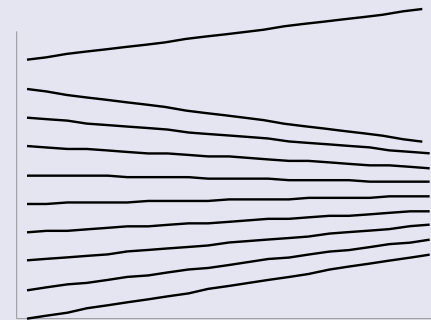
Absolute divergence



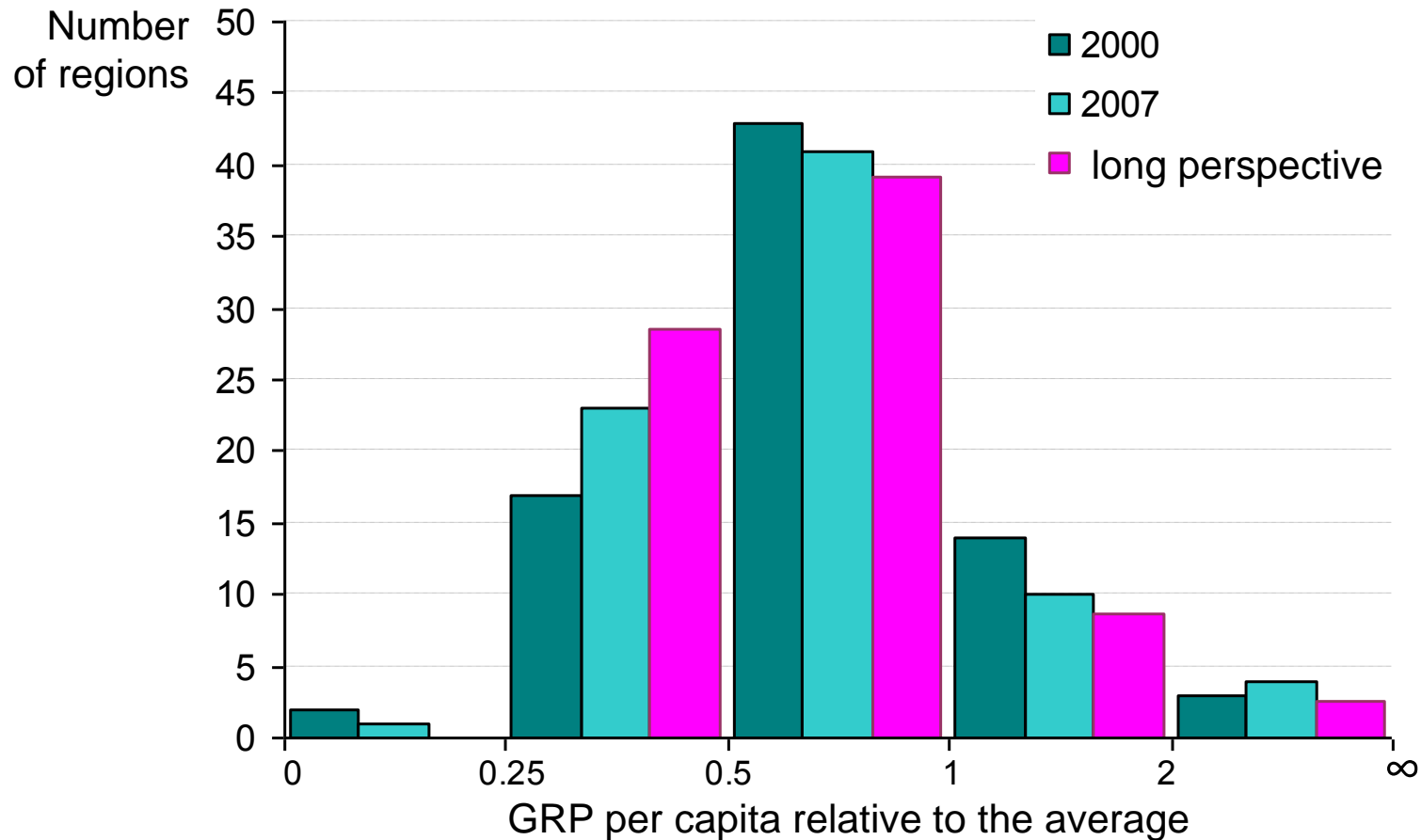
Cluster divergence



Quasi-divergence



Distribution dynamic approach of D.Quah



Histogram of the empirical frequency distribution of GRP per capita in 2000, in 2007 and estimation for long perspective

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- Interrelation between growth and regional differentiation

Growth and regional differentiation

1 year lag:


$$\Delta v_{it} = a \cdot I_{it} + b + e_{it} \quad i=1, \dots, 7, \quad t=1999, \dots, 2007,$$

∂de Δv_{it} – one year change of coefficient of variation in the Federal Land i ,
 I_{it} – growth rate of GRP of Federal Land i in the year t , a and b –
parameters for estimation, e_{it} – residuals.

Estimation results

Regional groups	Coef. a	F-stat.	PV
Region group without 3 regions	0,0034	2,7	0,10
Region group without 4 regions	0,0031	4,2	0,04
Region group without 5 regions	0,0038	5,0	0,03

2-3 years lag: *the model is not significant*



Shocks of the economic growth are connected with a short-term strengthening of a differentiation, because growth's impulses are mainly realized by more economic developed, more productive regions, which are able to receive an effect from their advantages.

At that time a system and long-term growth includes in its work also backward regions widespreading on the territory and assuring decreasing of interregional differences at least on the main territory of the country.



- Impact of crisis

The basic assumptions of modeling

- 1. Macroeconomic forecasts of Russian GDP growth (from World bank).**
- 2. The finding of specific of this crisis (from IET, Moscow): the regions that had high growth rates loose more**
Growth rate of each region calculates as the particular fraction of its growth in the previous year.
- 3. Population structure is constant.**

Conclusion

- 1. Intense increase of regional income differentiation for the last years of economic growth in Russia is going together with a strong evidence of regional convergence for the most part of economic space. Most part of Russian regional space (87% of territory, 90% of population и 65% of GDP) converges with the rate of around 2% per year. This case named quasi-divergence.**
- 2. During the general convergence tendency the short time regional inequality increases are found. These inequality shocks are produced by very high growth rates (accelerations). During next years such risings of differences then follow back to the decrease tendency.**
- 3. On the base of macroeconomic forecasts it was estimated that modern crisis affect for Russian regional economic disparities to increase way.**



Thank you for your attention!