



OECD Workshop

“Improving Productivity in Lagging Regions”


Paris
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1. Regional Policies in OECD – Paradigm shift
2. Main Determinants of Growth?
3. Policy Implications
4. Implications for Lagging Regions

Paradigm Shift in Regional Policies

	Traditional Regional Policies	New Paradigm
Objectives	Balancing economic performances by <u>temporary</u> compensating for disparities	Tapping under-utilised regional potential for competitiveness
Strategies	Sectoral approach	Integrated development projects
Tools	Subsidies and state aid	Soft and hard infrastructures
Actors	Central government	Different levels of government
Unit of analysis	Administrative regions	Functional regions
	Redistribution from leading to lagging regions	Building competitive regions by bringing together actors and targeting key local assets

Ministerial Level Meeting

“Investing for Growth Building Innovative Regions”

31st March 2009, Paris

(1) Data analysis

-- Assessment/diagnosis

(2) Identifying driving factors:

-- Large body of reviews

-- Theory

-- Econometric modelling



• Policy design



(3) Implementation



1. Paradigm Shift in Regional Policies

2. Main Determinants of Growth?

- Trends in data
- Analysis

3. Policy Implications

4. Implications for Lagging Regions



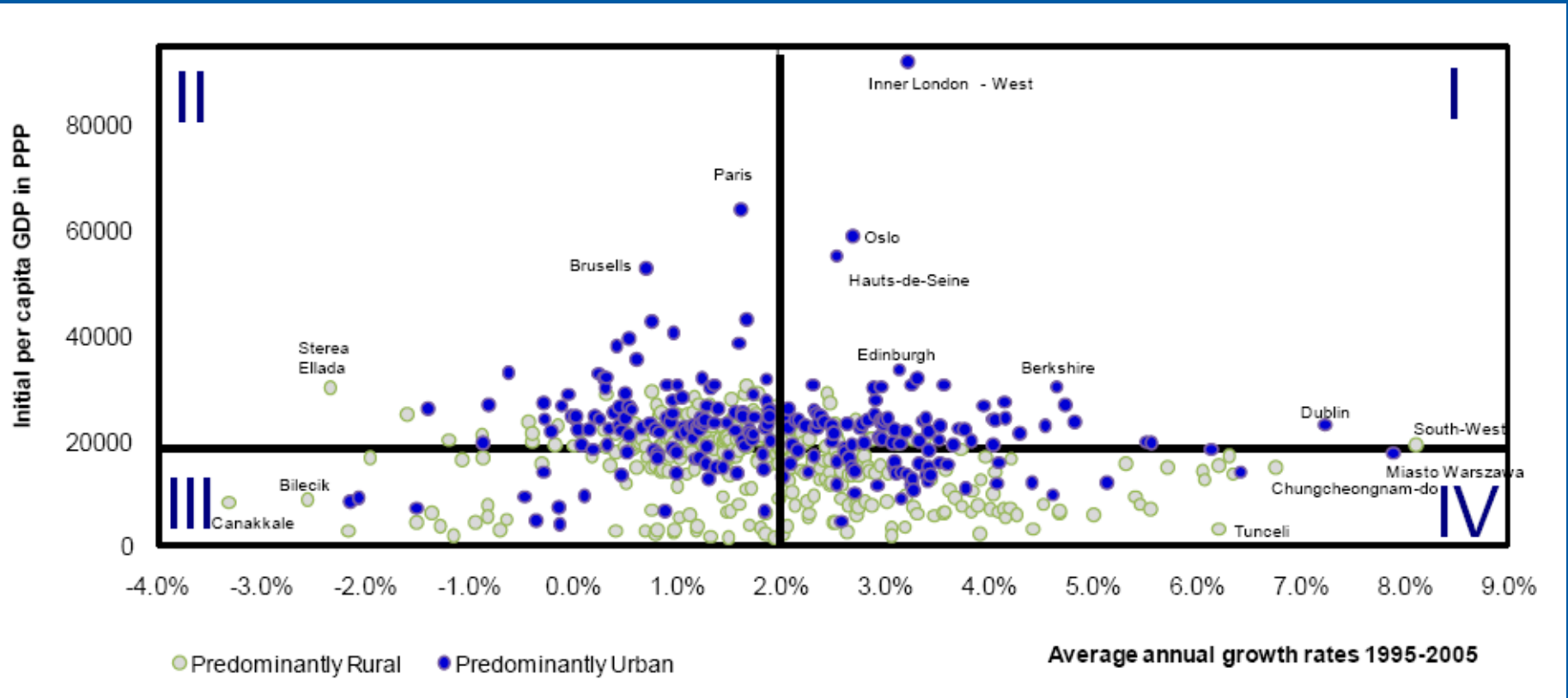
OECD Regional Data-Base (RDB)

- The RDB includes regional statistics on 5 major topics:
 - *Demographic*
 - *Regional accounts*
 - *Labour*
 - *Social indicators*
 - *Innovation*
- To facilitate the comparability of territorial units regions have been classified in 2 *Territorial Levels (TLs)*
 - *TL3 Territorial Level 2 (335 regions)*
 - *TL2 Territorial Level 3 (1679 regions)*

www.oecd.org/gov/regional/statisticsindicators/explorer

There is no single/unique path to growth...

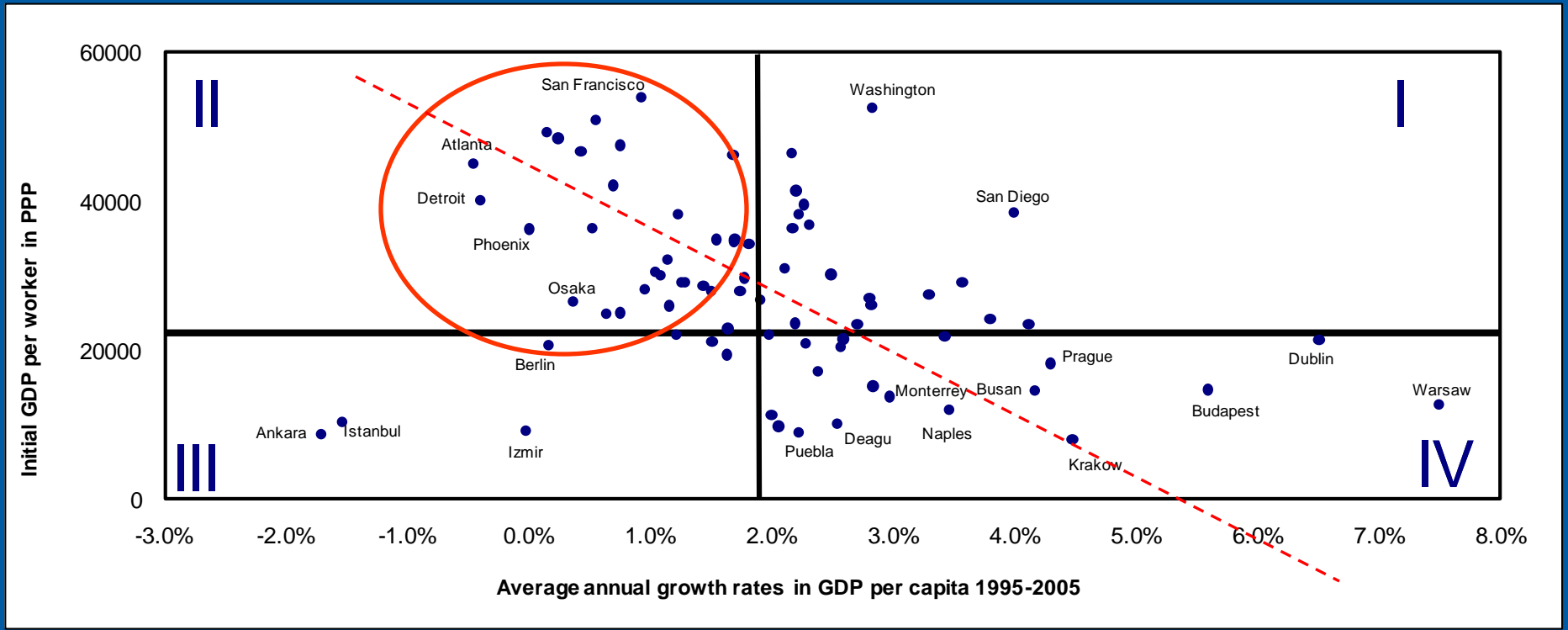
...a significant number of urban regions grow faster than rural regions...and many rural regions are growing faster than urban ones...



- Opportunities for growth exist in all types of regions
- Rural not synonymous with decline

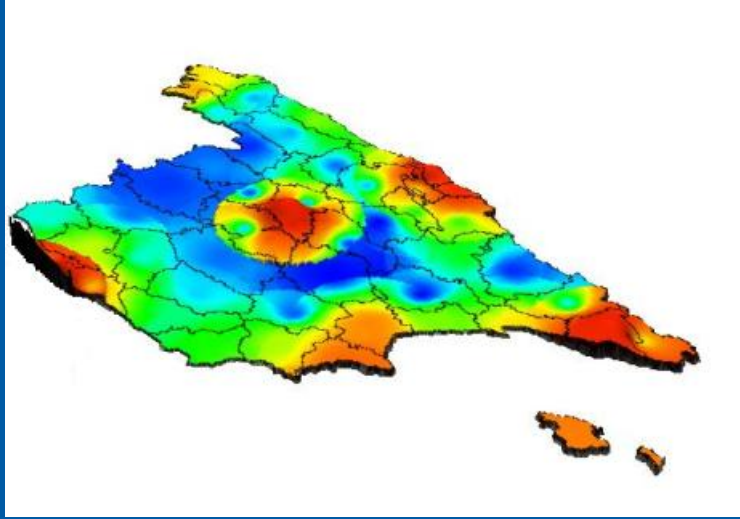
Only 45% of metro--regions grow faster than the national average...

...metro--regions appear to have entered in a process of convergence...

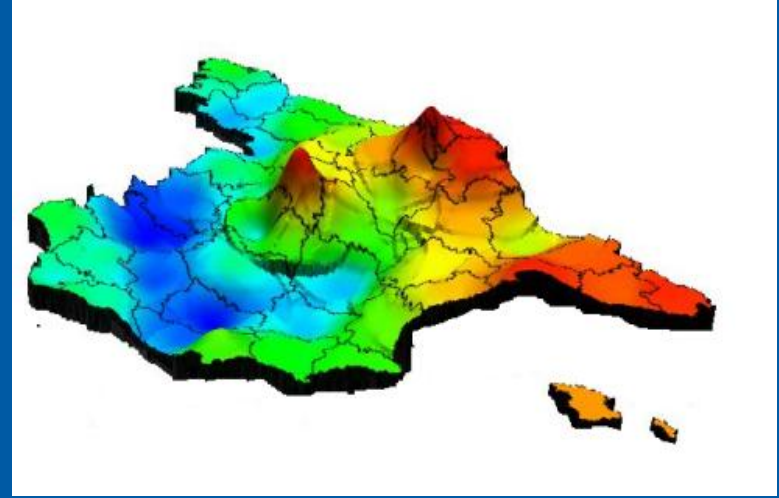


...signs of inefficiencies appear in metro--regions above 7.3 million inhabitants

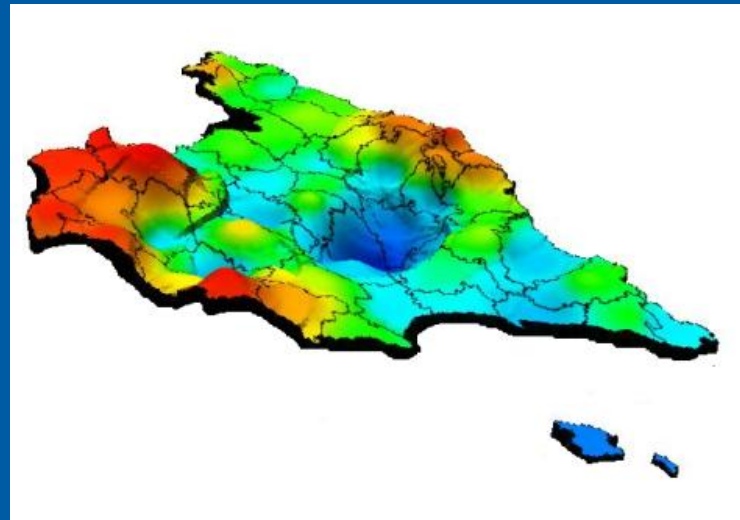
Spain



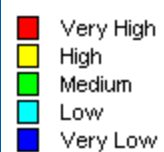
Economic Density
GDP per square kilometre



Labour Productivity
GDP per worker



Economic Growth
Real GDP per capita growth



Stylized Facts – Growth

- ❖ Growth Patterns are very Heterogeneous
 - Possibilities for growth exist in all types of regions

- ❖ Concentration and Growth
 - Concentration not sufficient nor necessary
 - Benefits of concentration not linear nor infinite
 - Diseconomies of scale and congestion costs can hinder growth in agglomerations



What are the main factors of growth at the regional level?

Econometric Analysis

Factors of Regional Growth

Model specification with variables based on :

- ❖ - Neo-classical approach
- ❖ - Endogenous Growth
- ❖ - New-Economic Geography



Regional GDP per capita growth as a function of:

- Initial GDP pc
- Infrastructure
- Human Capital
- Distance to Markets
- Innovation
- Labour Market
- Agglomeration
- Accessibility

Econometric Models

Unit of Analysis: OECD TL2 Regions

Cross-Sectional Model

- ❖ Regress beginning value (1995) on GDP pc growth
- ❖ Measures medium and long-term effects

Panel Model

- ❖ Measures the yearly effects on growth
- ❖ Complements Cross Sectional :
 - *Adds observations increases robustness*
 - *Measures time – lags*
 - *Controls for national effects and time effects*

$$\ln\left(\frac{GPD_{i,t}}{GDP_{i,t-1}}\right) = \alpha + \beta_1 \ln(GDP_{i,t-1}) + \beta_2 \ln(Inf_{i,t-1}) + \beta_3 (Pr_Ed_att_{i,t-1}) + \beta_4 \ln(Ti_Ed_att_{i,t-1}) + \beta_5 ER_t - 1 + \beta_6 \ln(Pat_{i,t-1}) + \beta_7 \ln(GDExp_Bi_{i,t-1}) + \beta_8 \ln(GDExp_G_{i,t-1}) + \beta_9 \ln(Spec_Ag_{i,t-1}) + \beta_{10} \ln(Spec_Man_{i,t-1}) + \beta_{11} \ln(Market_Dist_{i,t-1}) + \beta_{12} \ln(Accesibility_{i,t-1}) + \gamma_j CD_j + \varphi_t TD_t + u_i + e_{i,t}$$

Results of Estimates

Cross-Sectional Model

- ❖ Human capital and innovation positively influence regional growth
- ❖ Infrastructure influences growth only when human capital and innovation are present.
 - By itself it does not impact growth
 - A necessary but not sufficient condition for growth
- ❖ Agglomeration influences growth
- ❖ Distance to markets has positive impact to growth
- ❖ Accessibility influences growth

Panel Model

- ❖ Confirm results of cross-sectional model :
 - Infrastructure (+ and conditional on human capital and innovation)
 - Human Capital (+)
 - Initial income (- conditional)
 - Agglomeration economies (+)
- ❖ Infrastructure and human capital require 3 years to positively influence growth
- ❖ Innovation a longer-term process having a positive effect on regional growth only after a 5 period.

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Key Policy Questions

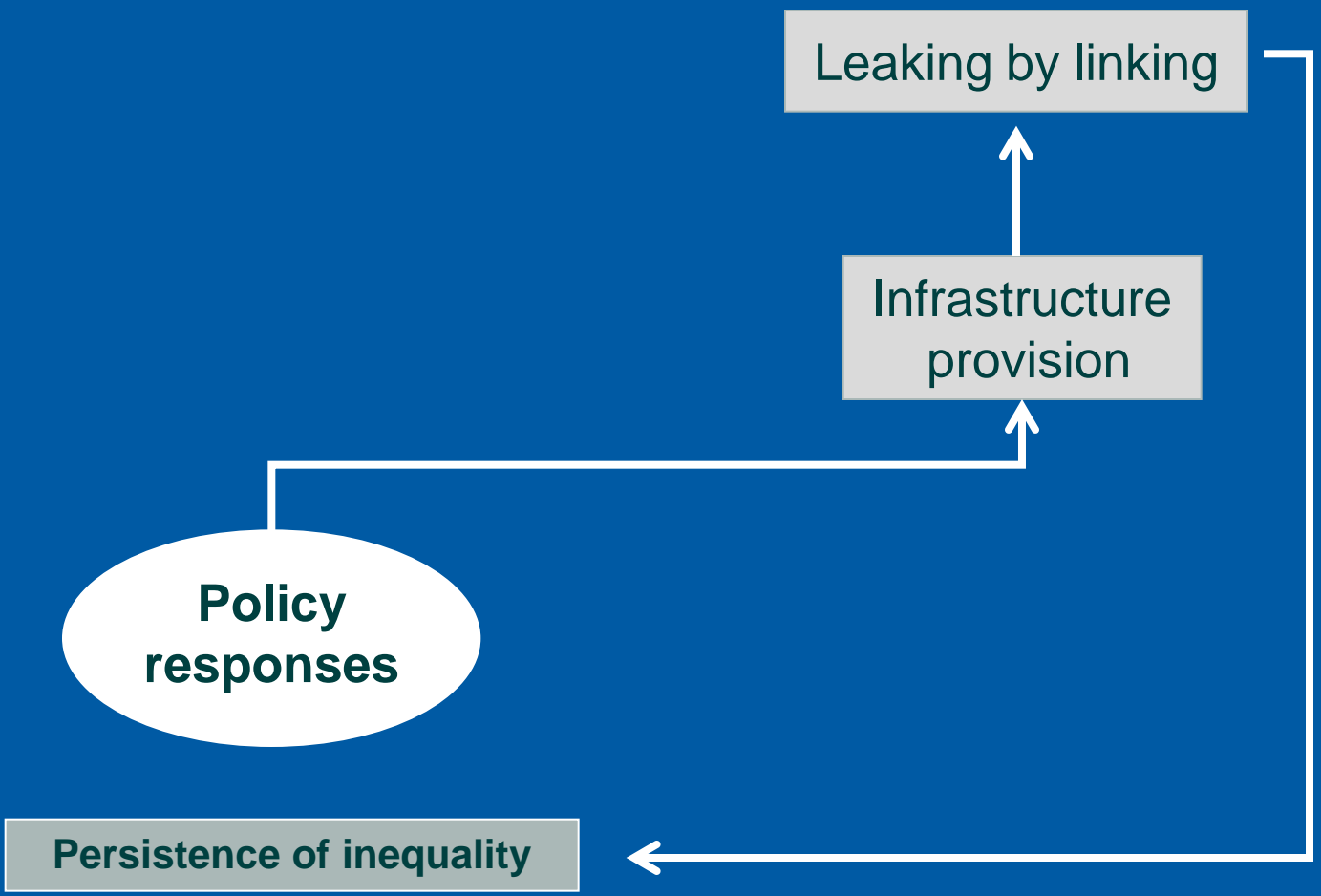
- ❖ Where should investment be targeted:
 - Only in regions with largest impact on aggregate growth?
 - In all regions?

- ❖ Supporting lagging regions is not an economic policy
 - Because lagging regions are marginal to national growth
 - Urban regions drive growth and rural regions are marginal

- ❖ How to prioritize integrated and differentiated policies

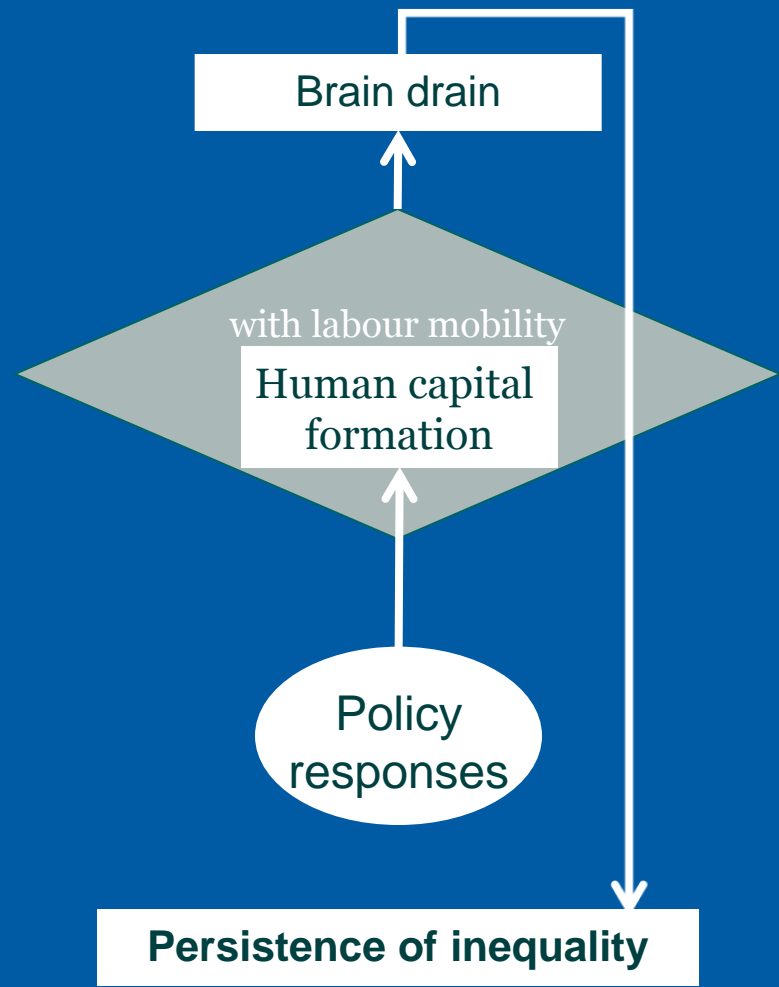
Targeting Investments:

Isolated sectoral action may have unintended outcomes

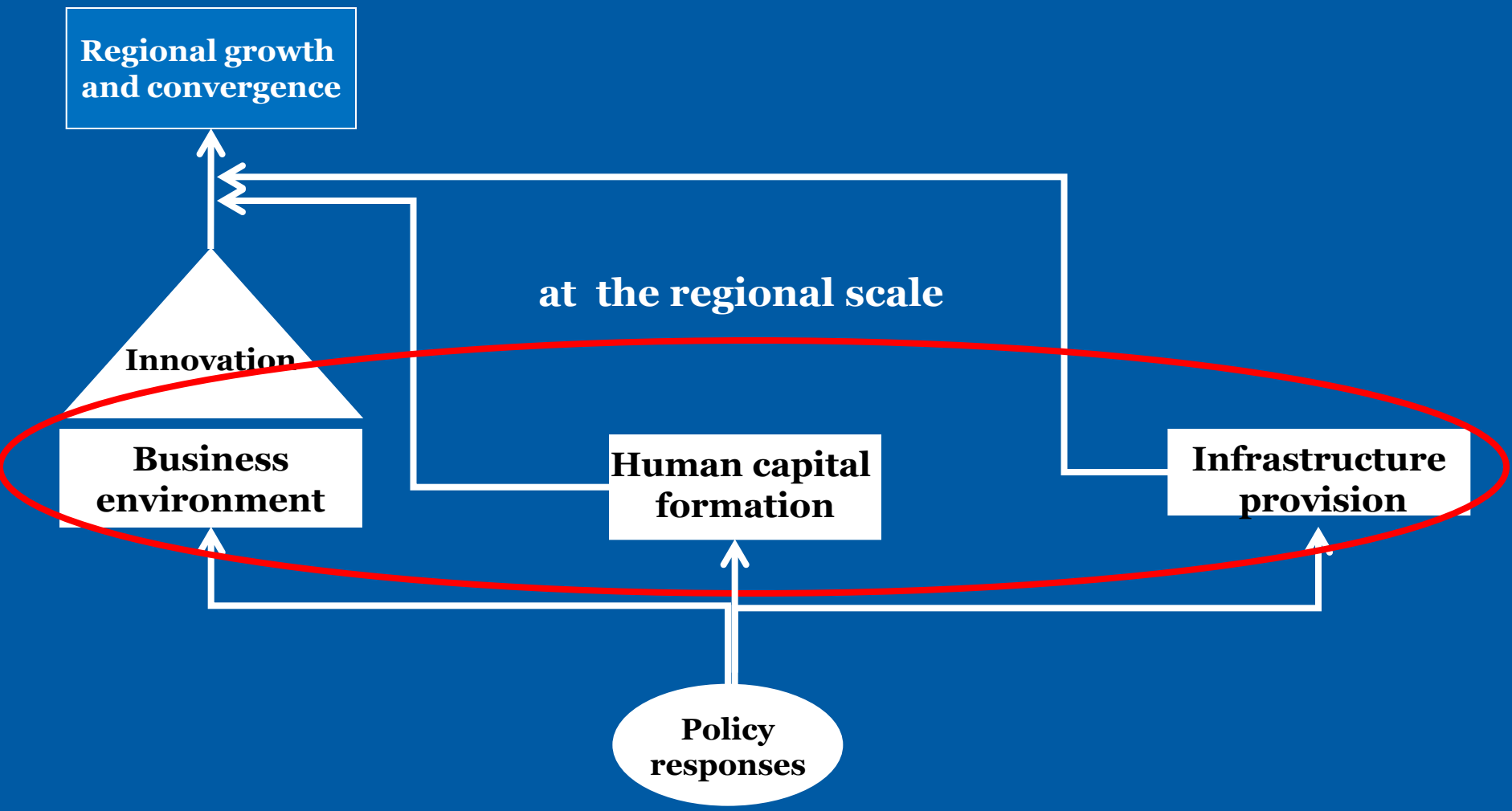


Targeting Investments:

Isolated sectoral actions may have unintended outcomes



Towards a Multidimensional Response



Many countries are reforming in this direction, but the implementation is still a difficult task

Are lagging regions marginal to aggregate growth?

	lagging	leading
Australia	29%	71%
Austria	53%	47%
Canada	26%	74%
Czech Republic	62%	38%
Finland	35%	65%
France	68%	32%
Germany	27%	73%
Greece	-16%	116%
Hungary	34%	66%
Italy	26%	74%
Japan	27%	73%
Korea	23%	77%
Mexico	44%	56%
Netherlands	49%	51%
Norway	61%	39%
Poland	44%	56%
Portugal	54%	46%
Slovak Republic	67%	33%
Spain	48%	52%
Sweden	58%	42%
Turkey	47%	53%
United Kingdom	57%	43%
United States	51%	49%
average unweighted	43%	57%
average weighted	44%	56%

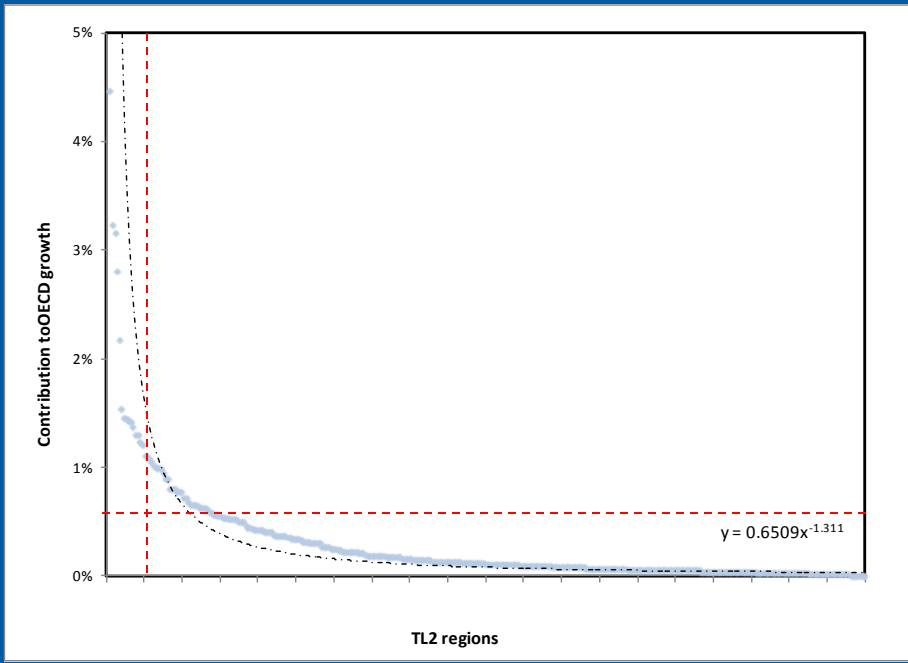
In the last decade, lagging regions have contributed significantly to national growth...

Overall they contributed to 44% of aggregate OECD growth...

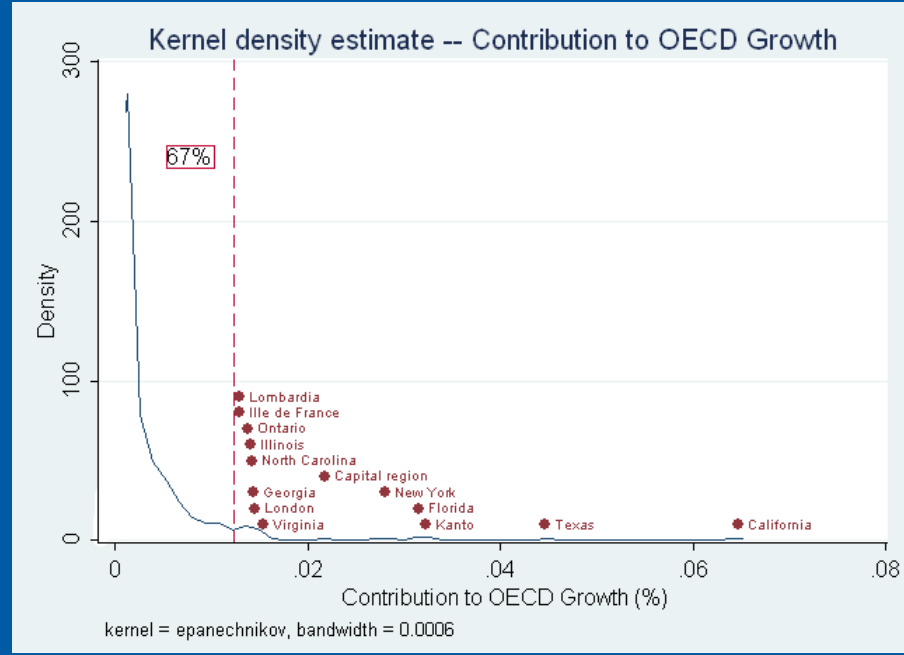
...in 8 countries lagging regions contributed more to national growth than leading regions.

Regional contributions to aggregate growth

Regional contribution to OECD GDP growth by TL Regions over the period 1995-2005



Source: Calculations based on the OECD Regional Database.



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Only 4% of regions contribute to 33% of OECD growth...

... and the remaining 67% comes from all other TL2 regions.

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Growing Lagging Regions Project

Objective of the Project:

- ❖ Investigate successful factors in helping lagging regions catch up
- ❖ Role regional policies have played in this process.

Methodology:

- ❖ Combines analytical methods and a series of case studies.
- ❖ Phase 1&2 focus on analysis
- ❖ Phase 3 focus on case studies aim at deepening the analysis

Goal:

- ❖ Gain knowledge in complementarities that exist in lagging regions
- ❖ Help prioritize portfolio of policies for lagging regions

Taxonomy National Benchmark

Distribution of Taxonomy and Contribution to National Growth

		Growth in GDP pc (1995-2005)	
		Growing (above national average)	Underperforming (below national average)
Initial GDP pc (1995)	Lagging (below 75%)	37 regions (11%)	15 regions (5%)
		contribution to growth = 4%	contribution to growth = 1%
	Quasi-lagging (above 75% and below national average)	<u>61 regions (19%)</u>	<u>103 regions (32%)</u>
		contribution to growth = <u>21%</u>	contribution to growth = <u>17%</u>
	Leading (above national average)	54 regions (17%)	55 regions (17%)
		contribution to growth = 39%	contribution to growth = 17%

Static Analysis

Compare indicators relevant for regional growth b/w “growing” and “underperforming” group

- Population density
 - GDP density
 - Employment rate
 - Unemployment rate
 - Youth unemployment rate
 - Patent applications
 - Patent intensity
 - Business R&D to GDP
 - Government R&D to GDP
 - Higher education R&D to GDP
 - Primary attainment rate
 - Tertiary attainment rate
 - Distance to markets
 - Accessibility to markets
 - Productivity
 - Infrastructure
- Economic mass/thickness of market economies of agglomeration
- Labour utilisation
- Innovation related indicators
- Human capital
- Geography/NEG

Performance of all “growing” regions associated with higher density and productivity...

Average values per group, relative to national averages

	lagging growing	lagging underperforming	quasi-lagging growing	quasi-lagging underperforming	leading growing	leading underperforming
population density	102	98	178	156	612	471
GDP density (PPP yr 2000)	1.9	1.1	4.3	3.2	28.3	17.7
productivity (PPP yr 2000)	31476	29380	54098	50141	72210	56819
employment rate	58%	57%	69%	66%	68%	64%
unemployment rate	9.69	7.07	6.35	8.30	5.86	7.30
youth unemployment rate	24.14	25.49	16.80	21.45	14.84	19.50
patent applications	33	31	271	214	985	514
patent intensity	13.63	11.76	67.14	65.87	124.44	72.52
primary attainment rate over LF	45.20	46.25	28.54	24.36	27.13	30.91
tertiary attainment rate over LF	12.90	13.06	10.76	13.21	9.73	11.21
infrastructure	0.24	0.15	0.29	0.20	0.19	0.20
BERD % GDP	0.34%	0.42%	0.95%	0.89%	1.27%	1.04%
GERD % GDP	0.25%	0.21%	0.23%	0.13%	0.40%	0.17%
HED % GDP	0.41%	0.39%	0.36%	0.36%	0.43%	0.33%
distance to mtk	4.56	4.54	4.58	4.54	4.63	4.58
accessibility to mtk	2.39	2.08	1.59	2.09	2.31	2.81
# regions in each category	37	15	61	103	54	55

Source: Calculations using the OECD Regional Database.

Notes: Lagging= initial GDP per capita <75% of national average, quasi-lagging =75-99% of national average, leading above the national average, growing =GDP per capita growth above the national average rate, underperforming=growth rate below the national average. Data from 1995-2005.

Performance of lagging regions is most associated with infrastructure...

Average values per group, relative to national averages

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Quasi-lagging growing regions are most associated with infrastructure and labour market mobilisation ..

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Performance of leading regions is most associated with innovation...

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Mobility among OECD regions

(results on small TL3 regions in 17 countries)

❖ Rural regions display higher out-migration than urban regions. But once one controls for their productive structure there are no significant outflows from rural regions

➔ Diversify economy and improve productivity also in traditional sectors

❖ Remote rural regions experience significant drains in their labour force

➔ Improve “connectivity” of regions; strengthen linkages among regions

❖ Persistency of out-migration is associated to economic fragility

➔ Beyond short-term adjustment, regions may struggle to improve productivity with a shrinking labour base

M. Brezzi and M. Piacentini

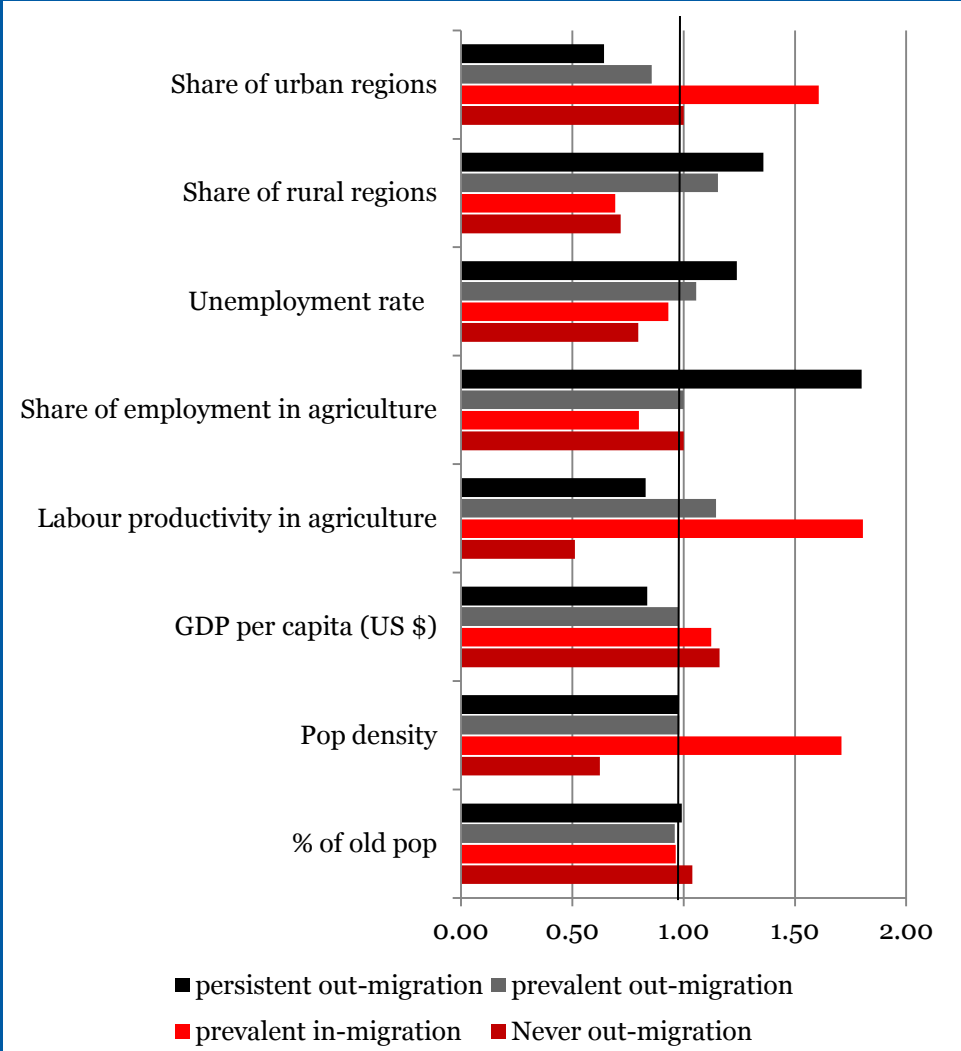
“Labour mobility and development dynamics in OECD regions” GOV/TDPC/TI(2010)1



Persistency of out-migration and fragility of regions

Regional characteristics by degree of persistence in out-migration (total regions =1)

Are persistent net out-flows of population (ten years) twinned with economic distress?



Outmigration is localized over time. Beyond short-term adj., regions may struggle to improve productivity with a shrinking labor base

Thank you