



# Linking aggregate and case study/micro research

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## Identities and the disaggregation of aggregates: partitioning GDP per head and GDP per head growth

- suppose one partitions GDP per head and GDP per head growth into elements that depend on
  - hourly productivity,
  - annual hours worked, and
  - the employment rate

$$\frac{\textit{Gross Domestic Product}}{\textit{Resident Population}} \equiv \left( \frac{\textit{Gross Domestic Product}}{\textit{Annual Hours Worked}} \times \frac{\textit{Annual Hours Worked}}{\textit{Employed Population}} \right) \times \frac{\textit{Employed Population}}{\textit{Resident Population}}$$

## An example: a decomposition of per capita GDP growth in the EU, and the US, 1951-2002

	GDP per head growth	GDP per hour growth	Annual hours worked per person employed growth	Employment rate growth
1950-73				
EU11	3.83	4.51	-0.64	-0.04
C4	5.50	6.11	-0.28	-0.33
USA	2.42	2.98	-0.61	0.05
1973-89				
EU11	1.78	2.26	-0.83	0.35
C4	1.93	2.96	-0.57	-0.46
USA	2.02	1.28	-0.18	0.92
1989-02				
EU11	1.55	1.89	-0.38	0.04
C4	2.58	1.43	-0.17	1.33
USA	1.60	1.51	0.20	-0.12

## Another example: a decomposition of per capita GDP growth in the EU, and the US, 1951-2001

Year	Real GDP growth (in PPS)	Midyear population growth	Civilian employment growth
1950-73			
EU11	4.58	7.51	0.71
C4	6.23	7.26	0.39
UK	2.89	4.79	0.49
USA	3.86	14.37	1.49
1973-89			
EU11	2.35	5.73	0.92
C4	2.66	7.31	0.27
UK	2.07	1.25	0.46
USA	2.99	9.66	1.88
1989-92			
EU11	1.91	3.54	0.40
C4	2.88	2.95	1.62
UK	2.06	3.35	0.49
USA	2.76	11.62	1.04

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Immediate lessons: Europe's growth is not substantially worse than that of the United States

- in 1989-2002 EU11 productivity growth (1.89%) exceeded US productivity growth (1.51% per year)
- the employment rate rose marginally in the EU11, while in the US it declined slightly
- annual hours worked per person employed rose in the US (0.2% per year), while they fell in the EU11 (-0.38% per year)

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## Implications for comparisons of France and the United States

- French hourly productivity stood at 60% of the US figure in 1960, 82% in 1973 and 111% in 2002.
- the average number of hours of work of French people declined from 103%, to 98% and to 78% of the US figure

## Comparing levels the EU, Japan and the USA in 2002 (share of the US figure)

	GDP per head	GDP per hour	Employment rate	Annual hours worked per person employed
EU11	0.71	0.92	0.94	0.82
C4	0.55	0.65	0.89	0.96
UK	0.72	0.81	1.01	0.88
Japan	0.73	0.72	1.07	0.95

## Comparing levels: Europe versus the US

- in terms of level the EU11 lies nearly 30 per cent beneath the US, but
- 'a significant fraction of GDP in the US does not improve welfare' (Gordon, 2002)
- the gap is also substantially due to the facts that
  - a smaller percentage of the population works (94 per cent of the US level)
  - Europeans spend fewer hours at work than their US counterparts (82% of the US figure)
- the remaining productivity divide is substantially due to retail and wholesale services



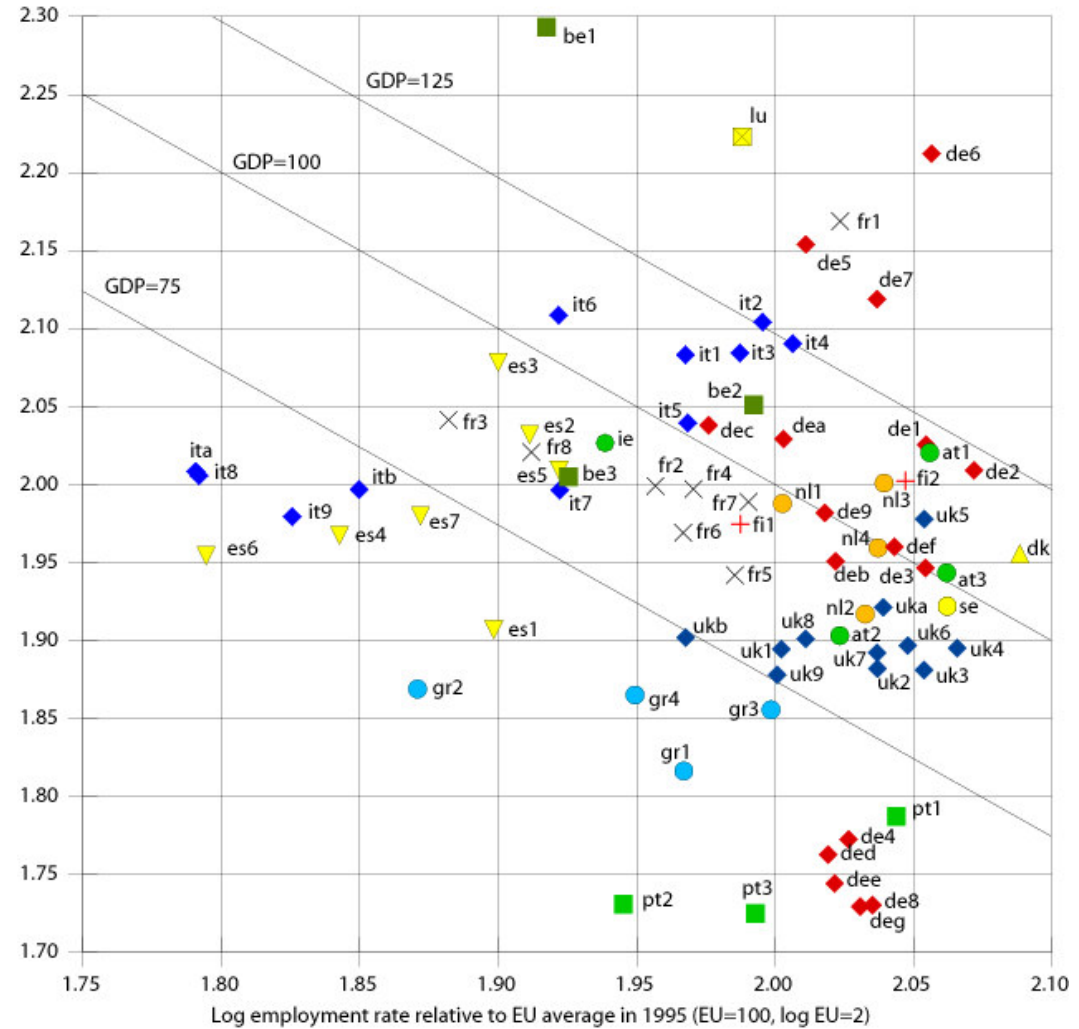
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## New questions: Europe versus the US

- differences employment rates and in working hours reflect a combination of
- the preferences of Europeans for leisure rather than work (welfare implications and sustainability) and
- insufficient employment growth, noting that
- differences in employment rates have **SIGNIFICANT** regional and national dimensions

# EU regional disparities: productivity and employment rate variations

Log GDP per person employed relative to EU average in 1995 (EU=100, log EU=2)

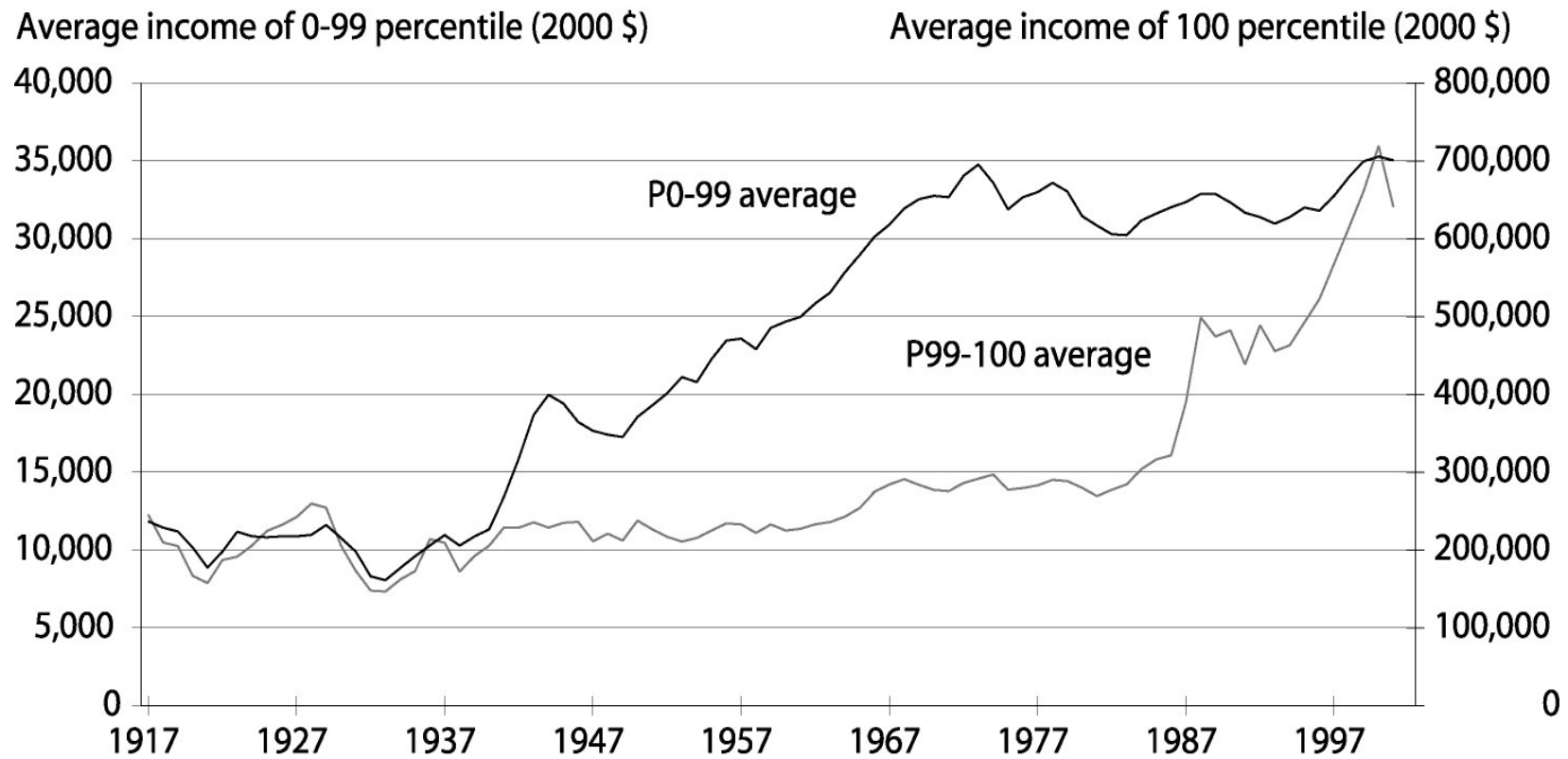


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## Who gets what?

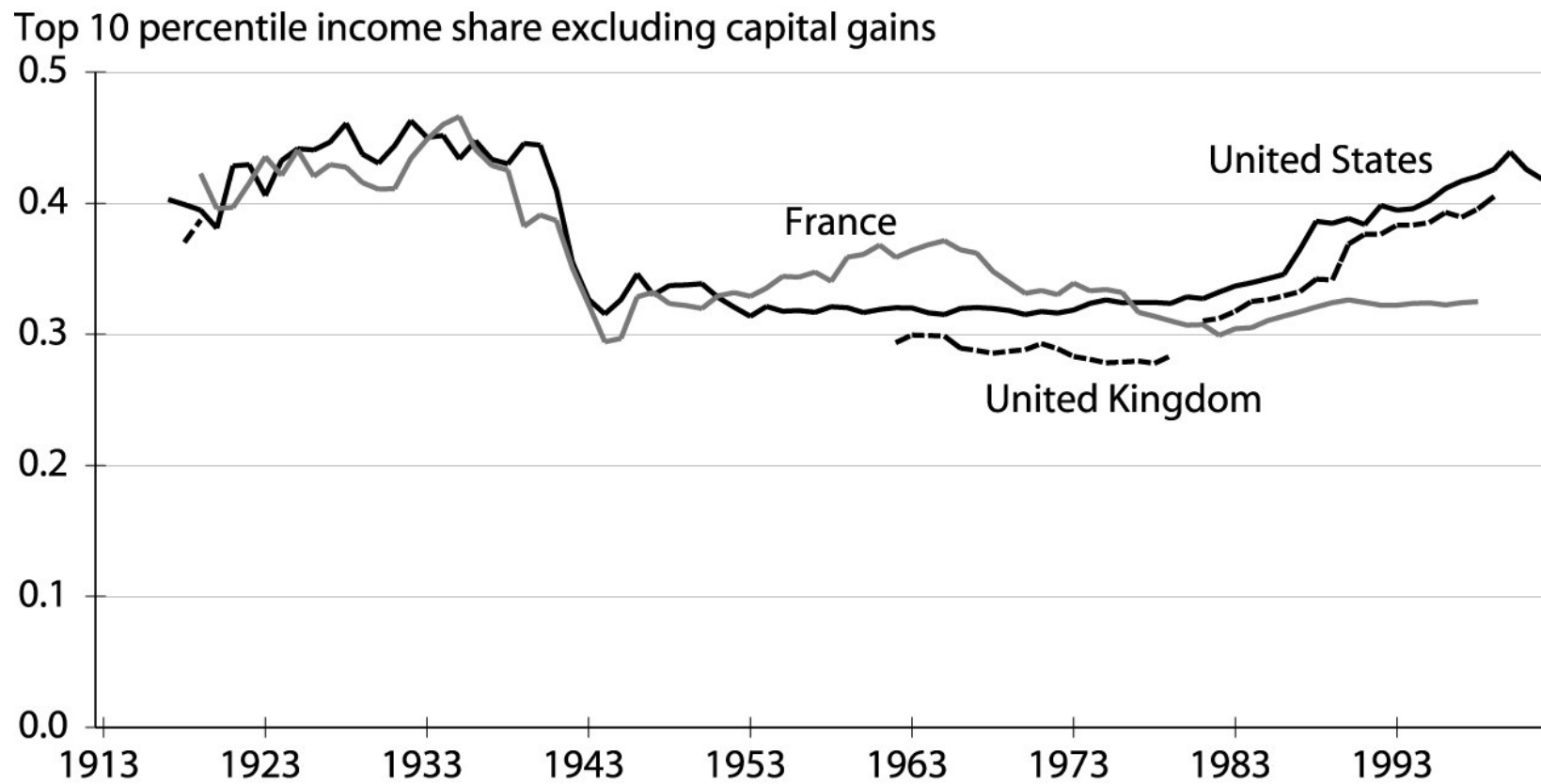
- of the total increase in US income in 1973-2000
  - nearly 60% went to the top decile, though most of the gains were made at the top of this group, so that
  - 28.8% of the total increase went to the top centile

## US: average income of tax units



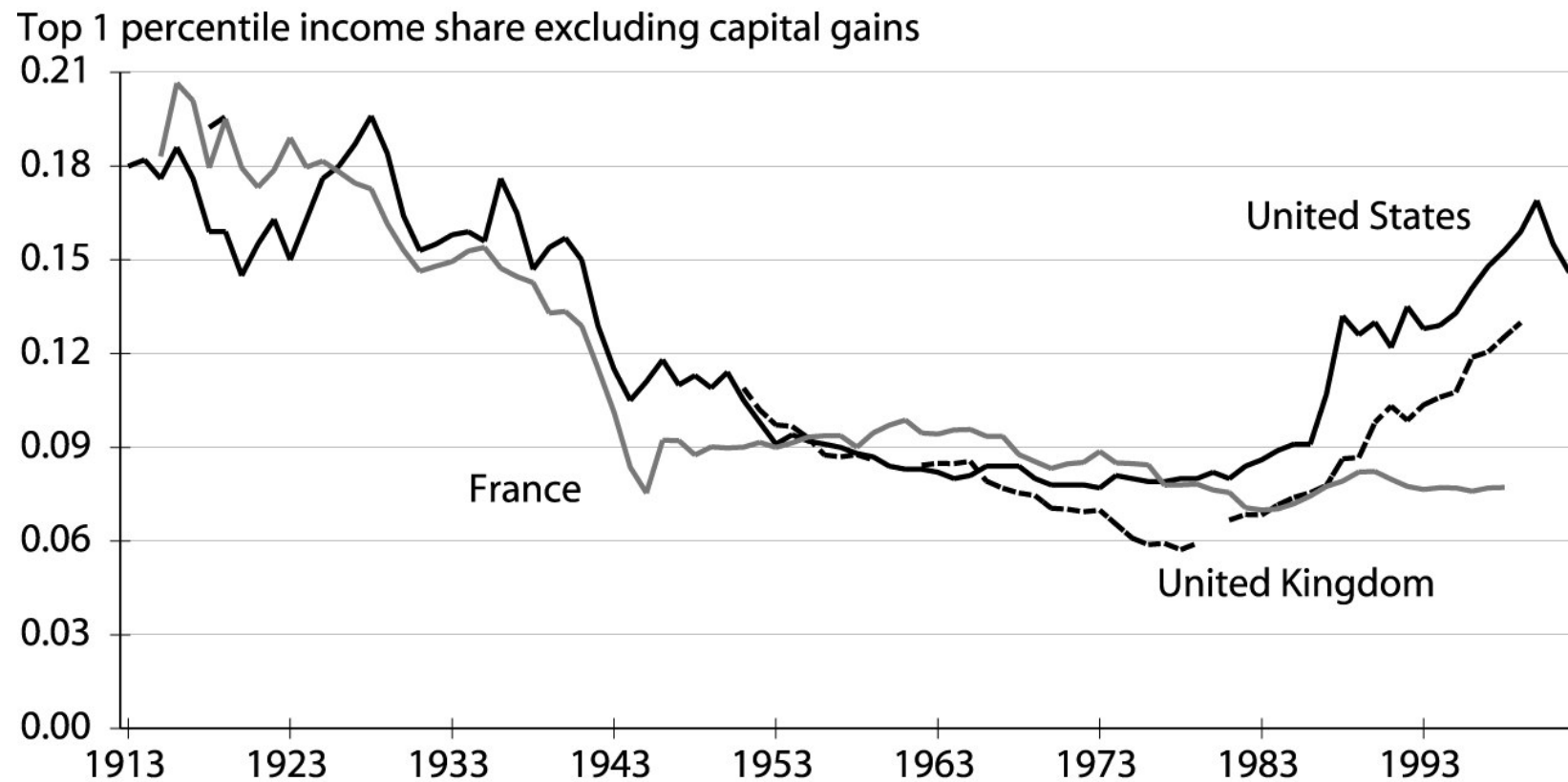
Source: Piketty and Saez

## Top decile income share: US. UK and France



Source: elaborated from Piketty and Saez, Atkinson and Salverda

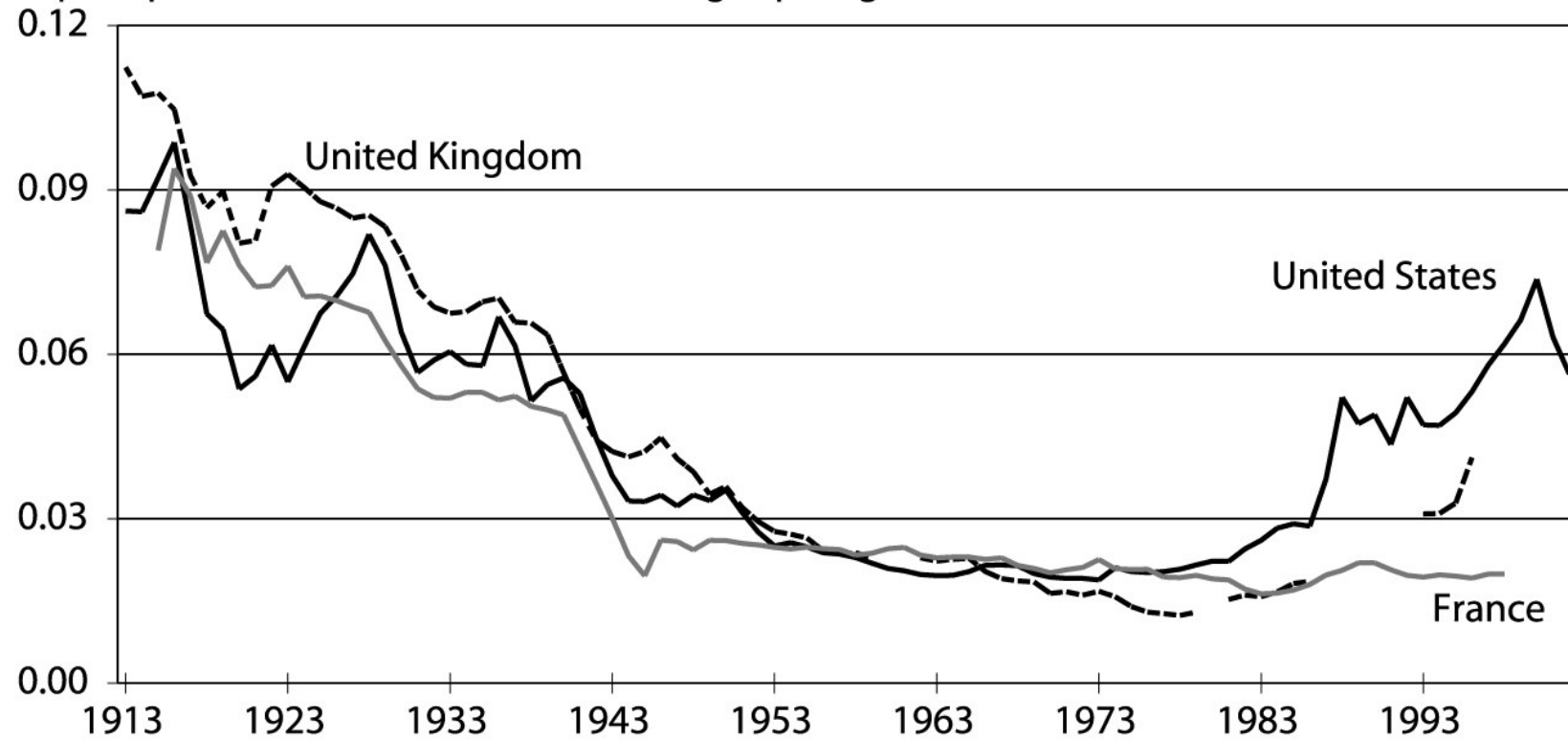
## Top percentile income share: US, UK and France



Source: elaborated from Piketty and Saez, Atkinson and Salverda

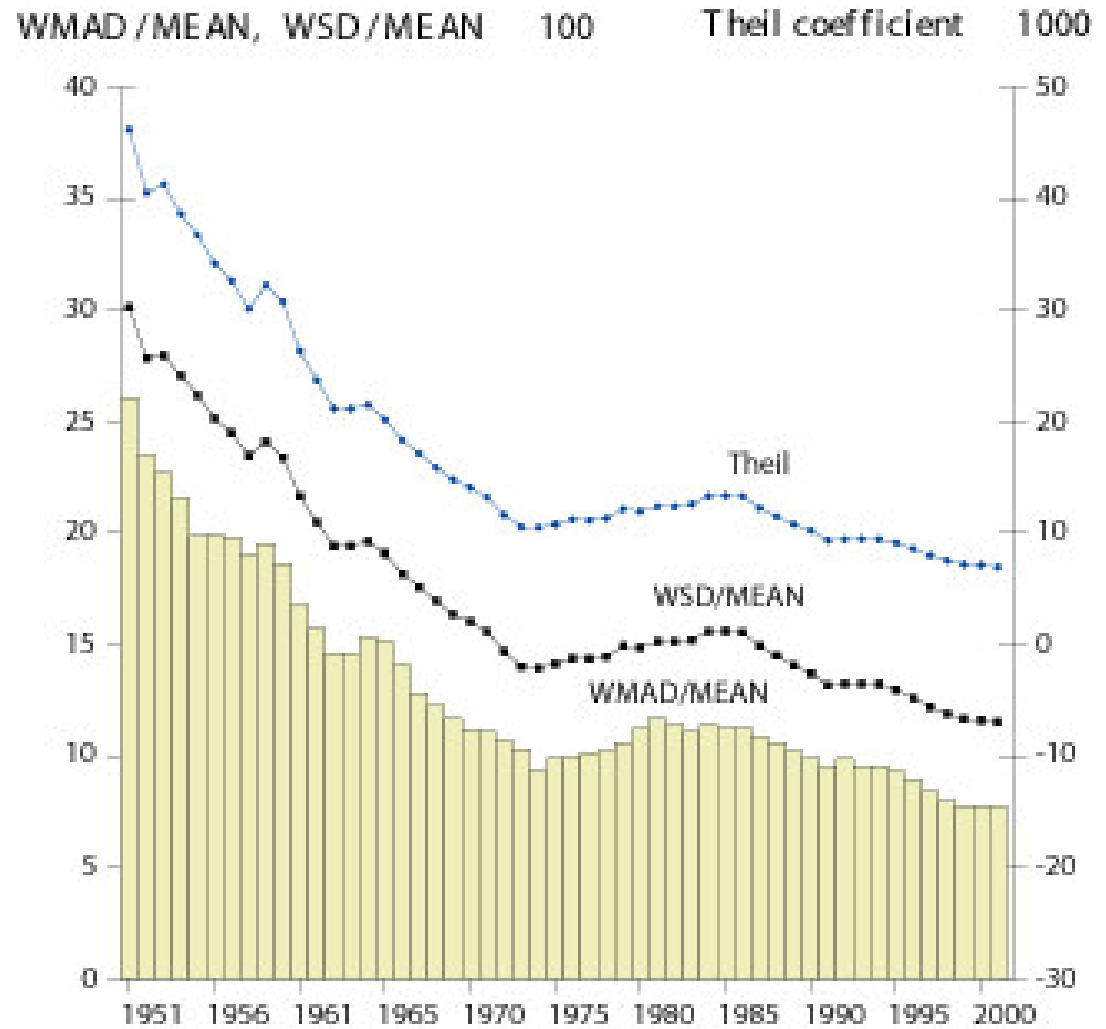
## Top 0.1 percentile income share: US, UK and France

Top 0.1 percentile income share excluding capital gains



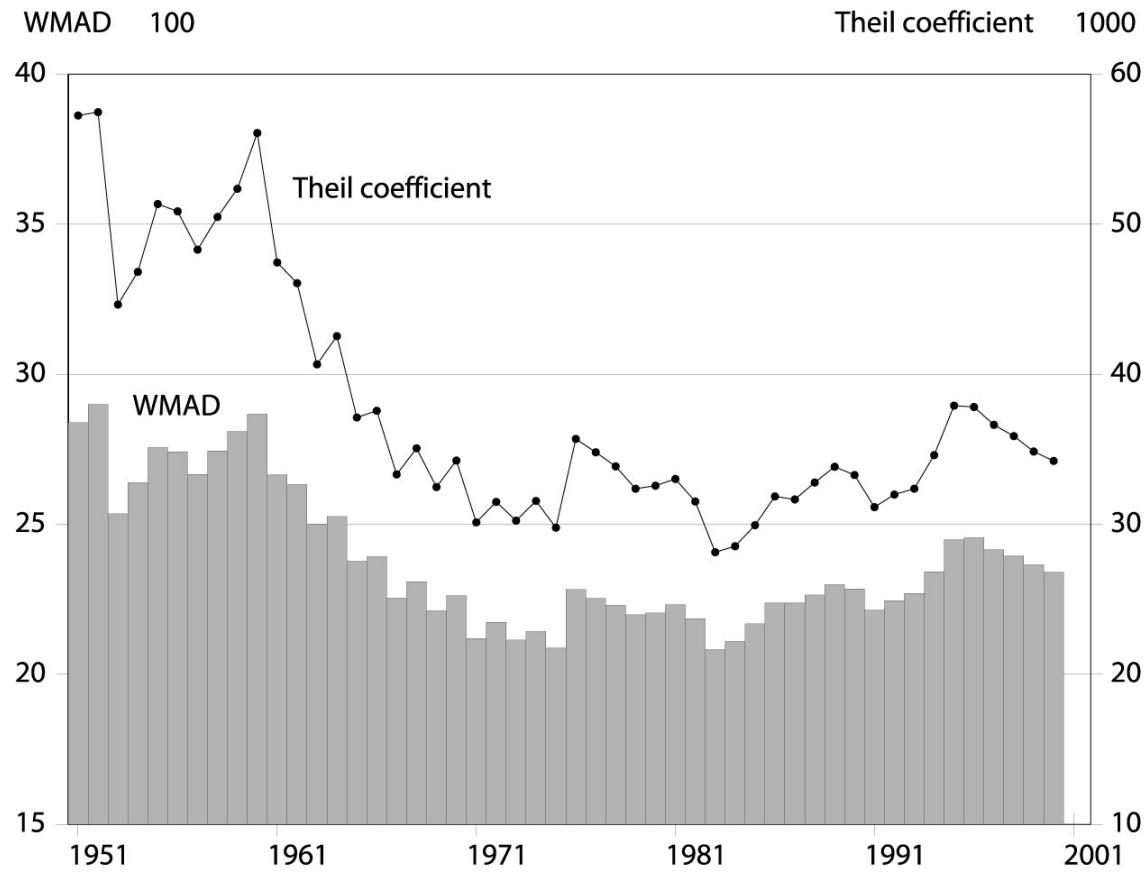
Source: elaborated from Piketty and Saez, Atkinson and Salverda

# National convergence in the EU15

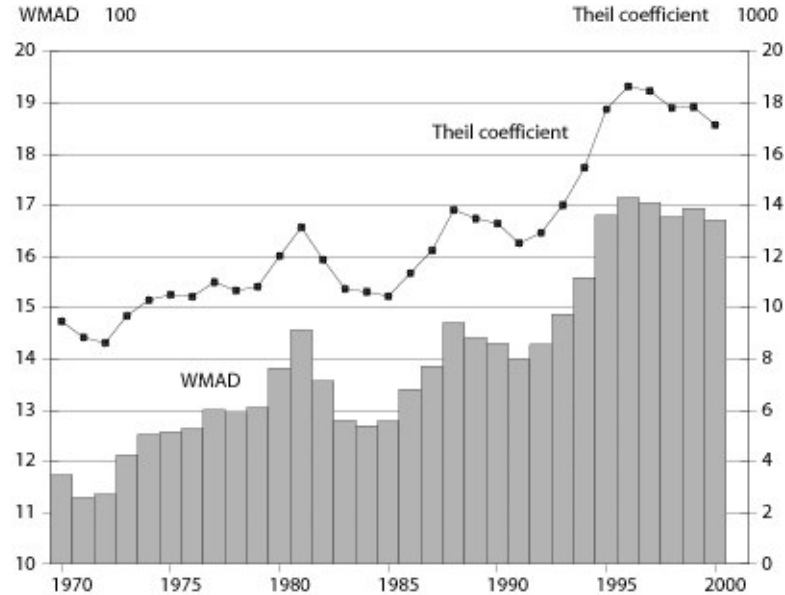
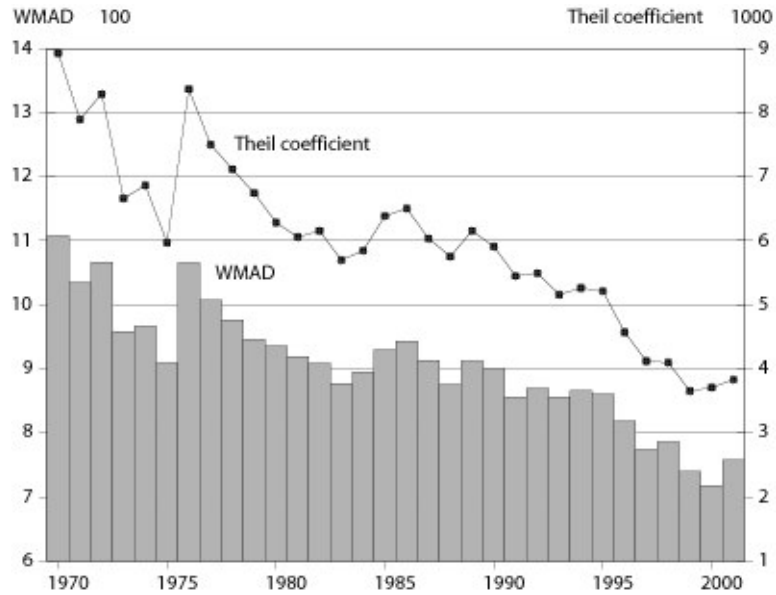




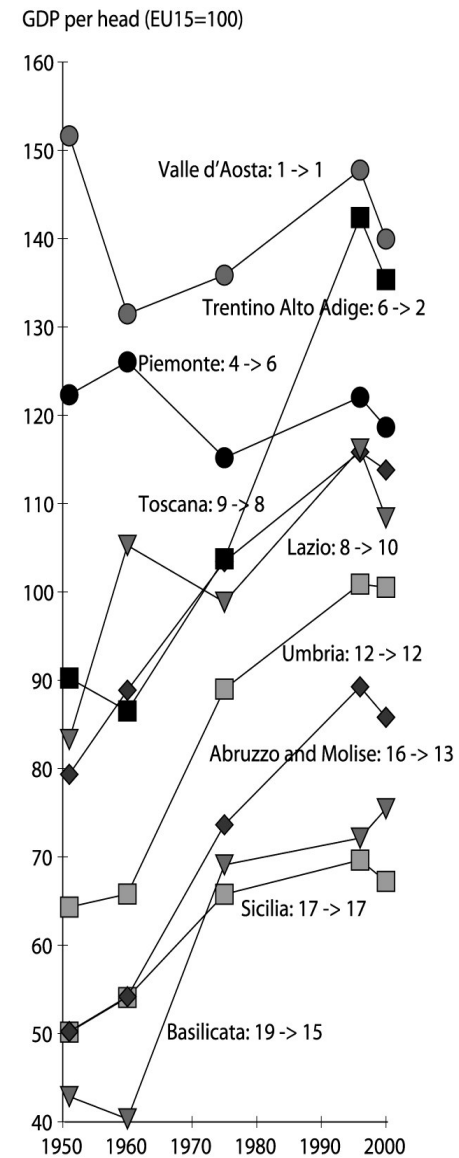
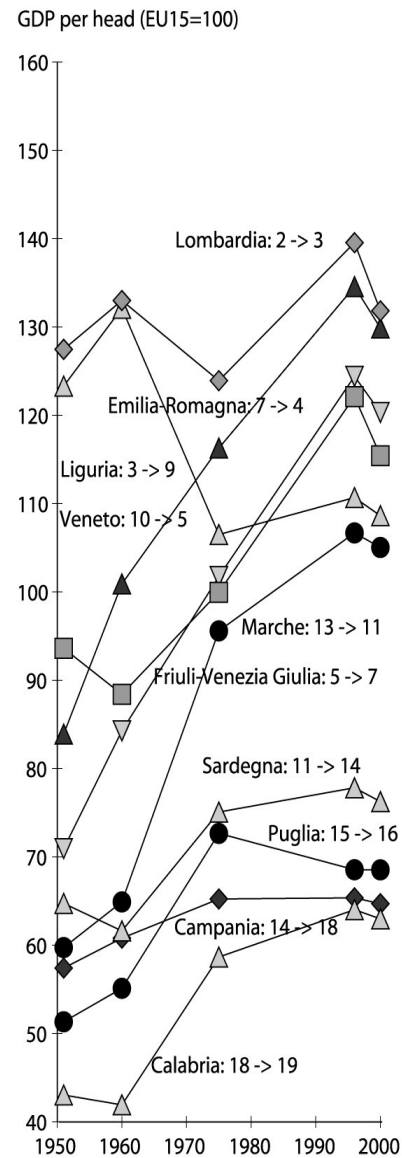
# Italian regional inequality



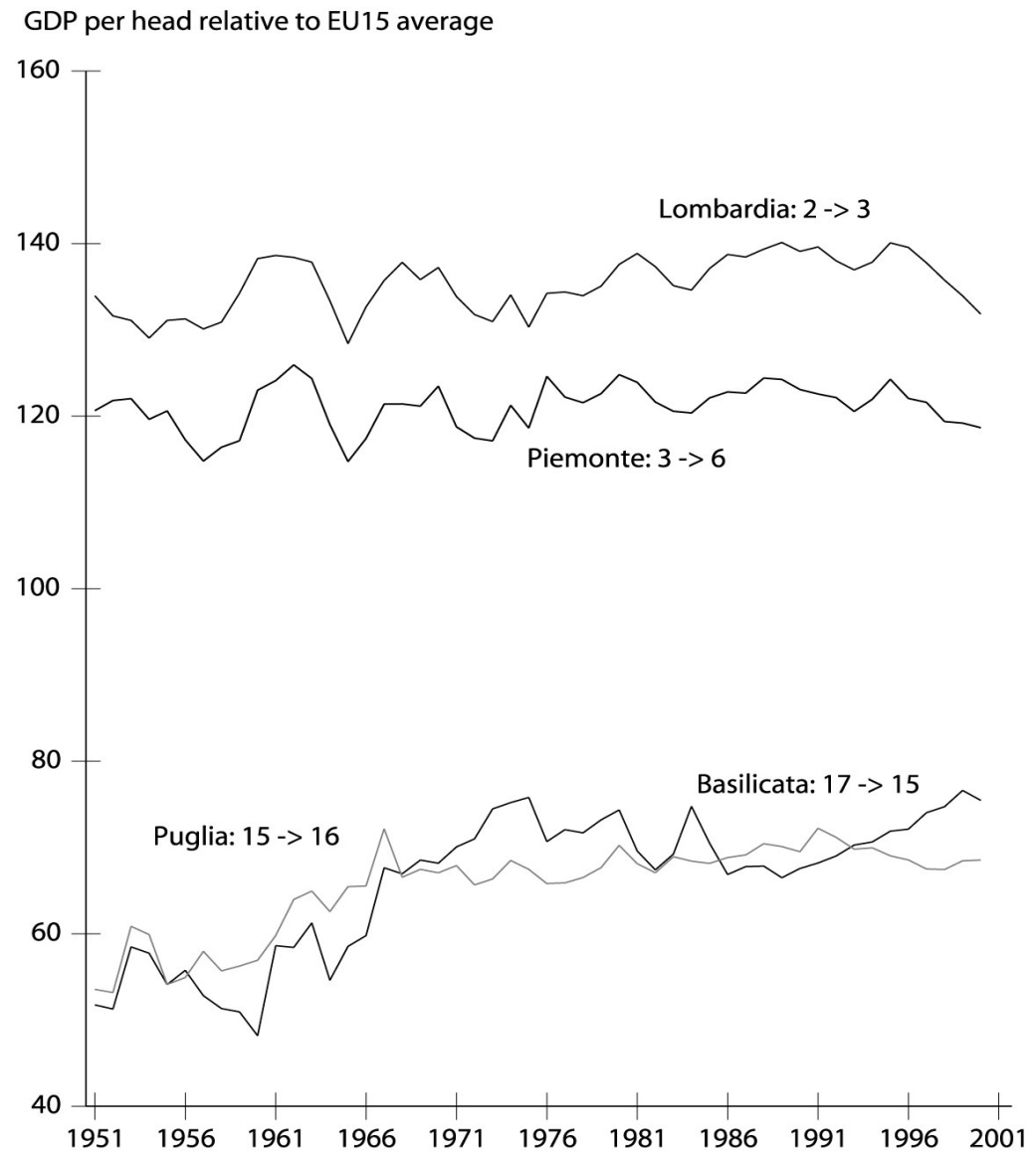
# Italy: Productivity convergence and employment rate divergence



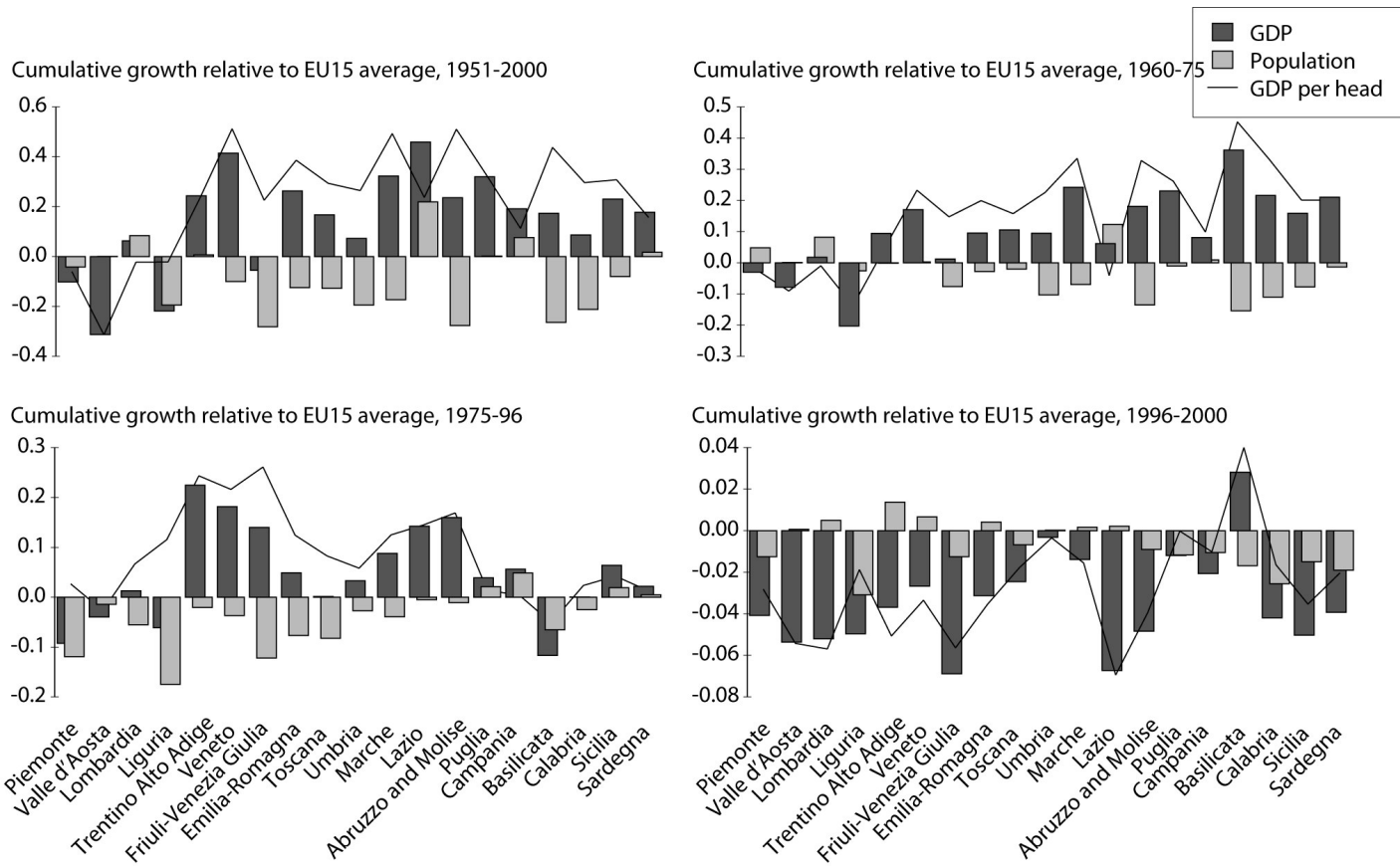
# Italian regional trajectories



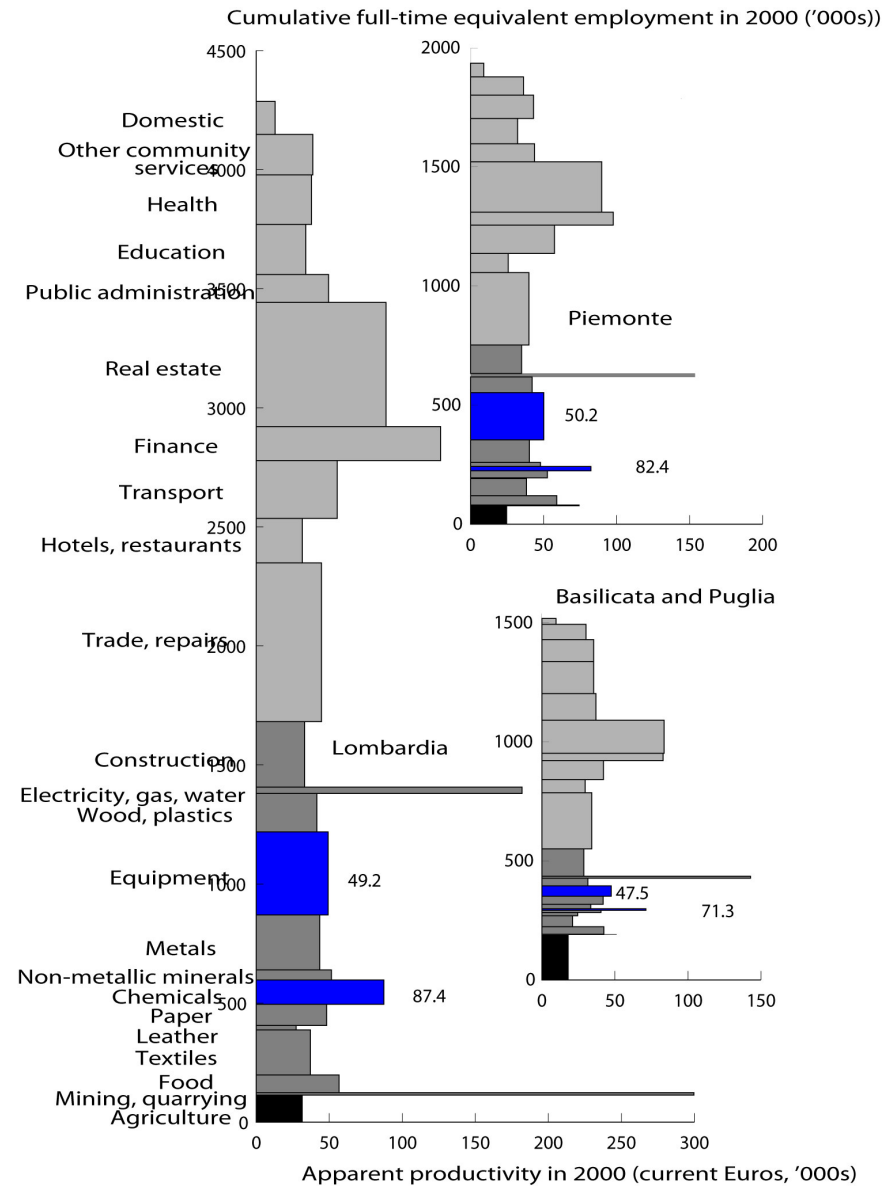
# Italy: north versus south



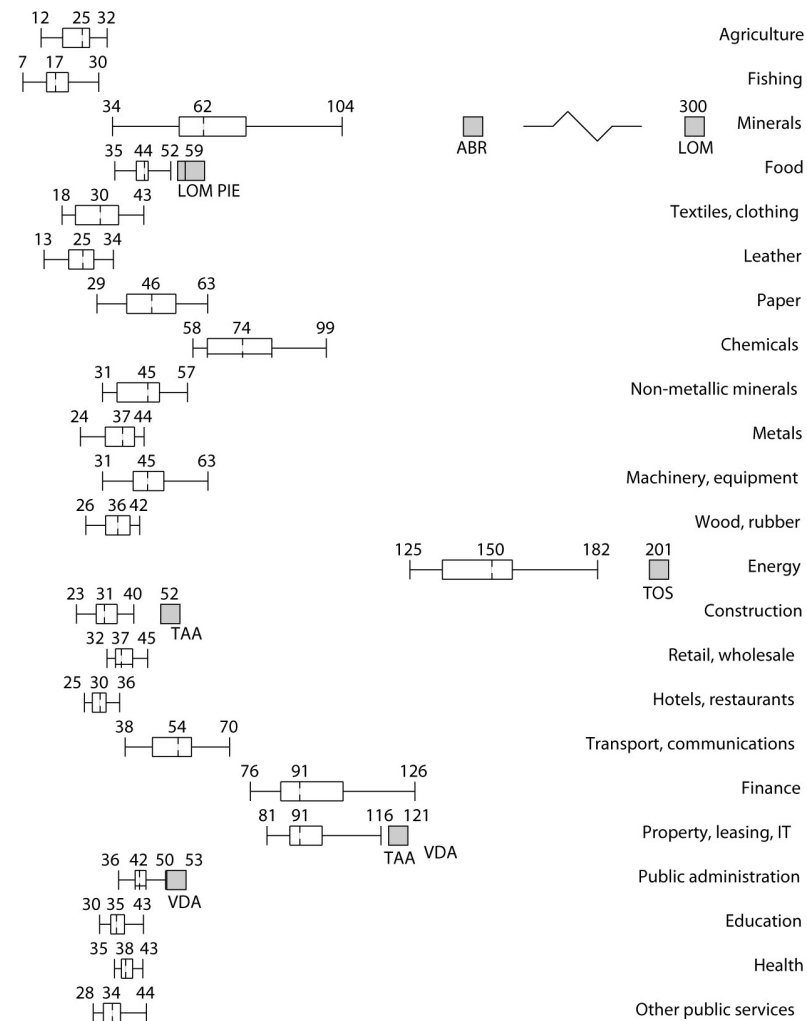
# The roles of output and demographic growth



# The role of industrial structure



# Sectoral productivities



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## Disaggregated aggregates and micro trends

- Disaggregation of aggregate trends to examine the dynamics of individual industries (growth – decline)
- Relationships between sectoral trends and changing trajectories of enterprises

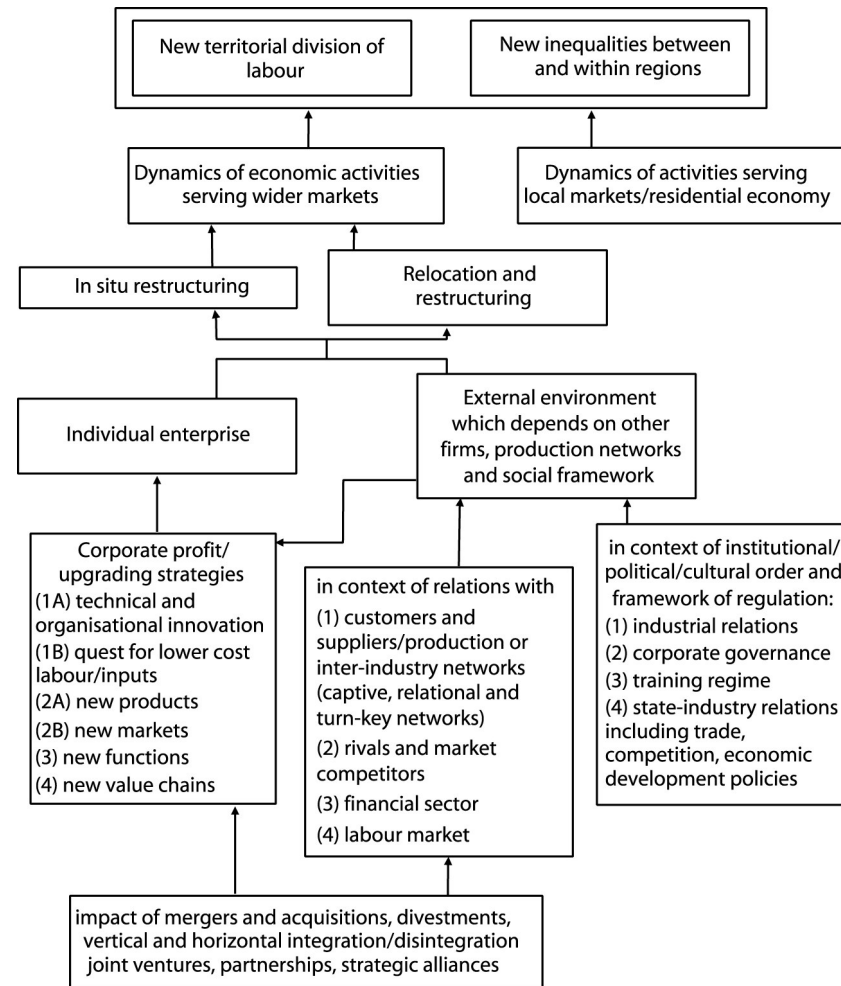


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## Identifying of a counterfactual

- What would have happened to Basilicata's relative productivity, if there had not been a significant transfer of vehicle manufacturing to the region. In 1980-95 employment in transport equipment increased from 1,300 to 4,900 FTEs, while productivity increased from 84 to 182% of the national average. If the complex were located in another area, if the productivity of the Basilicata transport equipment sector had remained at 84% of the national average, and if employment had changed at the national rate, declining to 831, the average productivity of Basilicata would have increased at 0.91 times the national rate rather than 1.02 times. The arrival of the car complex in Melfi added nearly 11 percentage points to Basilicata's relative productivity growth, transforming what would have been a further falling behind in terms of productivity into an actual catch-up.

# Aggregate trends and underlying micro trends



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## Geography and development (2): micro-foundations of regional dynamics

- Evolution of capitalist enterprises and their profit and upgrading strategies
  - cost reduction
  - commercially relevant products
  - new markets
  - different functional roles
  - changing chains/disinvestment
- Their environment

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## The Italian car sector

- Decline of well-paid manual jobs in the north-west
- Refocusing of manufacturing operations in the south
- Hierarchical international division of labour
- Reflecting (interdependent)
- Oscillating commitment to diversification, move towards higher value added and commercial-related functions that implied
- Lack of research and model development
- Failed entry into emerging economies
- Global sourcing