

# The Speeds of Europe – an analysis of regional disparities across the EU

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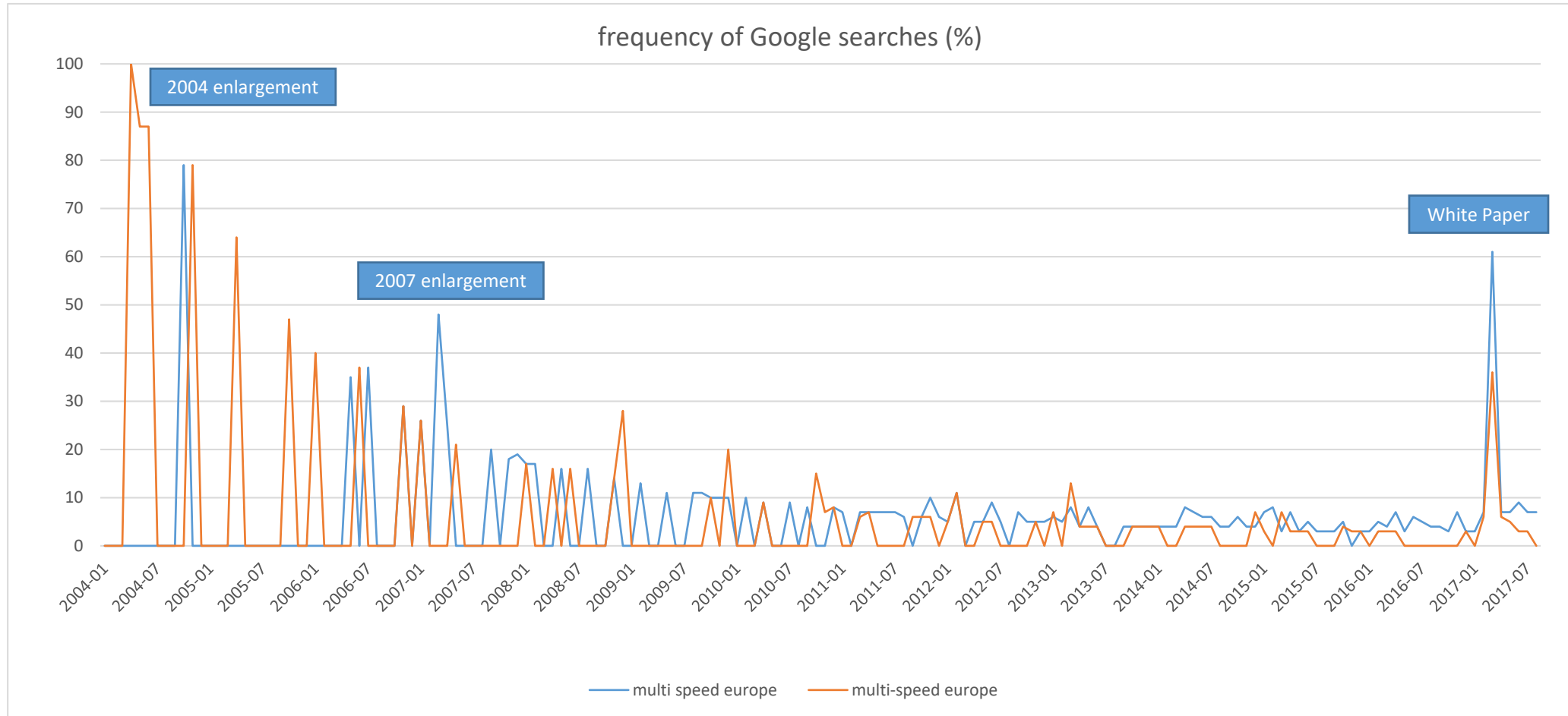
# Europe at a Crossroads

The EU has been facing challenges in recent years

- Accession of new members (RO, BG, HR)
- Financial crisis
- Migration crisis
- Perceived rises in social inequalities
- Lack of confidence in EU institutions
- Rise of populism
- Brexit

Multi-Speed Europe: a solution? a reality?

# Multi-Speed Europe



Frequency of the search terms „multi-speed europe“ and „multi-speed europe“ on Google since 2004. Google Trends data, own representation.

# Multi-Speed Europe: a brief clarification

“Those who want to do more...” (Juncker, 2017)

→ closer cooperation on some issues (already existing in some cases: patent law, transaction tax, Euro)

## The “core countries” narrative

- historically meant the North-South divide - reawoken in Euro crisis
- more recently used for East-West divide, contrasting older and newer member states
- often carries a normative component (“leaders and laggards”, “dutiful vs. lazy”, etc.)

## Possible consequences of Multi-Speed Europe for newer Member States

- further alienation
- incentive for further integration (benefits increasing step-by-step)
- comply-or-opt-out: the “core countries” continue to set the direction of policies

# EU27 - Economic realities

- *Developments in working life in Europe (2016)*: large discrepancies in nominal hourly earnings (ex. €28 in Denmark, Belgium, Luxembourg, less than €5 in Romania, Bulgaria, Lithuania)
- Full-time employment rate below 2006 levels until 2015, part-time employment has grown – in 2015 it was 14% above the 2006 level.
- Low-skilled workers especially affected by labour market developments
- Large disparities with respect to risk of poverty (household income below 60% of median national income), severe material deprivation (the inability to afford certain goods and services) or households with very low work intensity (less than 20% of full work capacity)

# Convergence: Literature Review

- Broad picture: slow income convergence between countries, with regional income and employment disparities increasing  
Rodriguez-Pose and Gill 2003; Terrasi 2000; Cappelen et al. 2003, Meliciani 2006, Maza and Villaverde 2004
- Criticism of conventional beta-convergence approaches: misspecification of the model, not taking into account distortionary factors, use of inappropriate data  
Cheshire & Magrini, 2000, Petrakos, Rodriguez-Pose & Rovolis, 2005, Quah, 1996
- We supplement existing literature by providing an updated perspective on the distribution of inequality for all phases of EU expansion, thus taking a closer look at the core-periphery divide, and decomposing inequality into its determinants.

# The Theil Index of concentration

Inequality indicator - part of Generalized Entropy Indicators

$$T = \sum_{i=1}^n \left[ \frac{a_i}{A} \ln \left( \frac{\frac{a_i}{A}}{\frac{b_i}{B}} \right) \right]$$

$a$  and  $b$ : value of some variable (e.g. GVA or population) for each group,  
 $A$  and  $B$ : sum of the respective variables over all the groups.

- **Additively decomposable** for different levels of spatial aggregation and determinants of inequality → combined decomposition (regions, countries, employment, productivity, etc.)
- Often used in spatial inequality analysis (e.g. Bracalente and Perugini 2010; Haughton and Khanker 2009; Faíña and López-Rodríguez 2004; Terassi 2000)

Contributions of the groups can be either positive or negative; equal share of both variables → ratio equals 1, contribution will be zero → values between 0 and infinity



# Data

## **Variables:**

- Gross Value Added (GVA) in 2005 constant EURO
- employment
- Population

**Data source:** European Regional Database (ERD) by Cambridge Econometrics

**Sample:** 189 regions

- Timeframe 1991-2014
- NUTS 2 level

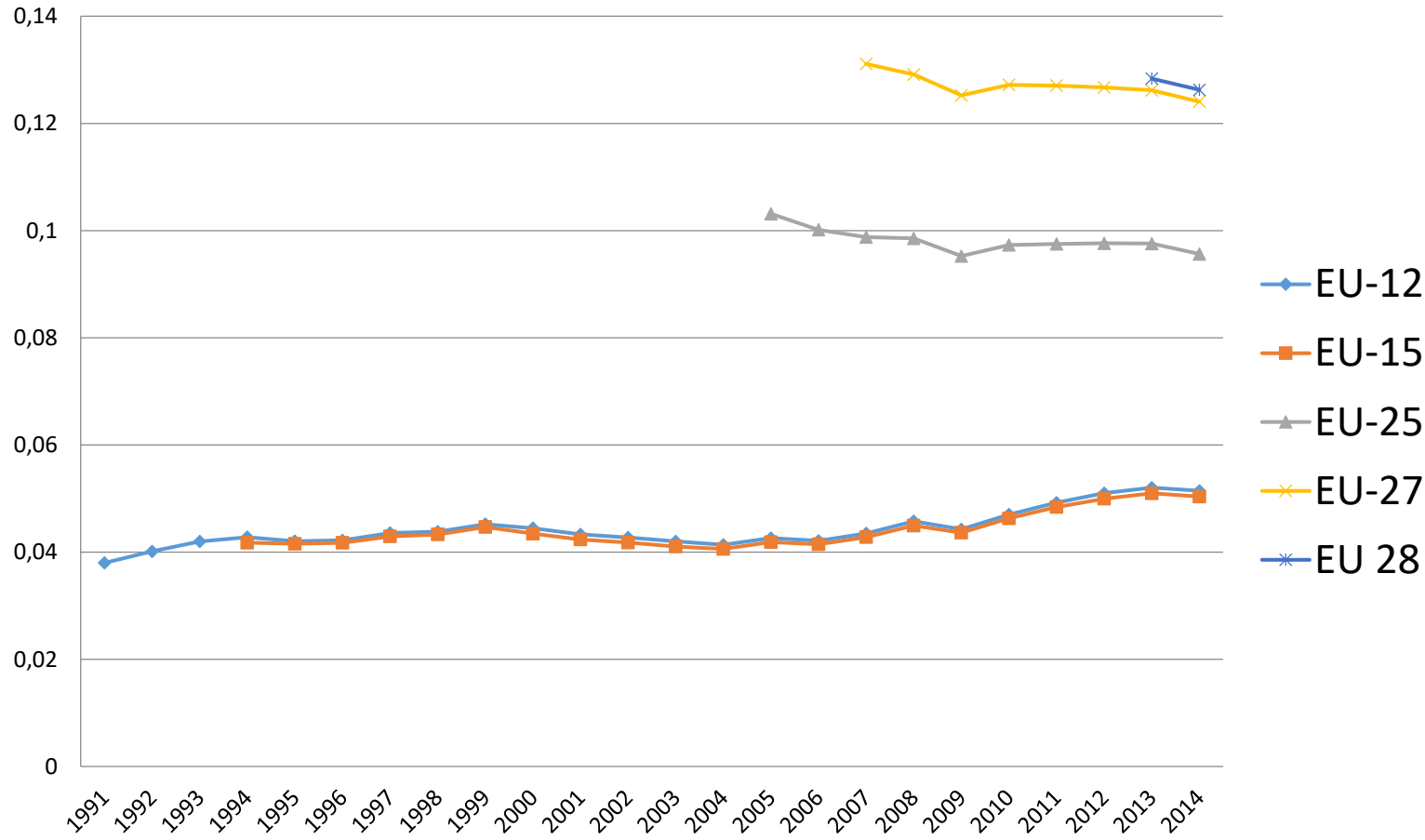
NUTS 1 data is used for Belgium, Germany, the Netherlands, Greece and the UK

NUTS 0 is used for Malta, Luxemburg, Latvia, Lithuania, Cyprus and Estonia

We eliminate a number of regions due to their remote geographical positions

# Results

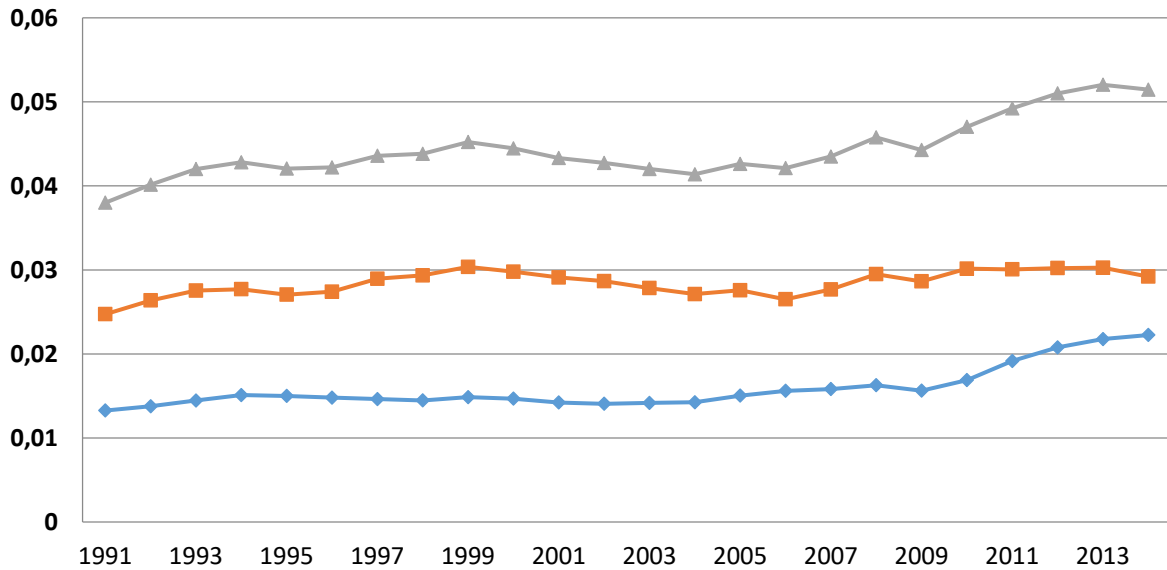
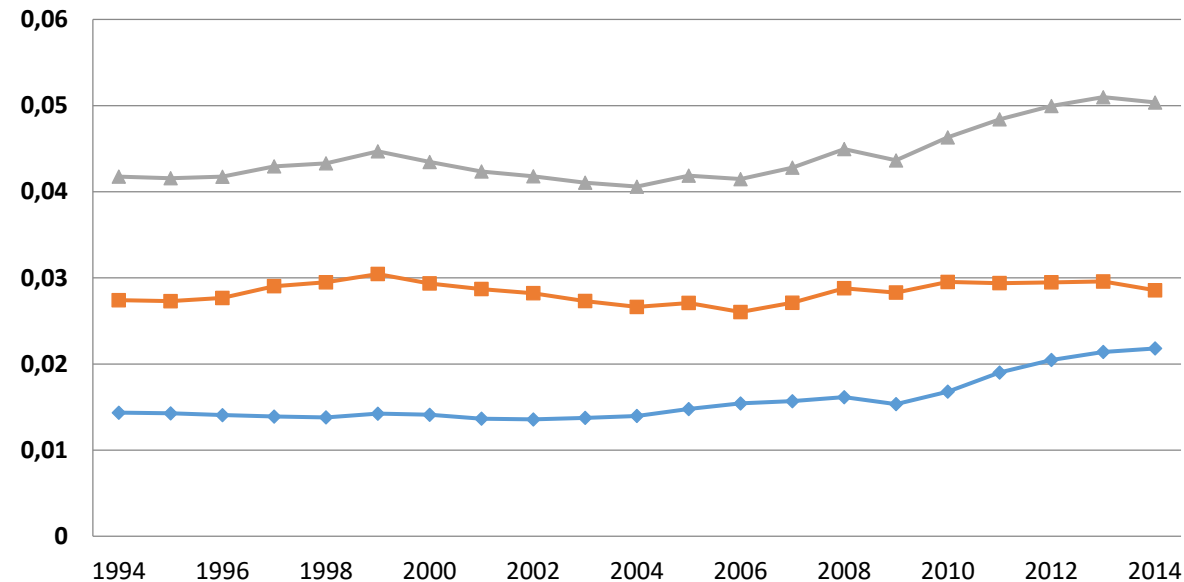
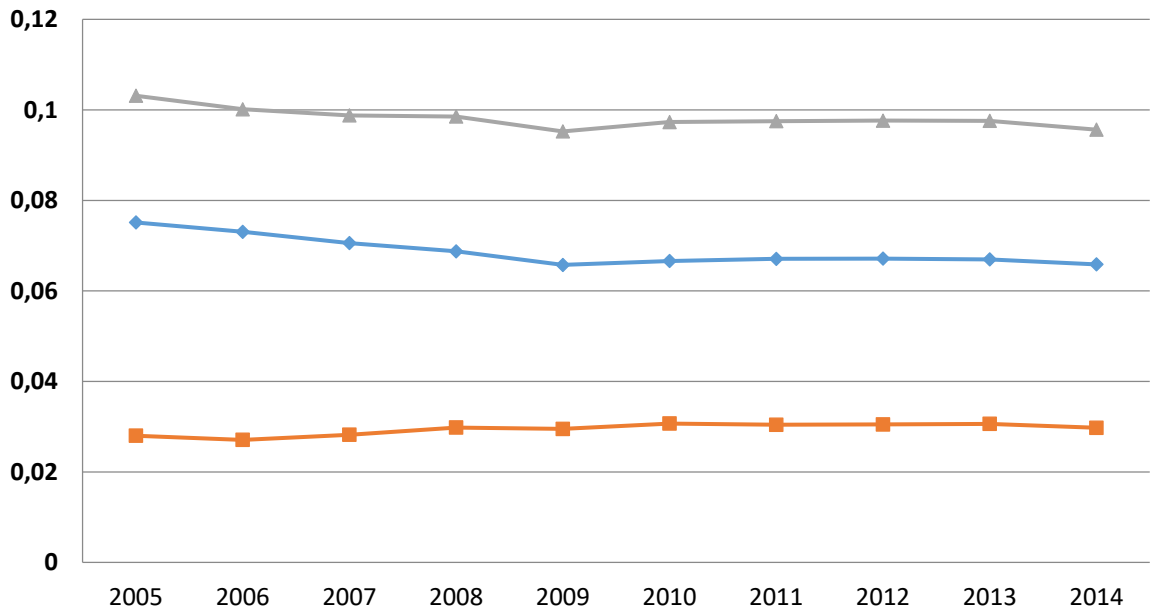
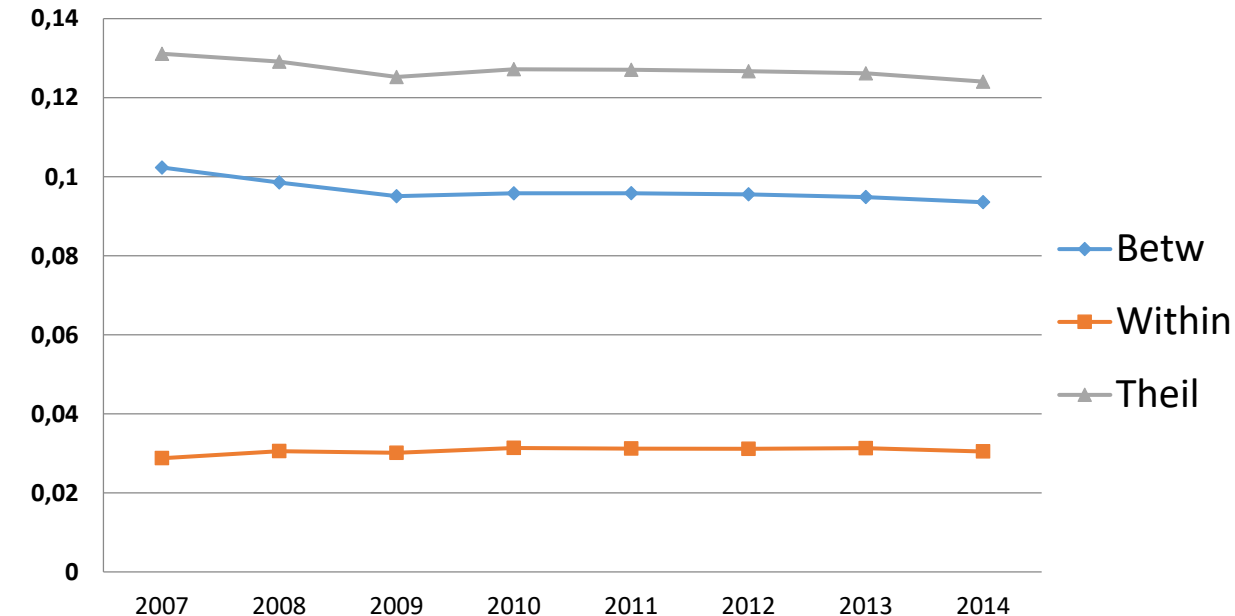
## Theil Index



Distribution of GVA relative to population.

→ recent EU enlargement waves **increased overall inequality** dramatically

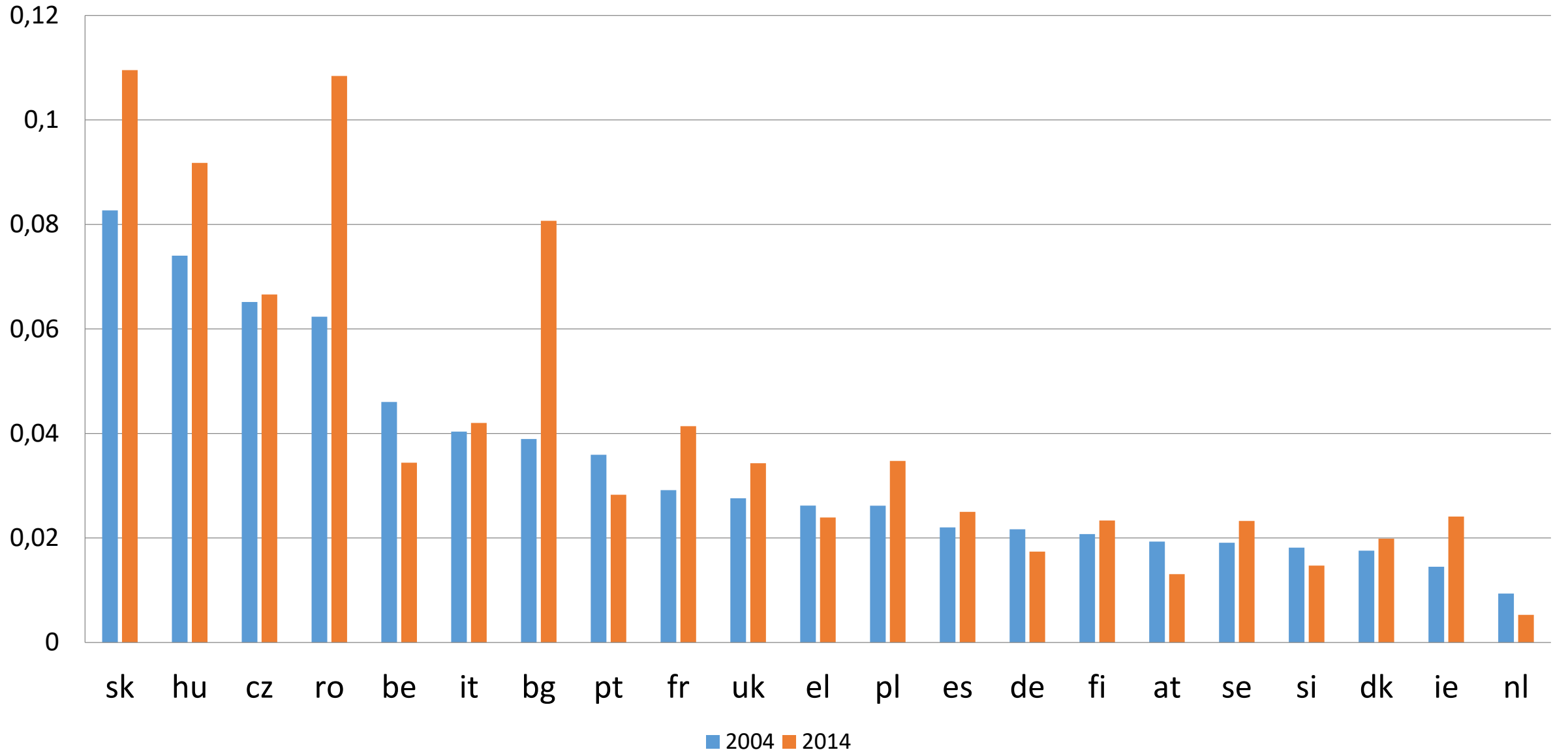
Can further be decomposed into a between-country and a within-country component.

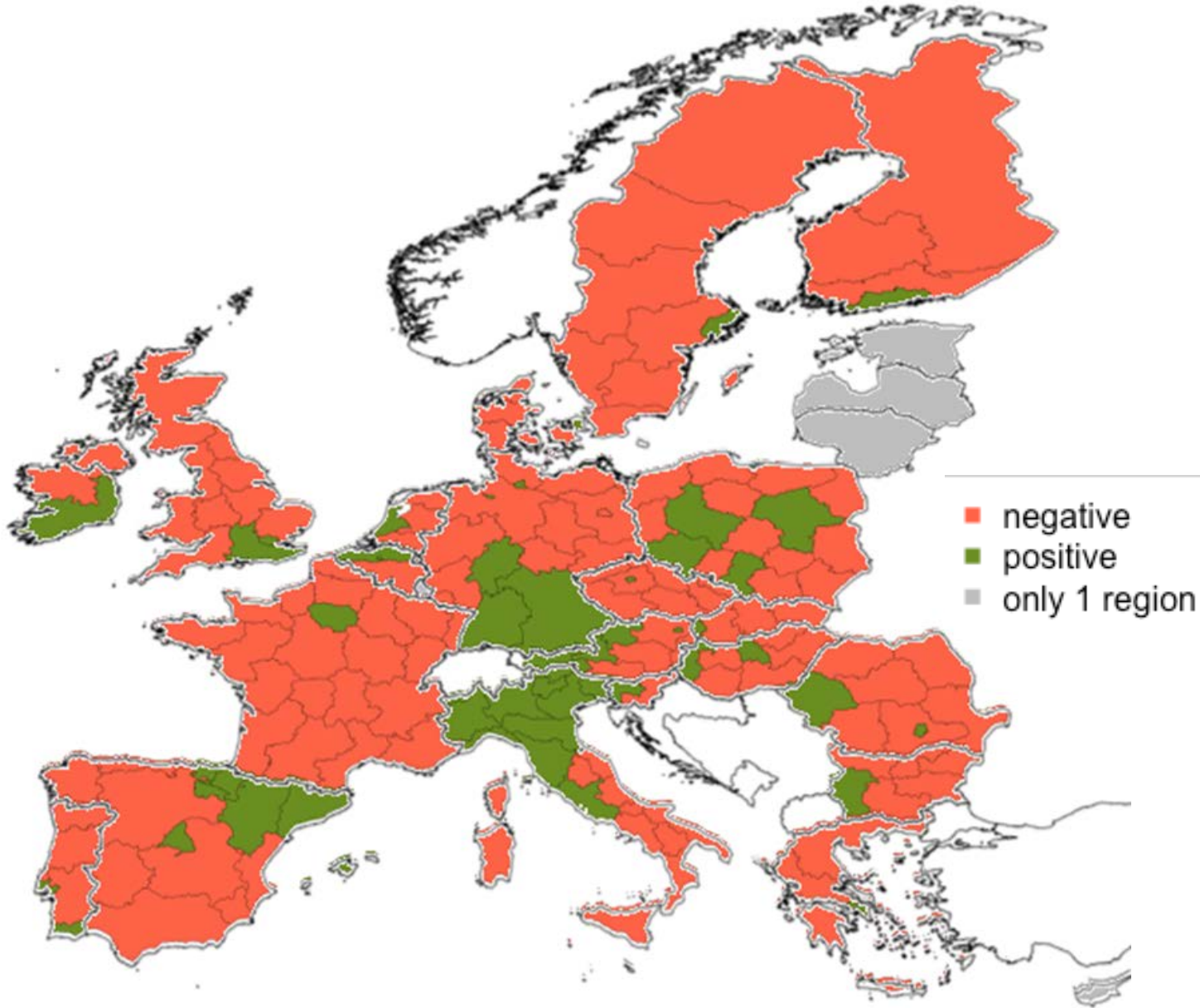
**EU-12****EU-15****EU-25****EU-27**

Evolution of the Theil Index for different sets of countries – contribution of within and between country disparities

- ◆ Betw
- Within
- ▲ Theil

## Regional disparities within selected countries (values of Theil Index)





## Regional contributions to each country's Theil index, 2014

Regions in green contribute positively to the index (regional share of total country GVA > population share)

Regions in red contribute negatively (higher share of population relative to share of GVA)

# Takeaways I

- Trend of convergence for **EU27** halted in the post-recession period
- **EU12 & EU15**: separate trend of increasing inequalities
- **Differences between countries** are the main driver of aggregate EU inequality nowadays
- Production activities often **concentrated** spatially in a small number of regions within most countries (frequently the capital)
- Tendency towards increasing levels of regional inequality most dramatic in Eastern European countries, improvement in regional disparities for some, but not all core countries → **heterogeneous evolution**

# Employment and Productivity

We can also decompose the Theil index by splitting it into shares of productivity and employment:

$$\frac{y_i}{n_i} = \frac{y_i}{l_i} * \frac{l_i}{n_i}$$

The following formulas apply:

$$T = T_{prod} + T_{emp}$$

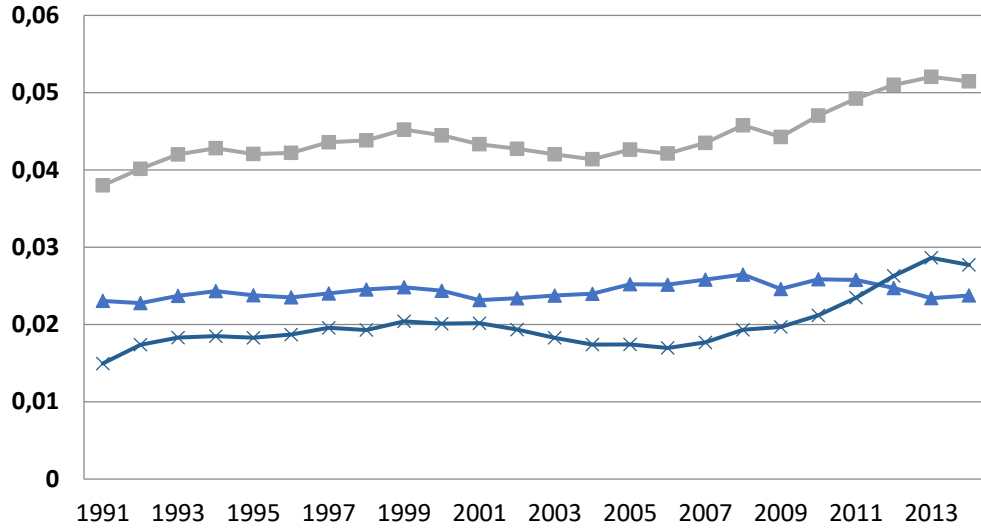
$$T_{emp} = \sum_{i=1}^n \left[ \frac{y_i}{Y_c} \ln \frac{\frac{l_i}{n_i}}{\frac{L_c}{N_c}} \right]$$

$$T_{prod} = \sum_{i=1}^n \left[ \frac{y_i}{Y_c} \ln \frac{\frac{y_i}{l_i}}{\frac{Y_c}{L_c}} \right]$$

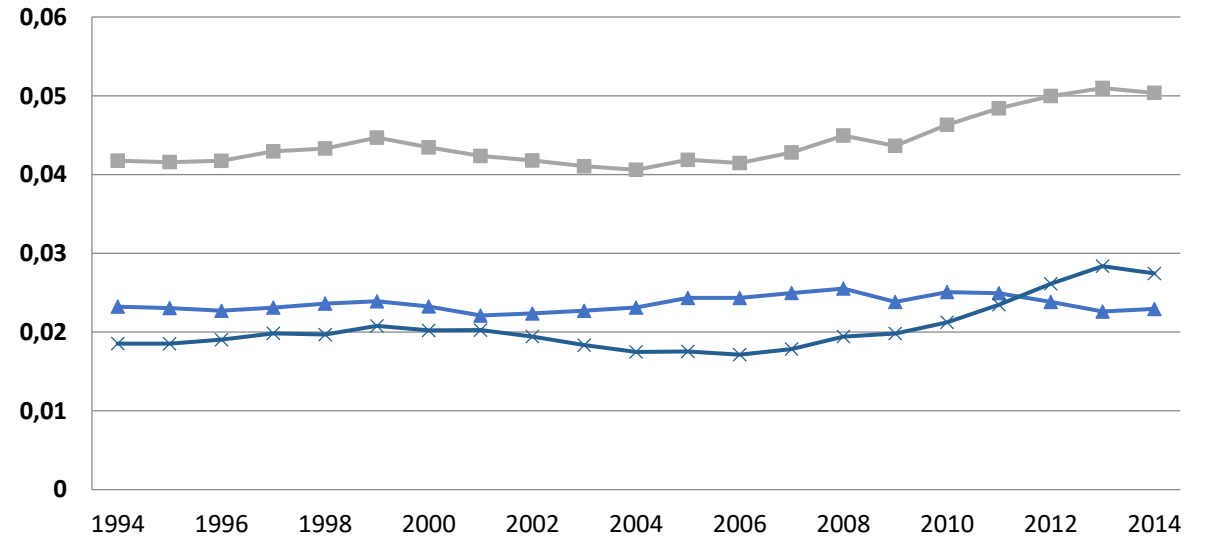
$L_c$  total labour force of a country  
 $l_i$  active labour force in a region  
 $Y_c, y_i$  GVA

We combine the within-between decomposition with the productivity-employment decomposition in order to find out where the sources of disparities lie.

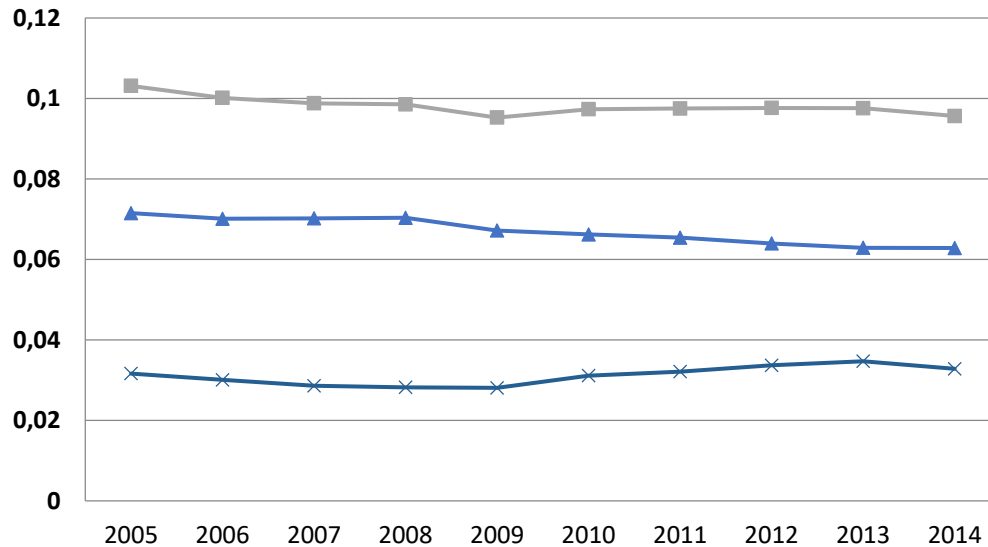
### EU-12



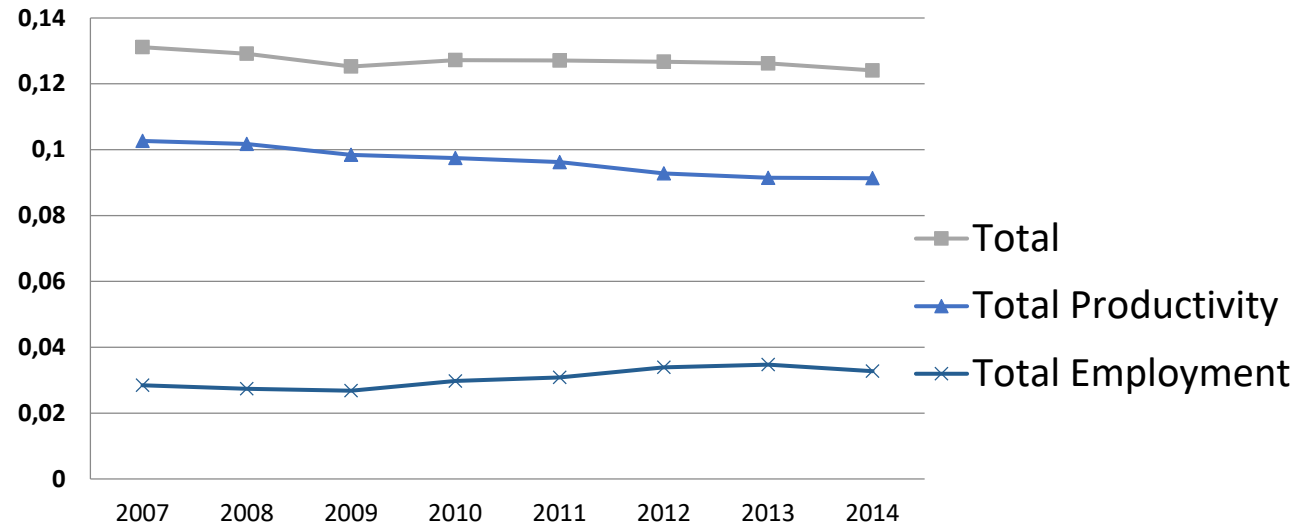
### EU15



### EU25

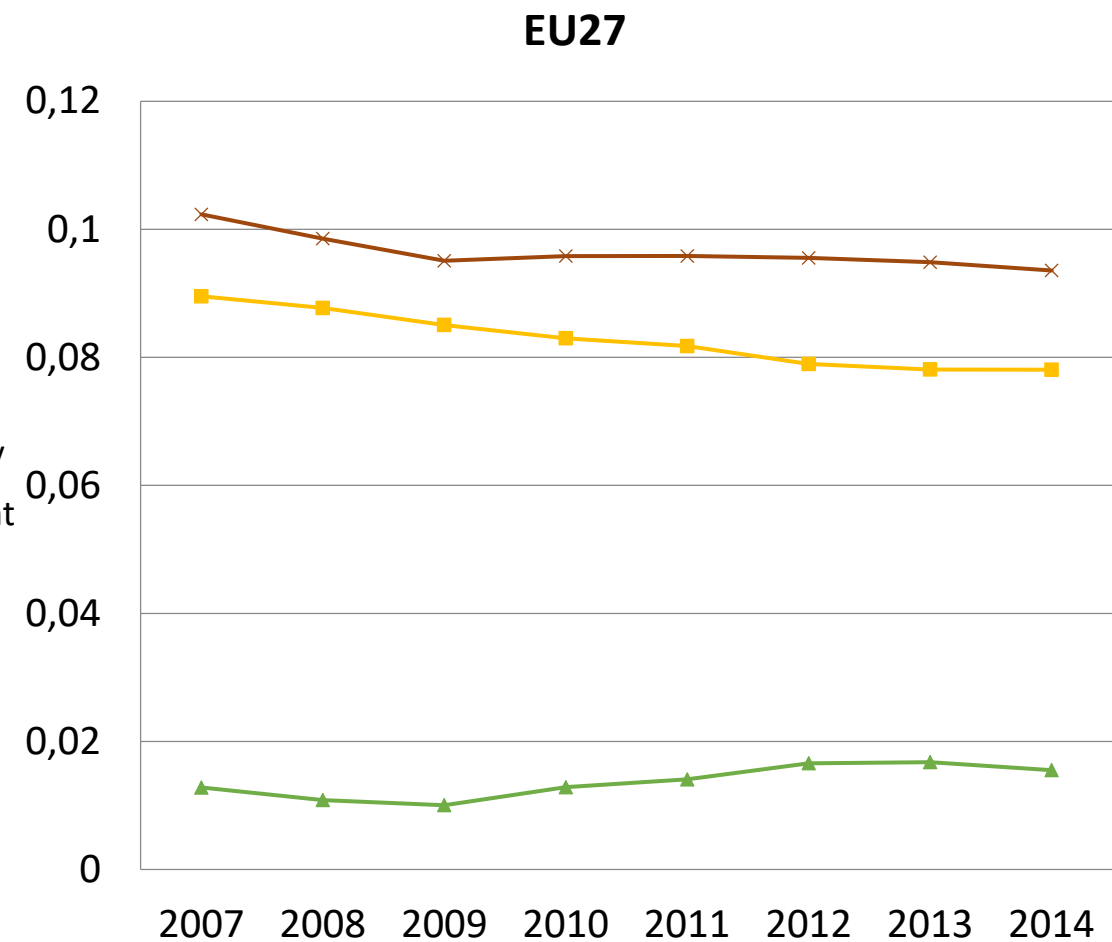
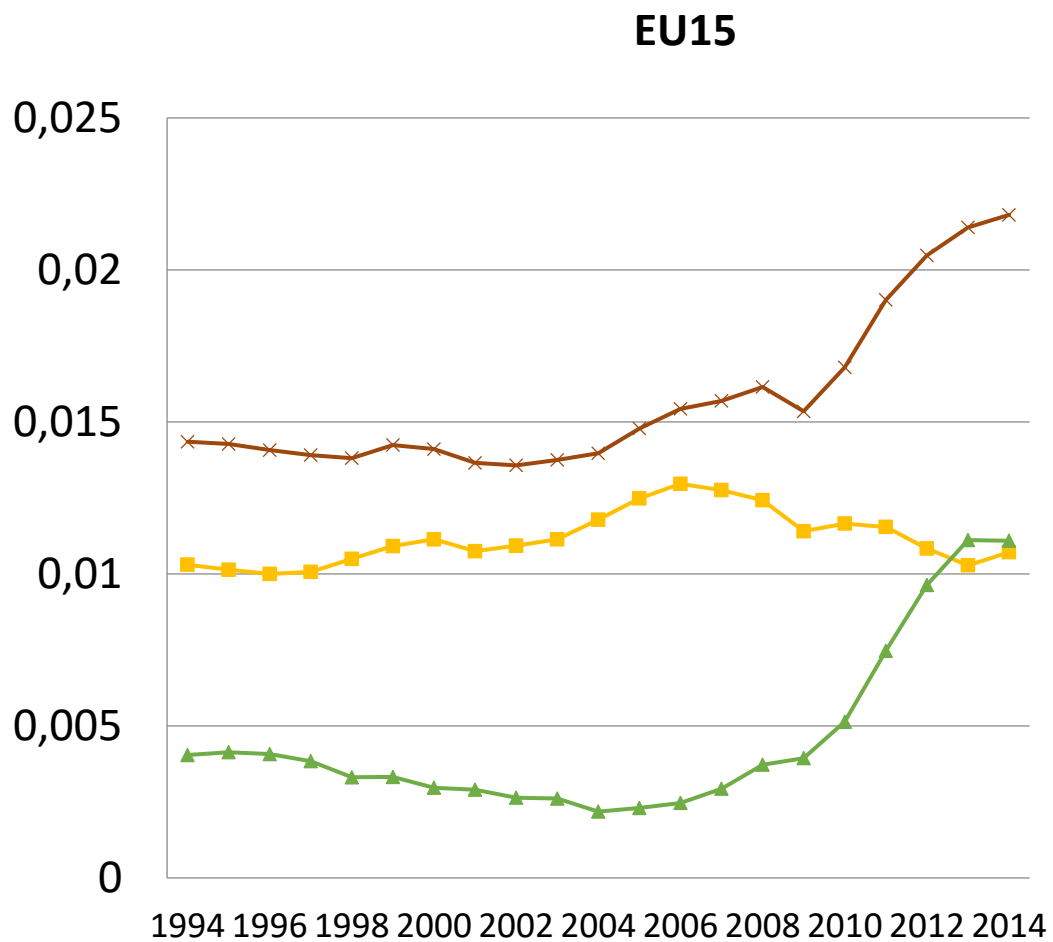


### EU27





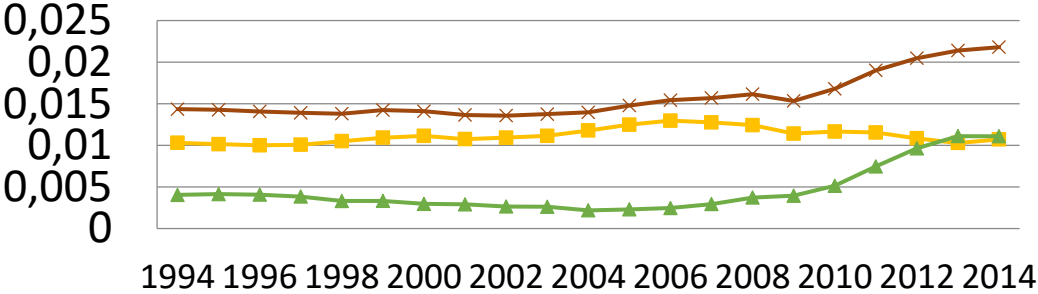
# Inequality Between Countries



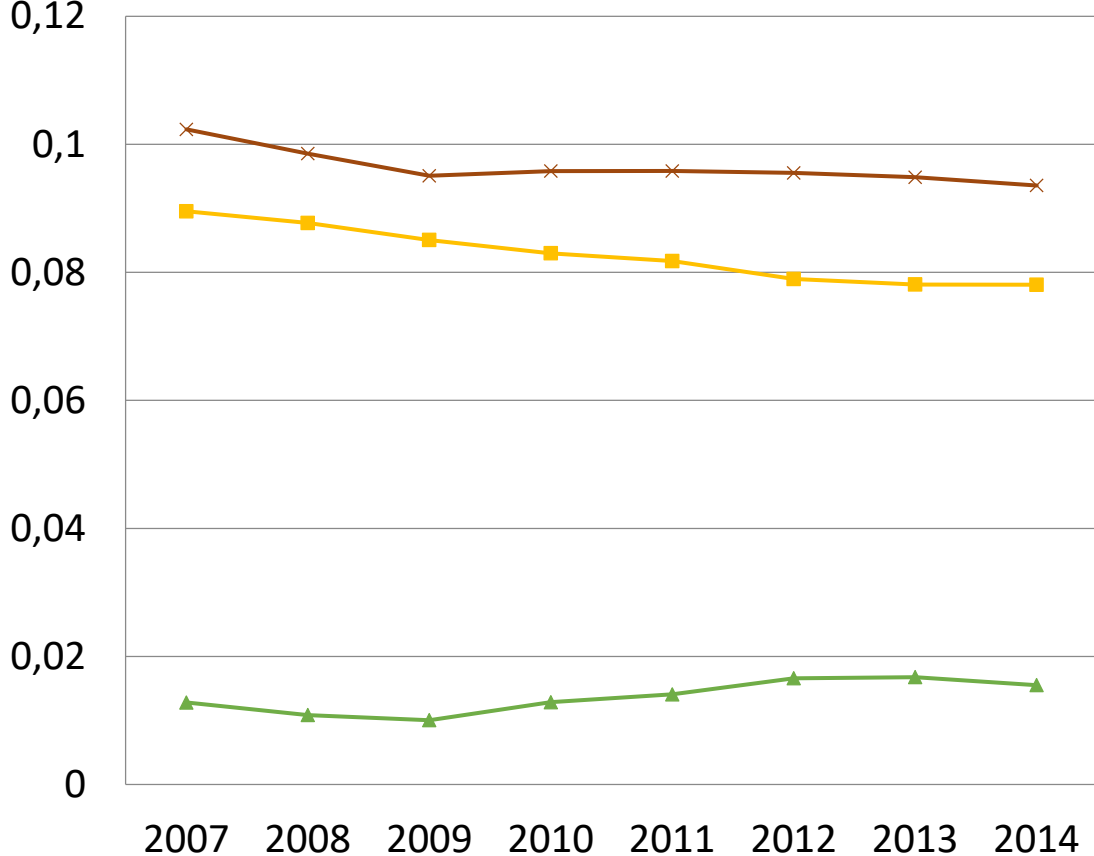
Evolution of the between-country share of the Theil Index for different sets of countries – contribution of employment and Productivity disparities

# Inequality Between Countries

EU15



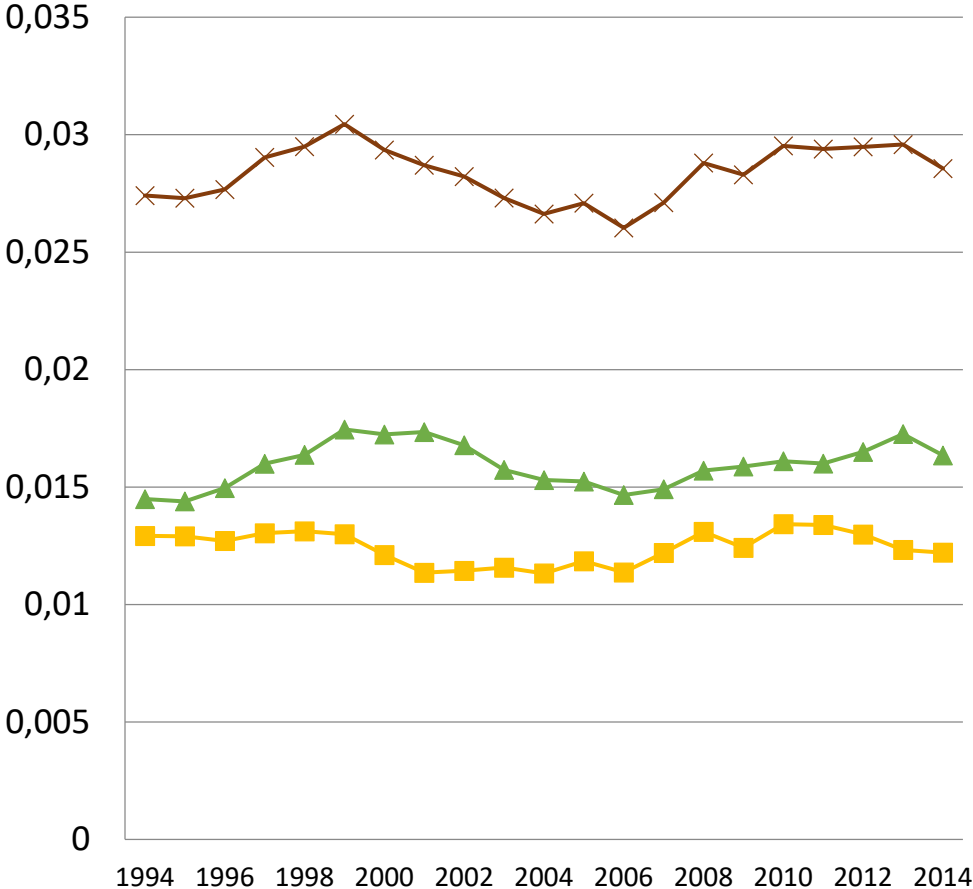
EU27



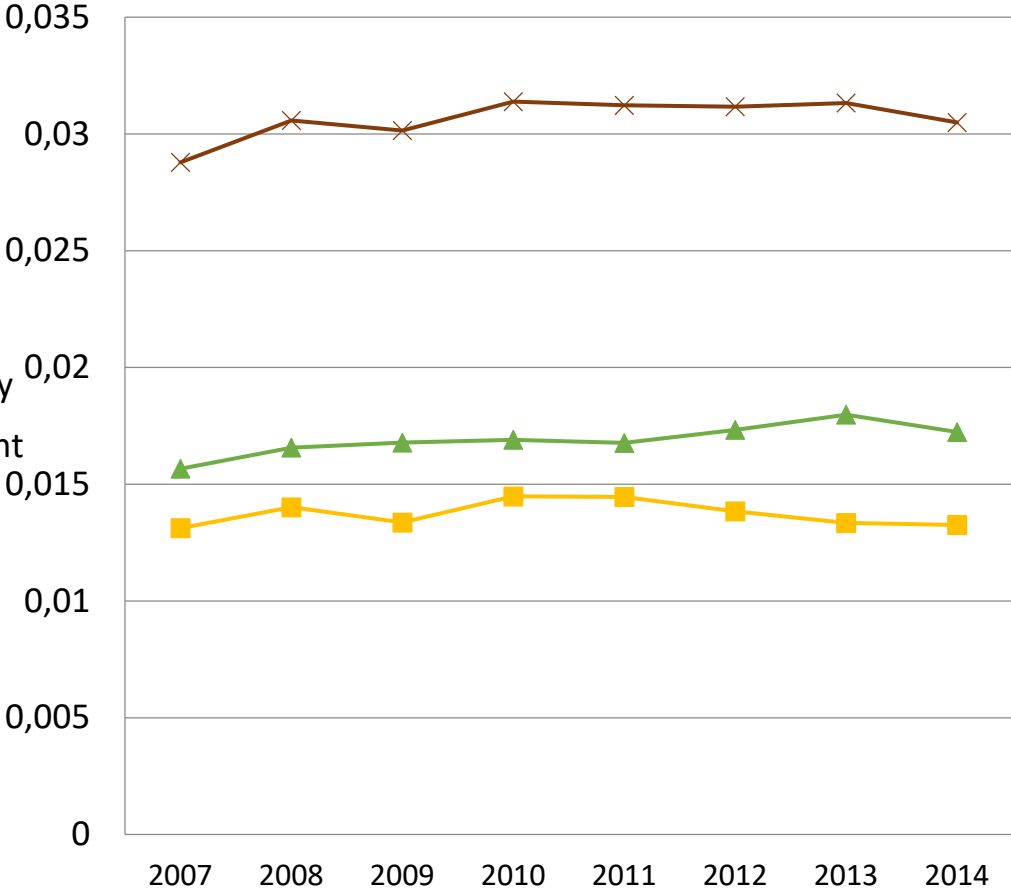
Evolution of the between-country share of the Theil Index for different sets of countries – contribution of employment and productivity disparities

# Inequality Within Countries

**EU15**



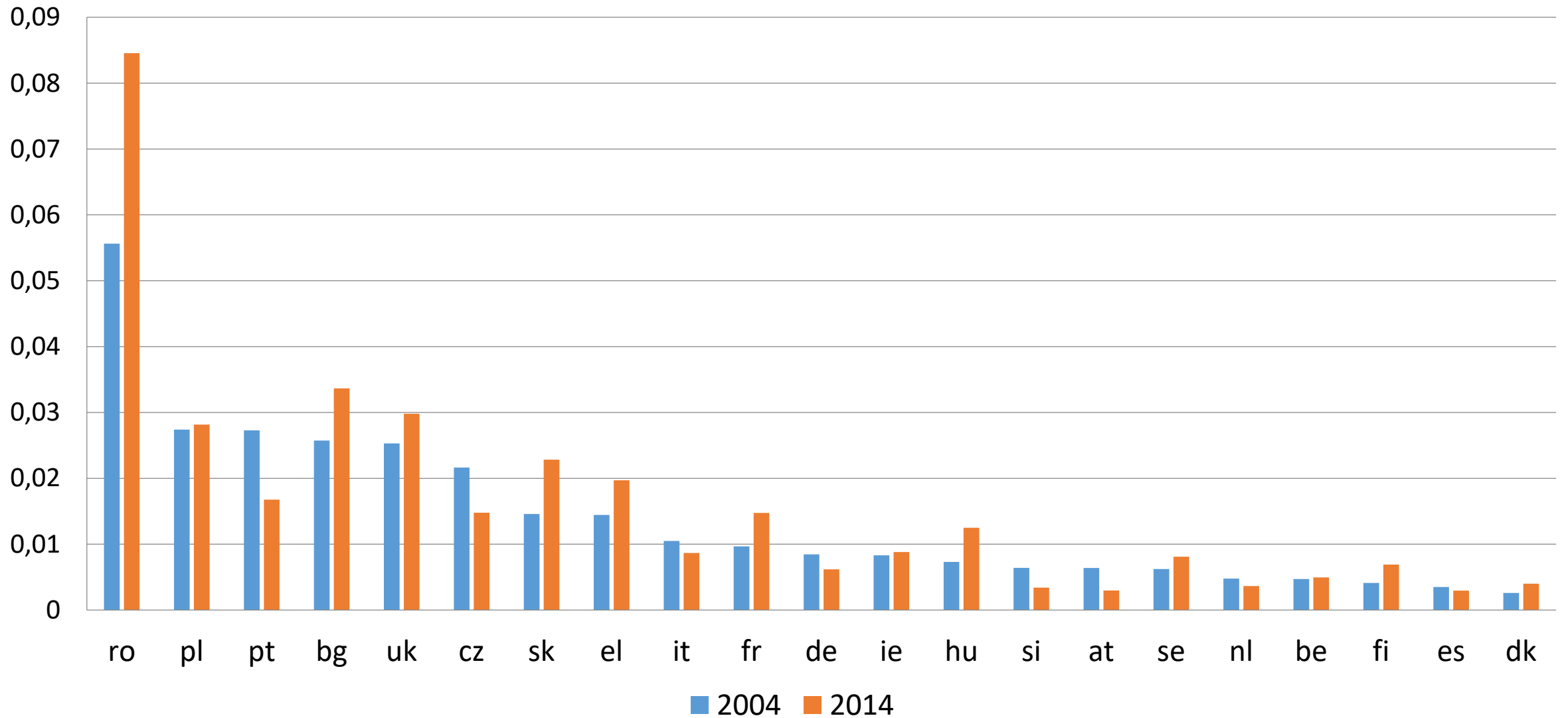
**EU27**



- Productivity
- ▲ Employment
- × Total

Evolution of the within-country share of the Theil Index for different sets of countries – contribution of employment and productivity disparities

## Regional labour productivity differences within selected countries (Theil)



# Takeaways II

Traditionally, **productivity differences** have been the main driver of disparities **between** countries and **employment differences** main source of inequality **within** countries.

**EU12 & EU15:** employment effects gained importance from 2007 onwards, **replaced** productivity disparities as the main source of between country inequality in recent years

**EU25 & EU27:** labour productivity levels remain main source of inequality between countries, slight convergence trend

Regional productivity disparities within countries:

- dramatic increases in Romania, significant increases also in Slovakia, Bulgaria, Hungary, the UK and Greece
- decreases in Portugal, Czech Republic, Italy, Germany, Slovenia, Austria and the Netherlands  
→ very **heterogeneous evolution**

# Implications for policy

Regionally varying challenges call for differentiated policies:

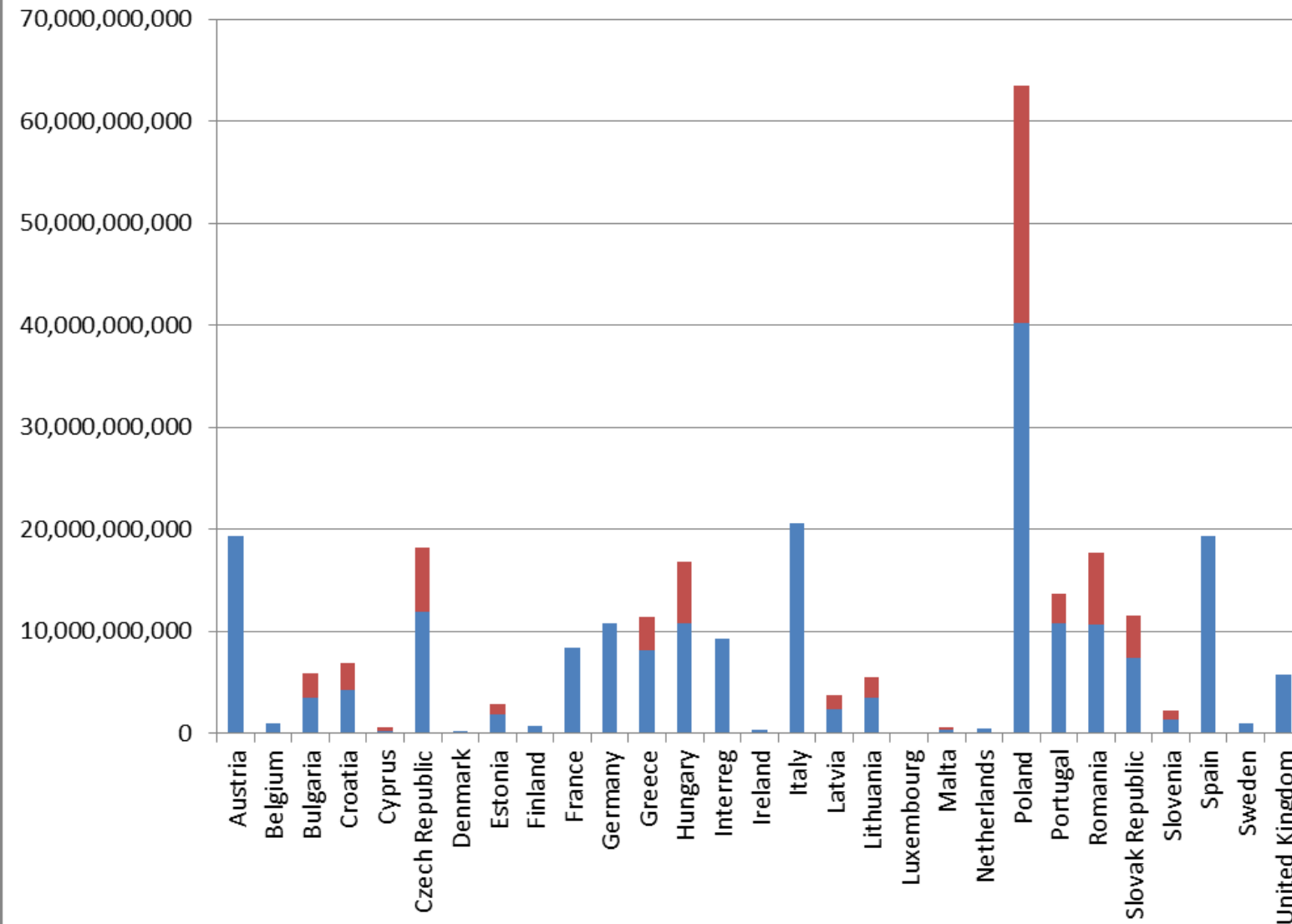
- recently high unemployment in the older Member States
- lasting productivity disparities between older and newer Member States
- Within-country disparities are exacerbating in many cases

→ different developmental paths and determinants with respect to inequality

- Lived realities in Europe are very diverse → political agendas are heterogeneous, common policy is a challenge
- Direction of funds towards
  - poorest regions
  - countries with large within-country disparities

# Actual Policies

ERDF and CF Allocations by country (2014-2020)



**European Social Fund (ESF)**  
available to all regions

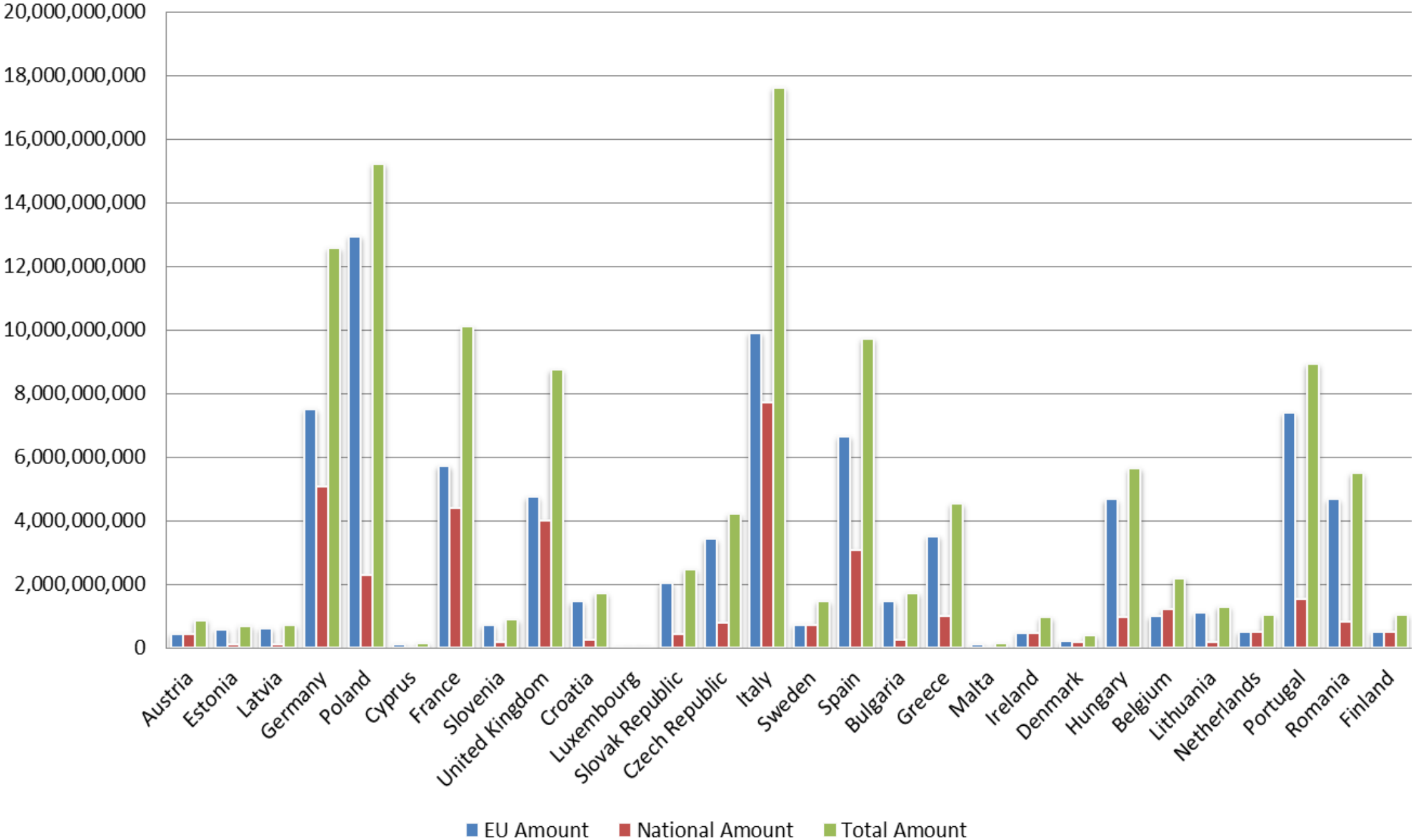
**European Regional Development Fund (ERDF)**  
available to all regions, aimed at „correcting imbalances between regions“

■ CF  
■ ERDF

**Cohesion Fund (CF)**  
available for regions in less developed Member States, defined as having a GNI per capita that is less than 90% of the EU average

➔ Ability to propose, co-finance and implement programs

# ESF Budget Allocations by Country (2014-2020)





# Conclusions

- Descending trend in inequality cannot keep pace with the EU expansion process; **convergence** may be happening, but at a comparatively much **slower** speed and in many cases at the cost of **rising inequality within countries**
- **EU12 and EU15:** aggregate regional inequality responsible for a higher share of total inequality than between-country component → **increasing importance of regional policy**. Differences between countries driven by **employment disparities**

# Conclusions (cont.)

- **EU25 and EU27:** inequality mainly explained by the between-country component and **large variations in productivity levels between countries**
- Startling increases in within-country productivity disparities, especially in Eastern Europe, suggesting that the **catching-up process is spatially concentrated** in selected regions with a high level of production activities, whereas the remaining regions are lagging behind

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