

**Università, Alta Formazione e Smart Specialisation in Puglia:  
i progetti *HESS* e *Targeted Support*  
Bari, 21 marzo 2018**

# **Training e dualismo territoriale in Italia: evidenza nel periodo della crisi economica e finanziaria**

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The logo for the London School of Economics and Political Science (LSE), consisting of the letters 'LSE' in white on a red square background.

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# Outline of the work

- Aim: to investigate subnational differences in the effect of a specific measure of skill upgrading – training given to people who are already employed – on a specific outcome – remaining employed
- How: panel on 3,983 individuals for the period 2008-2011; probit regressions, large number of control variables, IV estimates
- Main result: the effect of training on continued employment during the crisis is notably stronger in the South than in the North of the country

# Why does it matter?

## 1) Rising risks and training

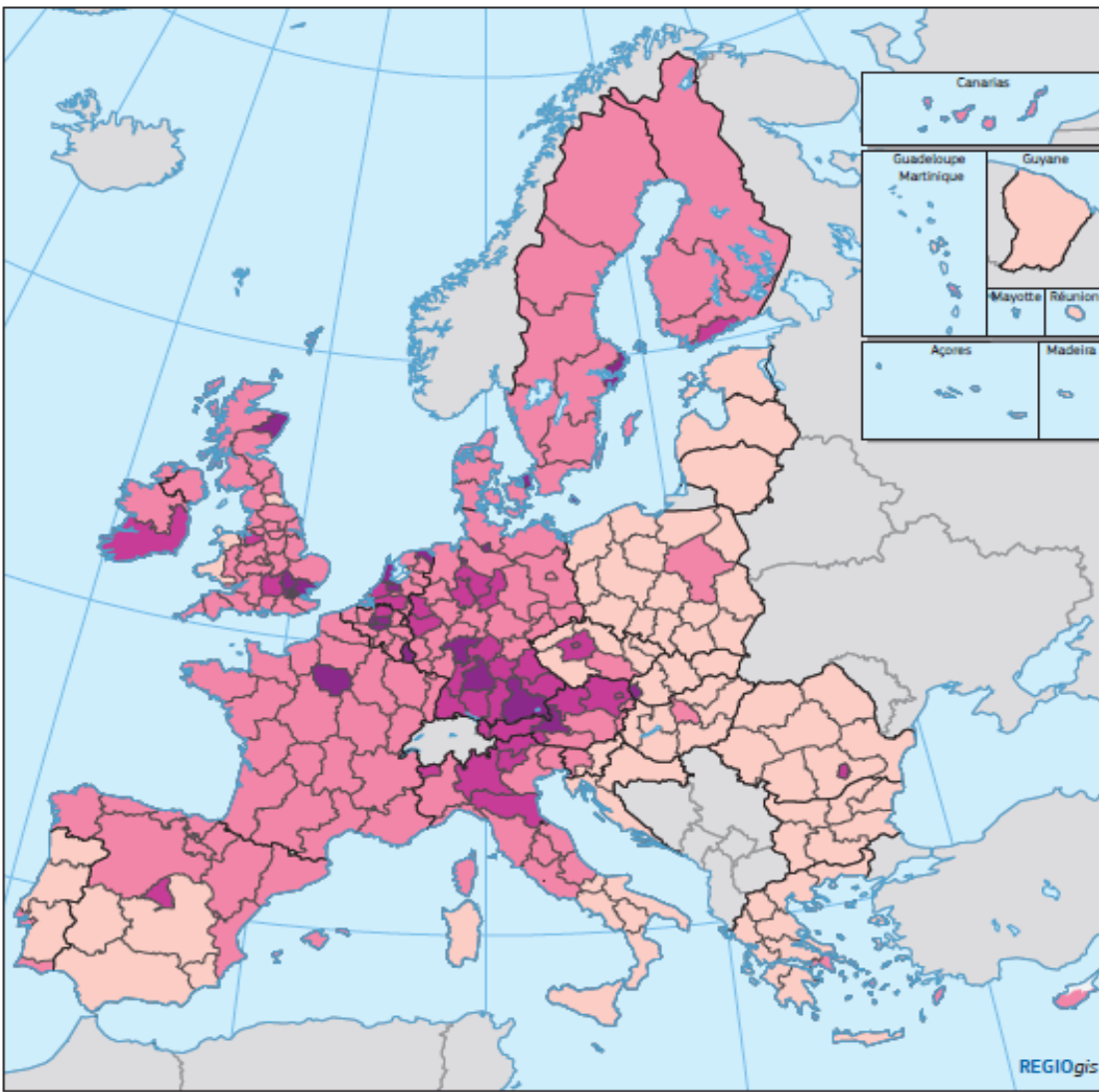
Labour market risks have been exacerbated in recent decades by three developments:

- increased pace of technological change in the workplace
  - globalisation of production activities
  - reduction in job security (employment protection)
- ... and the recent crisis

### **Training** in employment:

- Make up for deficiencies in education
- A form of further education – career advancement, skill upgrading
- A response to demand shifts and downturns

Why does it matter?  
2) Rising regional inequality:  
Italy in the European regional clubs



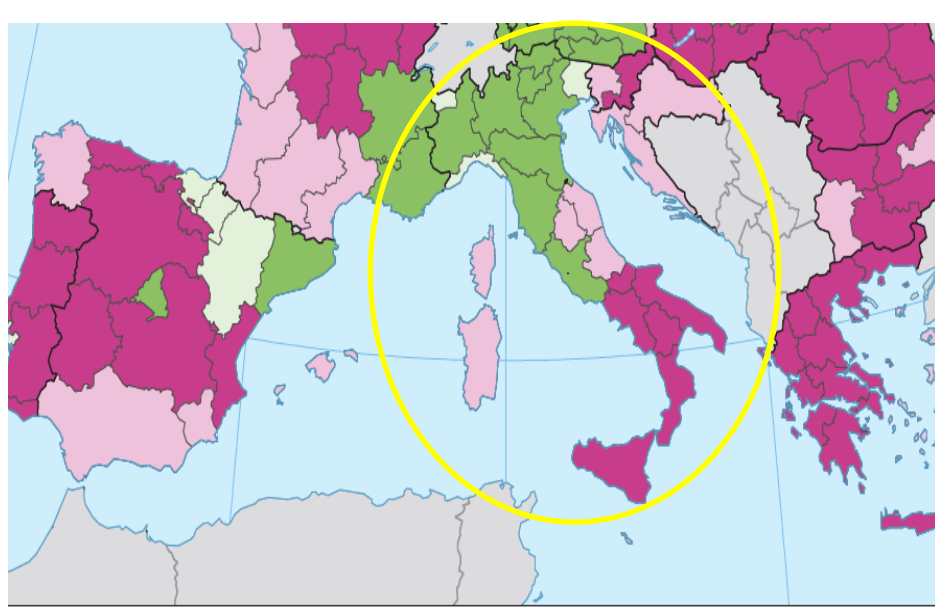
The Economic Development Clubs of European Regions

- Low
- Medium
- High
- Very high
- no data

0 500 km

[http://ec.europa.eu/regional\\_policy/en/information/publications/working-papers/2017/why-regional-development-matters-for-europe-s-economic-future](http://ec.europa.eu/regional_policy/en/information/publications/working-papers/2017/why-regional-development-matters-for-europe-s-economic-future)

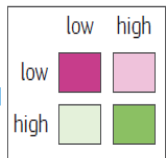
# Regional inequality (*cont.*): Italy, GDP and employment



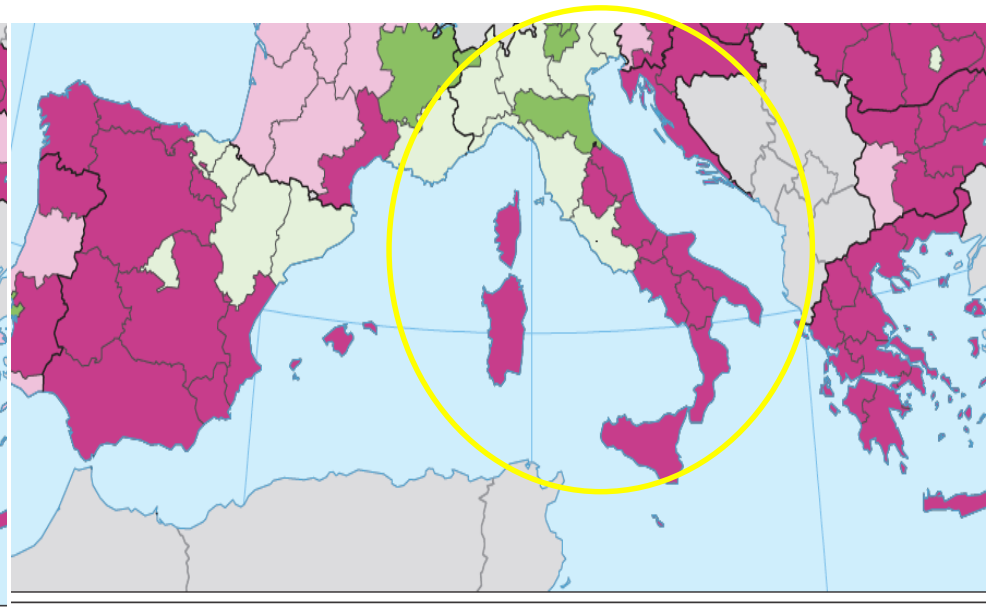
GDP per head EU Index (2013) vs. Employment Change (2001-2013)

High and low as compared to EU average

Employment change



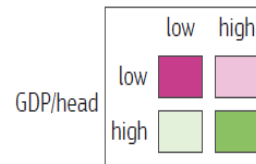
Source: Eurostat, Cambridge Econometrics, DG REGIO



GDP per Head EU Index (2013) vs. Employment Rate (2015)

High and Low relative to EU average

Employment rate



Source: Eurostat, Cambridge Econometrics, DG REGIO

# Literature on training

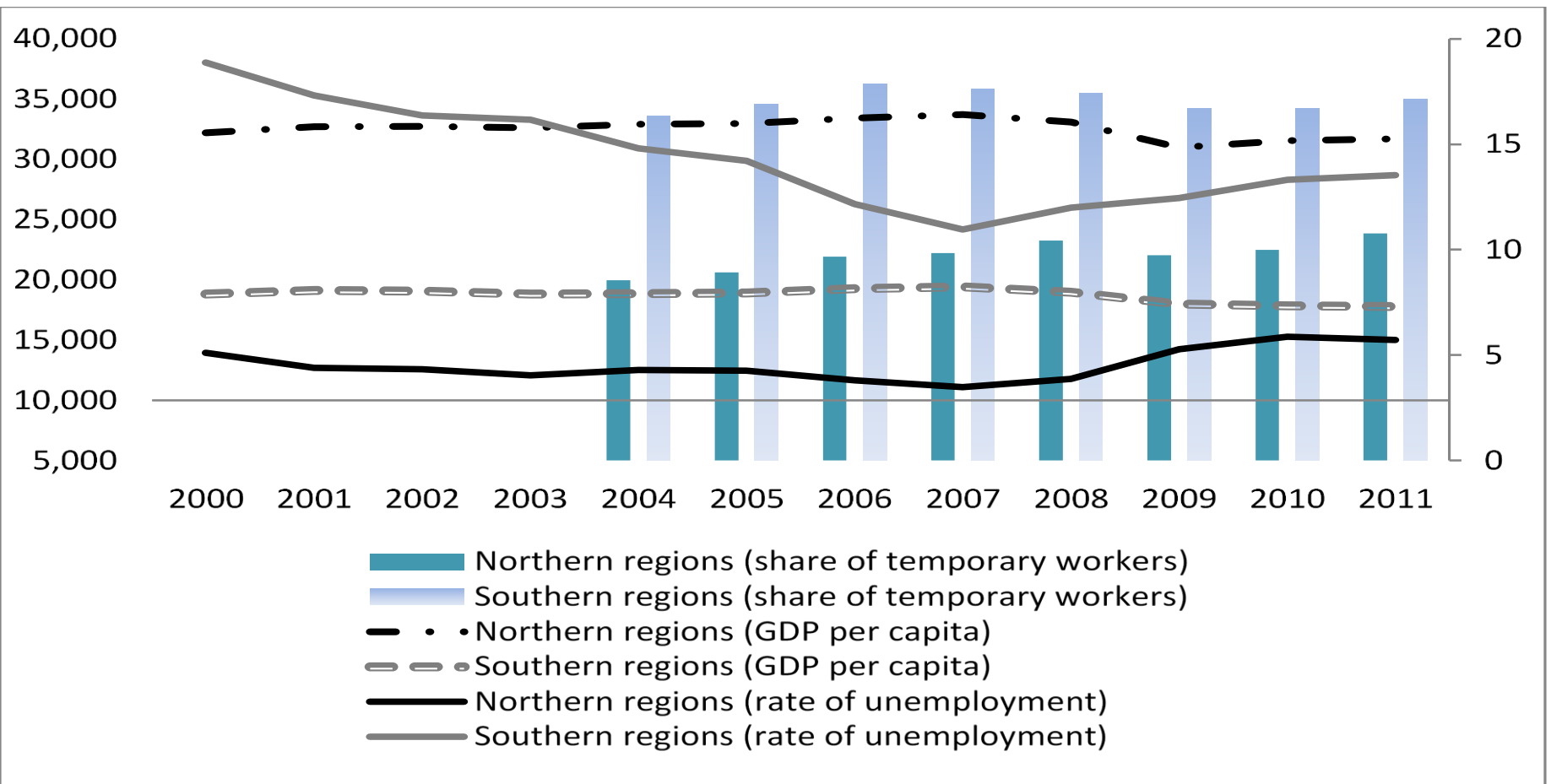
- Positive impact of training on earnings and productivity (e.g. Leuven, 2005; Conti, 2005; Colombo & Stanca, 2008)
- Training positively correlated with the level of formal education (Heckman, 1999; Kuckulenz & Zwick, 2003; Hughes et al., 2004); firms with more highly qualified workforce and advanced work organization train more (Lynch & Black, 1998); training incidence higher in countries with more educated labour forces (Brunello, 2001)
- National effects through institutions (e.g. Picchio & Van Ours 2011)
- Negative relationship between provision of training and employment density, which however is reversed in highly specialised agglomerations (Brunello & De Paola, 2004)

# Training and employability

- Training reduces job-loss rate by 3.5%; improved employability mostly because **trained workers are also more likely to be re-employed** (Ok & Tergeist, 2003)
- Training of **low-skilled workers contribute to firm-internal employability** but not to external (Sanders & De Grip, 2004)
- **Education strongly complementary** to employability → **more educated individuals show better match** between skills acquired through training and skills to perform jobs (Budría & Pereira, 2009)
- High unemployment puts workers with different skill levels in competition; **more highly educated/better trained favoured both in hiring and in retaining** the current job (van Ours & Ridder, 1995)
- Training while employed also **correlated with job characteristics**
- **Sub-national impact of training on employment outcomes** (and more generally on training effectiveness): **the literature so far is silent**

# The North and the South of Italy

Gross domestic product (GDP) at market prices per inhabitant, left axis (2000-2011);  
 Unemployment rate, right axis (2000-2011); share of temporary workers, right axis (2004-2011)



Source: ISTAT data warehouse, and Labour Force Survey



# Data

- PLUS survey developed by Isfol – Italian Ministry of Labour and Social Policy
- 3 year balanced panel: 2008, 2010, and 2011
- 12,593 observations in each year
- Sample stratified by region, type of city, sex, age, employment status
- Rich information on job & employer characteristics, training activities, individual characteristics (e.g. for instance, educational history, family background, residential mobility, geographical location, self-confidence, health, etc.)
- Our sample: employed in 2008 (3,983 individuals in each wave)

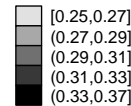
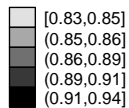
# Our dependent and independent variables

Remaining employed over the period 2008-2011, regional averages

Participation in training while employed over the period 2008-10, regional averages

Remaining employed

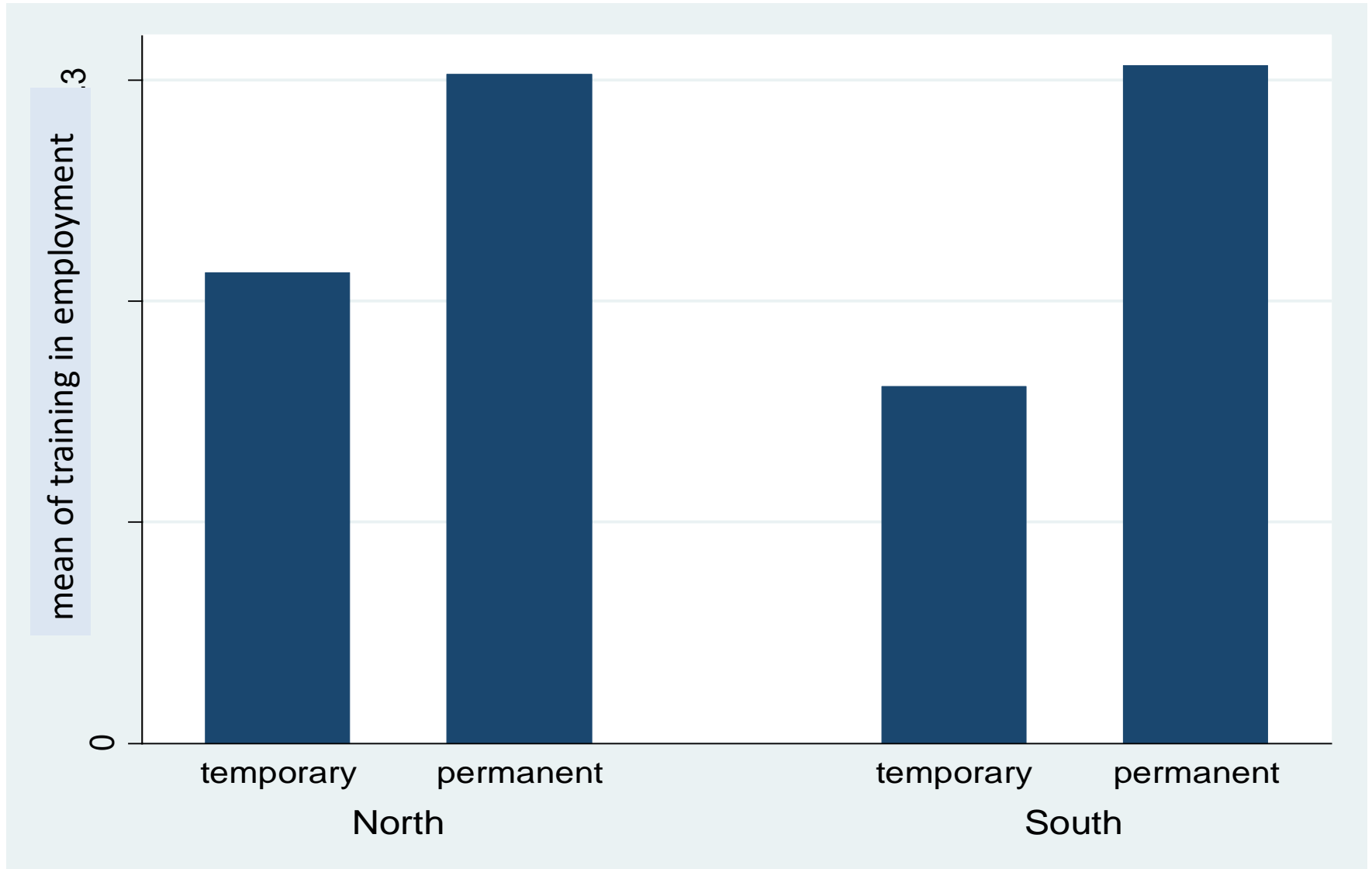
Training



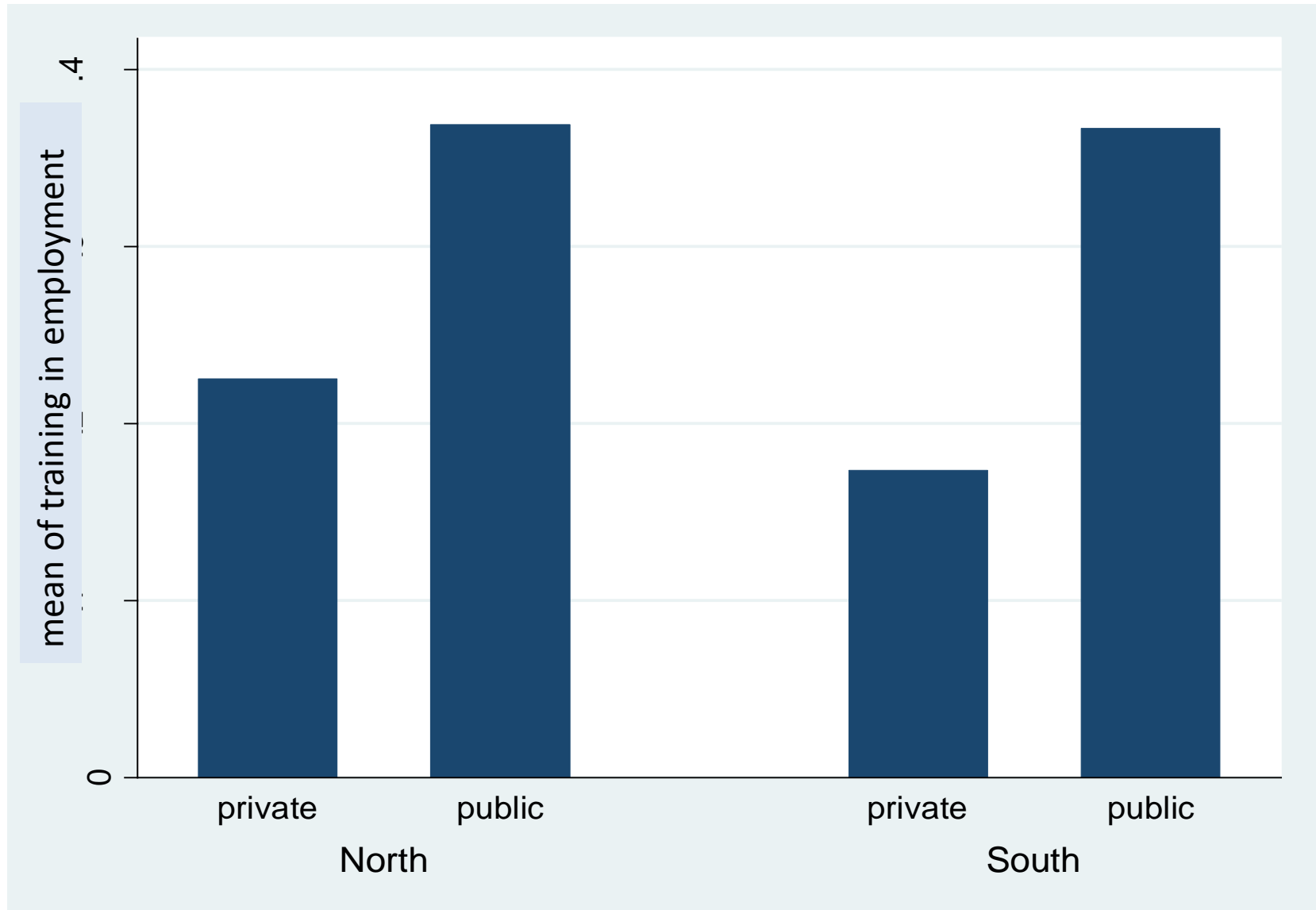
Source: PLUS Survey

Source: PLUS Survey

# Training in employment and type of contract



# Training in employment and private/public sector



# Model

- For those employed in 2008, effect of training in 2008-2010 on the probability of remaining employed in 2011
- Dependent variable
  - 1 if the individual is employed in 2011
  - 0 if unemployed in 2011 (excluding departures from labour force, e.g. retirement, studying or maternity leave)
- Individual controls: age, sex, education level, type of contract (permanent vs. other), part-time, English skills, computer skills, moved for current job, living in urban area, children, citizenship
- Regional controls: level of unemployment in 2008, change in unemployment in 2008-2011, per capita income
- Employer characteristics: public vs. private, size, industry

# Keeping the job during the crisis

Baseline Model 1:

$$\begin{aligned} \textit{remain employed}_i &= \\ &= c + \textit{training}_i + \textit{south}_i + \textit{edu}_i + \textit{reg}_r + \textit{ind}_i + \textit{job}_i + v_i \end{aligned}$$

to study differences in the effect of training between South and North, and between education levels, we introduce interaction terms In Models 2 and 3:

$$\textit{training}_i * \textit{south}_i$$

$$\textit{training}_i * \textit{south}_i + \textit{training}_i * \textit{edu}_i + \textit{south}_i * \textit{edu}_i + \textit{training}_i * \textit{south}_i * \textit{edu}_i$$

# Main results

- Model 1: training always positive and significant at the 0.1% level
- Model 2: effect of training on the probability of remaining employed not statistically significant in the North; the interaction of training with South positive and statistically significant
- Model 3: relative values between South and North remain unchanged, overall training more effective at higher educational levels
- IV strategy: endogeneity not a concern, coefficients on training and its interaction with South little changed
- Further regional controls: in no case did their inclusion lead to any substantial change in the size or statistical significance of the interaction of training and South

# Conclusions (1)

- In the South training has a substantially larger effect on the probability of remaining employed through the financial crisis than it does in the Northern regions. The effect is not explained by differences, across Italy's twenty regions, in initial unemployment, change in unemployment, or GDP per capita
- To understand any of these differences we will need to know more about the demand side of local labour markets
- Southern firms internalise more functions, have more limited external networks, and are less likely to be located in specialised clusters or industrial districts → less mobility → more training, and/or stronger relationship between training and employability



# Conclusions (2)

- Geographical subnational approach to labour market policy overdue
- Effective skills policy must either go together with the easing of inter-firm barriers and the emergence of specialised agglomerations, and/or work with employers to support their internal needs and technological upgrading
- Many large specialized agglomerations have grown from single successful firms that provided good training (e.g. Klepper, 2011; Feldman, 2014)

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**Grazie!**

