

# Session 4 – Looking Ahead: Examining the Relationship of Broadband to Entrepreneurship, Innovation, and Productivity

Irene Bertschek  
ZEW Mannheim  
and



ICTNET



OECD Technical Workshop  
FCC, Washington D.C., 12-13 October 2011



## ICTNET-European Network for the Research on the Economic Impact of ICT

- coordinated by OECD
- financed by European Commission / DG Information Society and Media
- Four research fields:
  - ICT, Productivity and Growth (ZEW Mannheim, D)
  - ICT, R&D and Intangibles (Imperial College London, UK)
  - ICT-enabled Innovation (OECD)
  - ICT diffusion to the Economy (University of Parma, IT)
- A network of 30 European partners



## ICTNET-European Network for the Research on the Economic Impact of ICT

- Organisation of workshops with contributions to the four research fields, open to the ICT community
- Assessment of the work on the economics of ICT

# Empirical Evidence on the Role of Broadband for Innovation and Productivity

- Macroeconomic evidence for OECD countries: positive and significant impact on productivity and growth from:
  - BB infrastructure (Czernich et al. 2011, Koutroumpis 2009)
  - mobile communication (Gruber/Koutroumpis 2011)
  
- Firm-level evidence:
  - Positive relationship between BB and innovation  
Todhunter/Abello 2011: AUS; Grimes et al. 2011: NZ;  
van Leeuwen 2010, Polder et al. 2010: NL; Bertschek et al. 2011: D
  - Mixed results w.r.t. BB ↔ productivity

# Issues of measurement

- Early years of BB diffusion → variation between firms using
  - no Internet,
  - modem,
  - DSL,
  - leased line
  - .....
  
- Now: major part of firms uses some kind of BB

## Three main ideas (1)

### 1) BB indicators should measure *variation*

- Differences in speed -> surveyed firms do not necessarily know → regional data from service providers?
- Diffusion within firms: % of employees with access to Internet, mobile Internet
- Applications that *need* BB (SCM, CRM, Cloud Computing, social software applications...)

## Three main ideas (2)

### 2) Collect in the *same survey* /from the *same firms*:

- standardised, well established performance measures such as innovation indicators of Oslo Manual / CIS
- measures of further firm characteristics necessary to estimate an innovation / production function (sales, qualification structures of employees, training etc.)
- panel data

## Three main ideas (3)

- 3) Merge firm-level data to regional-level technical and economic data / provide *regional-level data* when regions within country differ in the quality of BB availability