

Innovation and economic reform in Europe and Japan

Round table : Policy considerations and conclusions

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This presentation reflects the opinions of the author and does not necessarily express the views of the Banque de France.

Main messages

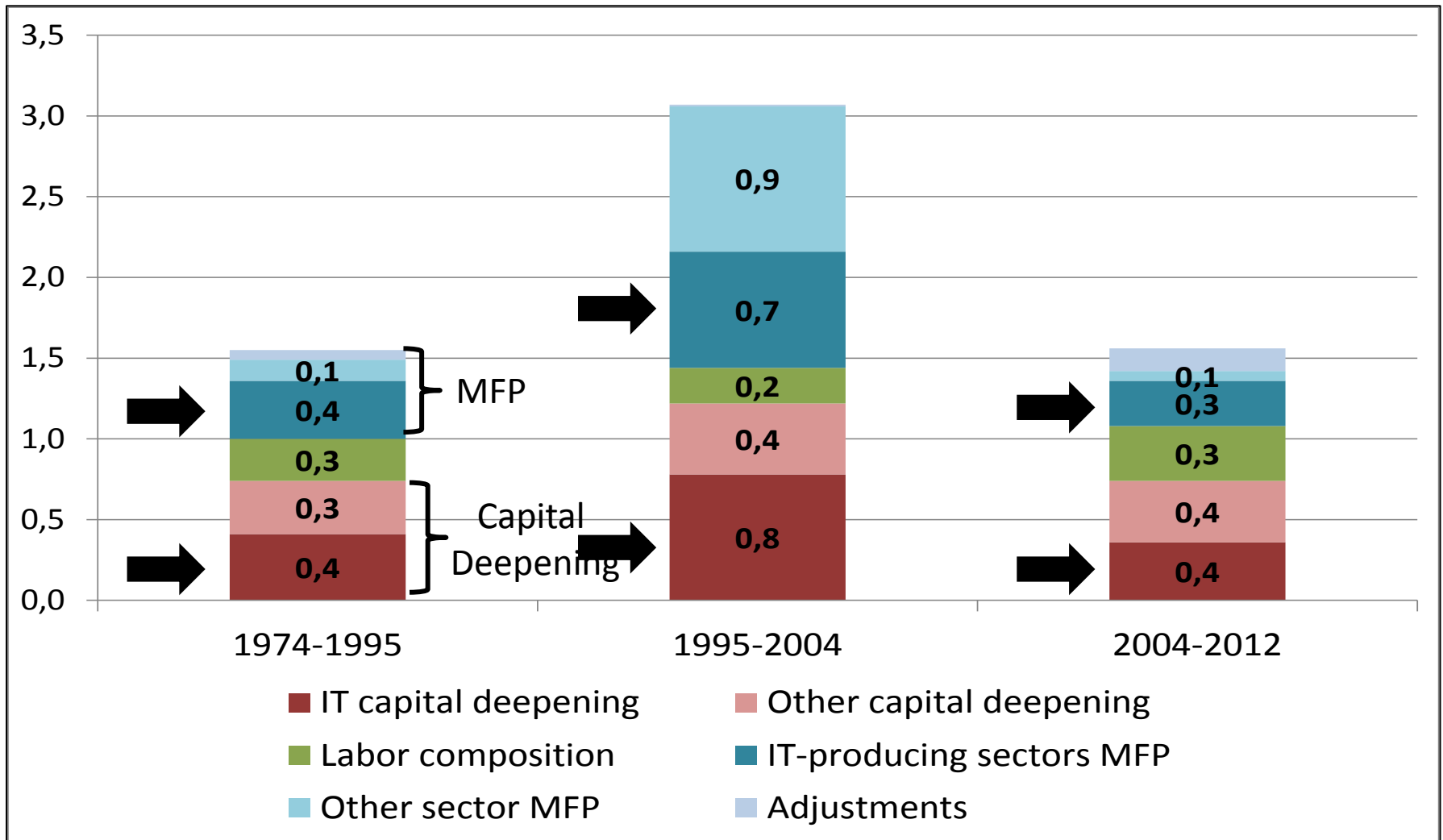
- Innovations matter...but also their diffusion
- Innovation policy is necessary...
- ...but also the whole institutional environment :
 - competition policy,
 - labour market,
 - education
 - appropriate financing.

Innovations matter...but also their diffusion

- Through which channels does a new technology contribute to growth?
 1. Multifactor productivity (MFP) gains in the technology-producing sector
 2. Capital deepening in the new technology
 3. MFP gains due to the use of the new technology

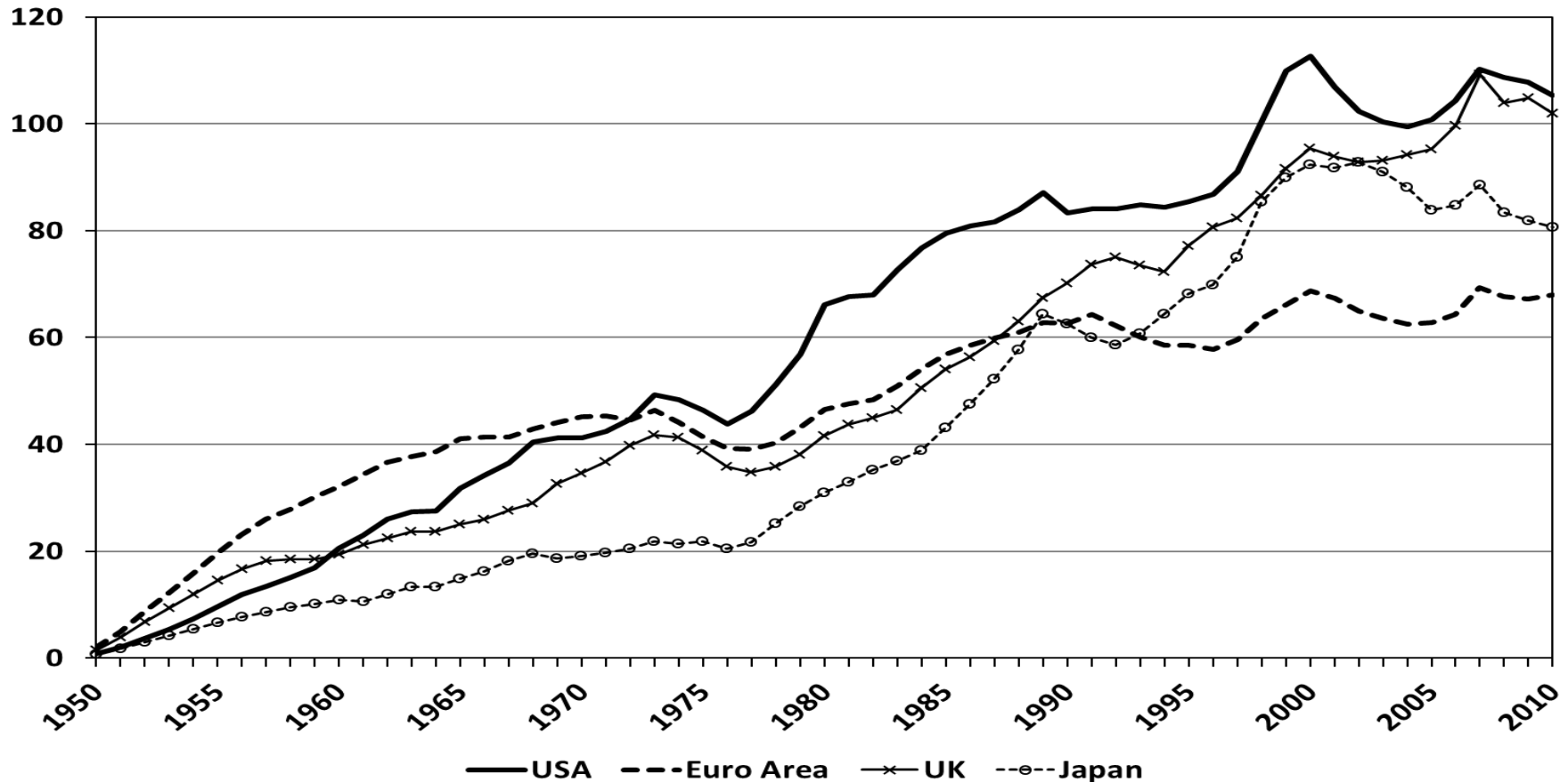
Innovations matter...but also their diffusion

Labor productivity in the US: Contributions (yearly growth rate, %)



Innovations matter...but also their diffusion

Ratio of ICT capital stock to GDP in value terms (multiplied by 1000)



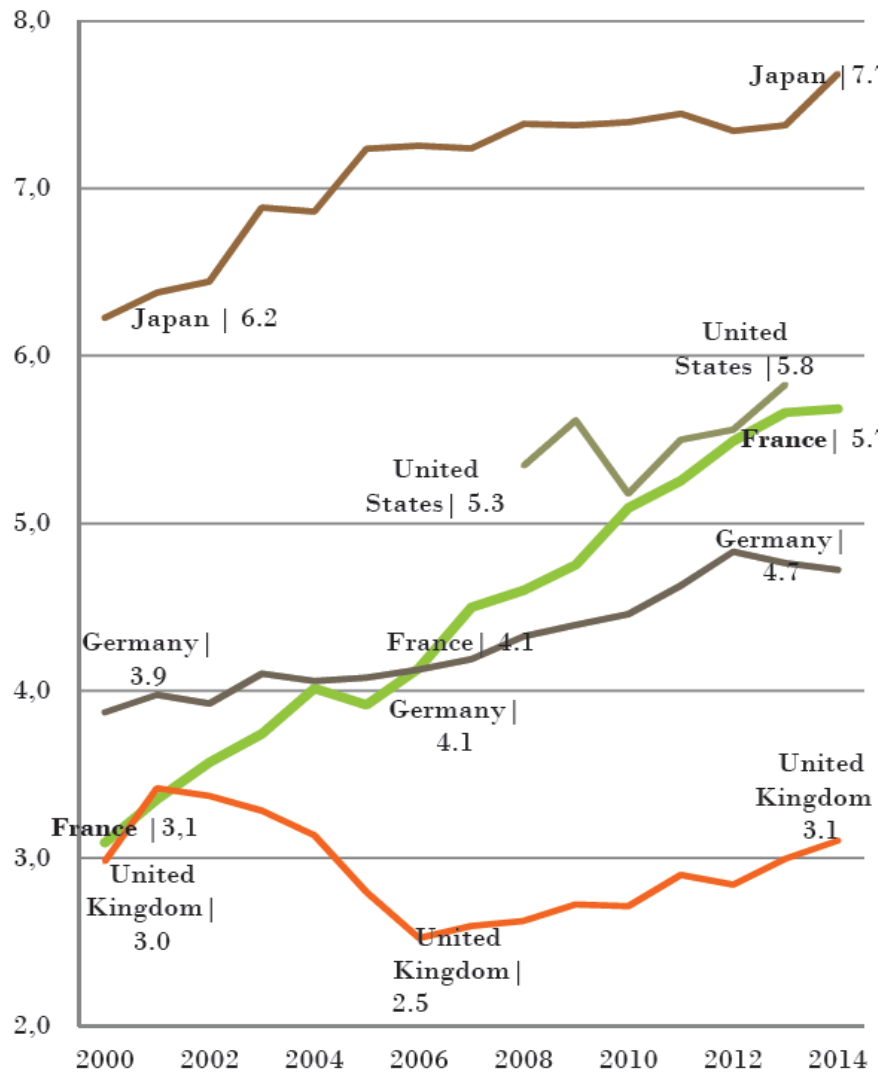
Source : Cette, Clerc and Bresson (2015)

ICT capital stock is the sum of communication equipment, software and computers capital stock, all assumed to be equal to 0 in 1950. The euro area does not include Portugal

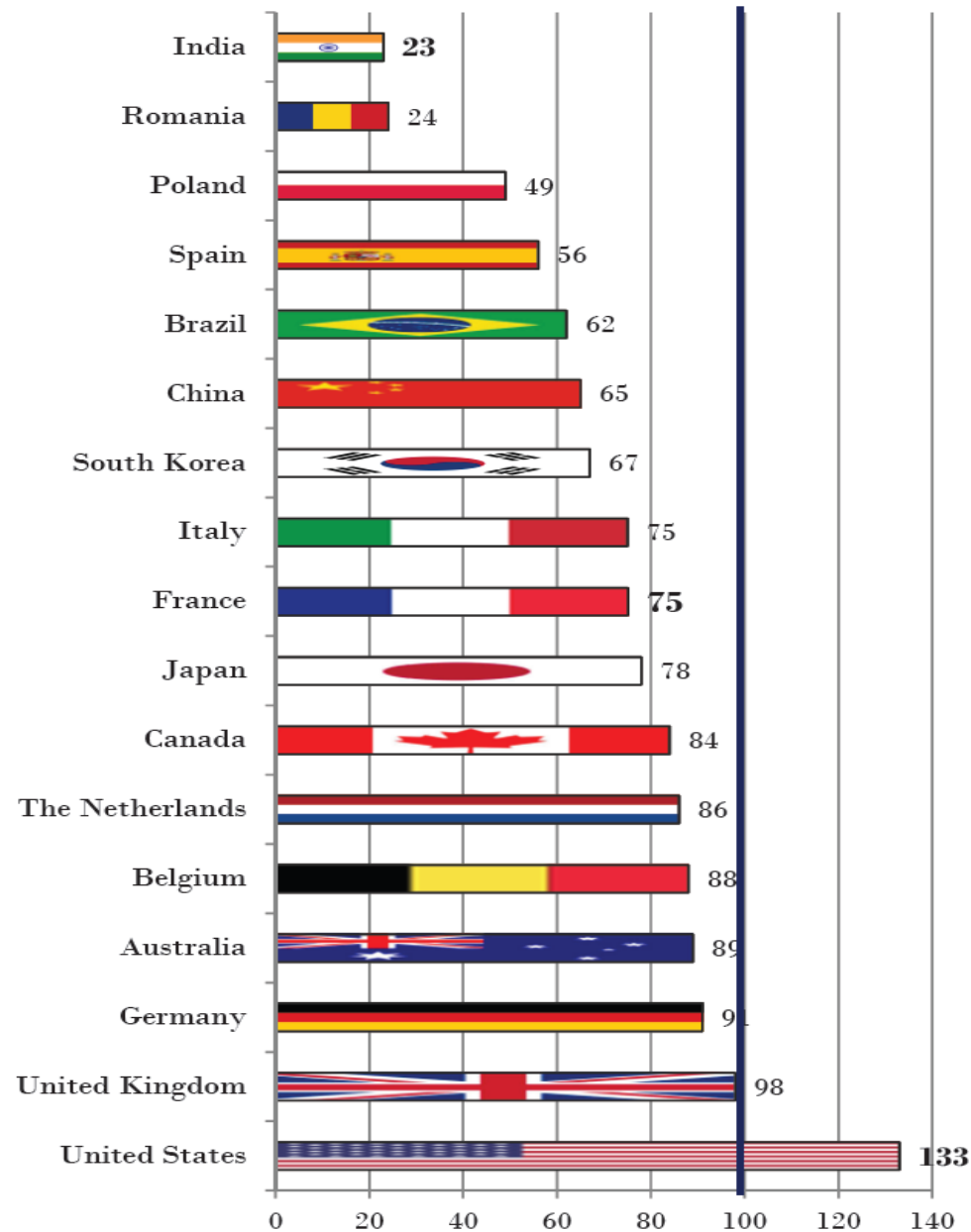
The role of innovation policy

- Externalities from R&D vindicate subsidies: direct financing of fundamental research, subsidies to private research.
- Tax credit: the French example
 - Tax credit on the volume of R&D expenditures: Crédit Impôt Recherche
 - 30% of expenses up to 100 Mlns €; 5% above
 - 5,6 Mds € in 2013
- Banque de France evaluation (Bozio, Irac and Py, 2014):
 - Diff and diff and matching
 - Multiplier effect between 0.9 and 1.4 of R&D expenditures
 - International evidence usually finds also unit multipliers
- Patent policy:
 - Balance between innovation return and innovation diffusion
 - Uncertainty due to the existence of multiple protection regime
 - European Unitary Patent in 2013

Corporate researchers per thousand employees (2000-2014)

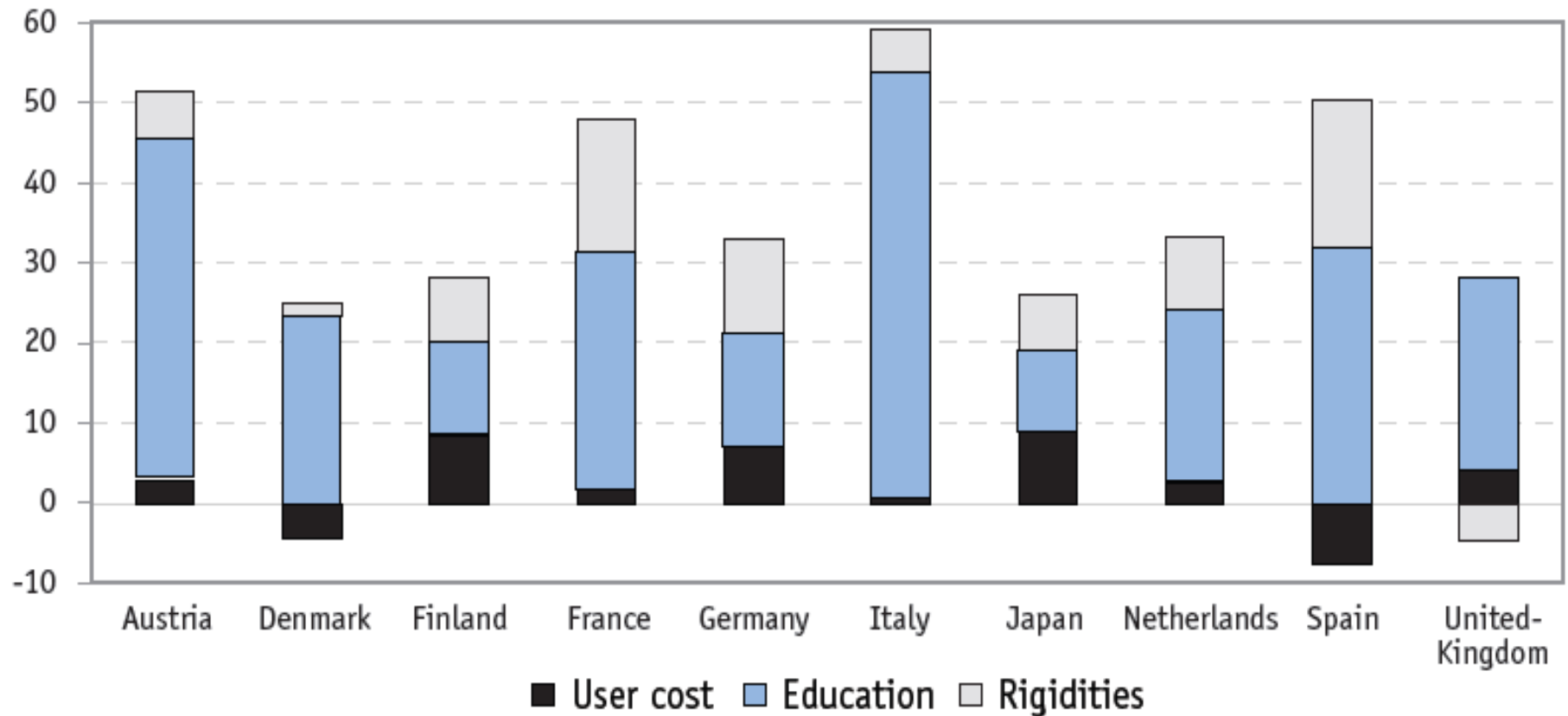


Average researcher cost after incentives



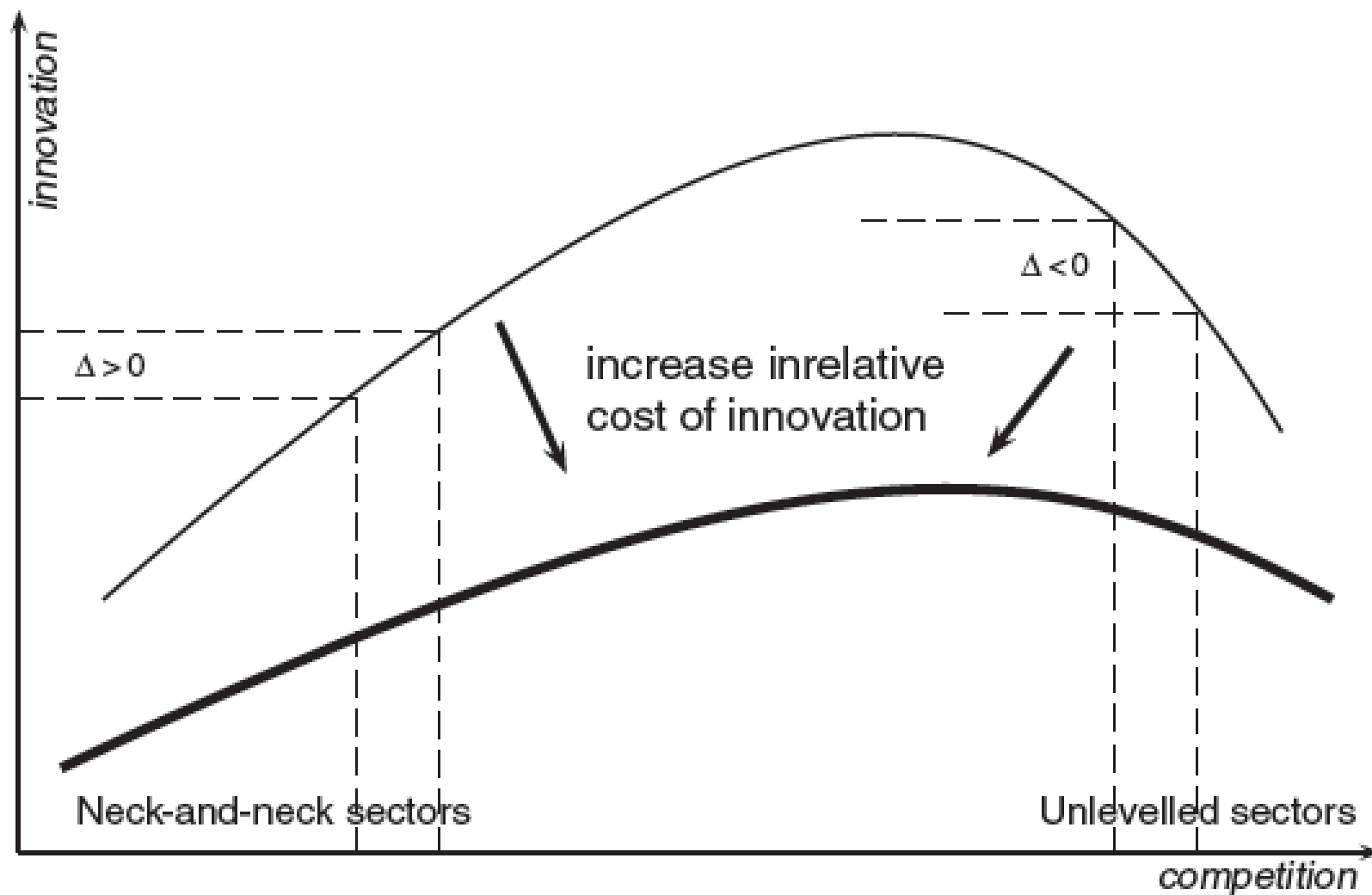
The role of the institutional context

Factors Underlying the Simulated ICT Diffusion Gap vis-à-vis the United States, 2005
(points)

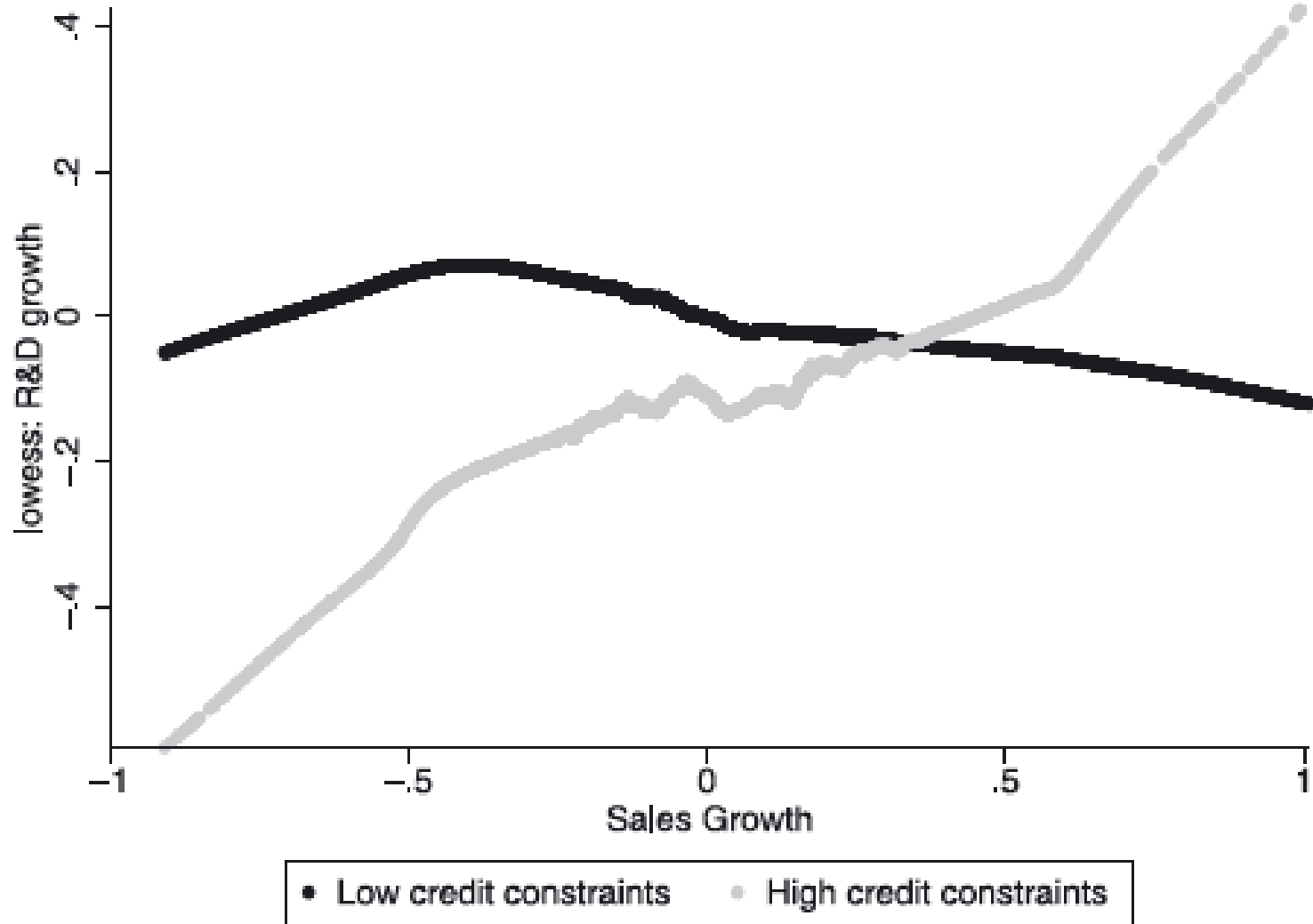


Competition and innovation

The inverted U-curve with different costs of innovation



The need for appropriate financing

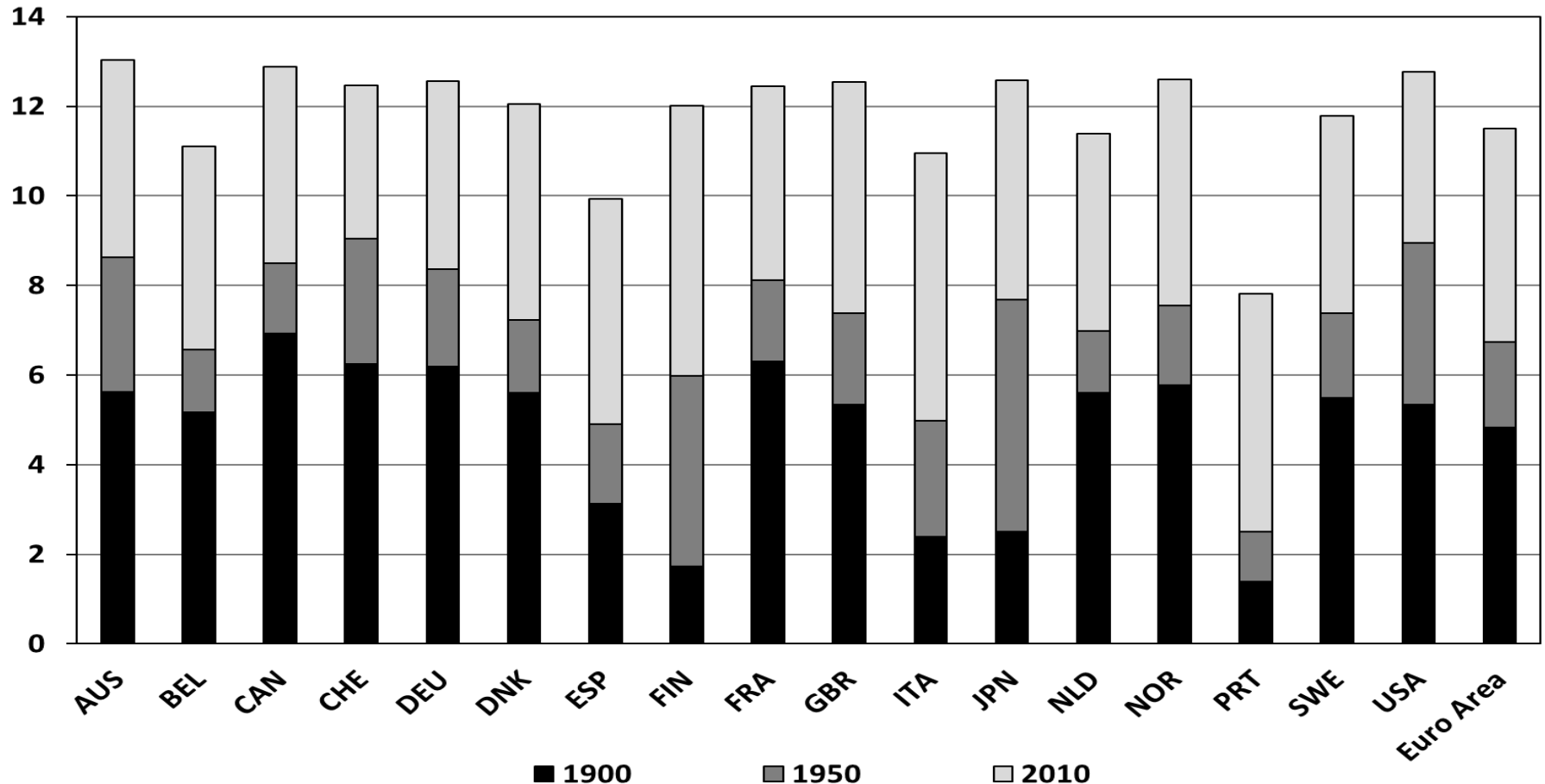


Supplementary slides

A well-educated population is key

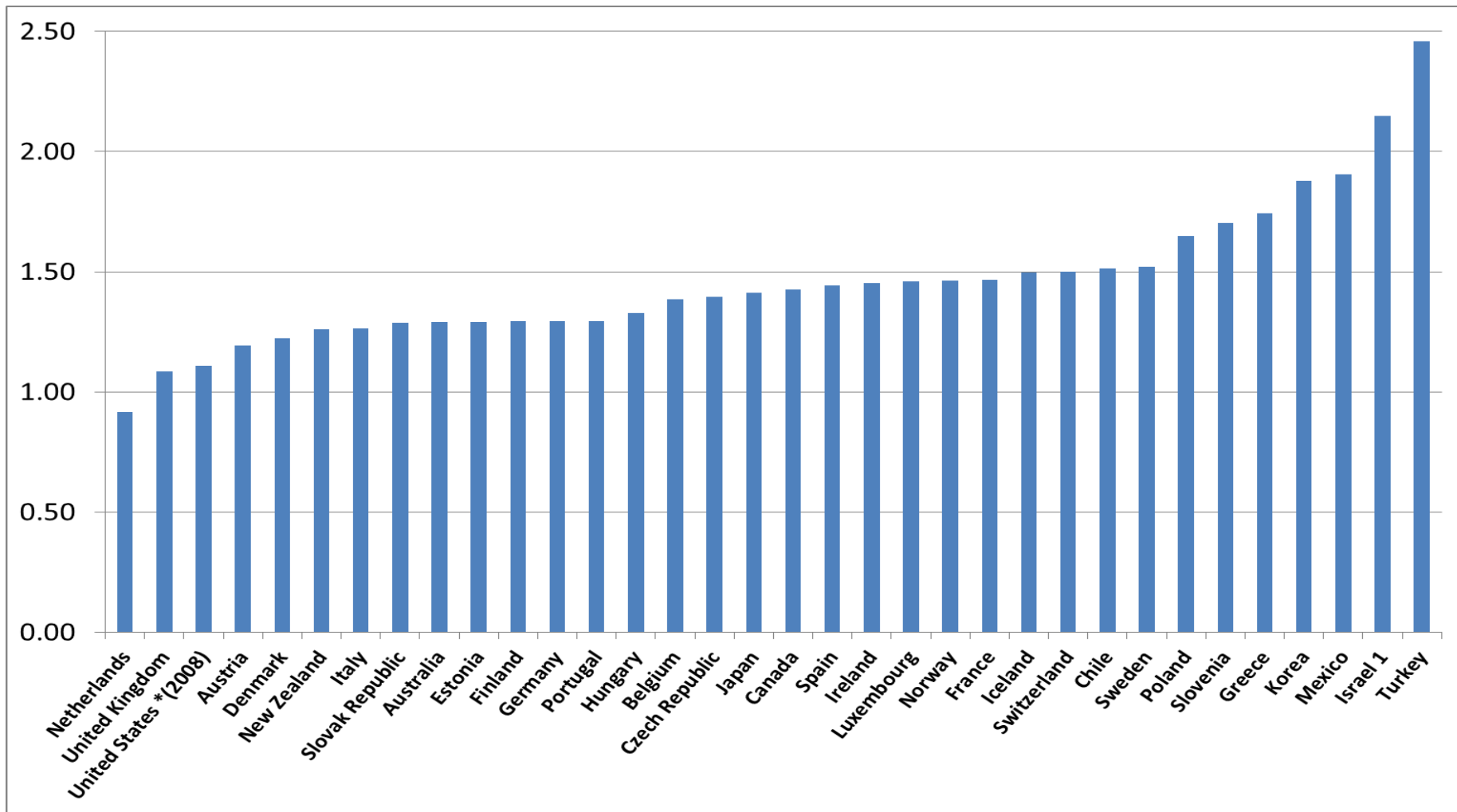
Educational attainment in 1900, 1950 and 2010

(Average duration of schooling for the population aged over 15, in years)



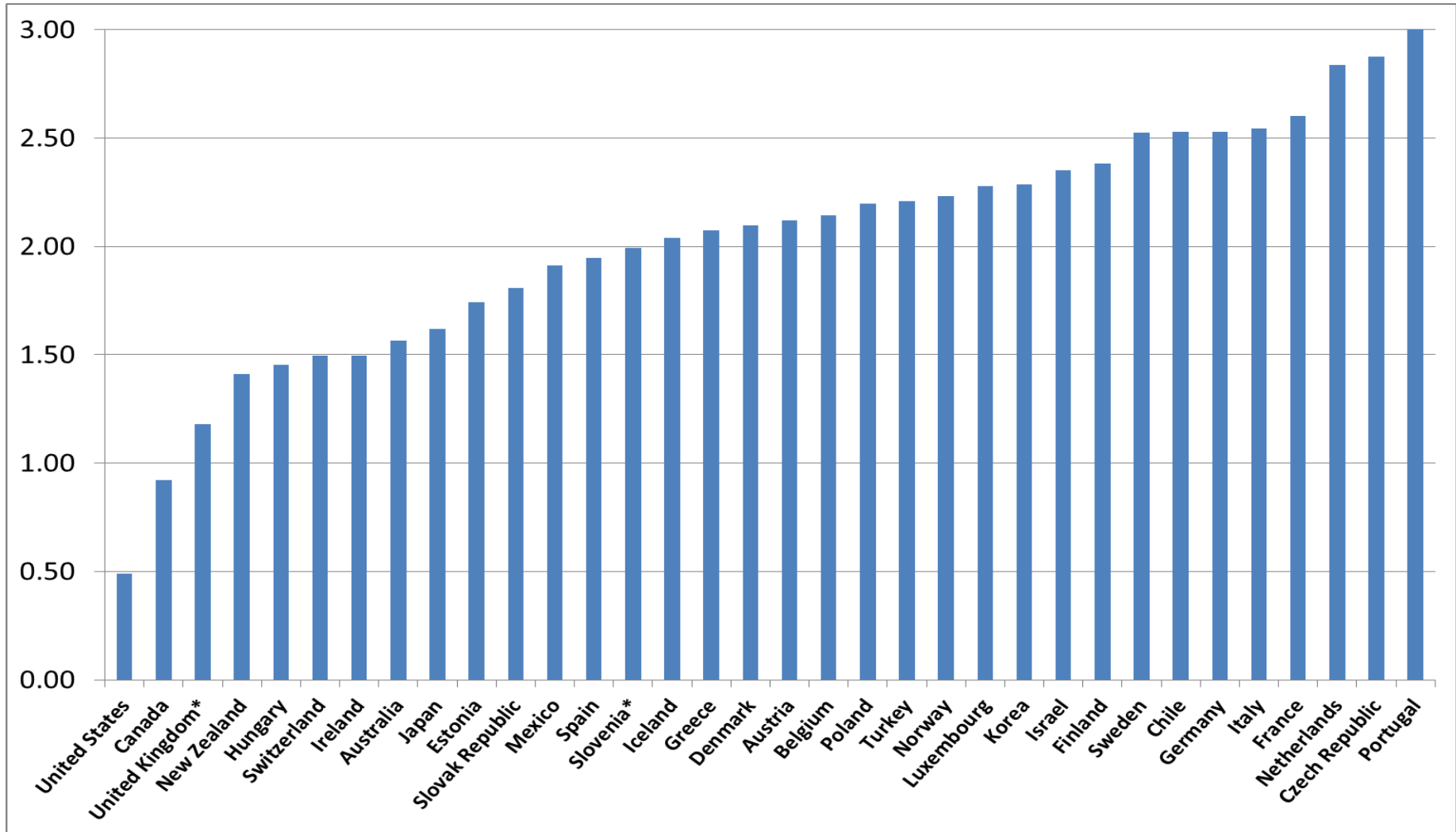
Market rigidities are hampering technology diffusion

Product Market Regulation in 2013



Market rigidities are hampering technology diffusion

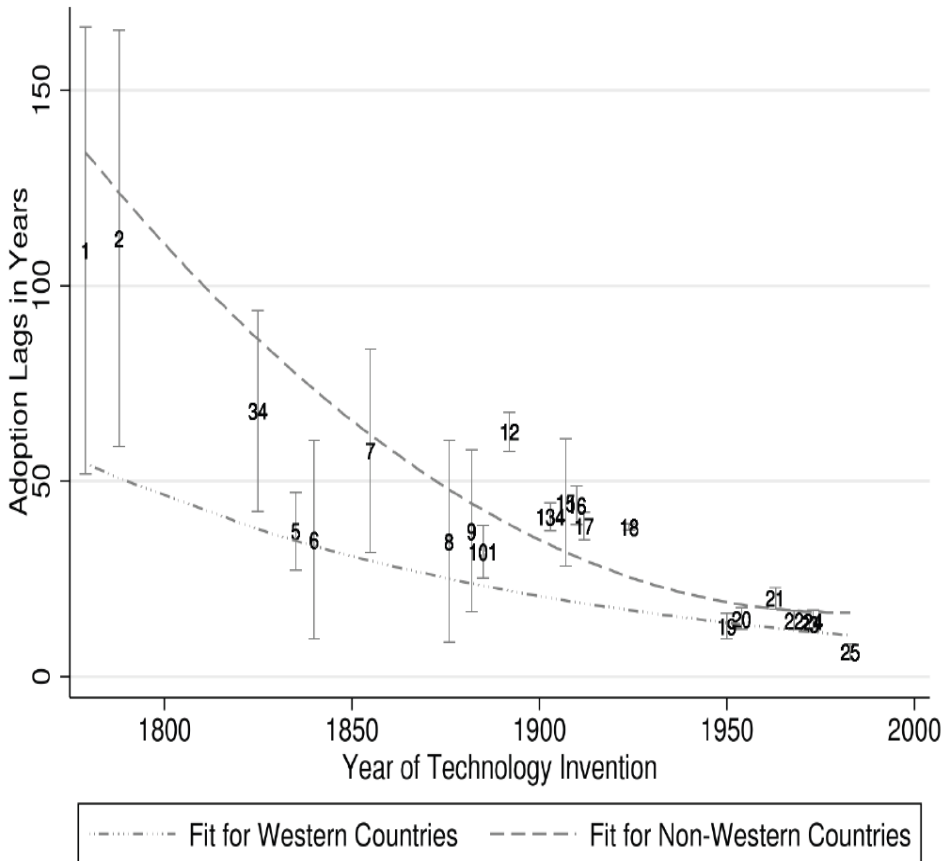
Employment protection legislation of permanent contracts in 2013
(*2014)



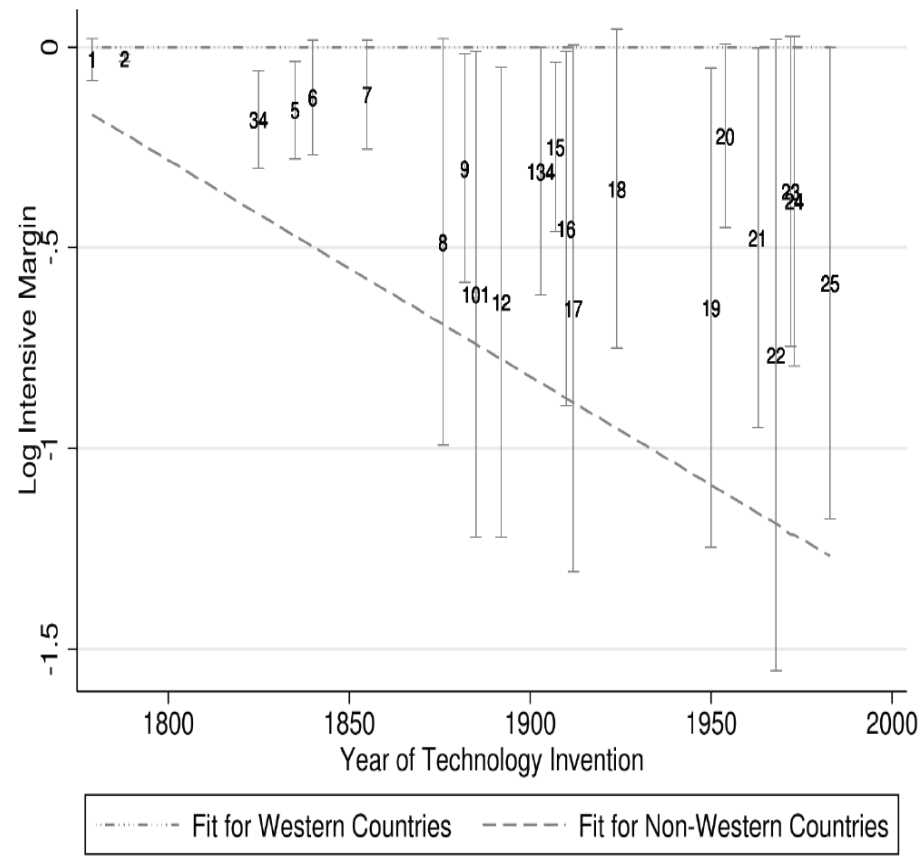
Innovations matter...but also their diffusion

Adoption of new technologies: lags and diffusion intensity

(a) Convergence of Adoption Lags



(b) Divergence of the Intensive Margin



Technology matters...but it is not the whole story

Filtered growth rate of different TFP measurements for the US

The series have been computed using a HP filter with coefficient 500 ($\lambda = 500$) over the period 1890-2010 to address the issue of initial values.

