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Broadband and Growth

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What we did to measure contribution of broadband to economic productivity

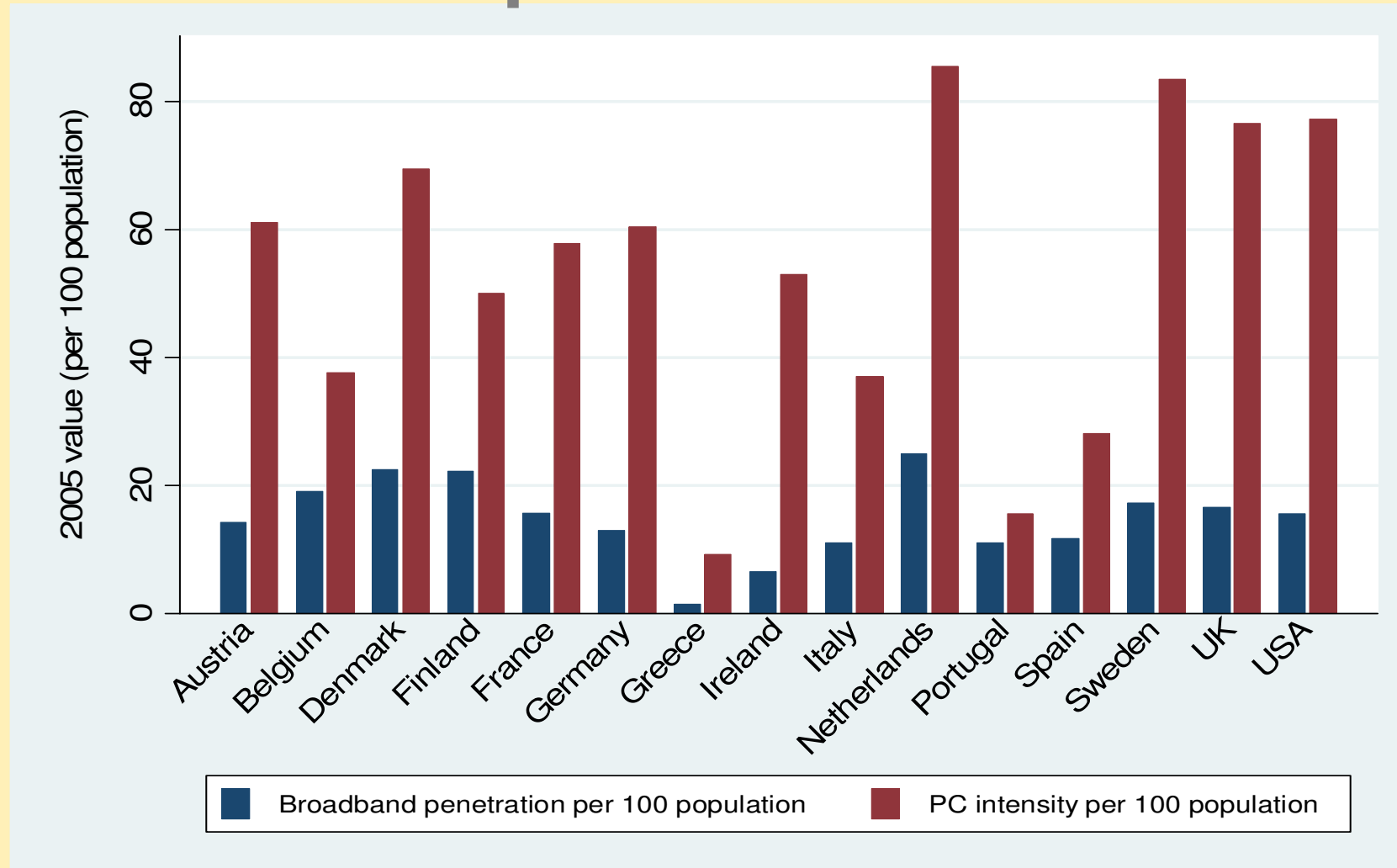
- Studied 15 OECD countries (US and 14 European nations) - period from 1980 to 2007
 - Measured productivity as GDP per hour worked
 - Indicators in first differences regression analysis:
 - Non-ICT capital,
 - ICT capital, voice penetration rate (fixed plus mobile),
 - PC penetration and **Broadband penetration**
- As proxies for ICT generally,
- Note absence of data on business BB

Country	ICT intensity
Austria	medium
Belgium	low
Denmark	high
Finland	high
France	medium
Germany	medium
Greece	low
Ireland	medium
Italy	low
Netherlands	high
Portugal	low
Spain	low
Sweden	high
UK	medium
US	high

Country sample for Broadband Study

- **+ ** “ICT intensity” differentiated**
- ***High* ICT diffusion in US, Nordic countries (Denmark, Finland, Sweden) and Netherlands**
- ***Medium* ICT intensity rates in central and western Europe: Austria, Germany, France, UK and Ireland**
- ***Low* ICT intensity rates in Southern European nations (Italy, Spain, Portugal, Greece) and Belgium**

Example of Data



Country	ICT intensity
Austria	medium
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Portugal	low
Spain	low
Sweden	high
UK	medium
US	high

Results

- ***For High ICT diffusion and Medium ICT intensity rates :***

1 additional BB line/100 people increases productivity .1%

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- **For USA, BB expansion of 2.5 lines per 100 people adds 0.25%/year to GDP growth, or 1/8 of 2.0% annual GDP growth**

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Results

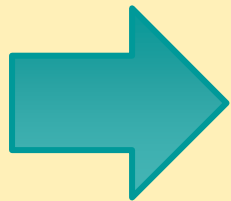
- **Low ICT intensity rates in Southern European nations and Belgium**

**an additional BB line adds
Zero to GDP**

- **suggests high adoption costs, critical threshold and/or large demand side issues**

Why these Results?

- To move up the ICT ladder requires expansion of Broadband infrastructure + ICT + crucially developing the skills and business interest in ICT as an enabler of change



There needs to be an ICT eco-system enabling broadband to be a productivity enhancement tool

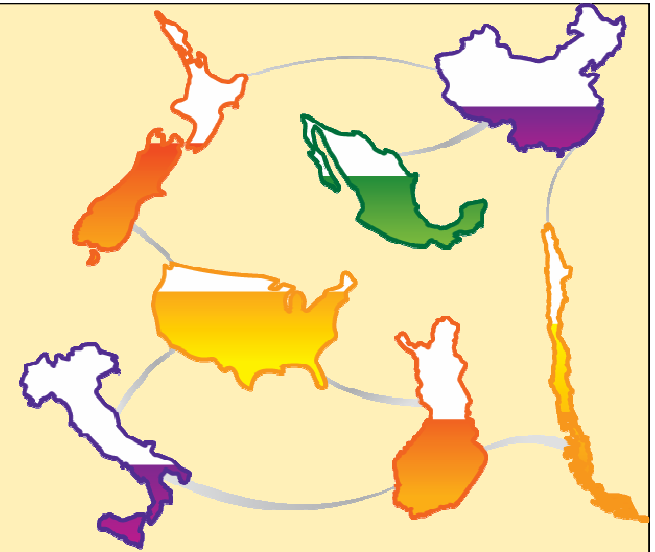
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Thanks

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For further information, link to
Connectivity Scorecard web
page:

www.connectivityscorecard.org



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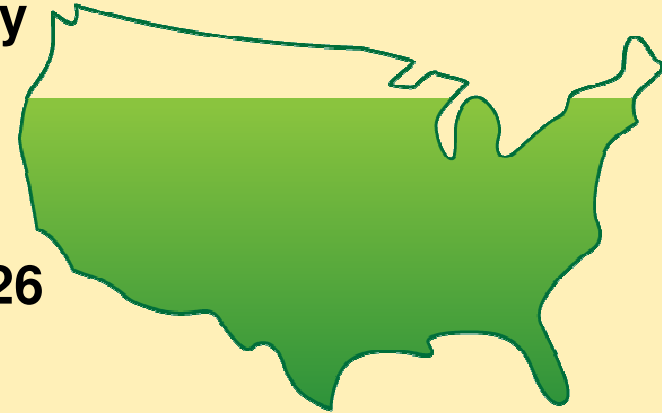
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The USA

- Between 1999 and 2007, US productivity grew at average rate of ~2 percent p.a., with the country adding 2.5 broadband lines per 100 inhabitants p.a.
- As a result, broadband contributed ~0.26 percent p.a. to productivity
- US productivity equals ~\$40 per hour worked on average -> a 2 percent growth rate equals 80 cents an hour worked



Between 1999 and 2007, broadband-related productivity growth in the US resulted in 11 additional cents of output per hour or \$29 billion a year.

Italy and Sweden

	Italy	Sweden
GDP per hour worked (2007, USA=100)	81	85
Average annual productivity growth, 1980-1997	1.96%	1.38%
Average annual productivity growth, 1998-2007	0.39%	2.32%
PC penetration, 2006	40.00	88.00
Broadband penetration, 2007*	17.10	31.20
% of population with no internet skills, 2007*		58%
22%		
% of enterprises receiving internet orders, 2007*	4%	26%
% enterprises purchasing on the internet, 2007*	29%	72%

Note: ITU database does not report the PC penetration level for Italy in 2006 or 2007.

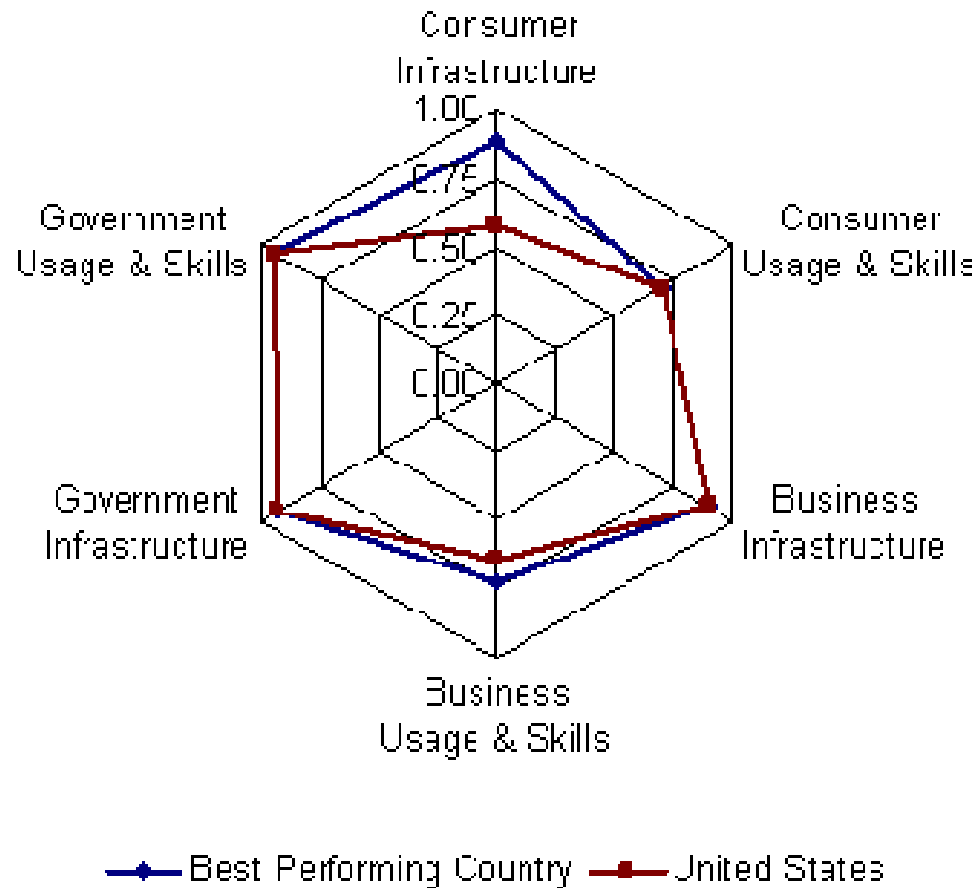
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Connectivity Scorecard 2009: Resource and efficiency-driven economies

Resource and efficiency-driven economies	Connectivity score
Malaysia	7.07
Turkey	6.71
Chile	6.59
South Africa	5.76
Mexico	5.39
Russia	5.37
Argentina	5.14
Brazil	5.12
Colombia	4.08
Botswana	3.98
Thailand	3.75
Iran	3.62
Ukraine	3.60
Tunisia	3.50
China	3.19
Philippines	3.17
Egypt	3.02
Sri Lanka	2.87
Vietnam	2.75
India	1.88
Indonesia	1.87
Kenya	1.75
Bangladesh	1.60
Pakistan	1.54
Nigeria	1.30

- **Malaysia again top scorer in its peer group, with very consistent results across the board**
- **New entrant Chile at 3rd position: best Latin American performer with outstanding business infrastructure**
- **China moderate 15th position, but ahead of India on all consumers and business dimensions**
- **India 20th (out of 25): scores poorly on many metrics, as faced with massive development challenges**
- **Median score only 3.60 out of possible 10 – fundamental challenges for emerging countries**

US versus 'The Best'



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