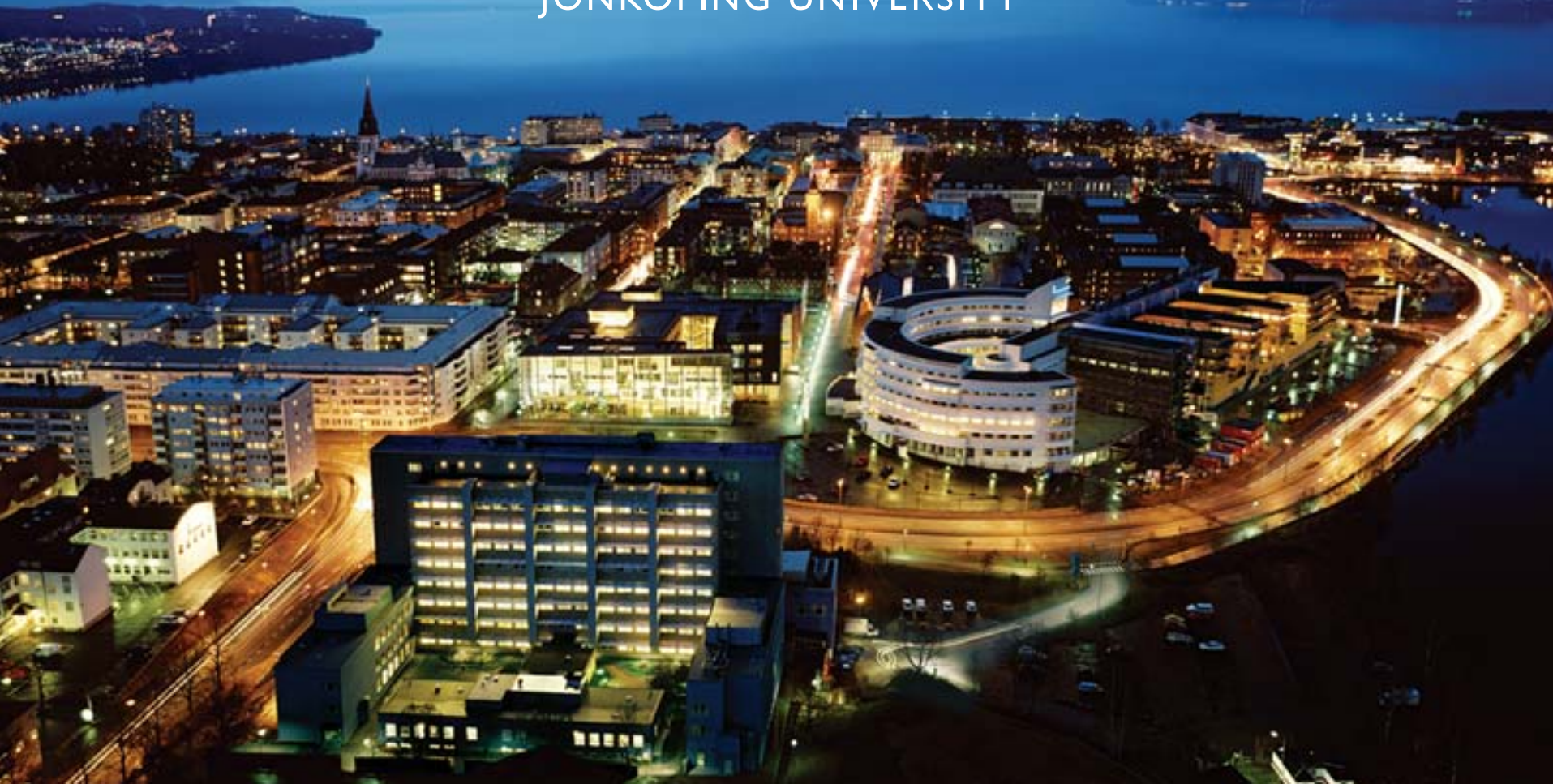




JÖNKÖPING UNIVERSITY



# **The Nordic countries - Leaders in the New Economy? ICT, Innovation and Economic Performance**

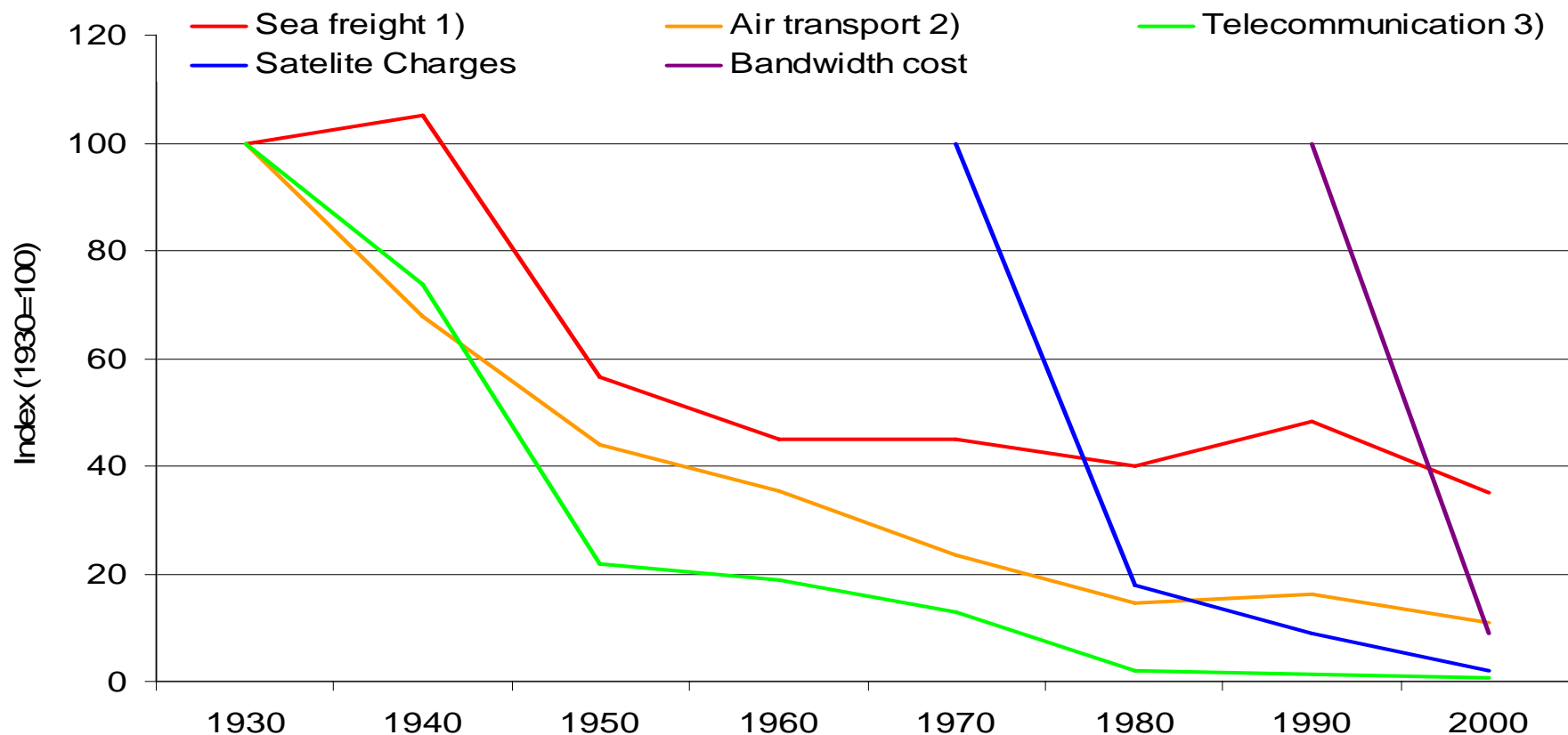
*Thomas Andersson*

RIETI

April 12, 2006



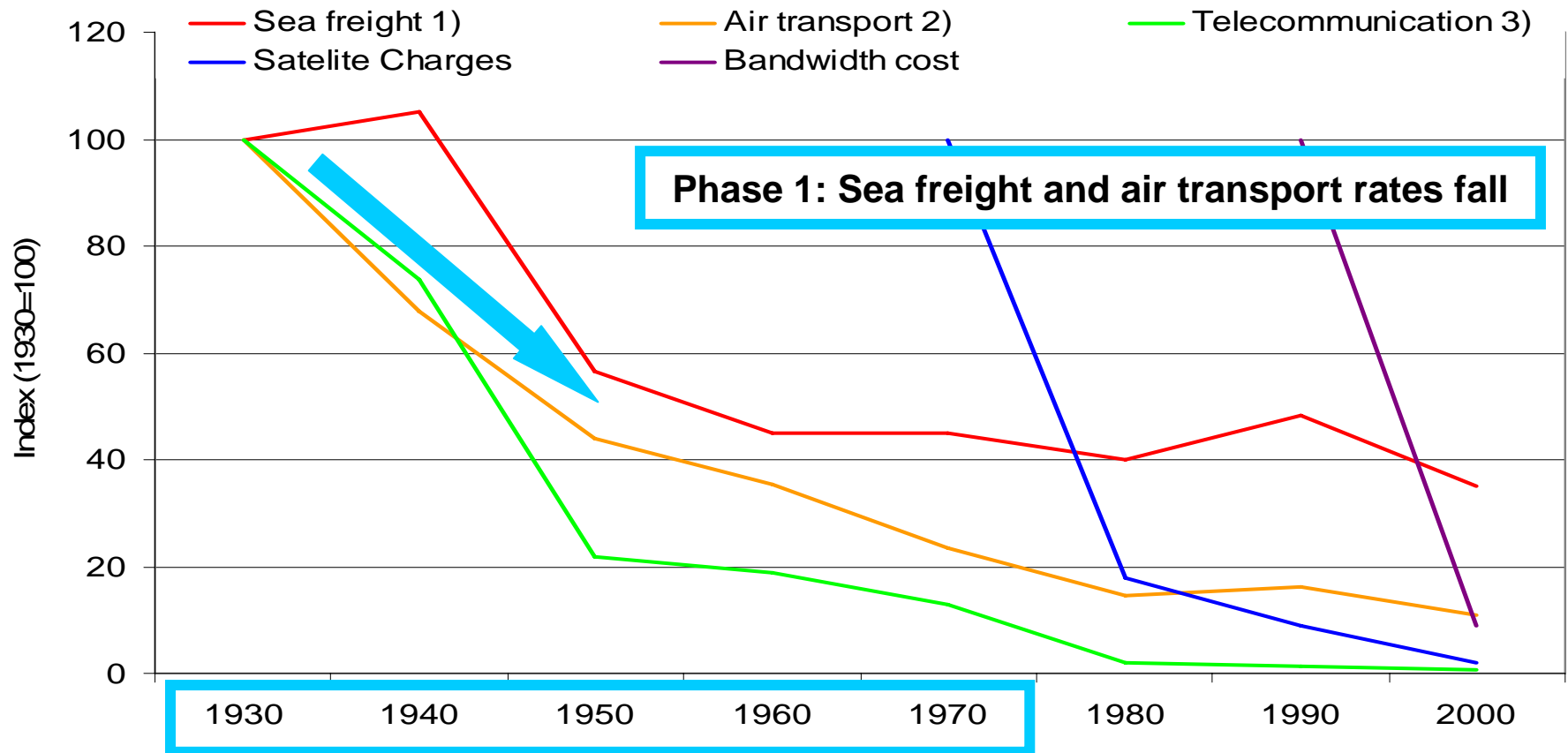
# Systematic reductions in transport and communication costs



Note: 1) Average ocean freight and port charges per short ton of import and export cargo. 2) Average air transport per passenger mile. Cost for 1920 not available. 3) Cost of a 3 minute telephone call New York to London. Cost for 1920 not available.

Source: Georg Hufbauer: World Economic Integration: The Long View, in Economic Insights, Vol. 30 (1991), pp. 26-27, Globalisation and the Competitiveness of Regional Blocs, Bernhard Fisher, Intereconomics 1998/04, and Tariffs, Transport Costs and the WTO Doha Round: The Case of Developing Countries, Mattias Busse, in Journal of International Law and Trade Policy, Vol. 4 (2003), No. 1, pp. 15-31.

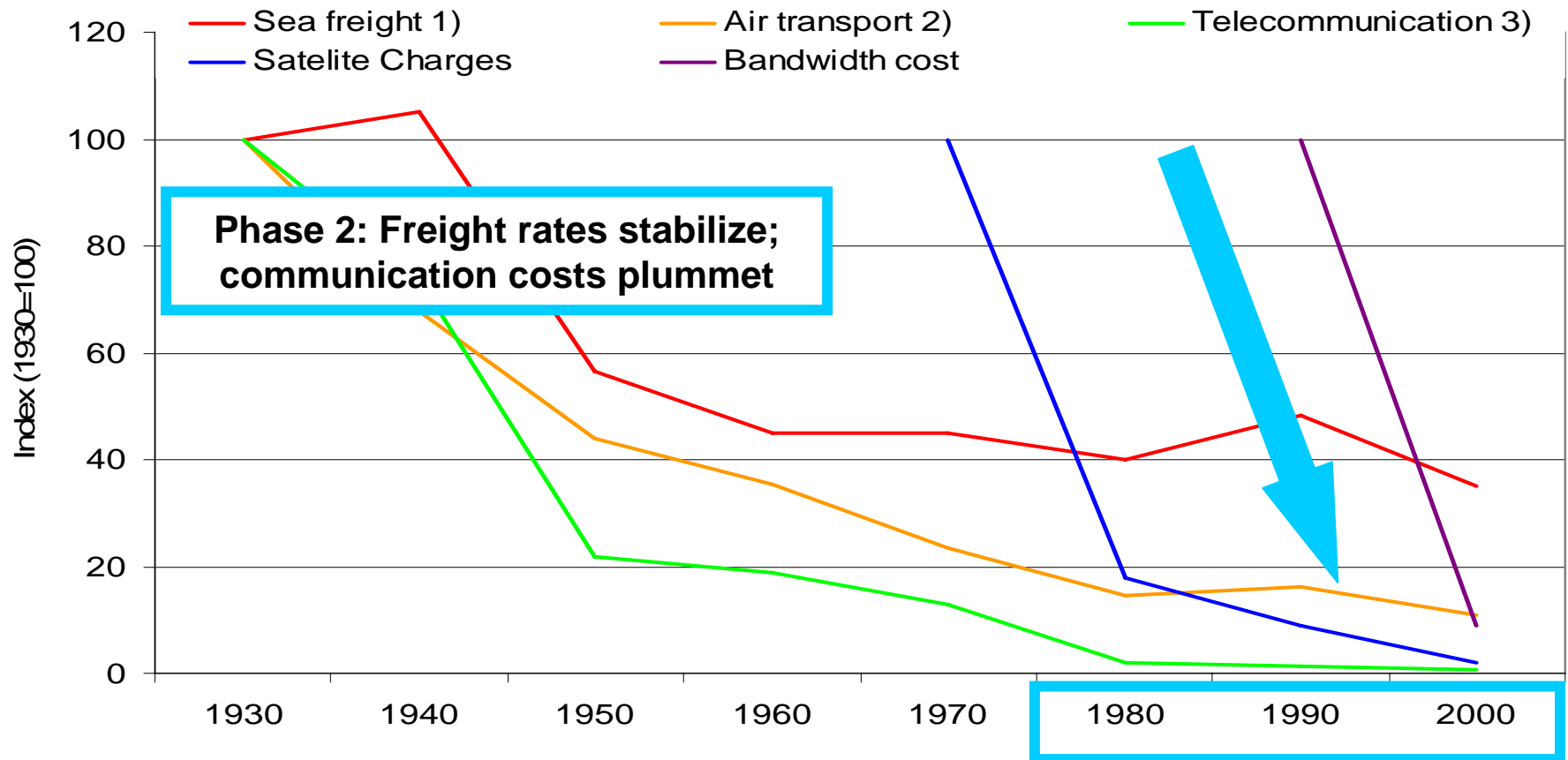
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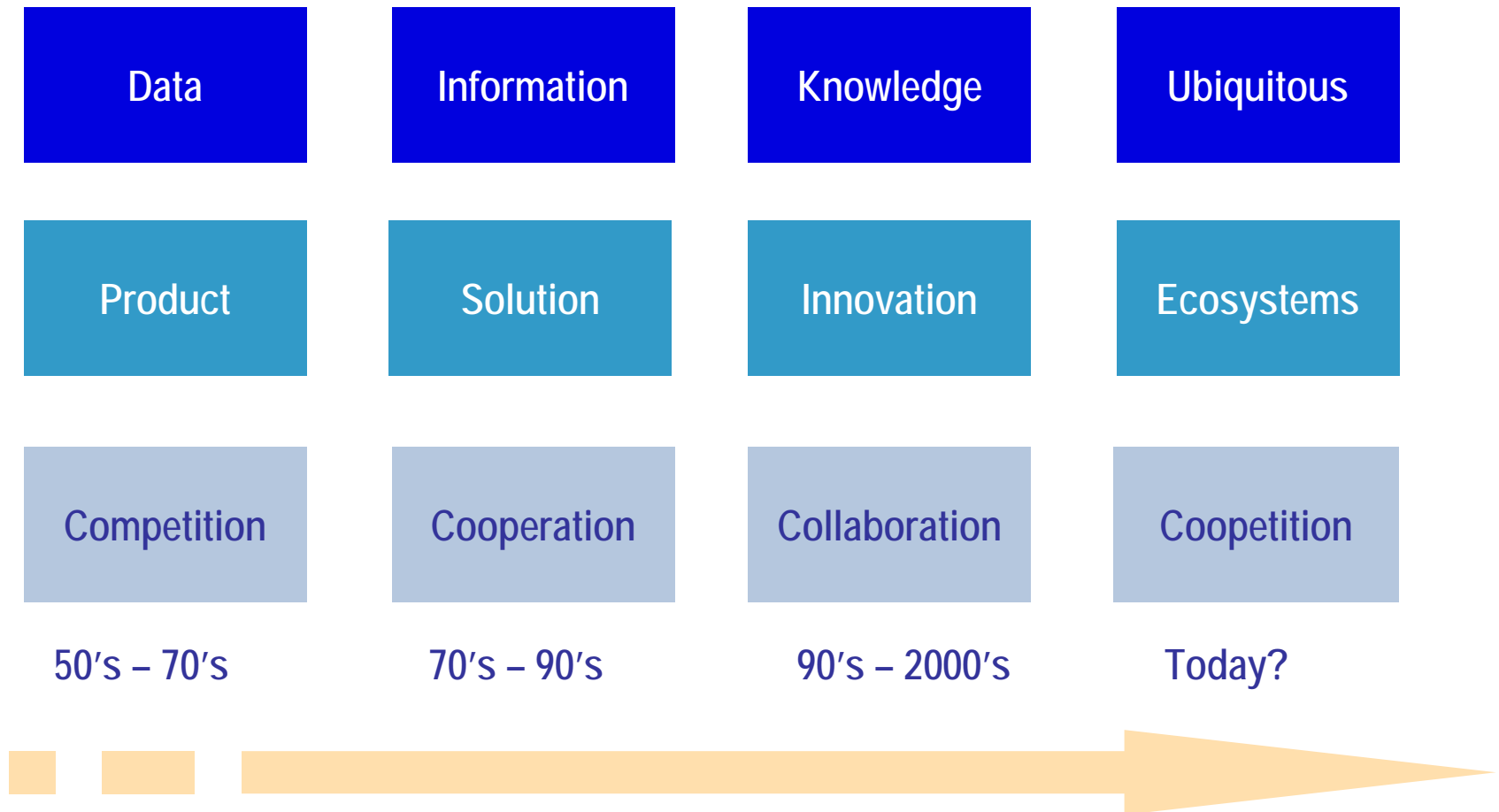
# Systematic reductions in transport and communication costs



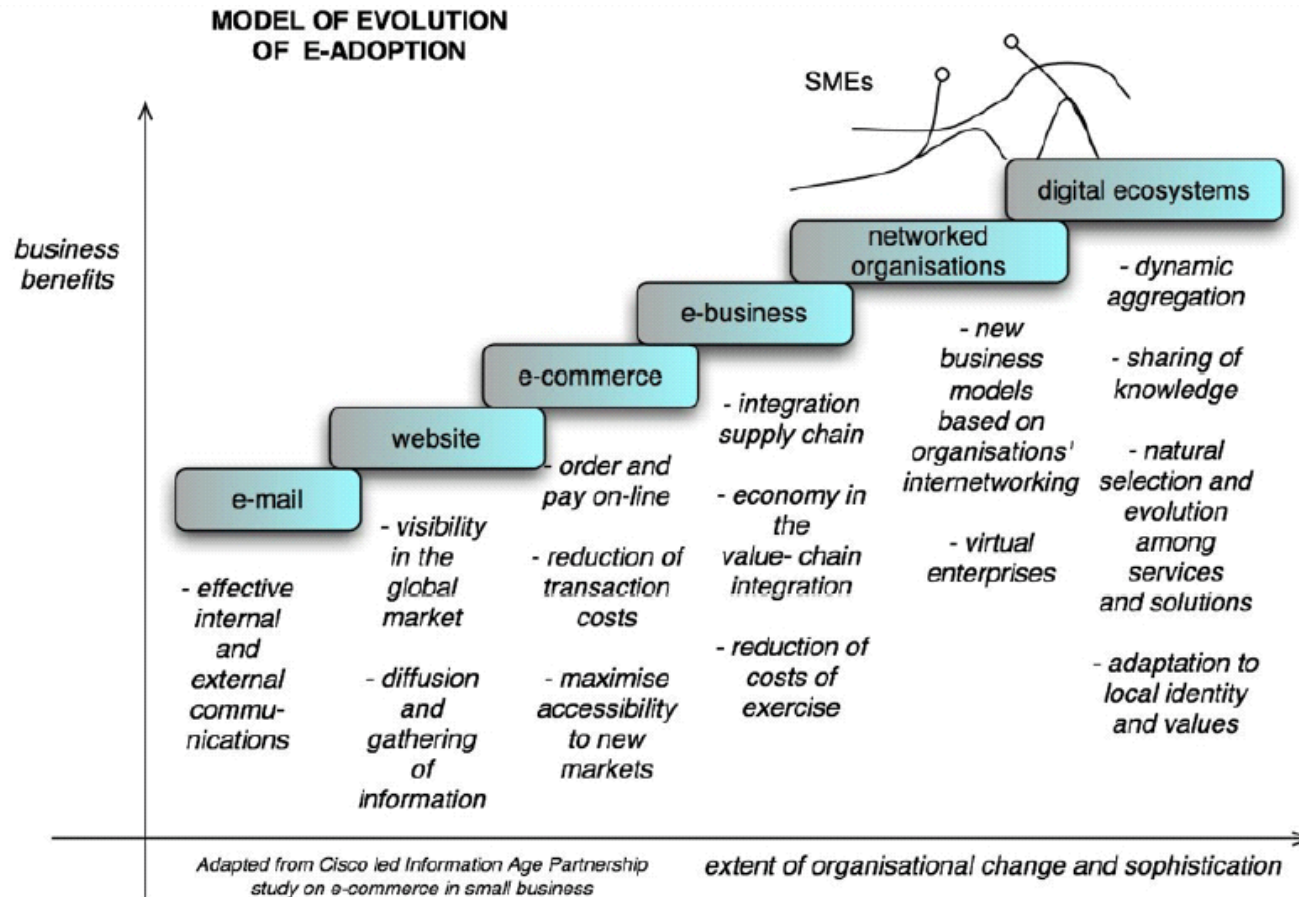
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# The Economic Evolution towards the Networked Society



# ICT for Business Ecosystems

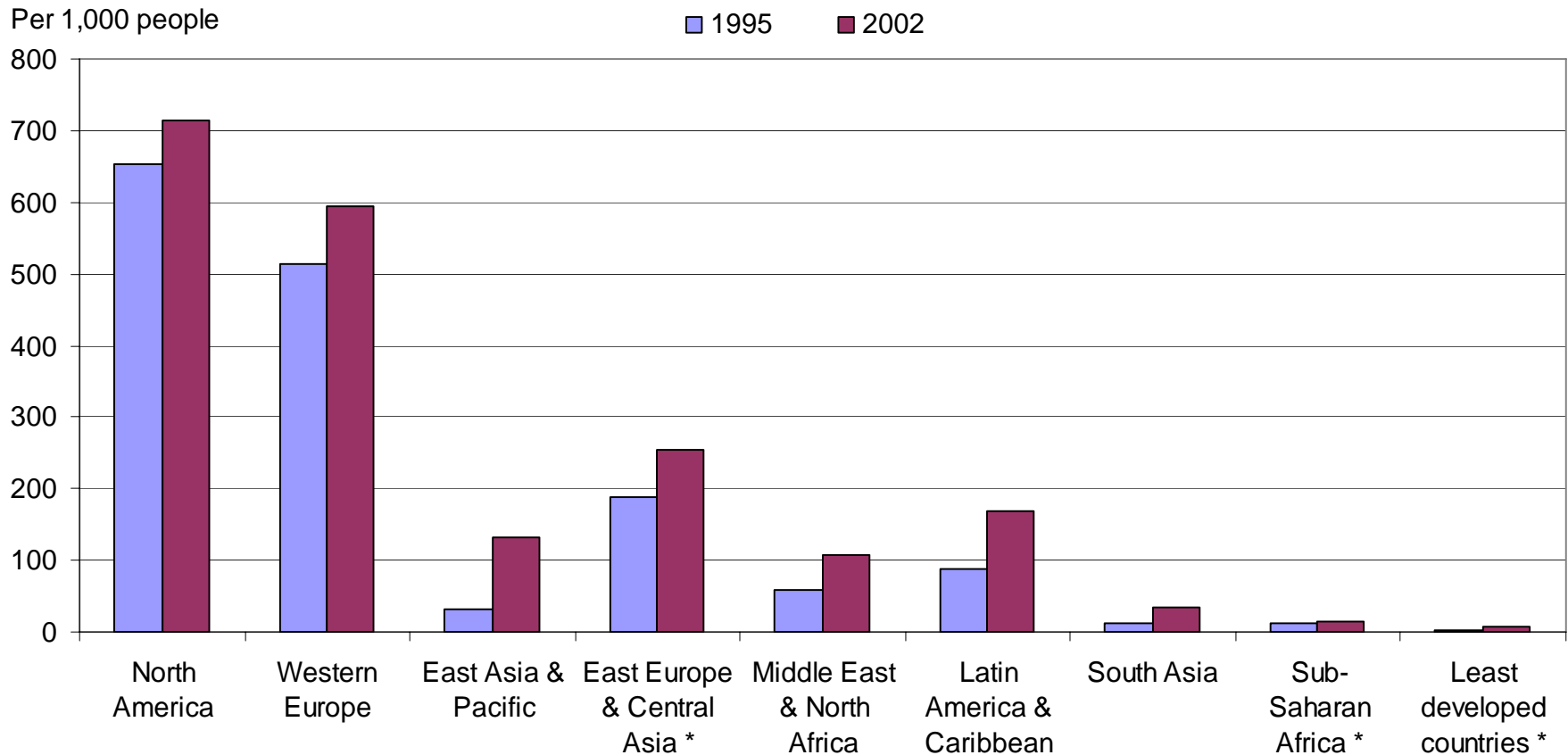


[Source: Gerald Santucci, European Commission Directorate-General Information Society Unit D5: ICT for Business, Global Forum 2004]



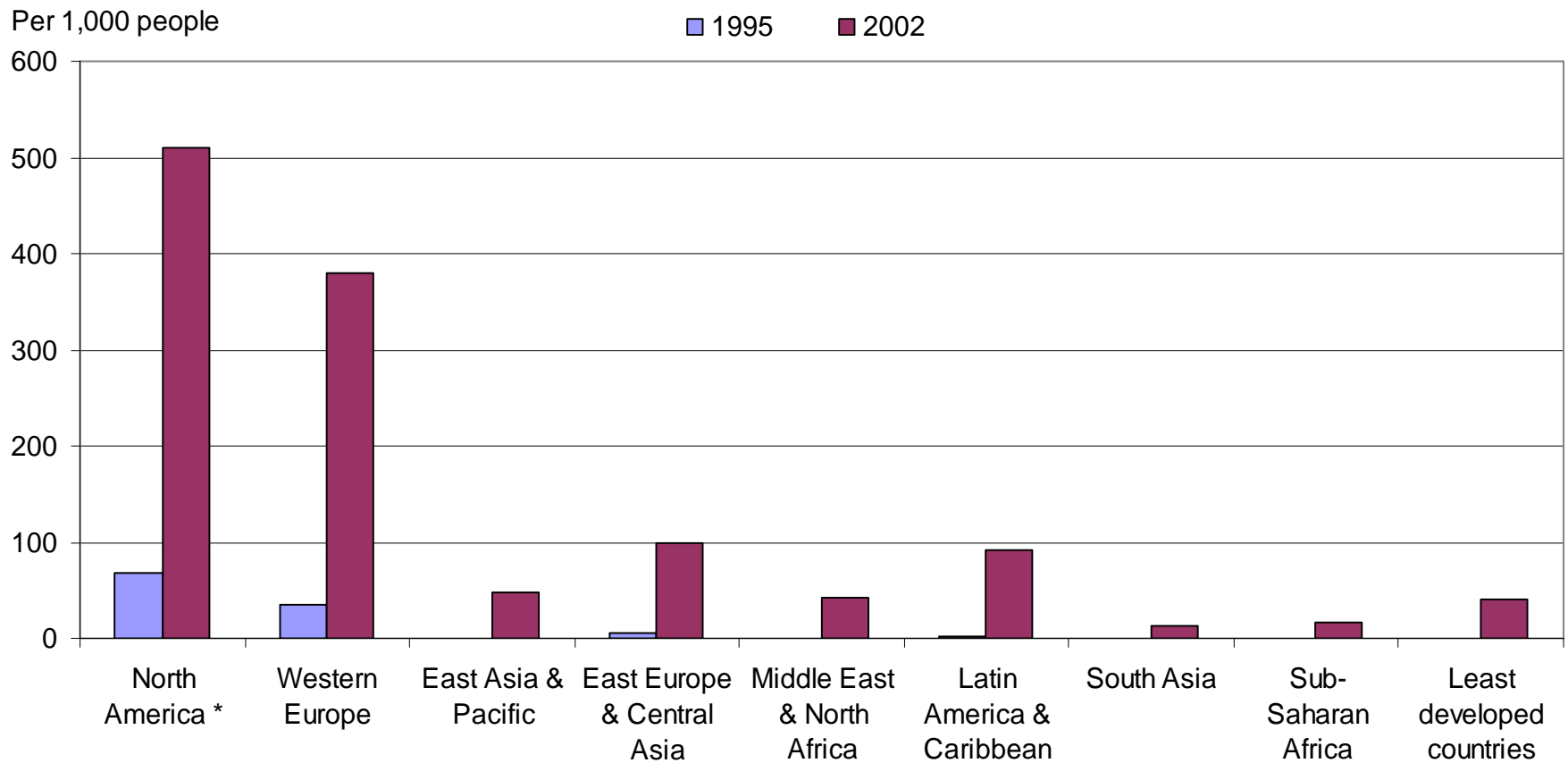
# The Digital Divide and ICT Infrastructure

## Telephone mainlines (per 1,000 people)



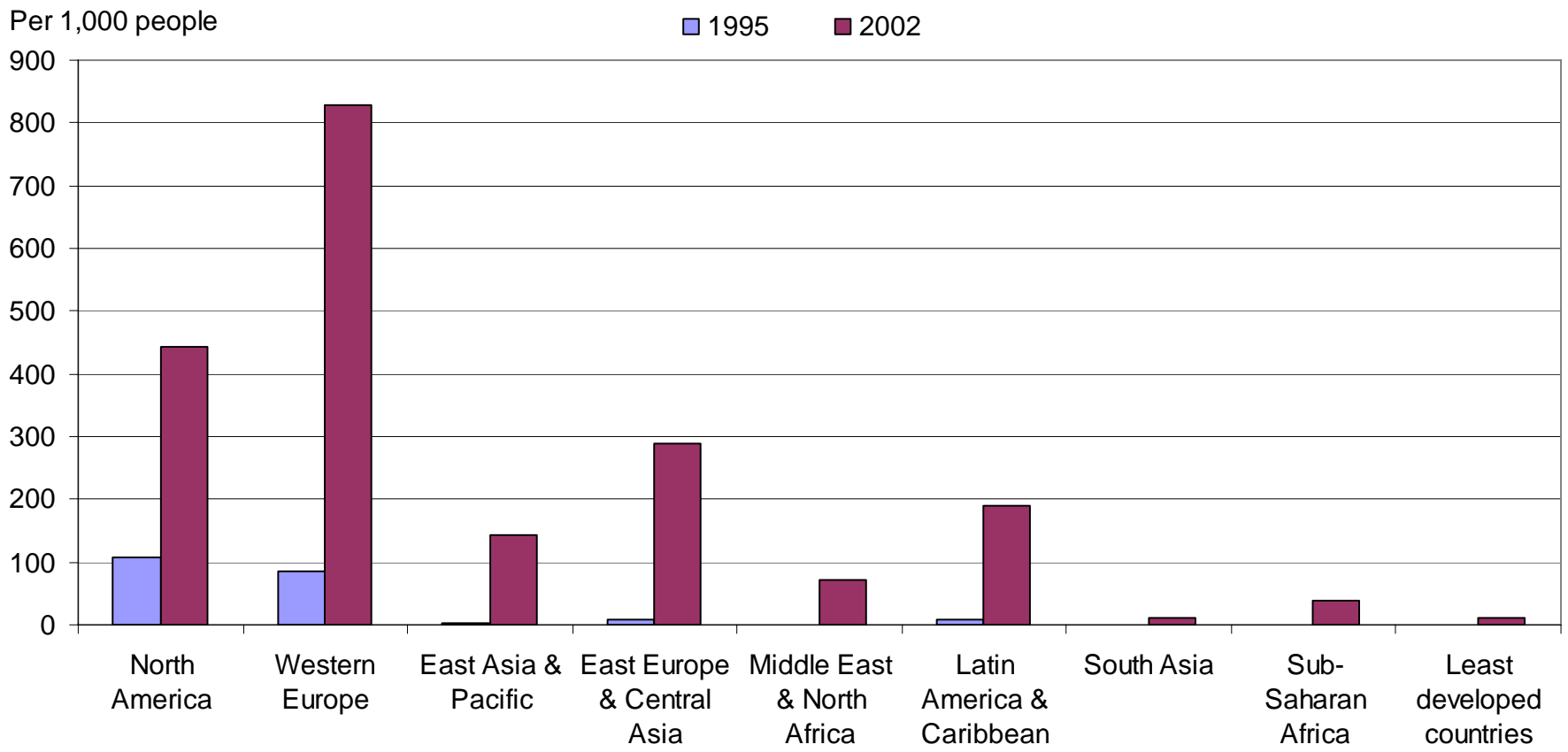
Source: World Development Indicators, 2005

# The Digital Divide and ICT Infrastructure: Internet Users (per 1,000 people)



Source: World Development Indicators, 2005

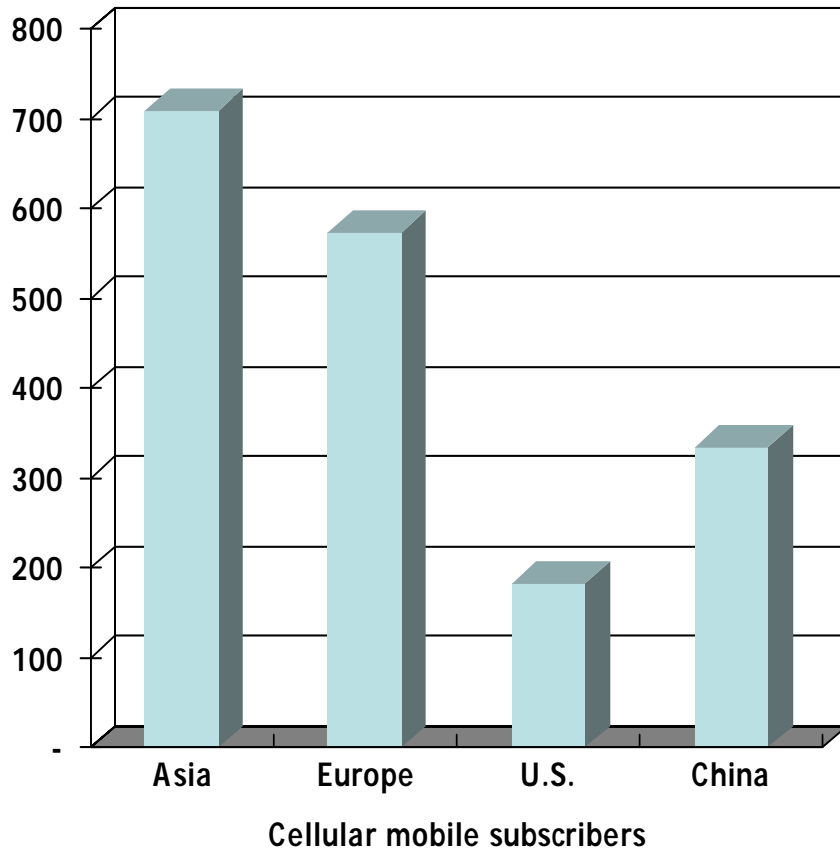
# The Digital Divide and ICT Infrastructure: Mobile Phones (per 1,000 people)



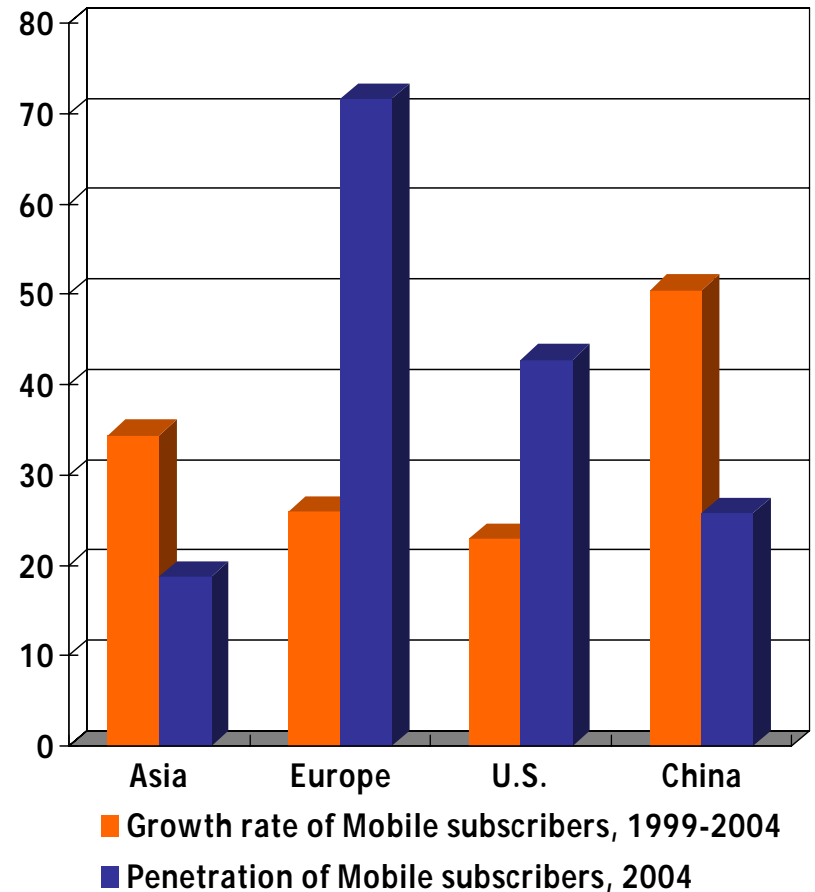
Source: World Development Indicators, 2005

# Mobile subscribers across regions, 2004

Subscribers in Million, 2004



Current growth Rates, %



# Looking for the effects

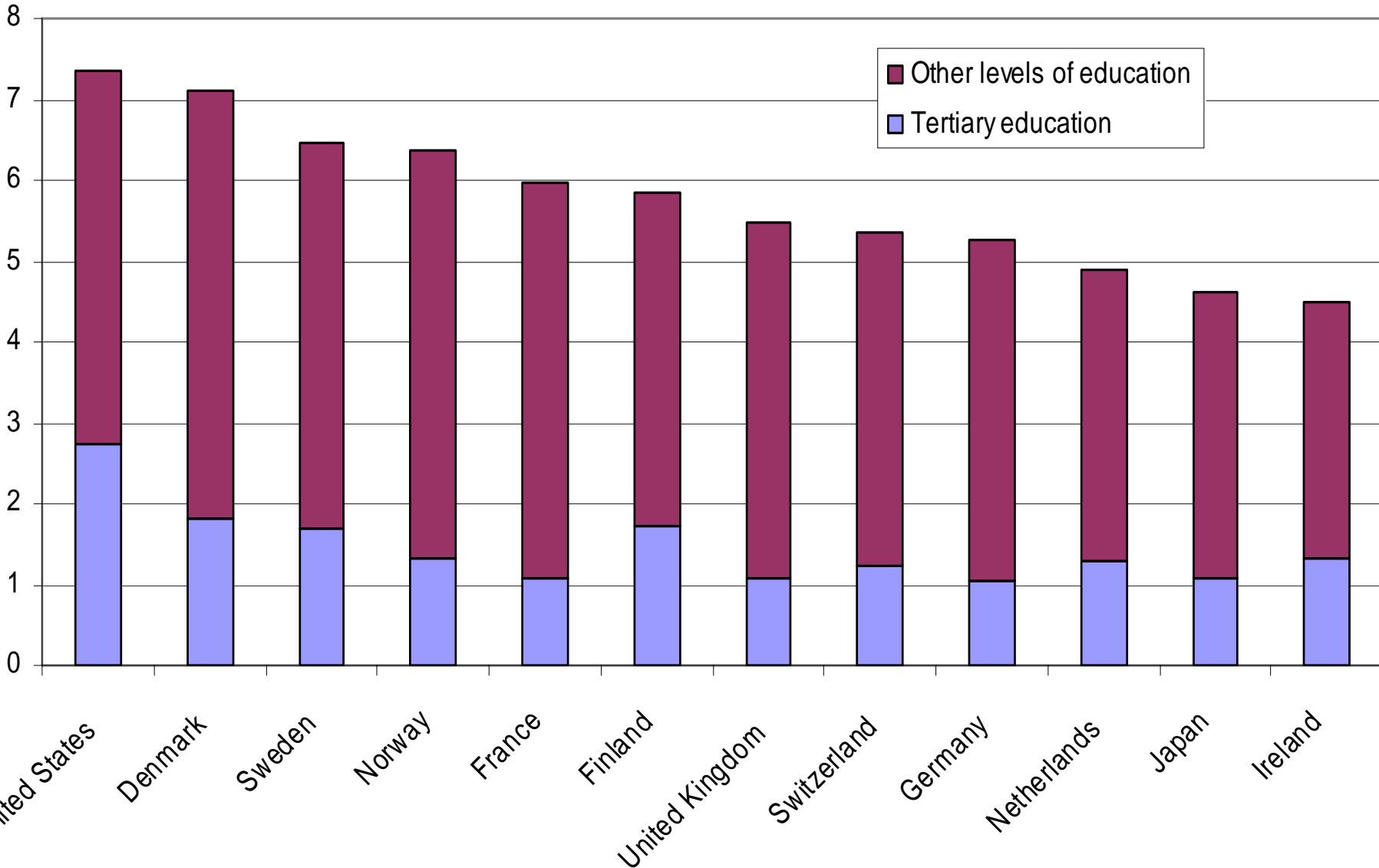
- From producer to the user side
- Levels: firm, industry, aggregate
- From individual production factors to total factor-productivity
- From static to dynamic: processes over time
- Complementary/enabling factors

# Crucial determinants

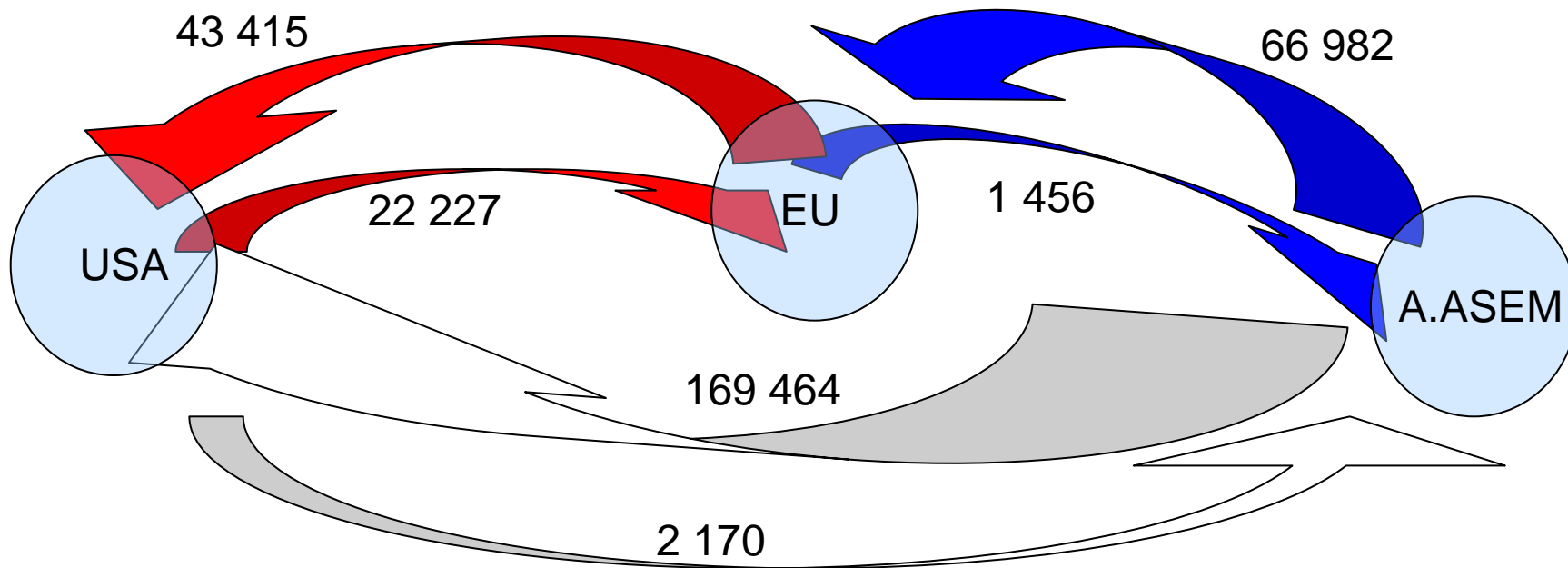
- Regulation - competition
- Human capital: from quantity of education to quality, learning, use of skills, learning
- Research, innovation, linkages
- Organisational change
- Entrepreneurship, risk-taking

# Investment in education in relation to GDP 2001

Per cent



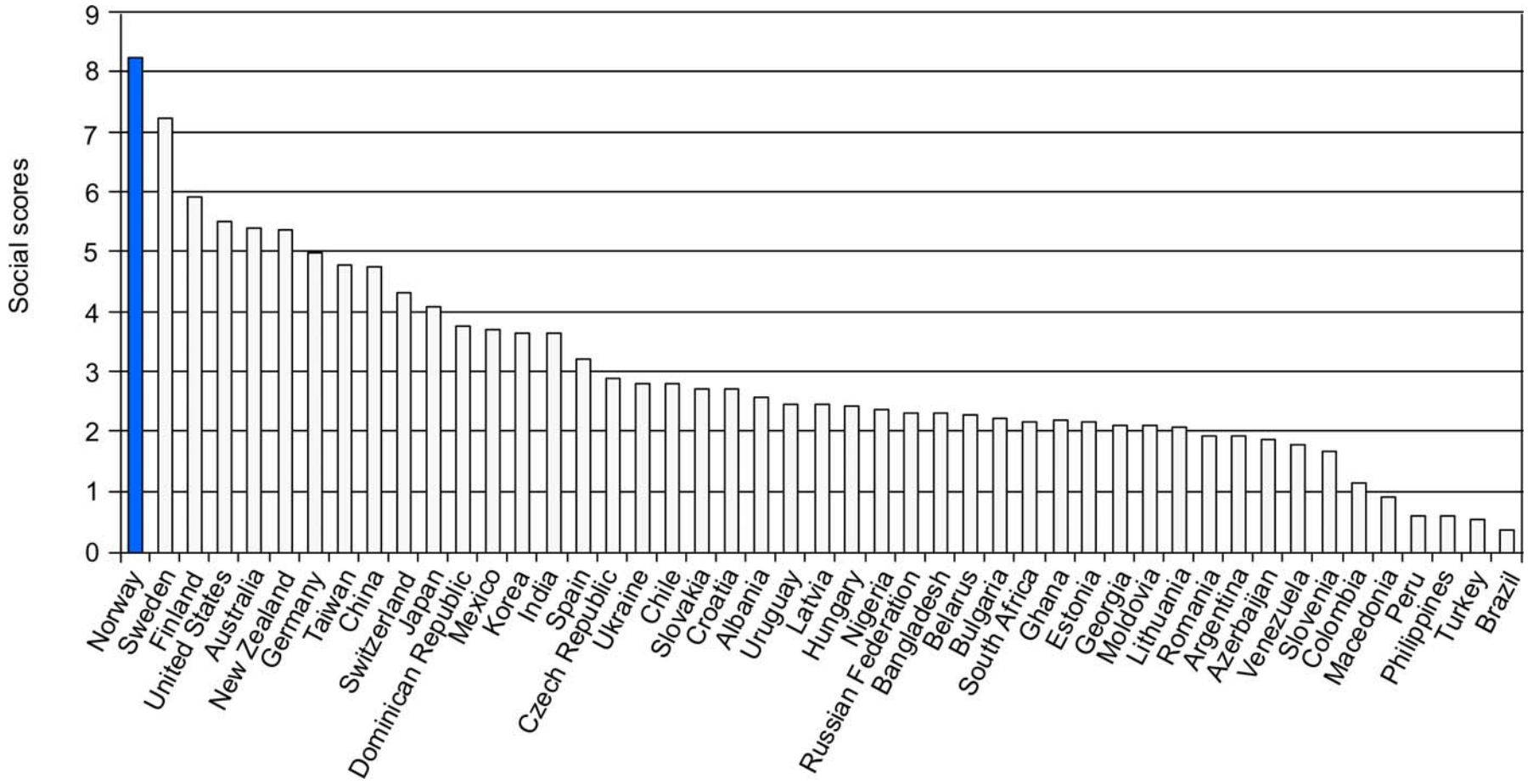
# Exchange of tertiary level students, 2000



Note: Luxembourg and Greece are not included in the EU aggregate. Brunei, Singapore and Vietnam are not included in the A.ASEM aggregate.  
Source: OECD Education database.

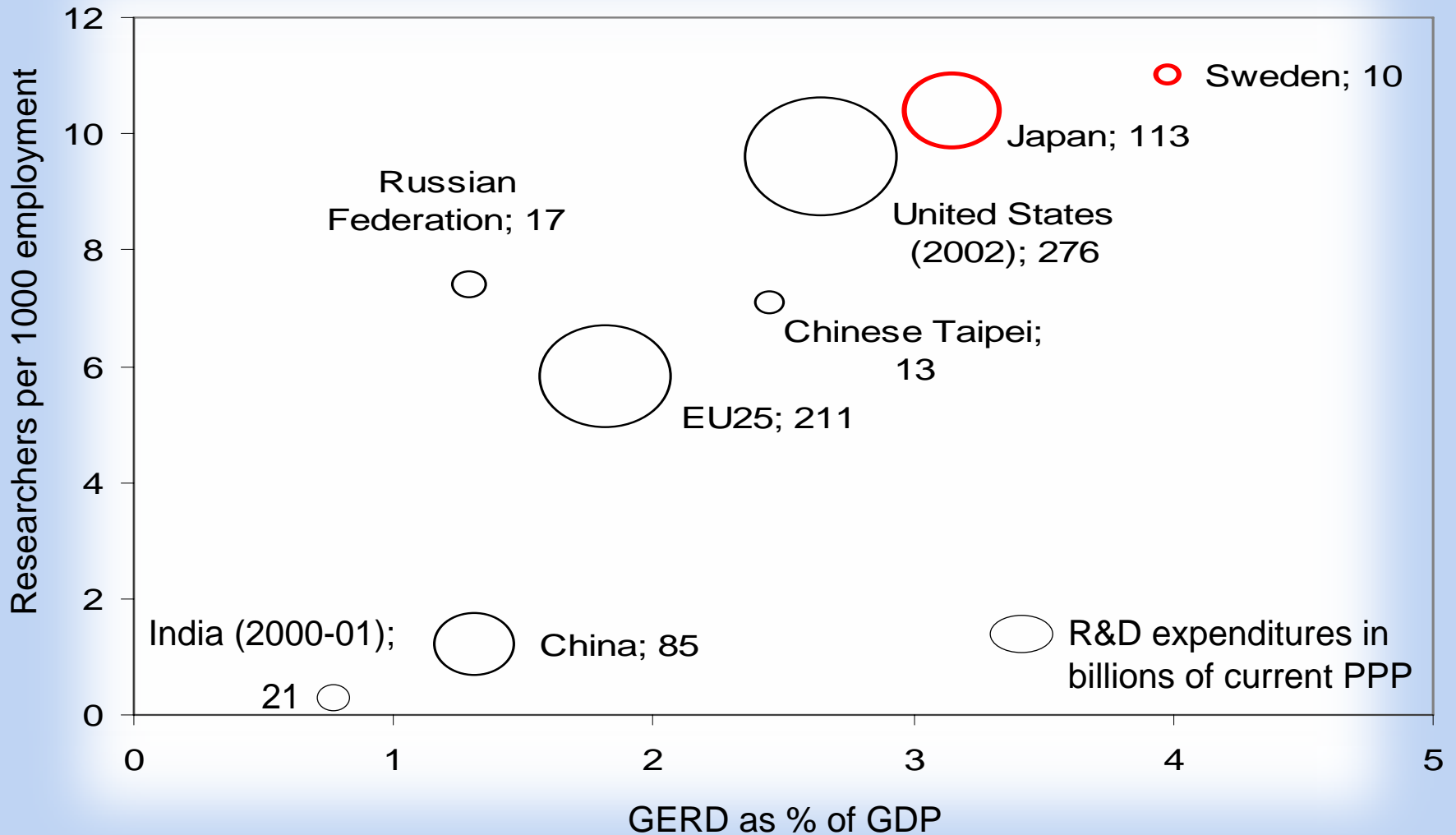


# Social trust ranking



Source: Norris (2001).

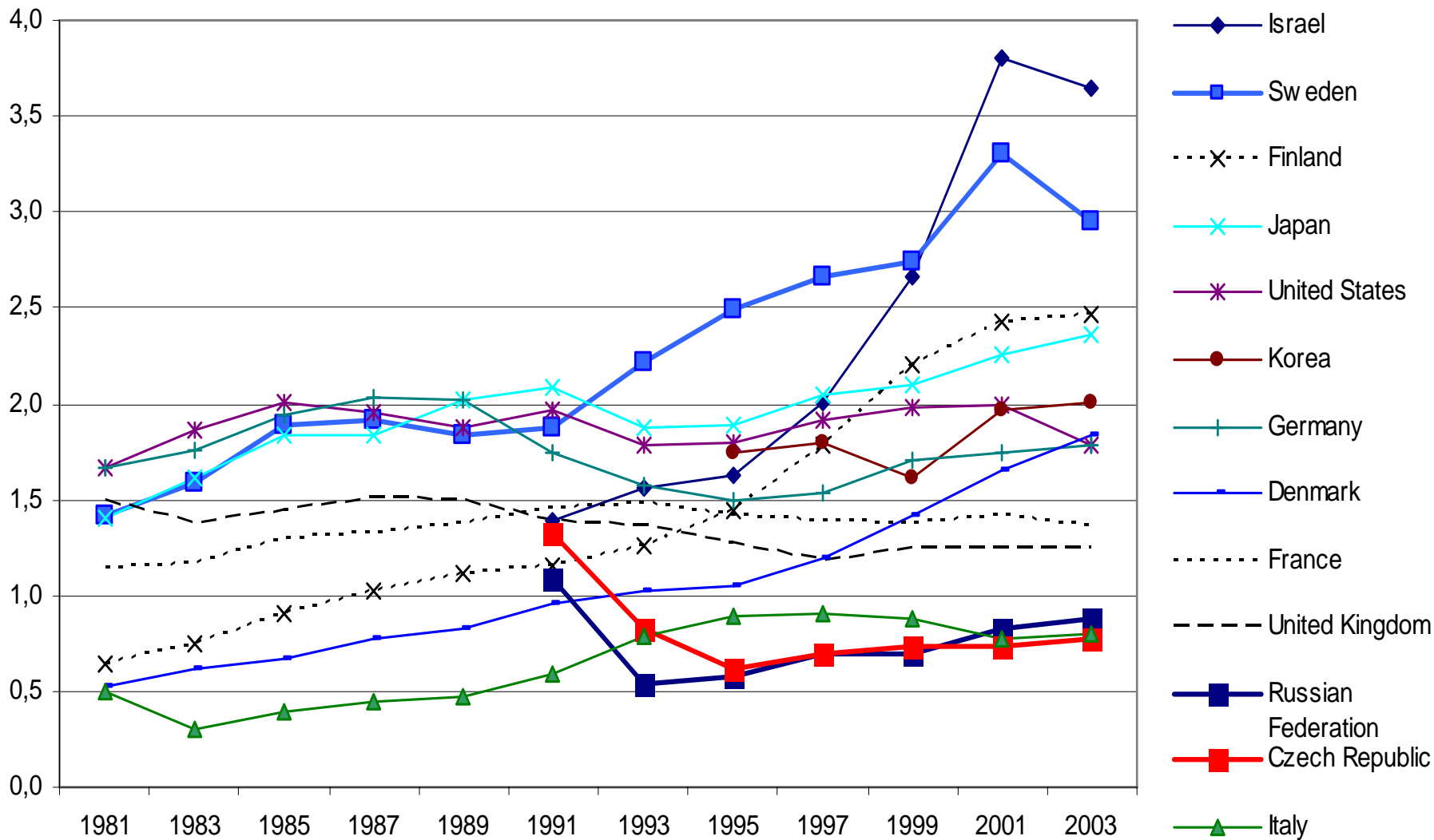
# R&D in the OECD and non-OECD area 2003, GERD in billion USD



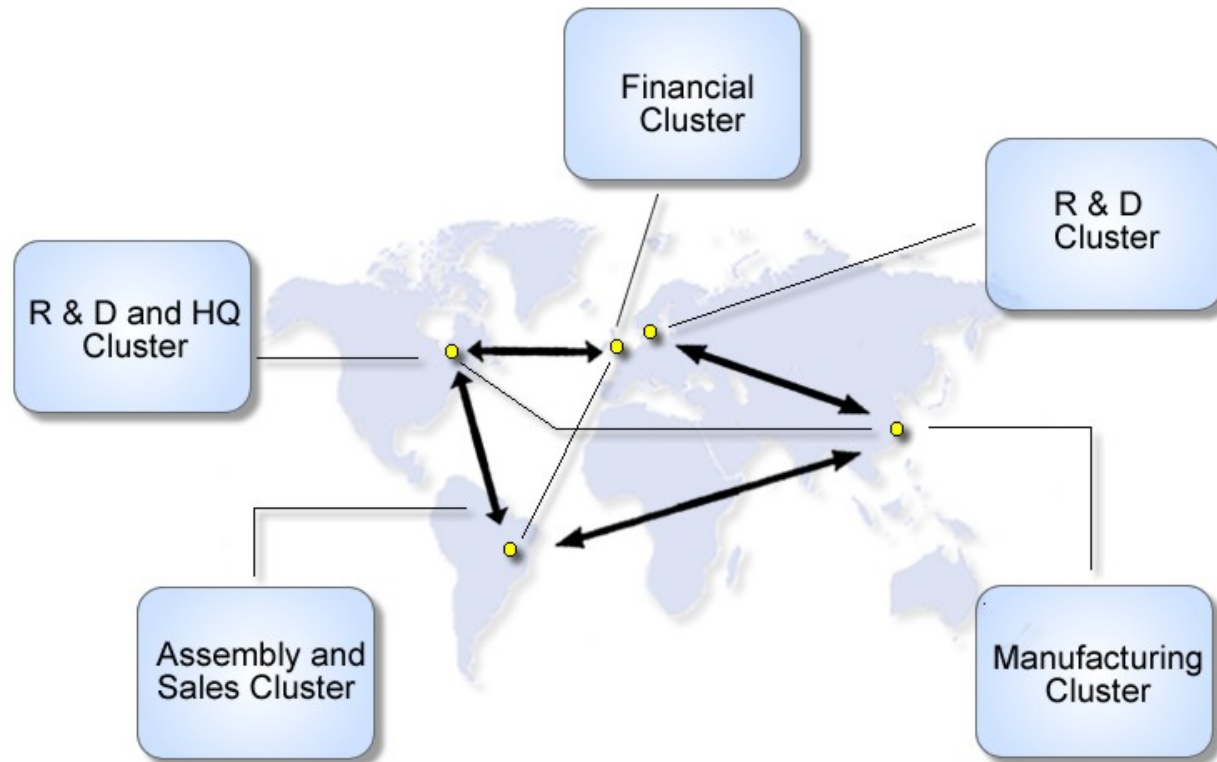
Source: OECD, Main Science and Technology Indicators 2005-2 (MSTI) and OECD Science, Technology and Industry Scoreboard (STI) 2005

# Business R&D expenditure in relation to GDP 1981–2003, percent

Percent of GDP

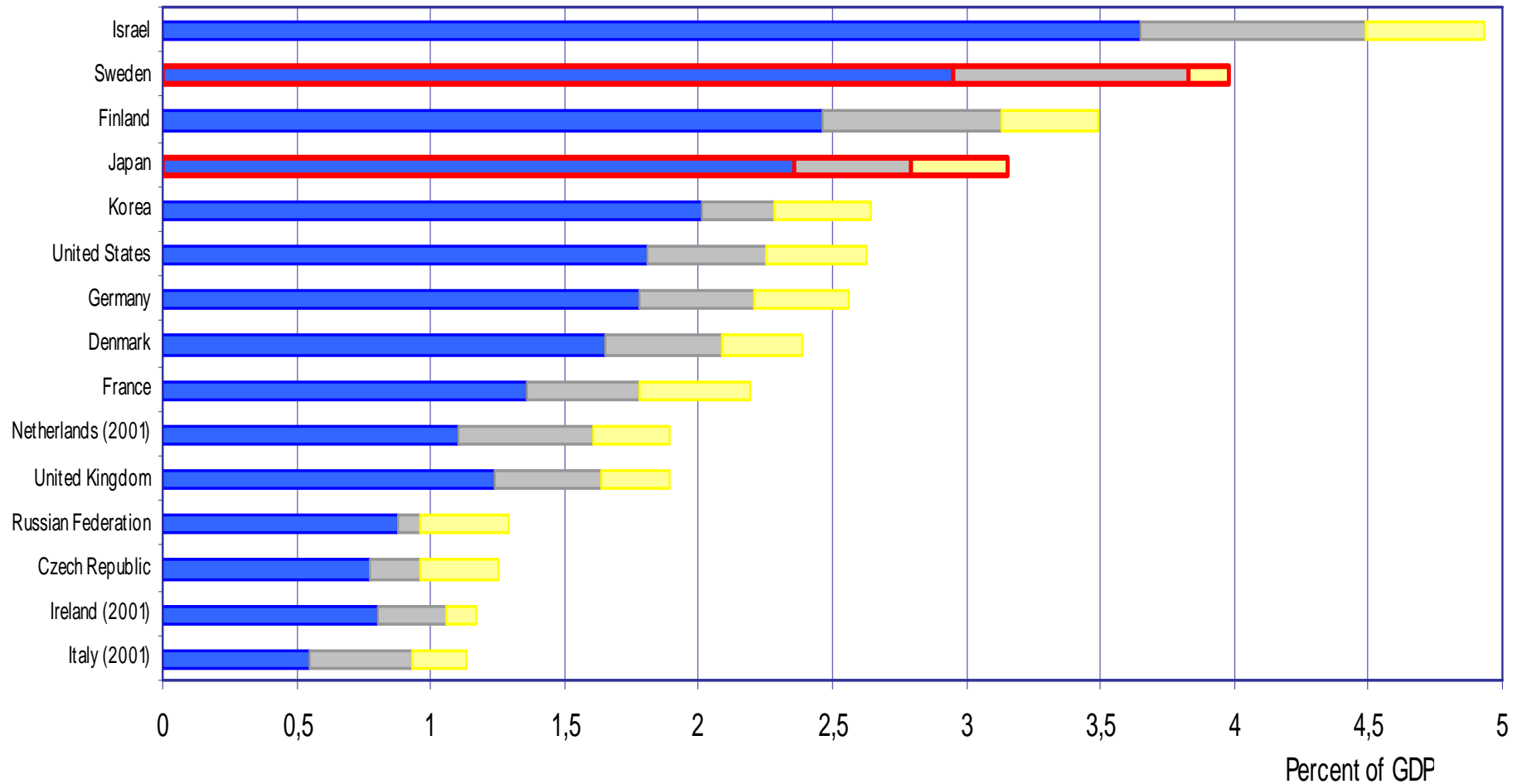


# Cluster dynamics and linkages: cooperation and competition

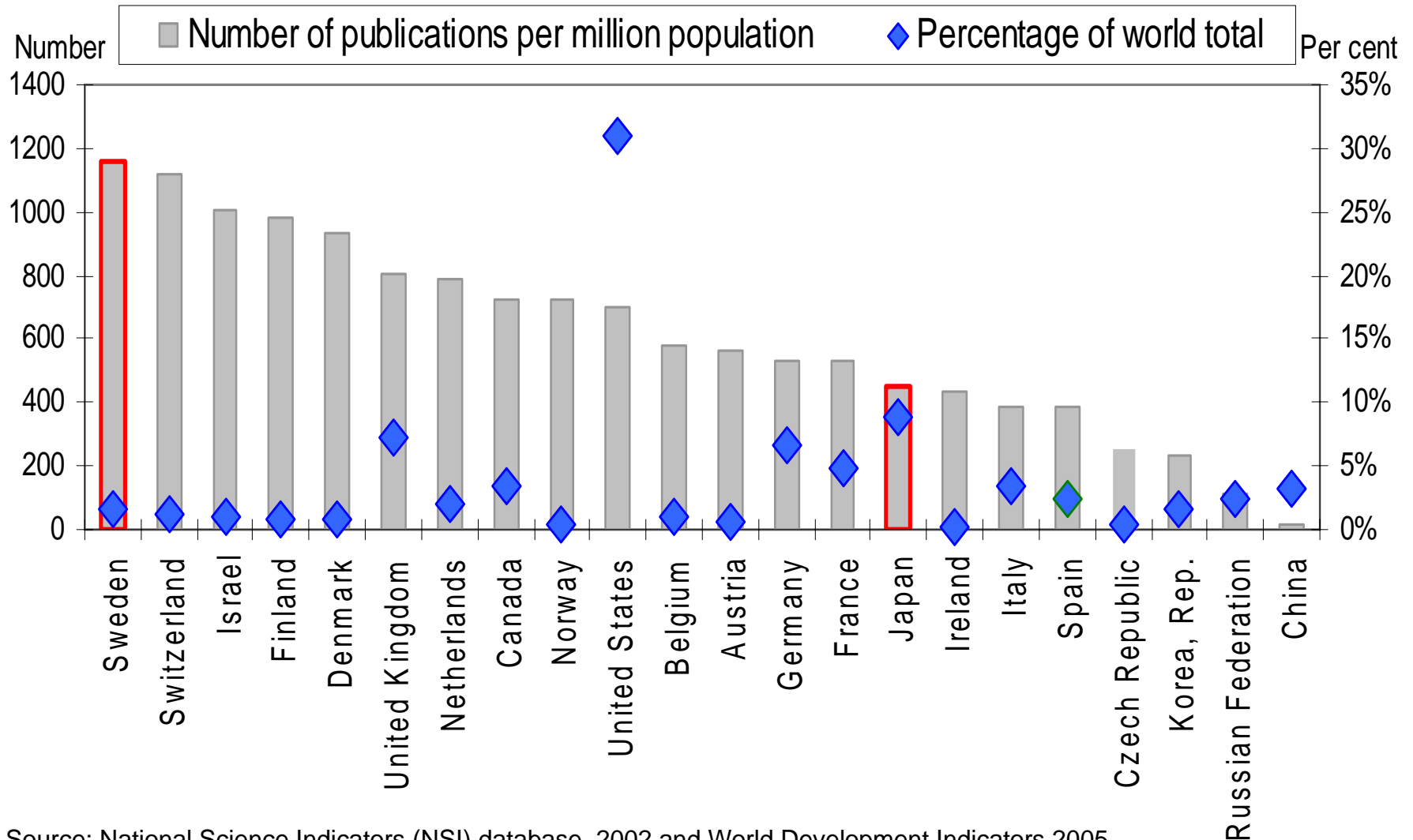


# R&D expenditure in relation to GDP 2003

■ Business sector 
 ■ Universities & colleges 
 ■ Government organisations



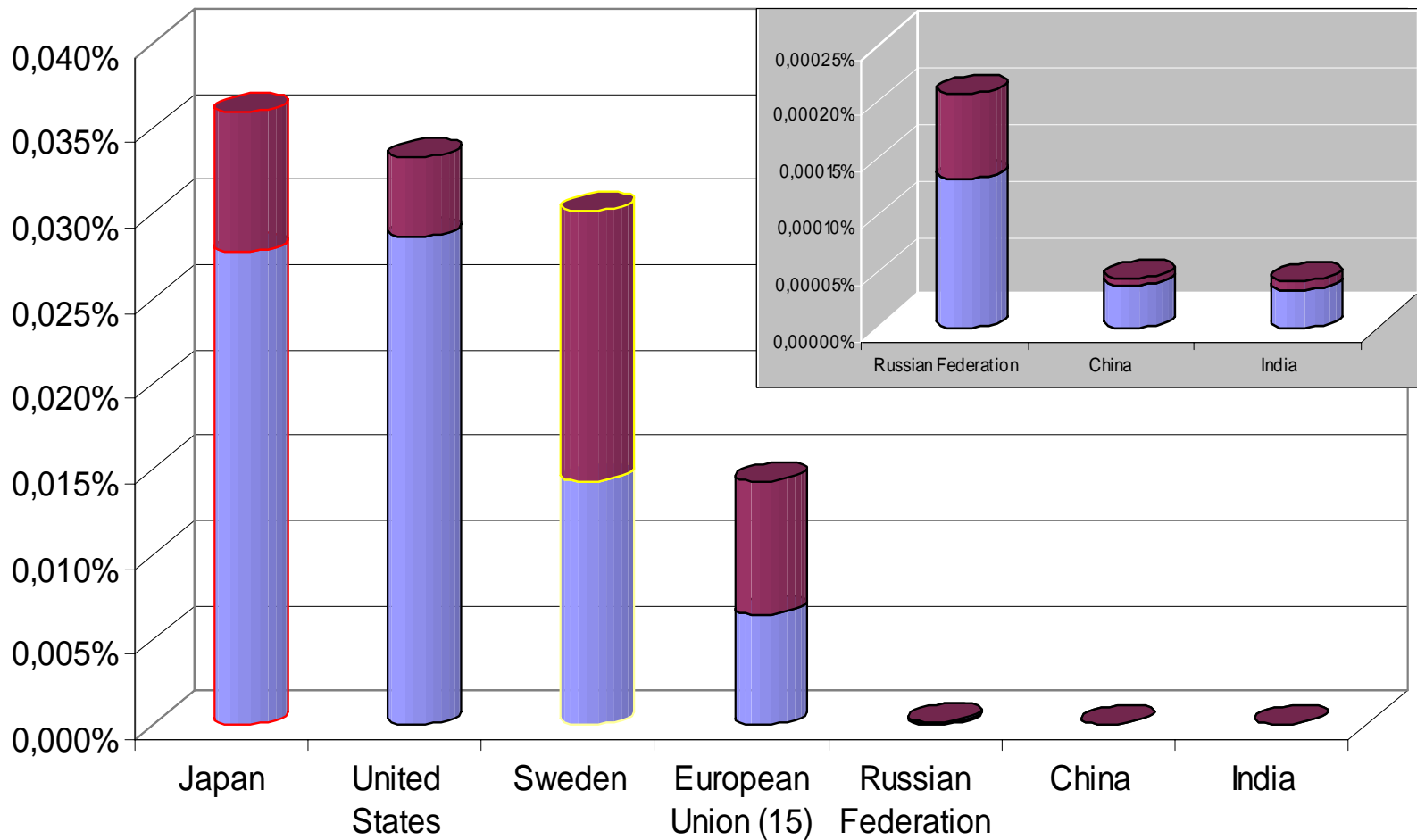
# Science & Engineering articles by country 2001



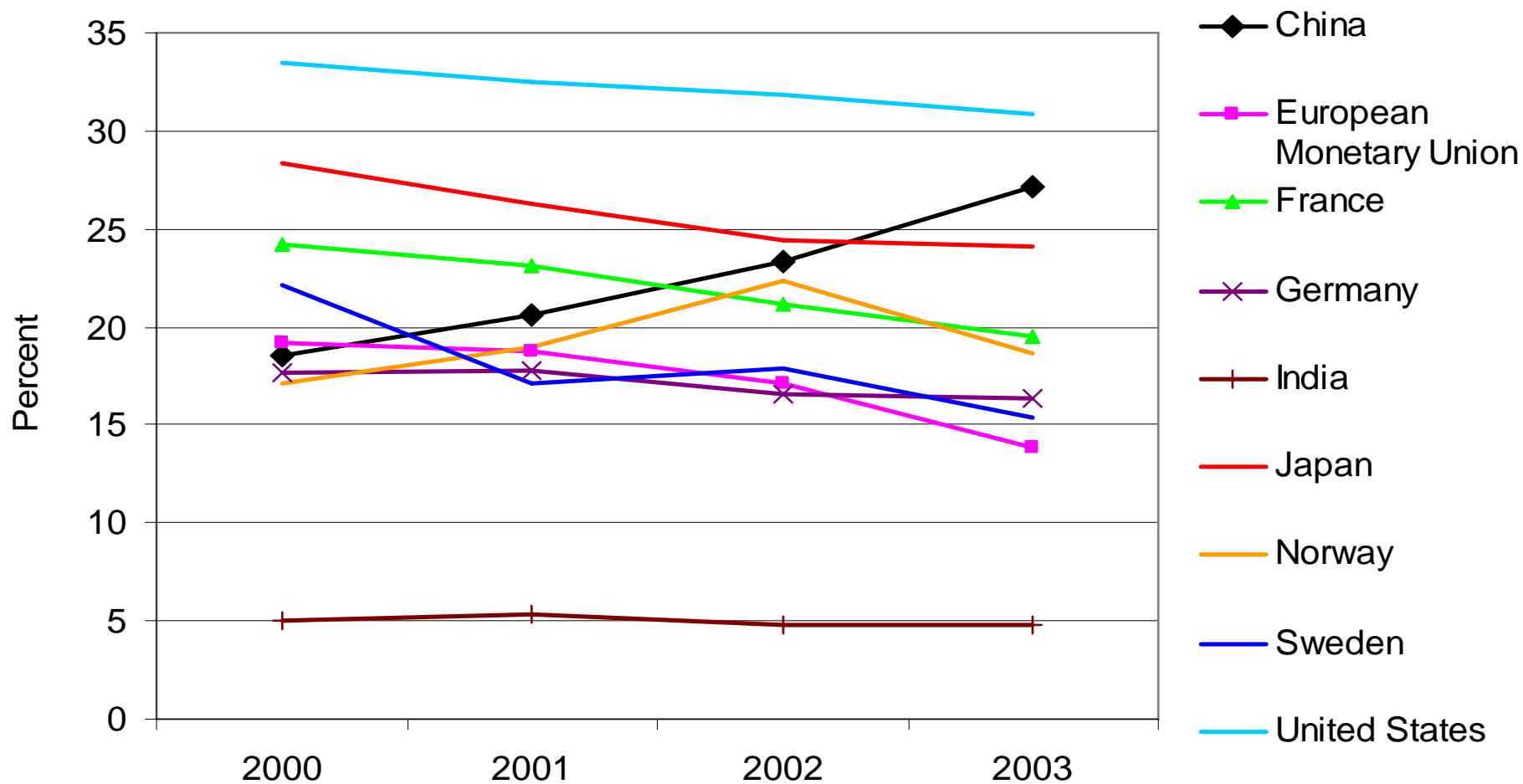
Source: National Science Indicators (NSI) database, 2002 and World Development Indicators 2005

# Patents to EPO & USPTO, relative to population, 2004

■ USPTO ■ EPO

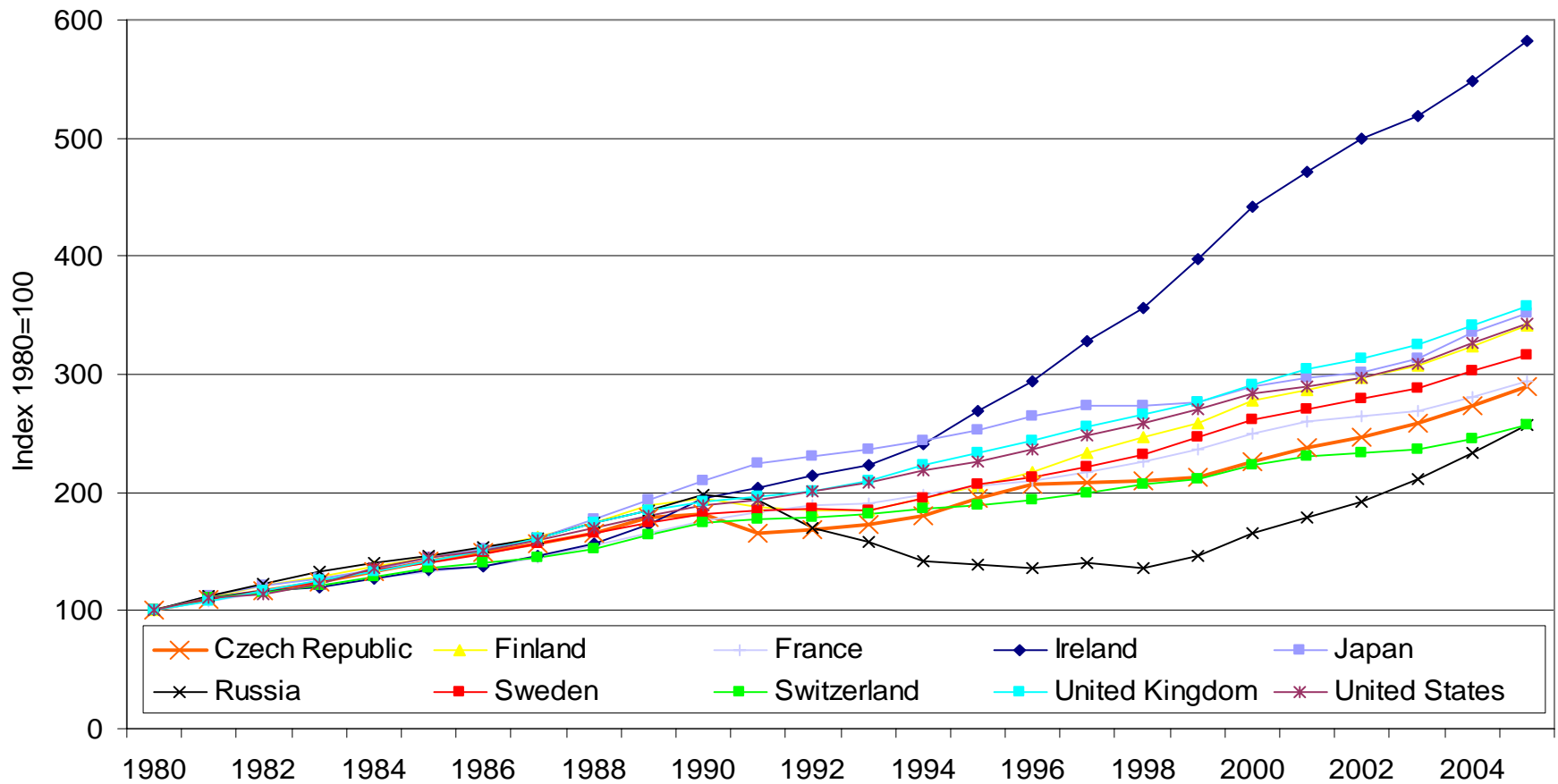


# High-technology exports in percent of manufactured exports, 2000-2003, percent

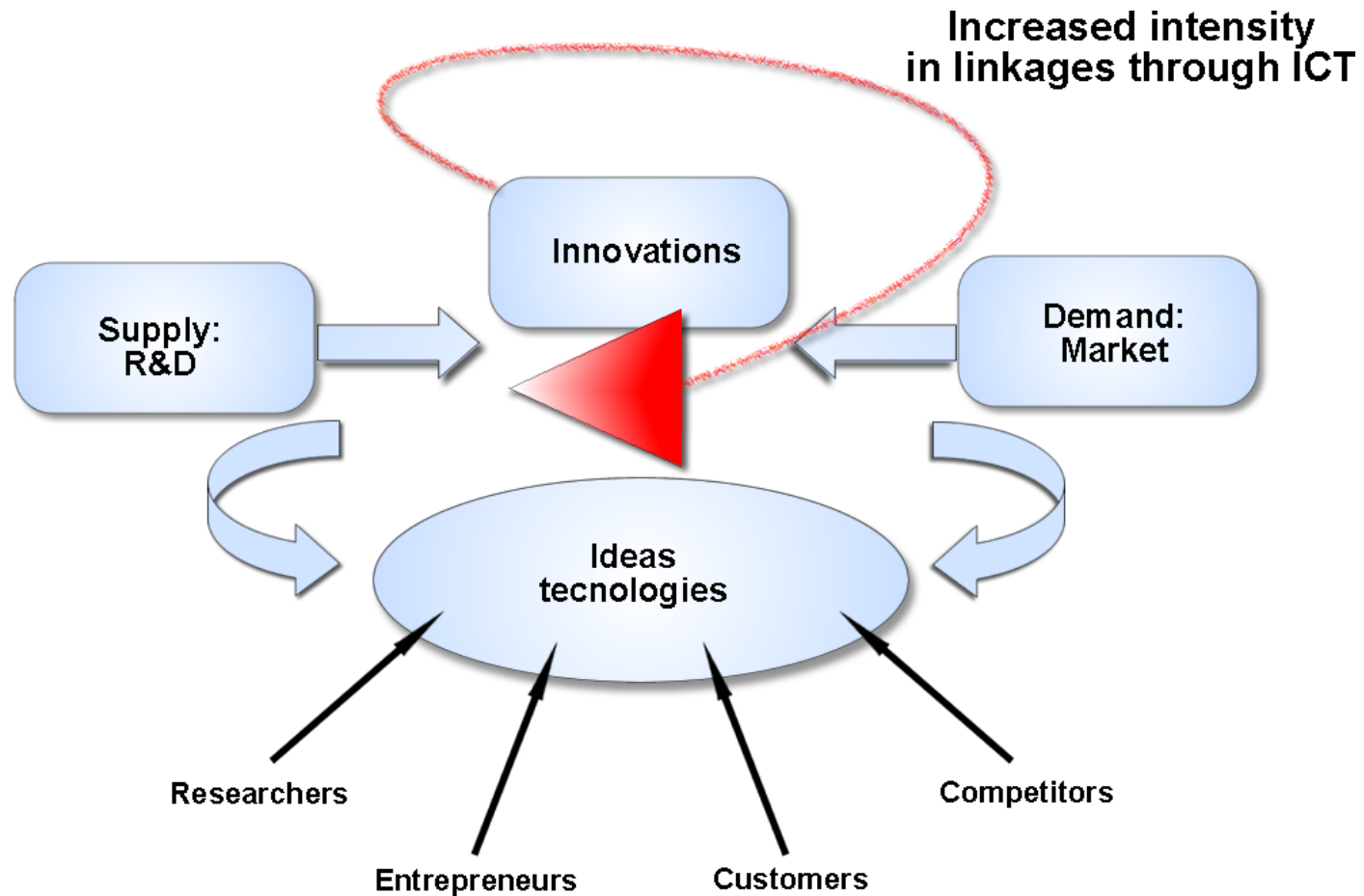




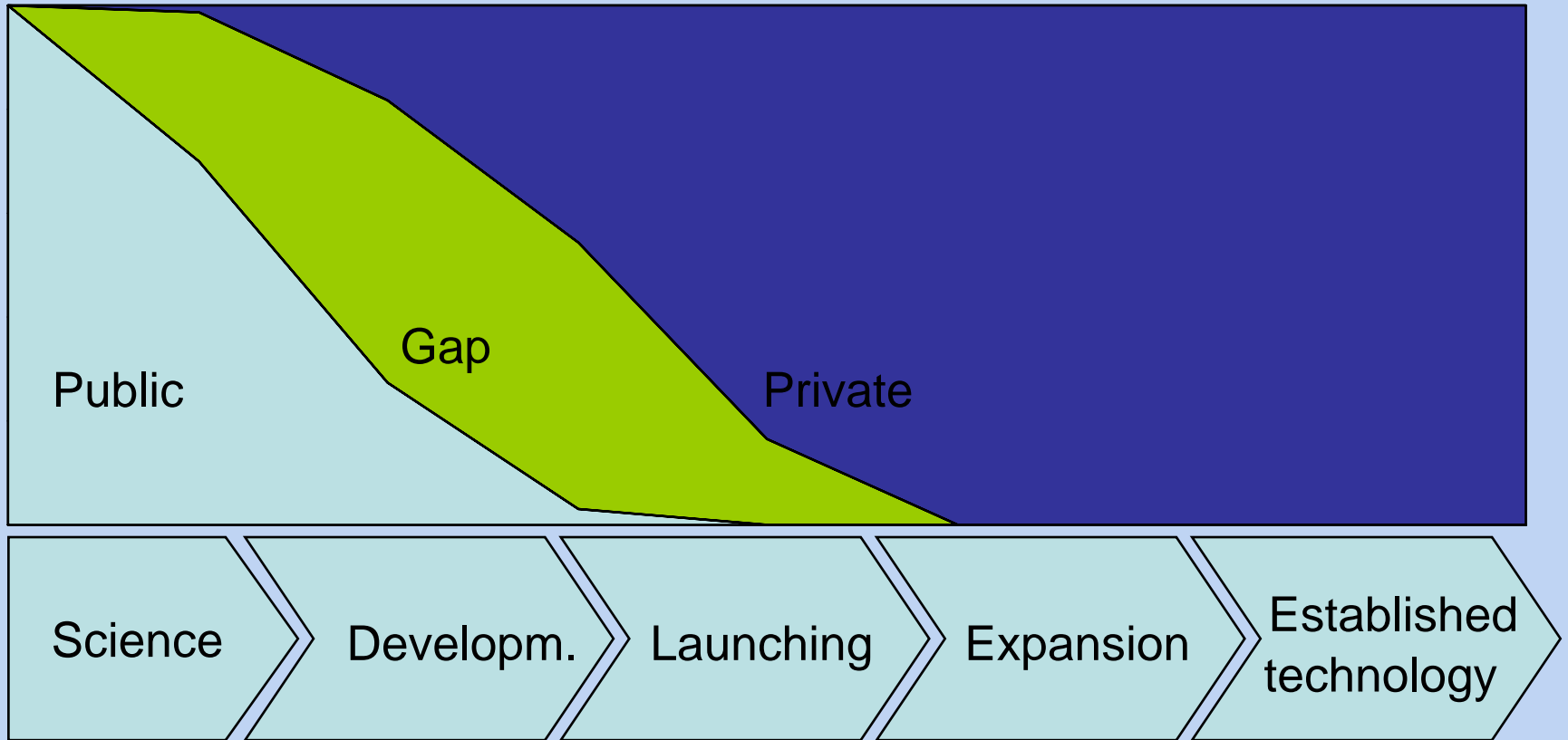
# GDP based on PPP per capita GDP (USD), 1980=100



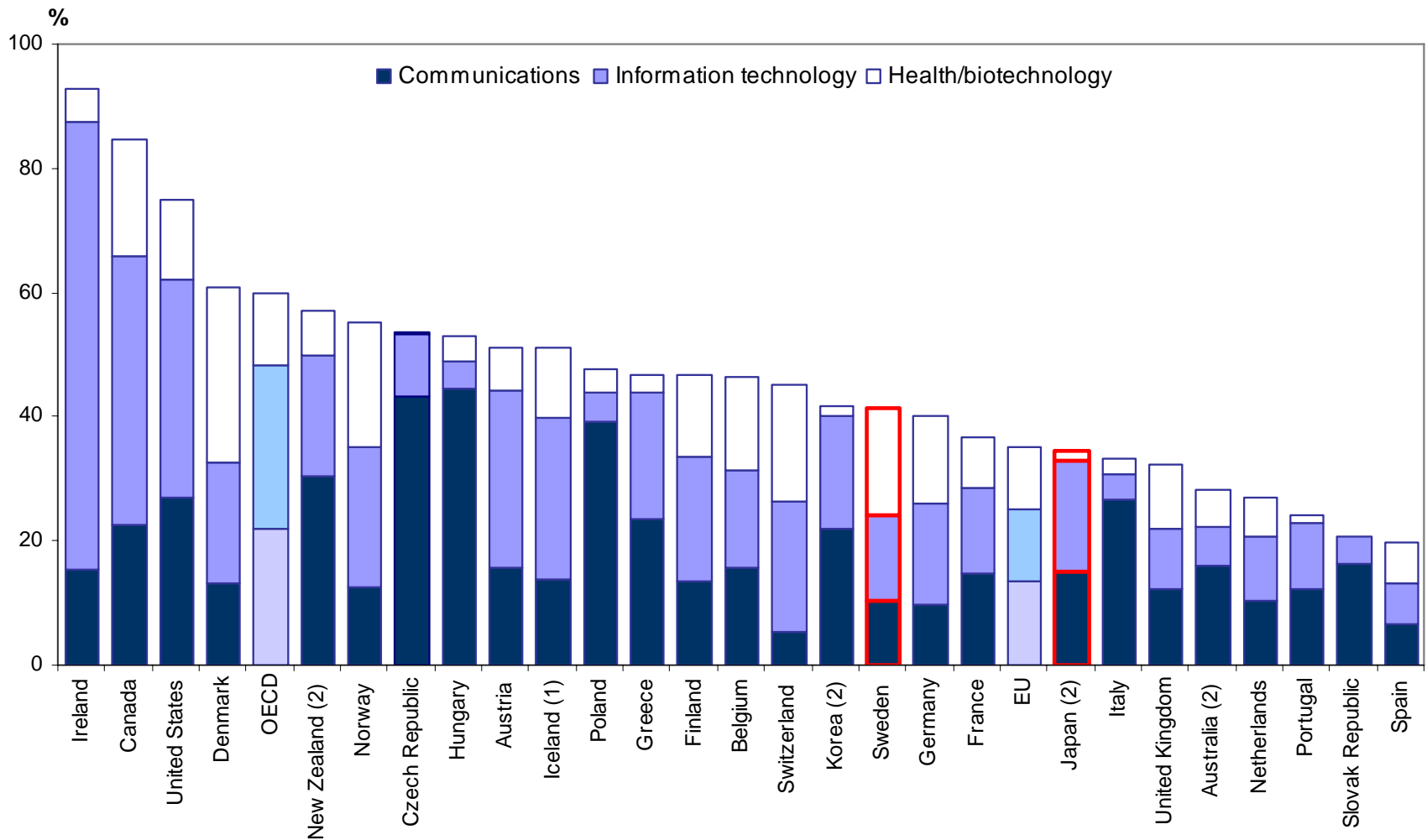
# Abandoning the linear model



# Lack of seed funding



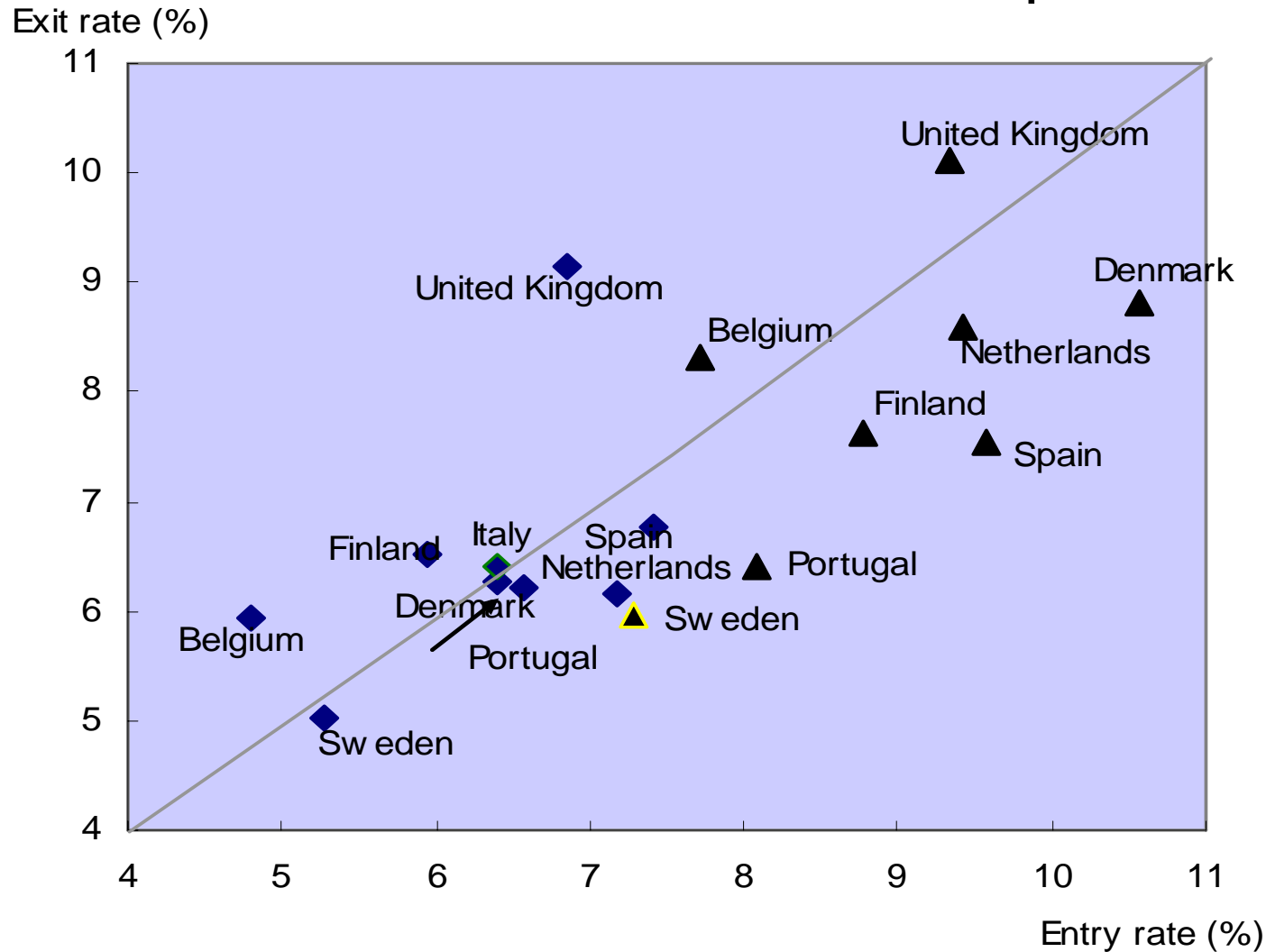
# High-tech venture capital as a percentage of total venture capital investment, 2000-2003



(1) 2000-2002, (2) 1998-2001

Source: OECD, Science Technology and Industry Scoreboard, 2005

# Entry and exit of firms, manufacturing and business services, 1997-2000, percent



# Female and male entrepreneurial activity

