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Science, technology and industrial development

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29/09/2006

Outline

- Research on productivity
- UNIDO and technology
- Selected activities in SEE
- Conclusions

Research on productivity

- Research on productivity in developing countries
- On-going work to assess and rank main supply-side constraints in developing countries
- The distance to the world technology frontier gauged (112 countries)
- Studies of determinants/constraints to inform about how to “quickest” close the gap
- Preliminary results point to four key areas for international organizations: Infrastructure; Human capital; Foreign direct investment; International trade

Research on productivity #2

- Next step: assessing the importance of health, energy/environment, institutions and geography/initial conditions
- Not one but a set of factors determine productivity levels and growth
- Increases in productivity require both new technology and improvements in technical efficiency
- World Productivity Database, 1960-2000
- More countries might be added

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Industrial Development Scoreboard

- Analytical framework to assess and compare selected critical indicators of industrial performance and capabilities
- Composite index to benchmark competitive industrial activity at the country level
- Structural factors expected to affect industrial performance
- More detailed analyses are to follow
- Knowledge and S&T are key components

Competitive Industrial Performance: determinants

BERD pc	1998
Country	US$
Switzerland	859.9
Austria	214.4
Singapore	198.4
Ireland	152.8
Slovenia	73.3
Romania	2.5

FDI pc	1993-1997
Country	US$
Singapore	2536
Switzerland	529.8
Ireland	484.2
Austria	304.6
Slovenia	92.9
Romania	20.6
Albania	19.7

Royalties pc	1998
Country	US$
Ireland	1683.1
Singapore	559.2
Switzerland	151.7
Austria	100.4
Slovenia	19.5
Romania	0.9

Tertiary technical enrolments	1998
Country	share pop
Ireland	0.91
Austria	0.78
Switzerland	0.51
Romania	0.49
Slovenia	0.49
Singapore	0.47
Albania	0.11

Source: Industrial Development Report 2002/2003

BERD pc: productive enterprise-financed R&D per capita , FDI pc: Foreign Direct Investment inflows per capita, Royalties pc: Royalties and licence payments abroad per capita, Tertiary technical enrolments as a share of population include pure science, mathematics and computing and engineering

Competitive Industrial Performance

Country	1980 CIP
Switzerland	0.758
Singapore	0.683
Germany	0.658
Austria	0.497
Turkey	0.306
107 countries	

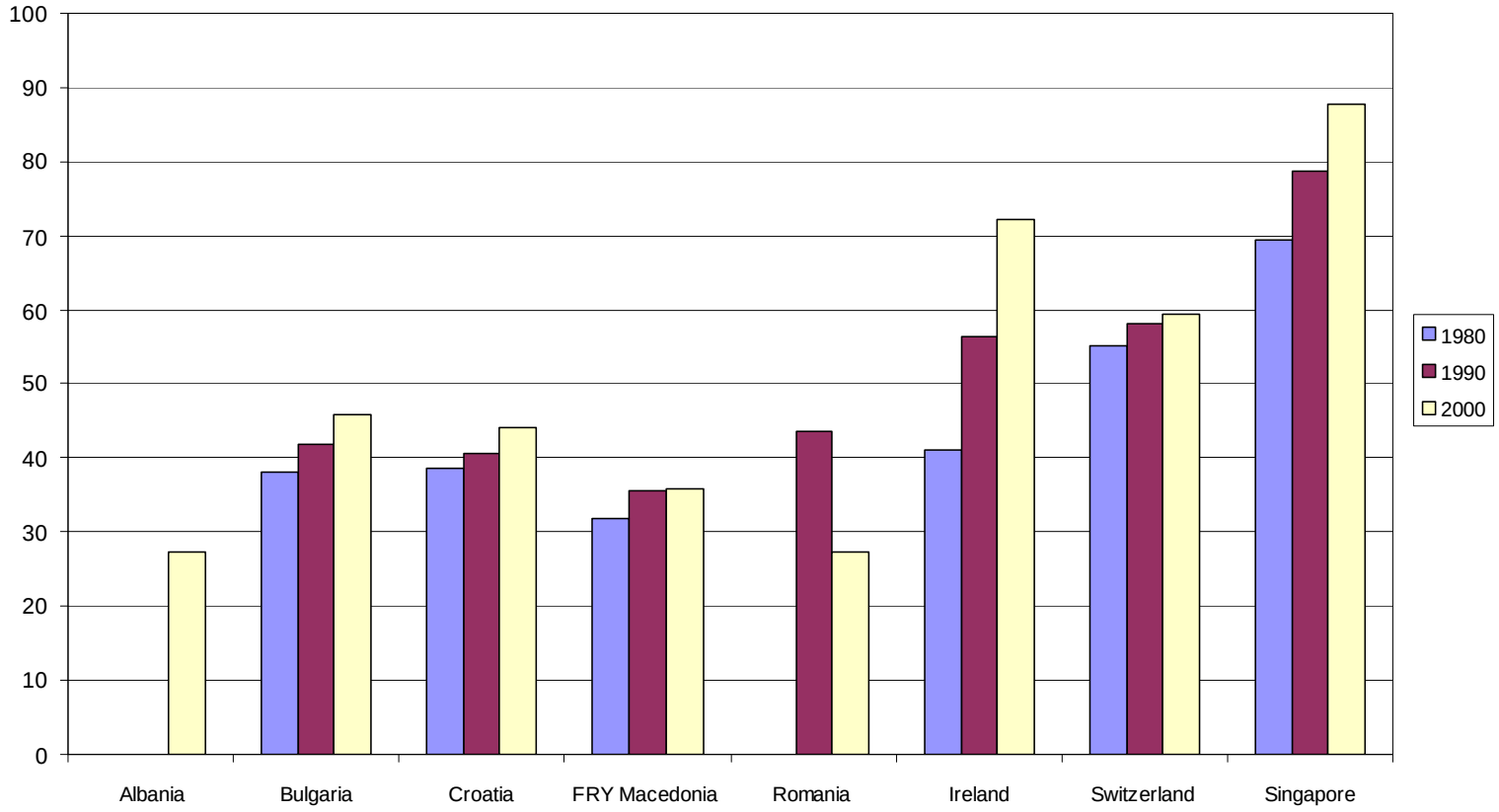
Country	1990 CIP
Singapore	0.772
Switzerland	0.748
Germany	0.683
Austria	0.547
Romania	0.367
Turkey	0.268
108 countries	

Country	2000 CIP
Singapore	0.833
Ireland	0.738
Switzerland	0.717
Austria	0.512
Slovenia	0.449
Croatia	0.322
Turkey	0.309
Romania	0.294
Bulgaria	0.278
FRY Macedonia	0.271
Albania	0.196
155 countries	

Source: Industrial Development Report 2004

CIP: Competitive Industrial Performance Index

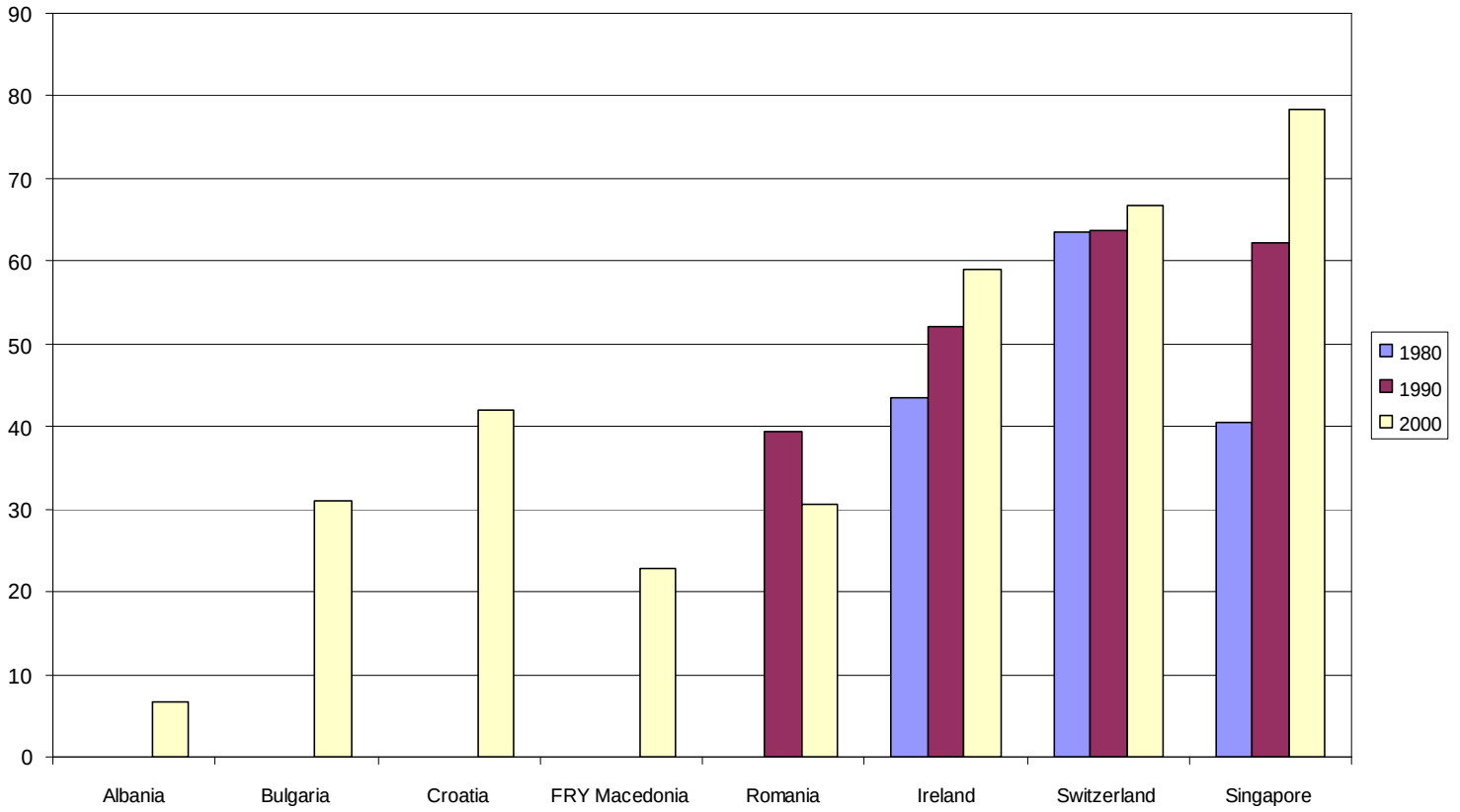
Share of MHT activities in MVA



Source: Industrial Development Report 2004

MHT: Medium- and High-Tech, MVA: Manufacturing Added Value

Share of MHT goods in manufactured exports



Source: Industrial Development Report 2004

MHT: Medium- and High-Tech

Key issues for technological development and management

- Government/institutional leadership
- Strong research base
- Ability to attract/retain key people
- Access to capital
- Access to infrastructure
- Entrepreneurial culture
- Protection of IPR
- Synergies and mutual reinforcement
- Regional cooperation

Source: UNIDO internal report “Success factors for biotechnology – An assessment of the status of China’s innovation”

UNIDO and technology

- Support to alleviate some of the problems faced by developing countries and countries in transition in mobilizing domestic and foreign investment as well as modern technologies

- Services for strengthening national technology management systems
- Technology foresight for development

Selected examples

- Regional Initiative on Technology Foresight for Central and Eastern Europe (CEE) and the Newly Independent States (NIS)
- Transfer of Environmentally Sound Technology in the Danube River Basin
- Implementation of an International Environmental Convention (Montreal Protocol) in Albania, Bosnia and Herzegovina, Romania, FRY Macedonia

Conclusions

- Technology seems to play an important role in the output per capita gap between advanced and developing countries and countries in transition
- UNIDO potential partner for SEE countries in the field of Technology
- Further activities possible either directly (UNIDO and other UN sister Organizations) or through existing mechanisms (EC)

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Further information

- UNIDO's website
  http://www.unido.org

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