



ICEG European Center

**Factors and Impacts in the Information Society:
Analysis of the New Member States and Associated
Candidate Countries**

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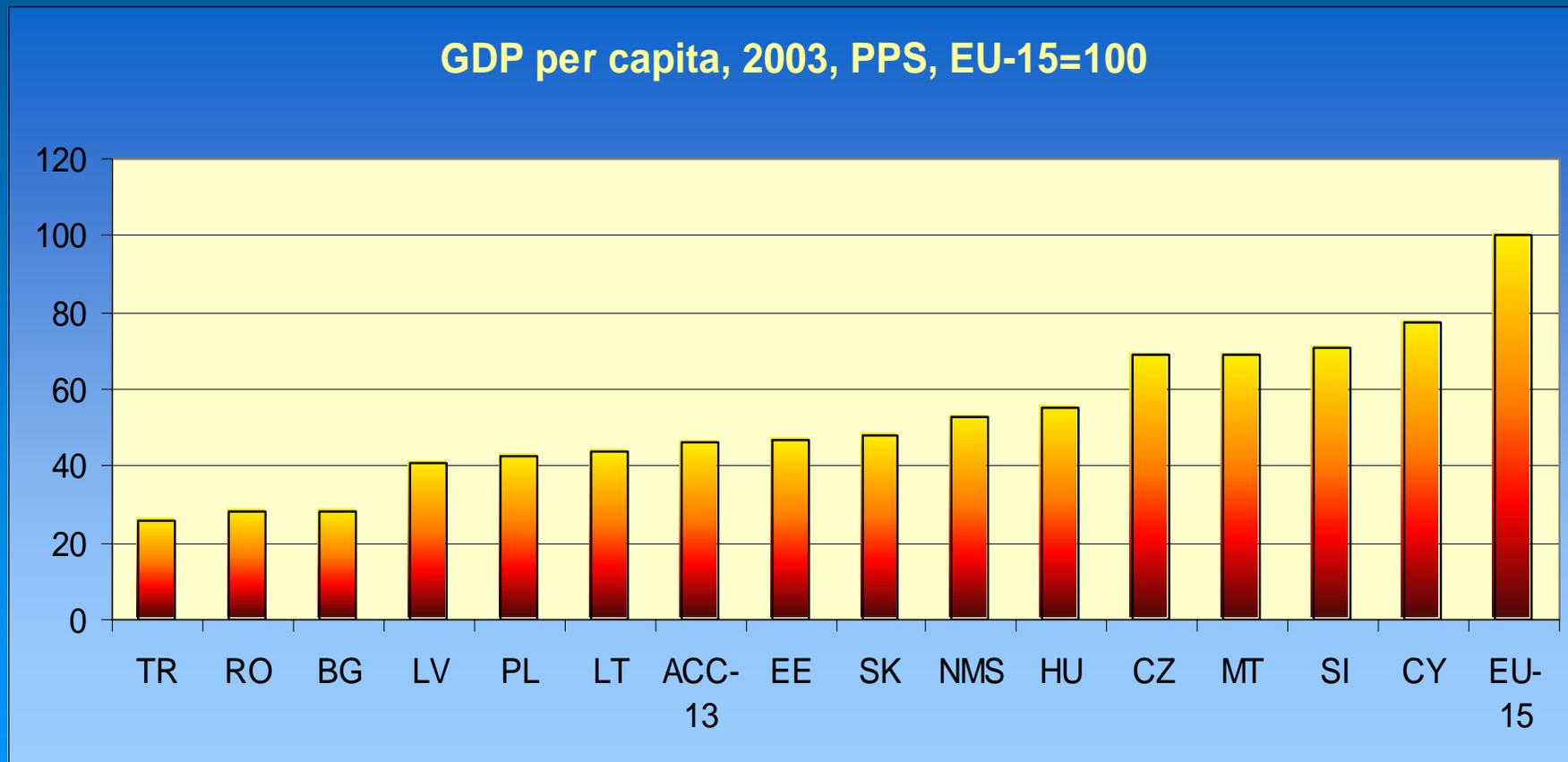
Presentation at XIVth Economic Forum, Krynica, 11 September, 2004

Structure of Presentation

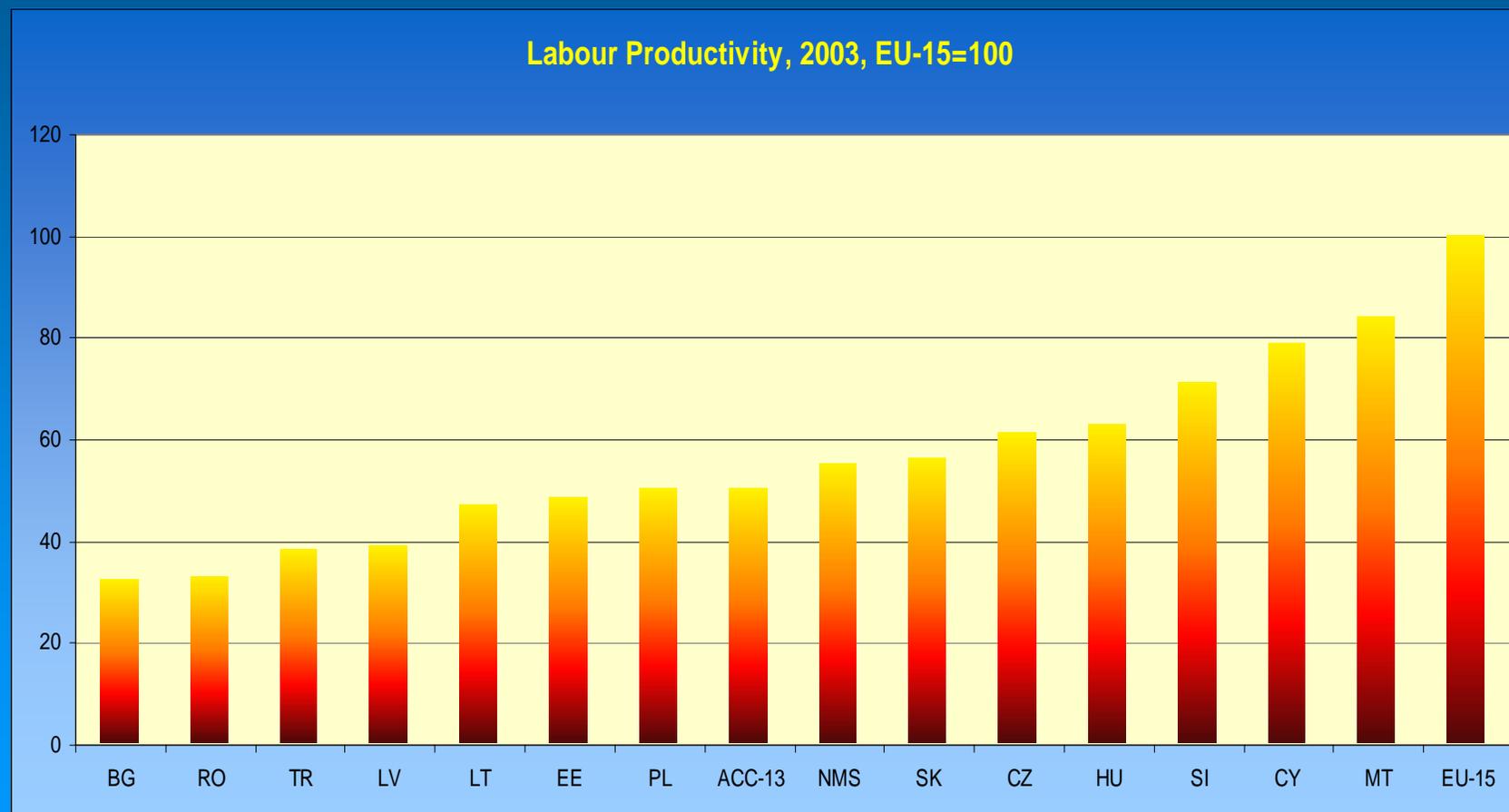
- ❖ **NMS and ACC-3 countries: Comparative Review of Lisbon Indicators**
- ❖ **IST Level of Development**
- ❖ **ICT Level of Development**
- ❖ **Factors Affecting IST and ICT Developments**
- ❖ **Open Issues**

I. NMS and ACC-3 countries: Comparative Review of Lisbon Indicators

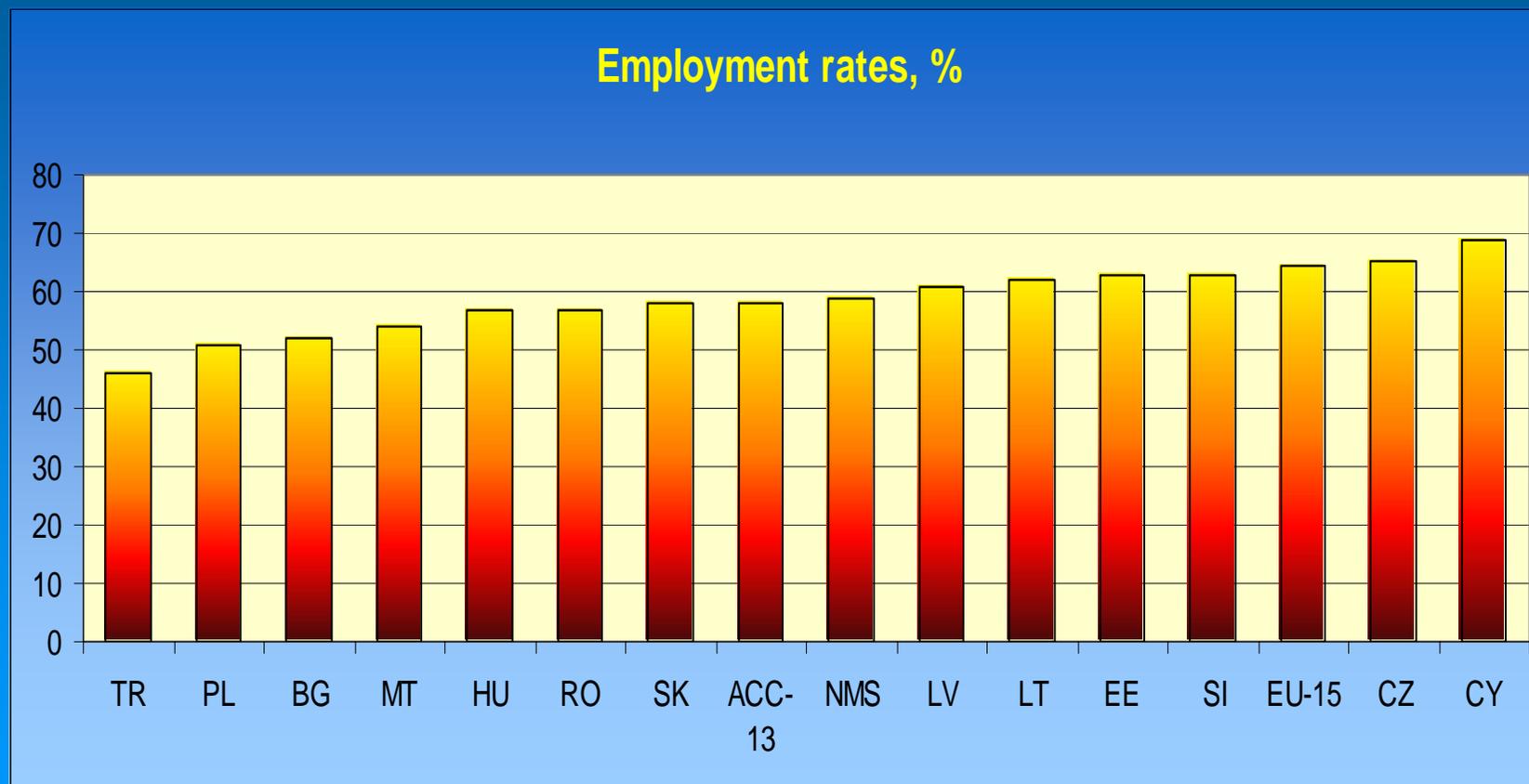
Structural Indicators: GDP per capita



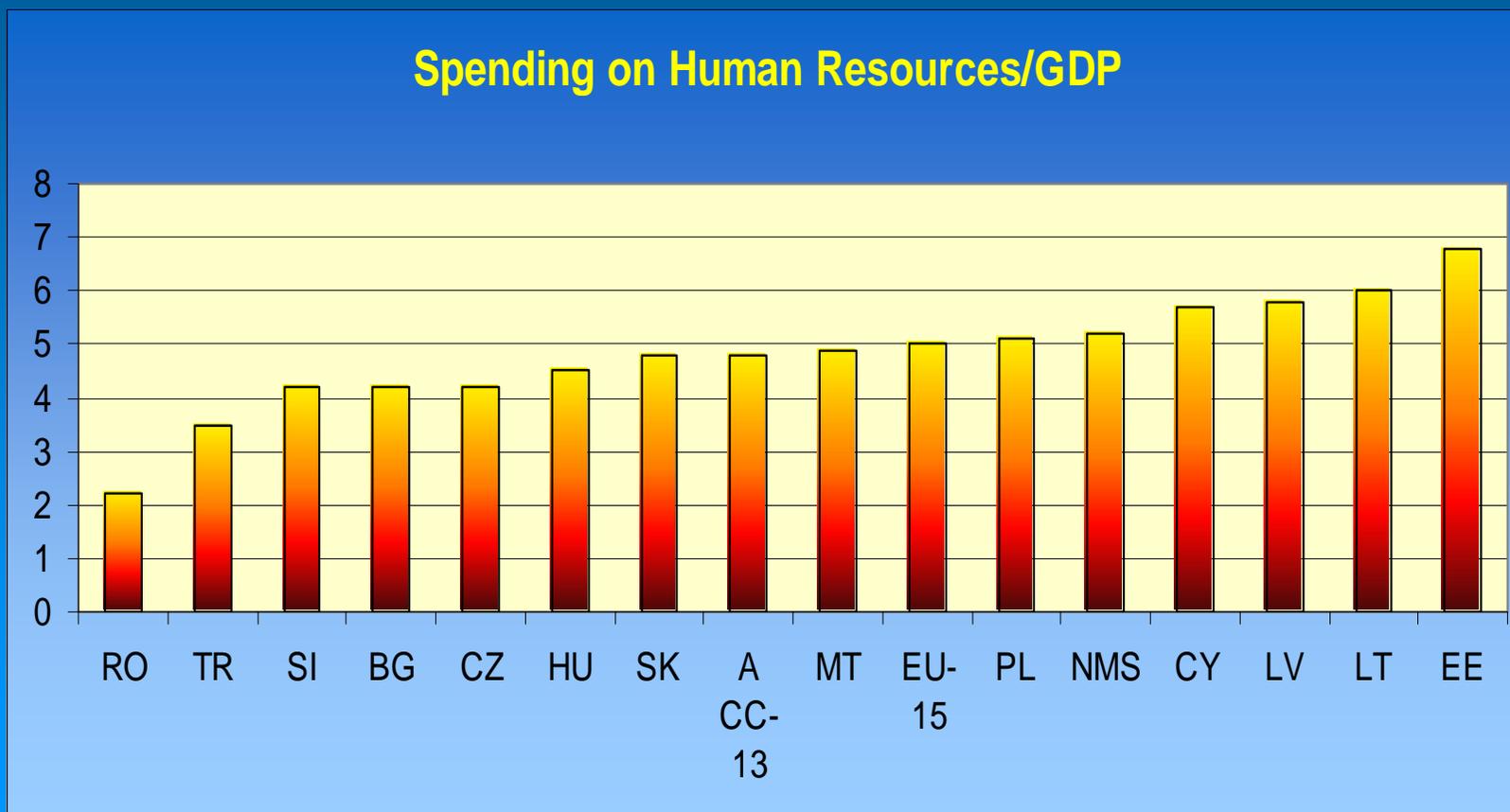
Structural Indicators: Labour Productivity



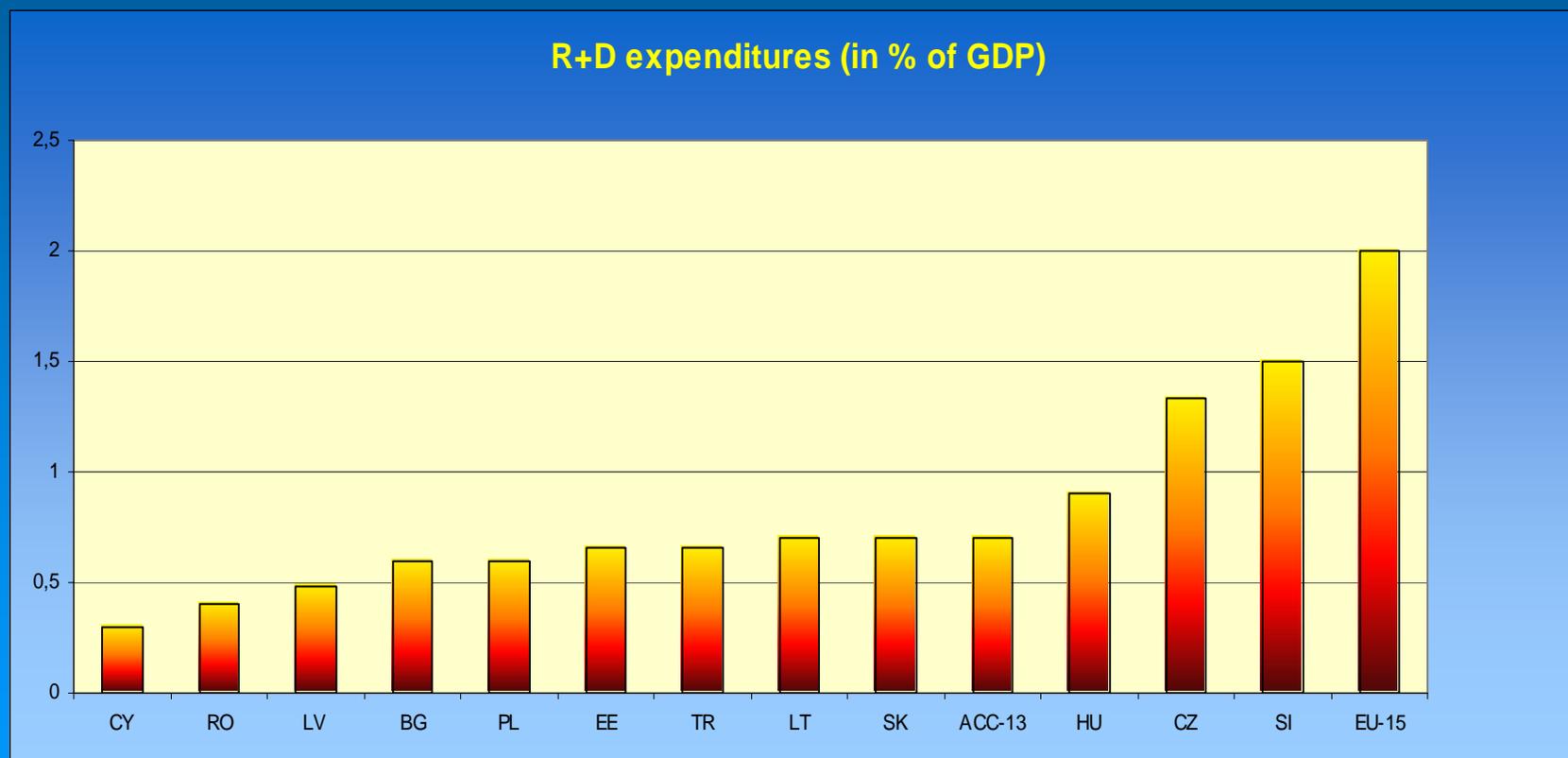
Structural Indicators: Employment Rates



Structural Indicators: Spending on Human Resources

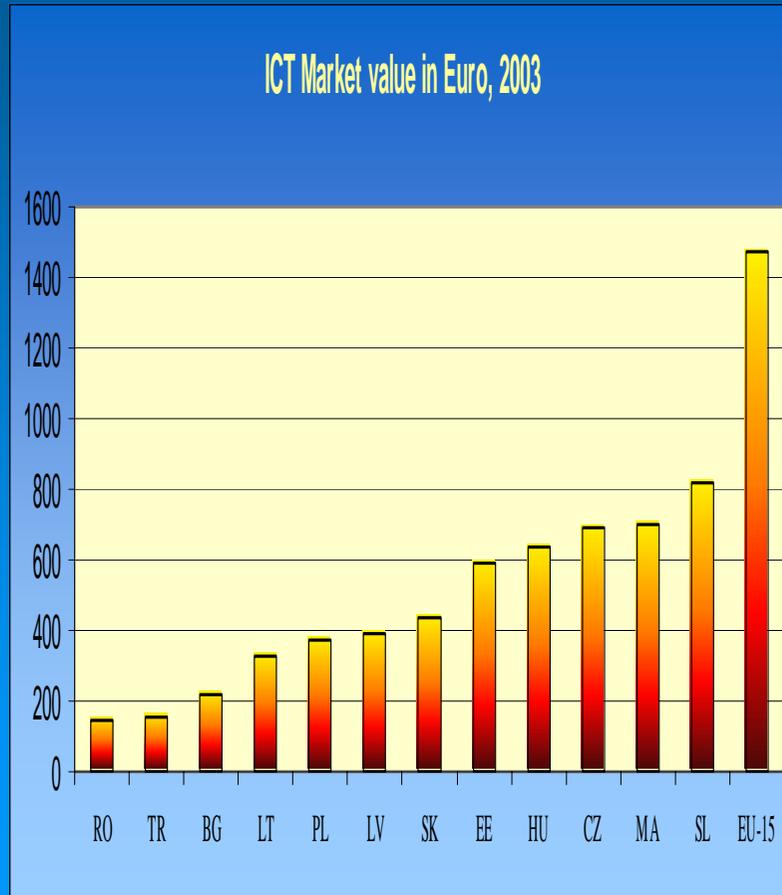


Structural Indicators: R+D Expenditures



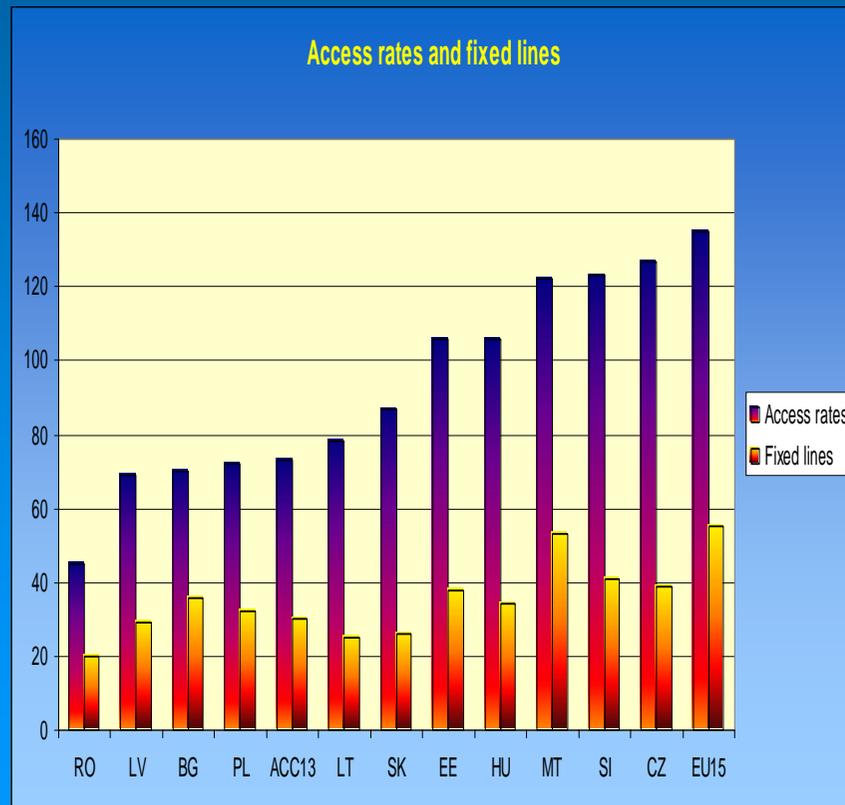
II. IST Level of Development

IST Level of Development: ICT Market Value



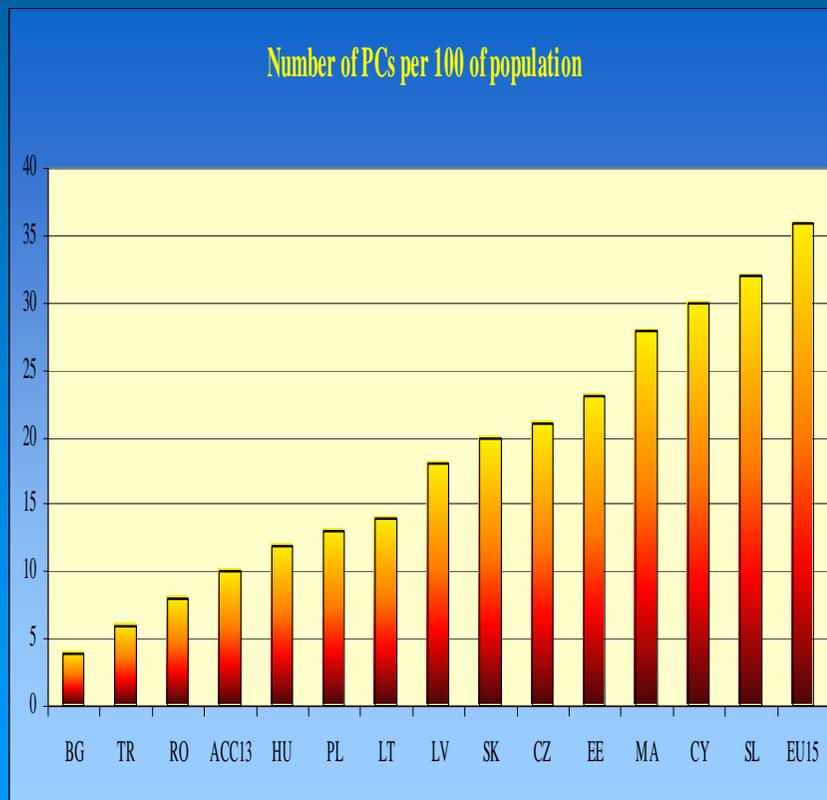
- Significant gap between NMS and older Member States,
- Levels linked to level of economic development,
- Differences in the €or in GDP based ranking are significant among NMS (income and price convergence, PPS measurement)
- Recently changes in ranking as fast growth rates and real increase of the ICT market values in some countries (Poland, Slovakia), while slight decline in others

IST Level of Development: Access Path and Fixed Lines



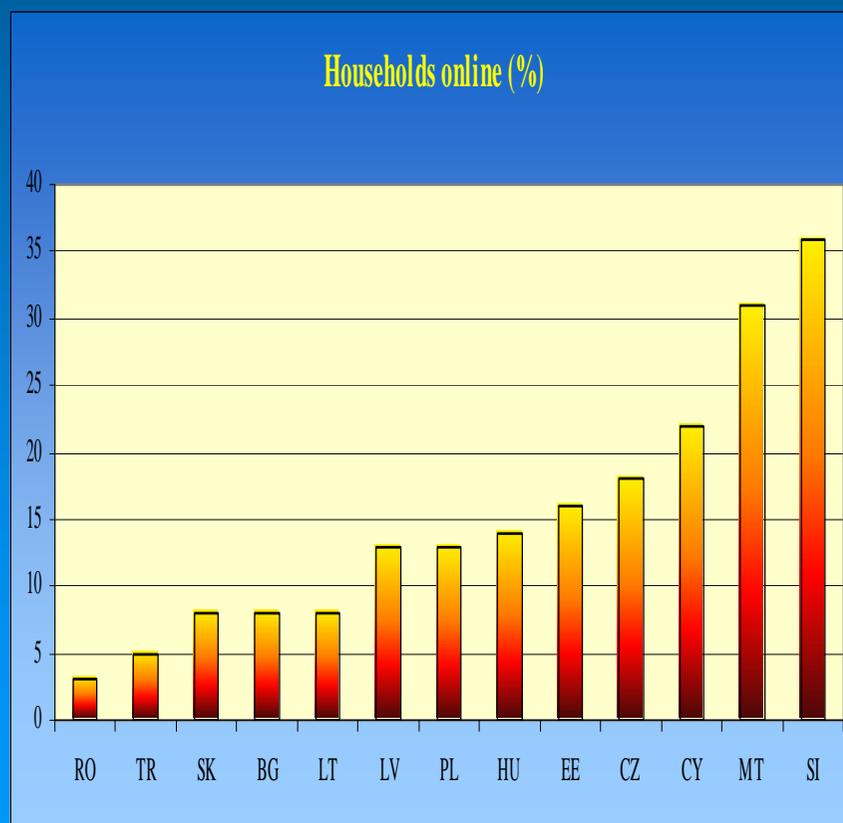
- Smaller gaps between NMS and EU-15
- Structural factors explaining part of the differences
- Different trends in mobile and fixed penetration rates in individual NMS and ACC-3 countries
- Significant gaps among the NMS and ACC-3 in stock and especially flow figures

IST Level of Development: PC availability



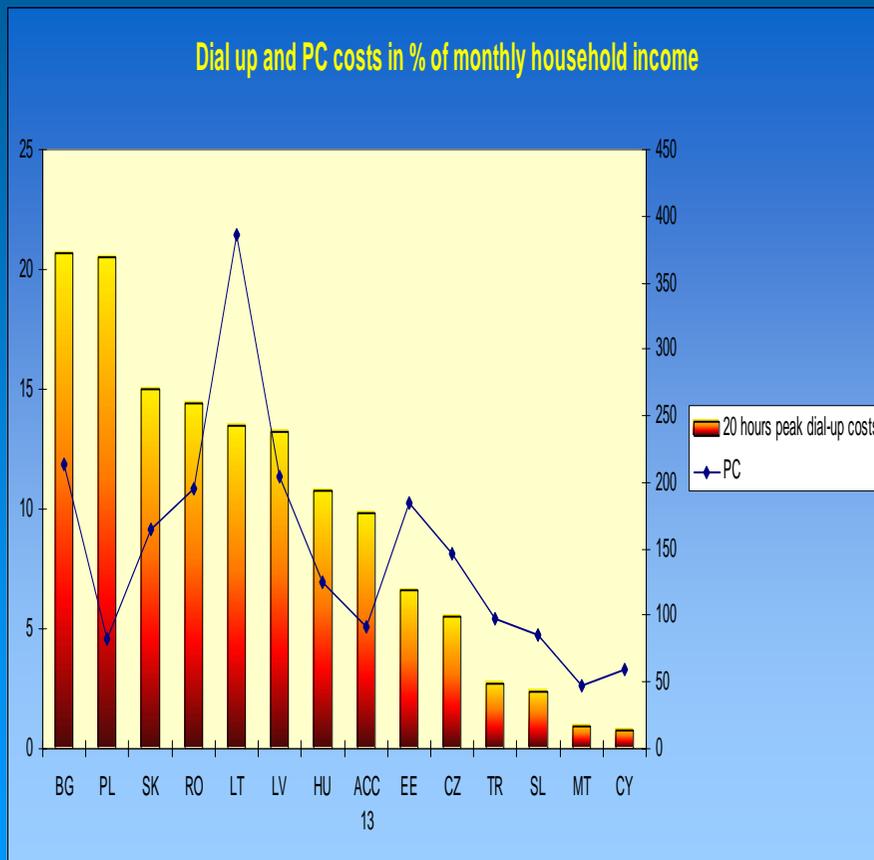
- Gaps in PC use high and have been recently growing
- Strong correlation with income levels and three country groups
- Besides incomes prices and affordability, policies and supply of IS services are the major explanatory factors
- Dynamic picture differs strongly between NMS and ACC-3 with increasing gaps

IST Level of Development: Households online



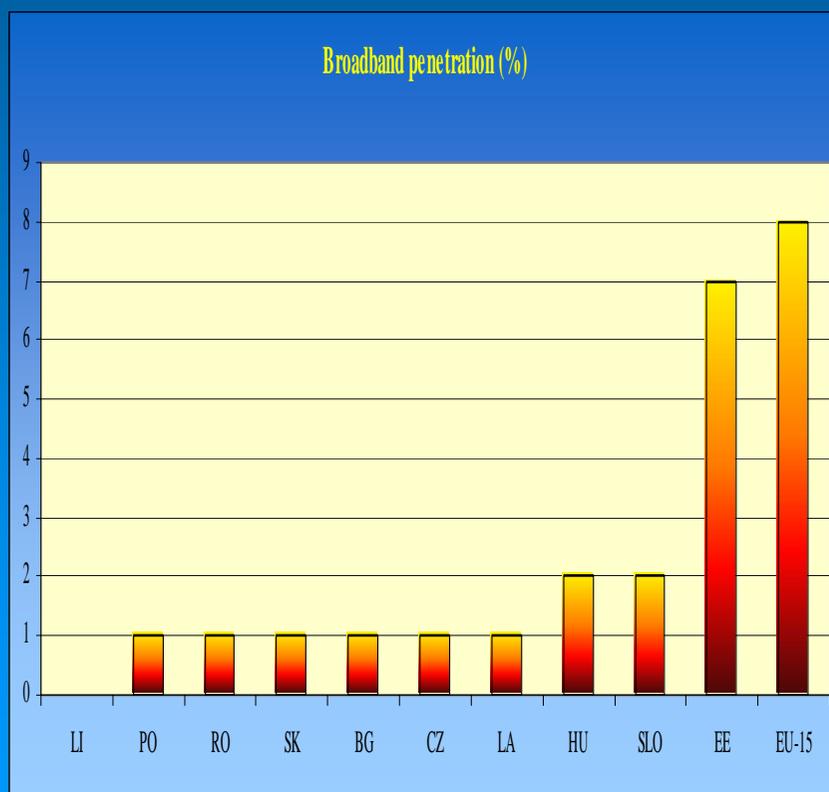
- Low levels except Malta and Slovenia, and surprisingly low in NMS,
- Income differences, access prices are important
- Strong correlation between percentage of households online and the relative level of development
- Strong correlation between the number of households online and the level of fixed line penetration rates

IST Level of Development: Access Costs



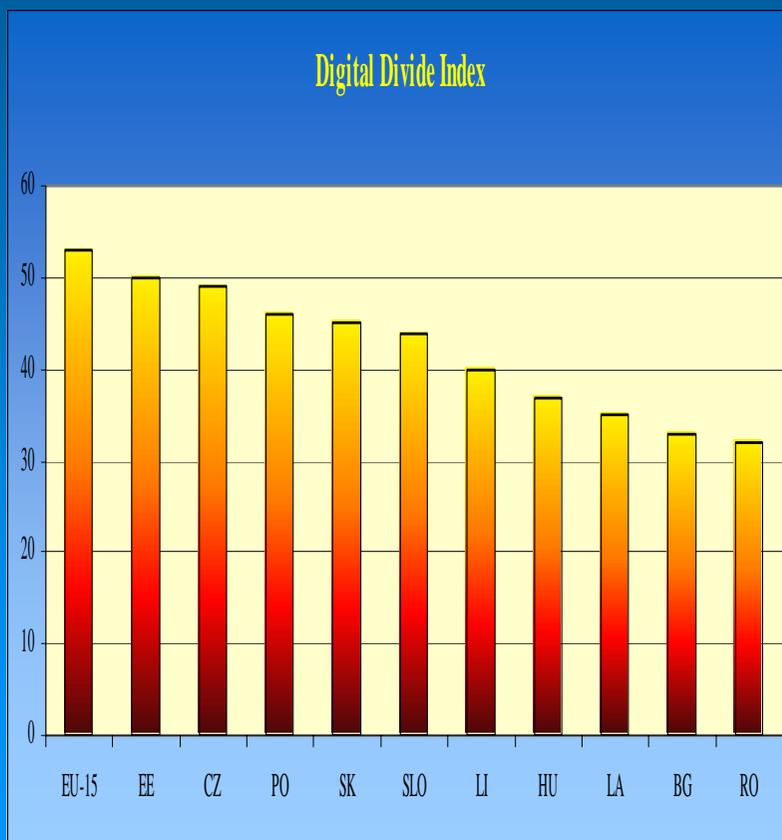
- **Cyprus, Malta and Slovenia are the leading countries as the relative costs of Internet access, PC purchase in PPS adjusted level and relative to households income is the lowest,**
- **Regulation, market structure, income differences, income growth explain mainly the differences,**
- **There is also a fairly strong correlation between Internet penetration rates and price of access.**

IST Level of Development: Broadband penetration



- ❖ Much lower shares in NMS and ACC-3 in broadband
- ❖ Broadband technology outdated
- ❖ Government policy, private sector spending, public funding, technological constraints, price levels explain the gaps between NMS and EU-15
- ❖ Recent recognition of gaps and accelerated developments, national broadband strategies

IST Level of Development: Digital Divide Index



- ❖ Higher but not significantly worse index for NMS and ACC-3 than for the EU-15
- ❖ Gender gap is less, but income and education gaps are more important determinants of the Index
- ❖ Digital divide in these countries comes also with bigger social and regional divides

IST Level of Development: Conclusions

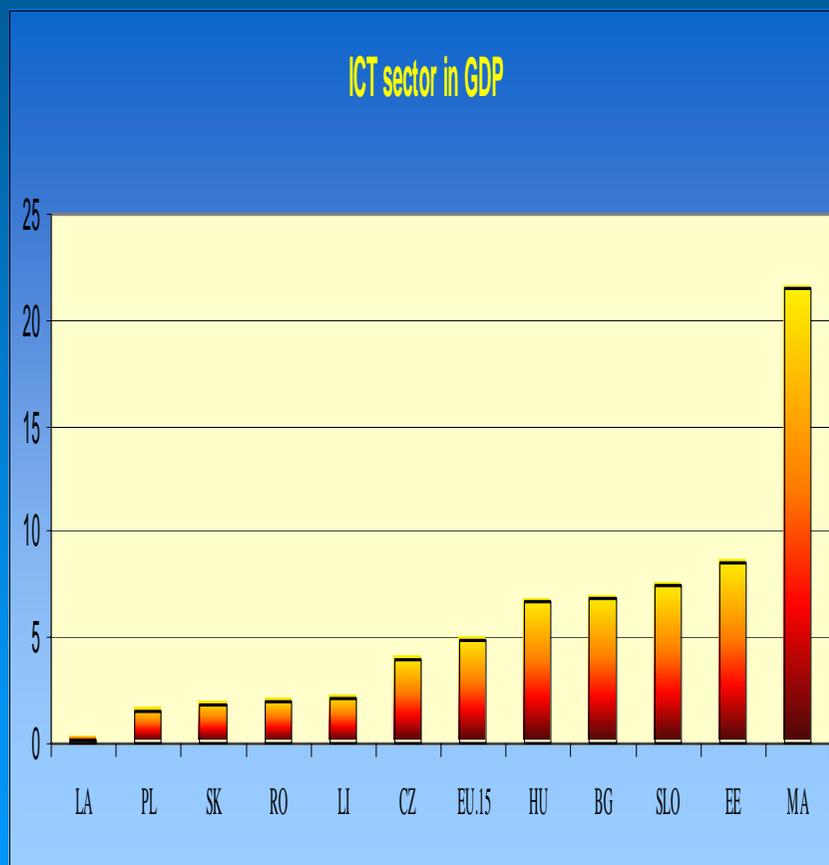
- ✓ **Considerable and indicator specific gaps between NMS and ACC-3 and the EU-15 in IS indicators**
- ✓ **Gaps in most cases widening, sometimes fast: PC use, broadband access, ICT market value and households online show it most ,**
- ✓ **Major areas of concern: low level of PC use in households, high access prices, the low share of broadband access,**
- ✓ **Quantitative differences hide also qualitative ones between NMS and ACC-3 and the EU-15,**
- ✓ **Significant differences exist in use of information and communication technologies by the business, household and public sectors**

IST Level of Development: Conclusions

- ✓ **As expected close links between the indicators: e.g. access prices, and PC purchase positively correlated with Internet penetration rates**
- ✓ **While stock figures reflect significant and sometimes widening gaps, recent flow data are more favourable in NMS and ACC-3,**
- ✓ **There are significant differences between the individual NMS and ACC-3 countries**

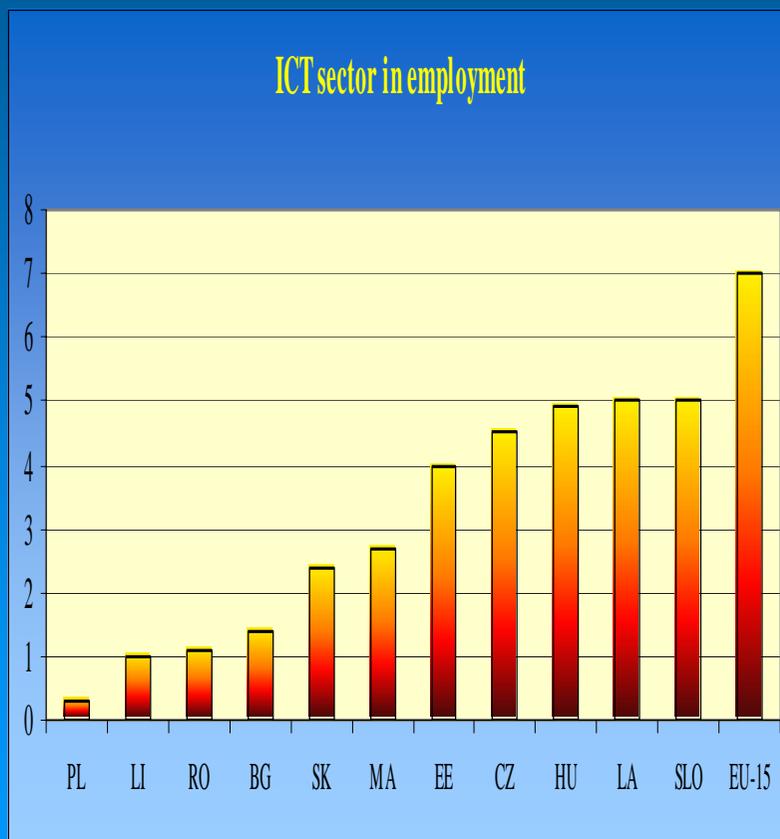
ICT Level of Development

ICT Level of Development: ICT Sector in Production



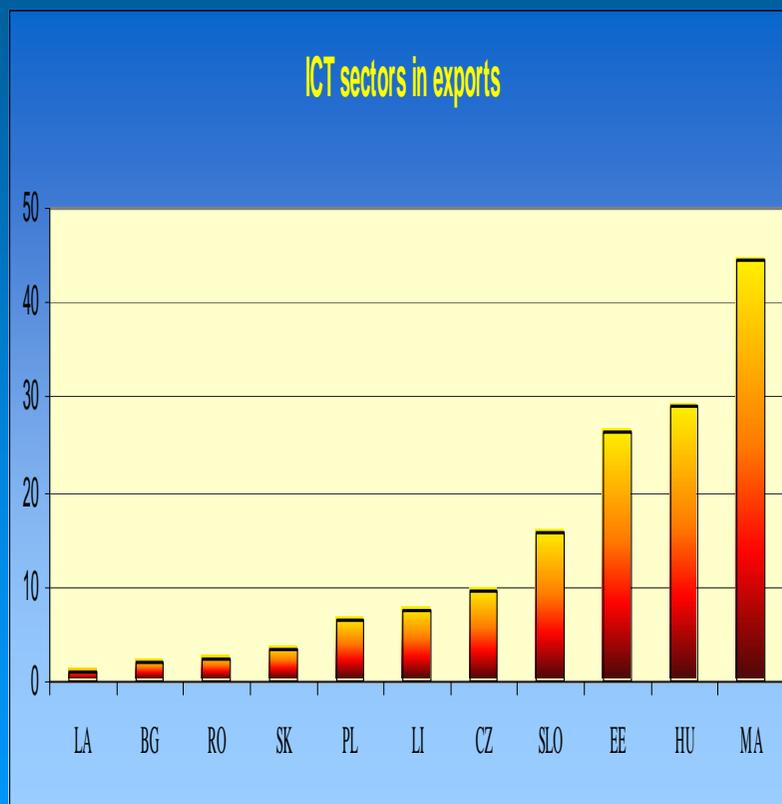
- Contribution to GDP between 1,3% and 22,5%,
- Malta, Slovenia, Hungary are the leading producers,
- Three types of ICT sectors depending on the destination of sales and domestic market size

ICT Level of Development: ICT Sector in Employment



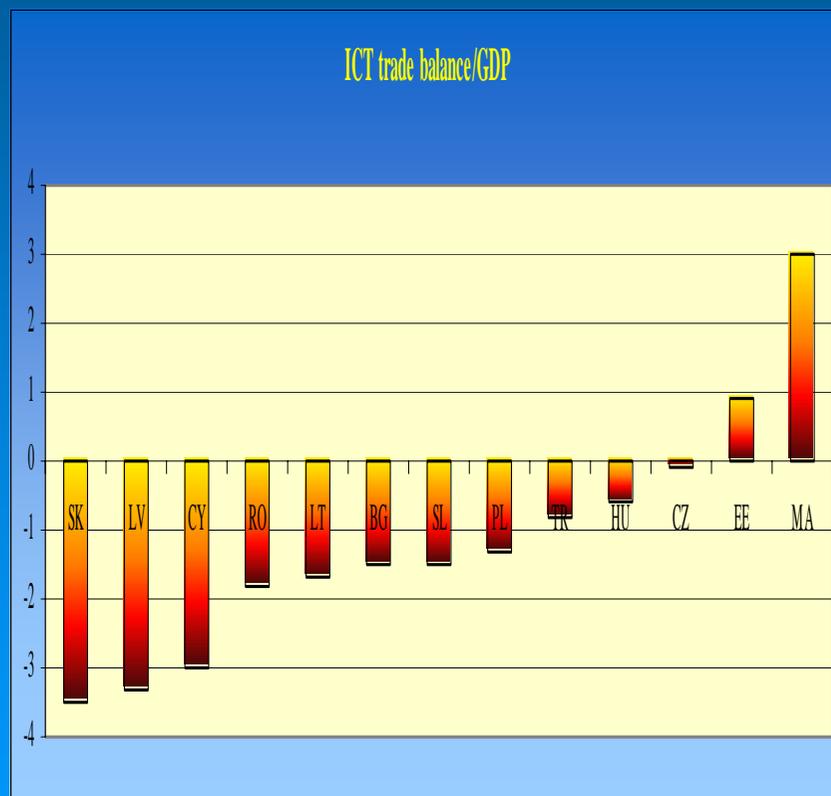
- Contribution varies between 0,3% and 5 % of the total labour force,
- Low level of ICT output and high productivity explain the levels below production

ICT Level of Development: ICT Sector in Exports



- Very high differences due to different market size and openness level,
- Re-exporting and assembling with gradually increasing value added content
- Vulnerability to shocks, re-deployment and cost competition.

ICT Level of Development: ICT Sector Trade Balance



- Deficits prevail with the exception of Malta and Estonia
- Different reasons: either temporary due to product cycle or permanent due to low domestic production and growing consumption

ICT Level of Development: Conclusions

- ✓ **Bigger polarisation in ICT indicators than IST indicators among the NMS and ACC-3 countries**
- ✓ **The value and the market share of ICT sector in NMS and ACC-3 is lower than in EU countries and EU-15**
- ✓ **ICT output in total is below EU levels except for some countries with a strong FDI penetration and production in these sectors**
- ✓ **ICT related spending and consumption is lower both at households and enterprises level than in the older Member States**
- ✓ **The future of ICT sector is very country-dependent**

IV. Factors Affecting IST and ICT Developments

Factors Affecting IS Developments

I. Economic Growth and Real Convergence

- Income level and its growth strongly influence the nature and speed of the spread of information society
- ICT spending and economic growth closely linked,
- Affecting disposable incomes and private investments,

II. Changing pattern of household consumption:

- Significant increase in real private consumption
- Consumption dynamics driven besides income by composition effects
- Changes in real private consumption considering price developments,

Factors Affecting IS Developments

III. Sustainability of public finances and public sector reform

- Lack of public funding of IS developments,
- Fiscal imbalances constrain IS funding,
- Lack of public finance reform and bad composition of public expenditures,

IV. Economic, social and regional disparities

- Widening regional disparities,
- Social divides: income distribution, long-term unemployment, employment levels,
- Differences in access to IS services and goods,

Factors Affecting ICT Developments

- **Restructuring: expanding service sector and reindustrialisation with remaining structural legacies**
- **FDI and the economic openness of the countries**
- **Financial sector development and its financing capacity for the ICT sector**
- **Privatisation and regulation**
- **Educational levels and supply of human capital**

V. Open Issues

Open Issues Raised by the Research

- ❖ **ICT, productivity and competitiveness**
- ❖ **Policy bottlenecks in developing a well functioning information society**
- ❖ **ICT and IST Developments and the Lisbon Indicators**
- ❖ **ICT and Use of Structural Funds in the NMS**

THANK YOU FOR YOUR ATTENTION

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