

IST and Competitiveness in the New Member States

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**Presentation for the conference Competitiveness in the New Member States: the case
of Hungary**

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The Structure of Presentation

- I. The contribution of IST to economic growth and productivity: international and NMS-8 evidence
- II. The gaps between NMS-8 and EU-15 in certain key IST indicators
- III. How do these gaps reduce competitiveness and growth of NMS-8?
- IV. Measures to enhance the contribution of IST to competitiveness of NMS-8

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I. Contribution of IST to Growth and Productivity: International and NMS-8 Evidence

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I.1. Contribution of IST to economic growth

$$Dy = vl * dl + vict * dict + vnict * dnict + dtfp,$$

where vl, vict, vnict- share of labour, ict and non-ict capital in income,

Empirical evidences:

- Colecchia-Schreyer (2001): in past twenty years, ICT contributed between 0,2 and 0,4 percentage points per year to economic growth, depending on the country.
- OECD (2003): the contribution of the ICT sector to the 2,5% growth (between 1990 and 1995) was 0,4-0,5%, while to the 4% growth (between 1995 and 2002) was 1%
- Jorgenson, Ho and Stiroh (2003): US growth increased by 1.85% points between 1995-2000 compared to 1990-1995, of which ICT contributed 0.93 % points
- OECD (2003): in the last decade ICT investments contributed to annual GDP growth by 0.3% - 0.8%
- Growth of the ICT sector: it contributed 1% annually to GDP growth in Korea, Ireland and Finland
- Increased employment: Finland 7,2% of the labour force (Daveri (2004))

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I.2. Contribution of IST to productivity growth

Three major channels:

- increase of TFP through the spread of innovation, knowledge and related spill-over effects
- capital deepening both in ICT producing and due to new investments in ICT using sectors
- technical progress in ICT producing industries and its spill-over effects (all purpose technology)

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I.2. Contribution of IST to productivity growth

Empirical evidence

- Basu et al (2003): marked shift in TFP growth in the US, linked to a relatively higher ICT capital growth in the first half of the 1990s
- Van Ark, Inklaar and McGuckin (2003): most European economies showed lower investment in ICT than the US, and a deceleration of productivity growth in contrast to the acceleration in the US
- Pilat-Lee-van Ark (2002): In most OECD countries, the contribution of ICT manufacturing to overall labour productivity growth has risen over the 1990s
- EU Commission (2004): productivity level vis-à-vis the US 97% (mid 90s), and 88% (2005), the decline was caused up to 50% from declining K/L and 50% from declining overall efficiency of production

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I.3. The Role of Direct or Indirect Channels

Three hypothesis:

- ICT usage matters (Blanchard (2003), Art-Inklar- van Guckin (2003), McKinsey Global Institute (2002), Stiroh (2003)). Between EU and US the major difference is in Y/L in retail, banking and wholesale
- ICT production matters (Gordon (2004), Daveri (2004)): not the diffusion matters, but the presence of few very active producers in IT with their strong spillovers
- ICT irrelevance: if reclassified then other factors are more important: labour and product market regulation

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I.3. The Role of Direct or Indirect Channels

Indirect effect is stronger:

- Basu et al (2003): in US about 75% of the overall increase in GDP growth was indirect
- Van Ark et al (2003): ICT intensive usage sectors had driven the jump in US productivity
- Jorgenson et al.(2002): while the structure of output is shifting towards the ICT producing industries, but even more substantially towards the ICT using industries
- Colecchia-Schreyer (2001): "ICT diffusion plays a key role and depends on the right framework conditions, not necessarily on the existence of an ICT producing sector"

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I.4. Growth and productivity contribution of ICT in NMS

- Empirical evidence is scarce: Piatkowski-van Art (2004), World Bank (2004): ICT-producing and ICT-using sectors have both contributed, but more the ICT-using ones
- Much faster increase in growth and TFP in NMS than in the EU-15, while investment rates and capital accumulation or labour contribution is similar or less than in the EU-15. Productivity was driven mainly by labour cuts and TFP increases
- On the other hand the share of ICT producing, using sectors quite similar to EU-15: ICT producing sectors 4%, using 27% and non-ICT 68% in the EU in 2002, in HU 5%, 25% and 70%, SK 4%, 24%, 72% and PL 2%,24%,74%
- ICT contributed mainly to TFP growth and less to non-ICT or ICT capital intensity in measuring its contribution to growth

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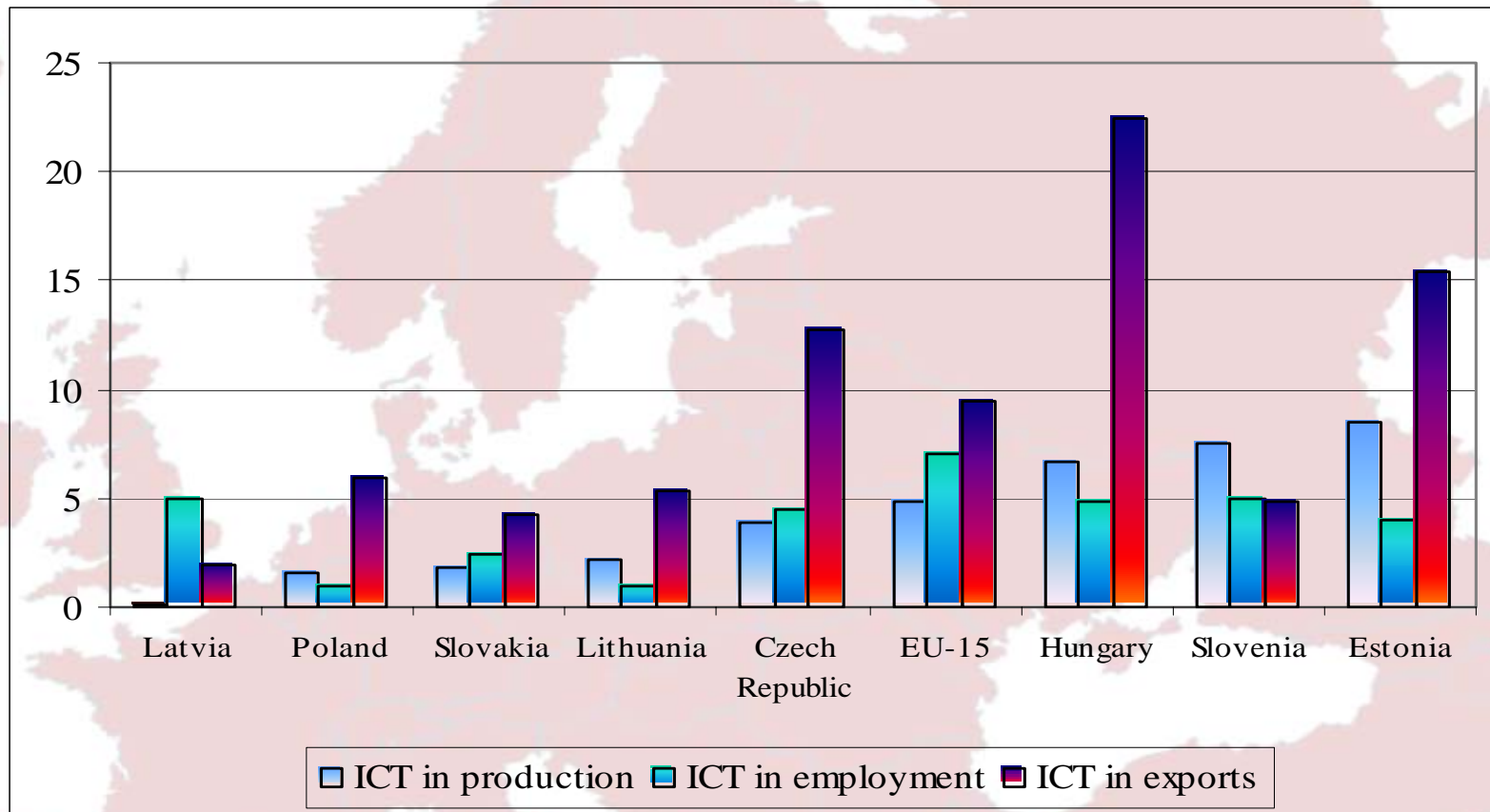
I. The Gaps in IST Indicators between NMS-8 and EU-15

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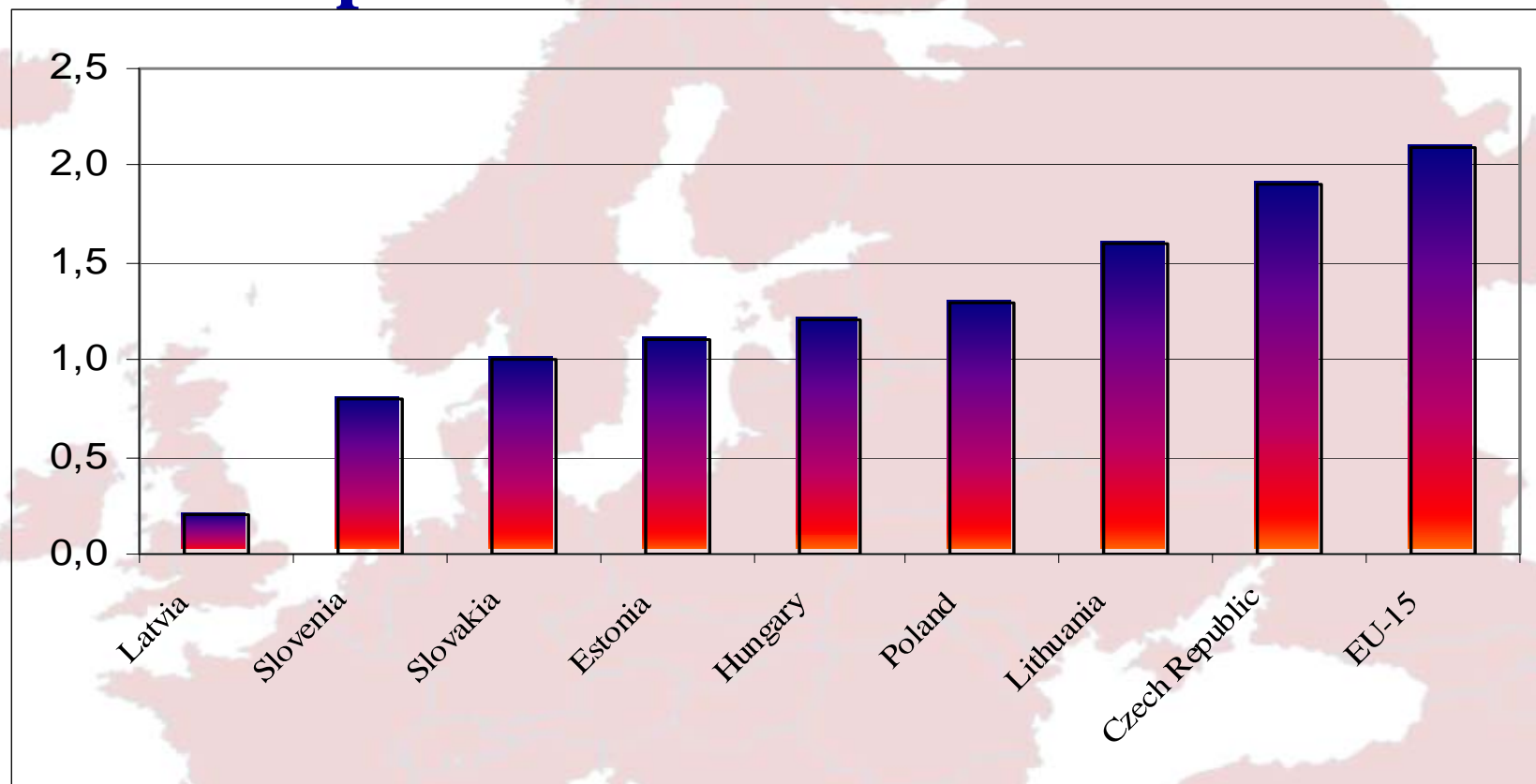
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Role of the ICT Sector in the Economy



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Enterprise Revenues from eCommerce

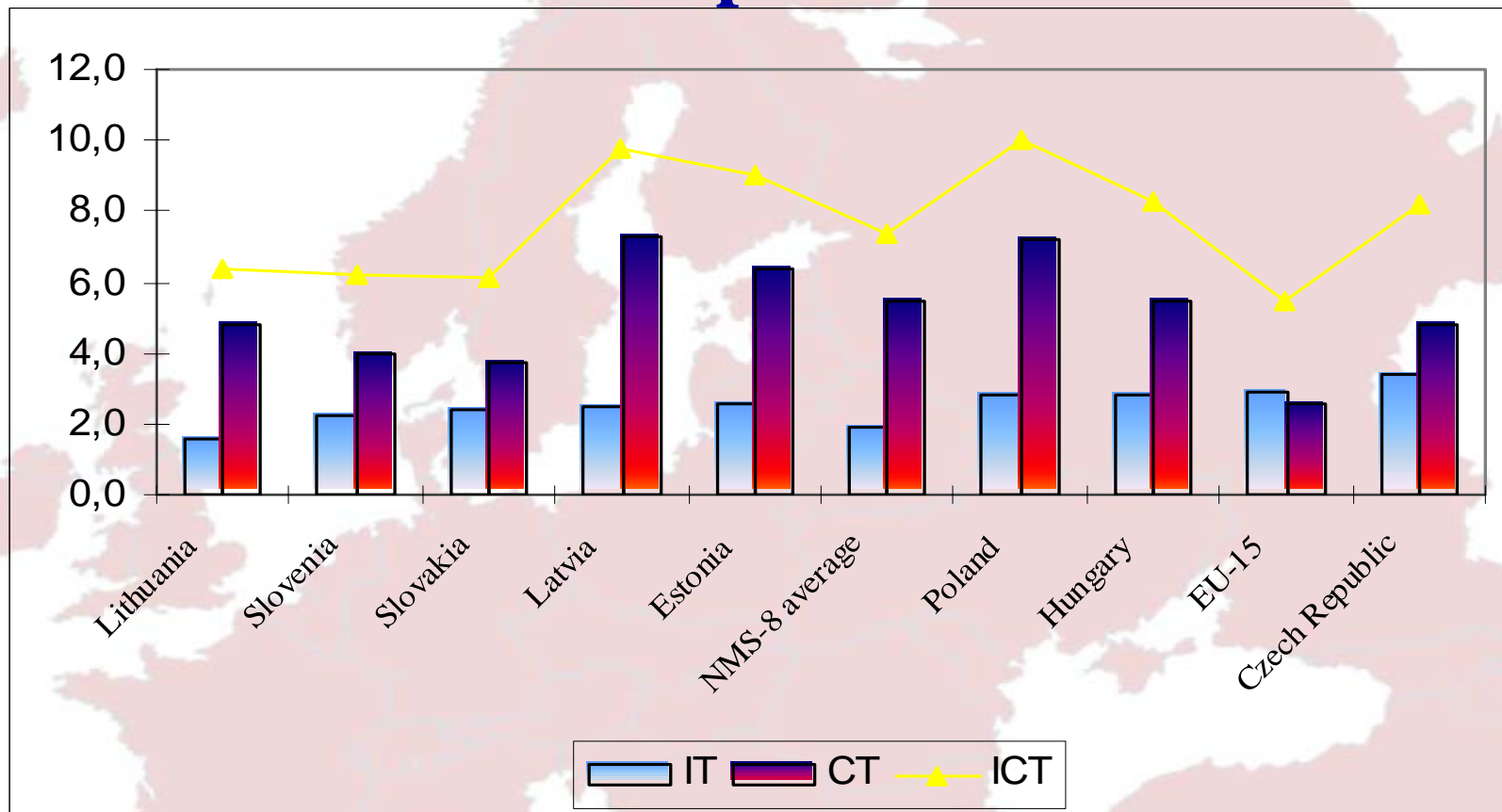


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Share of ICT expenditures in GDP

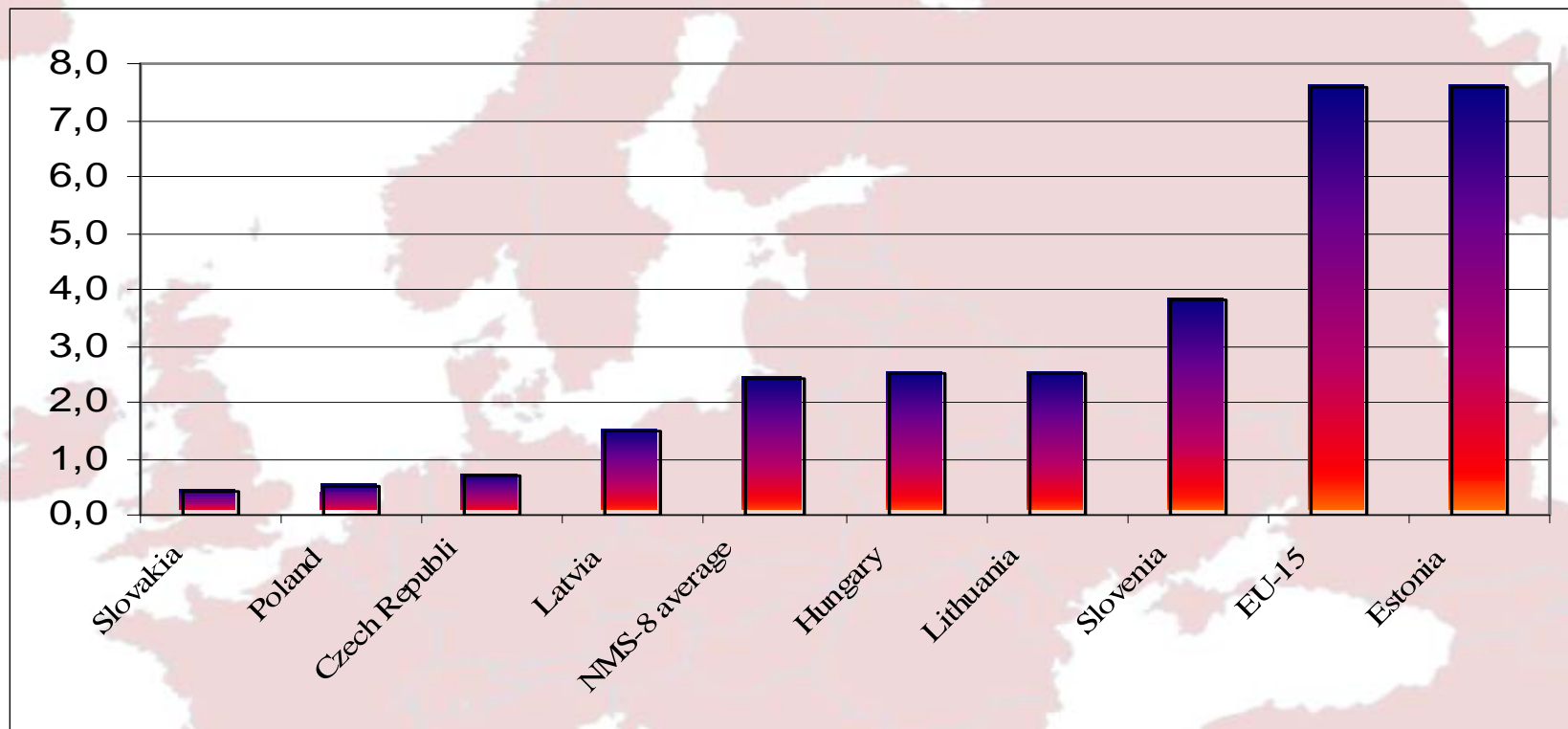


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Share of Broadband Lines in Total

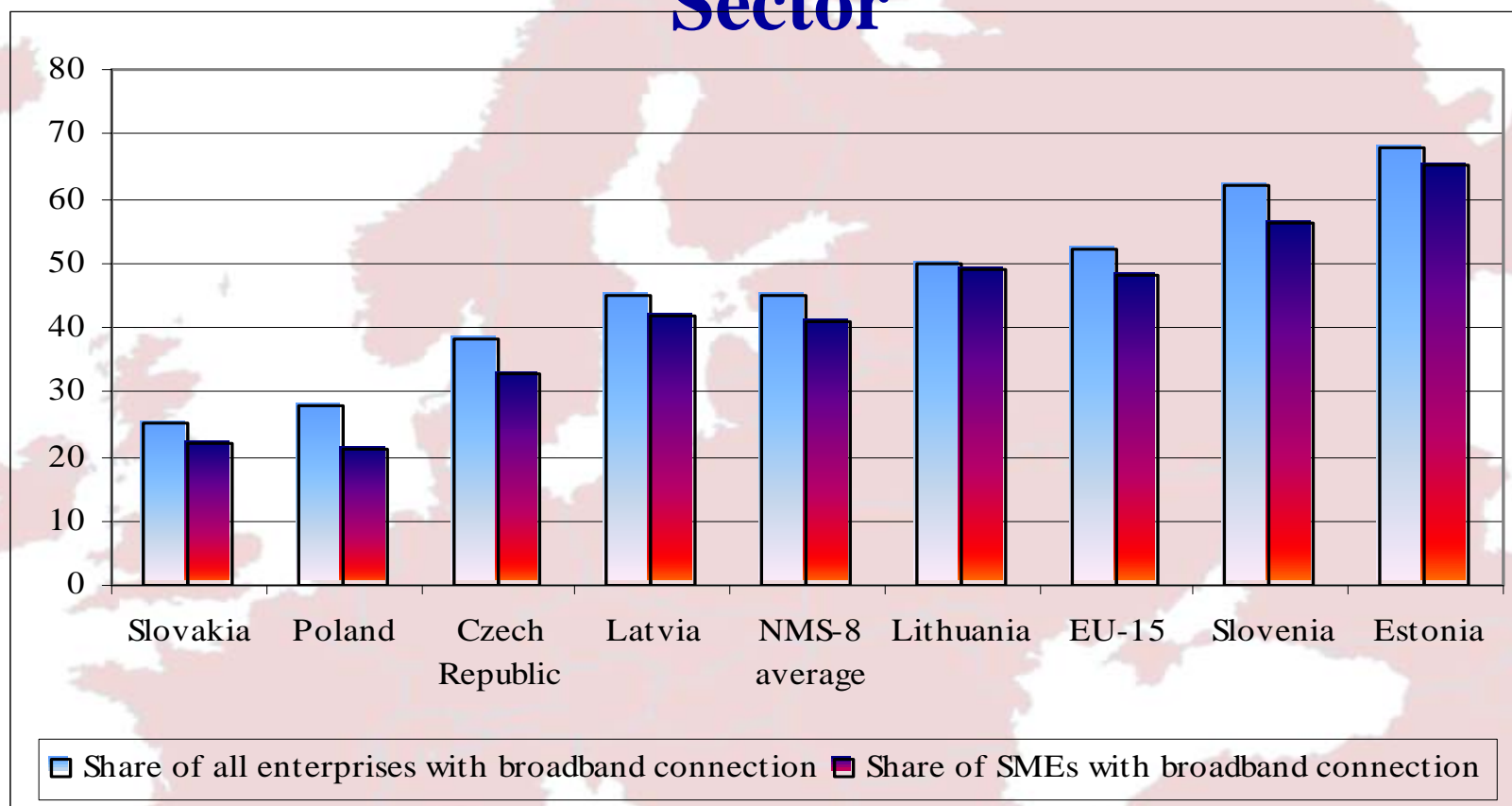


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Broadband Connections in the Enterprise Sector

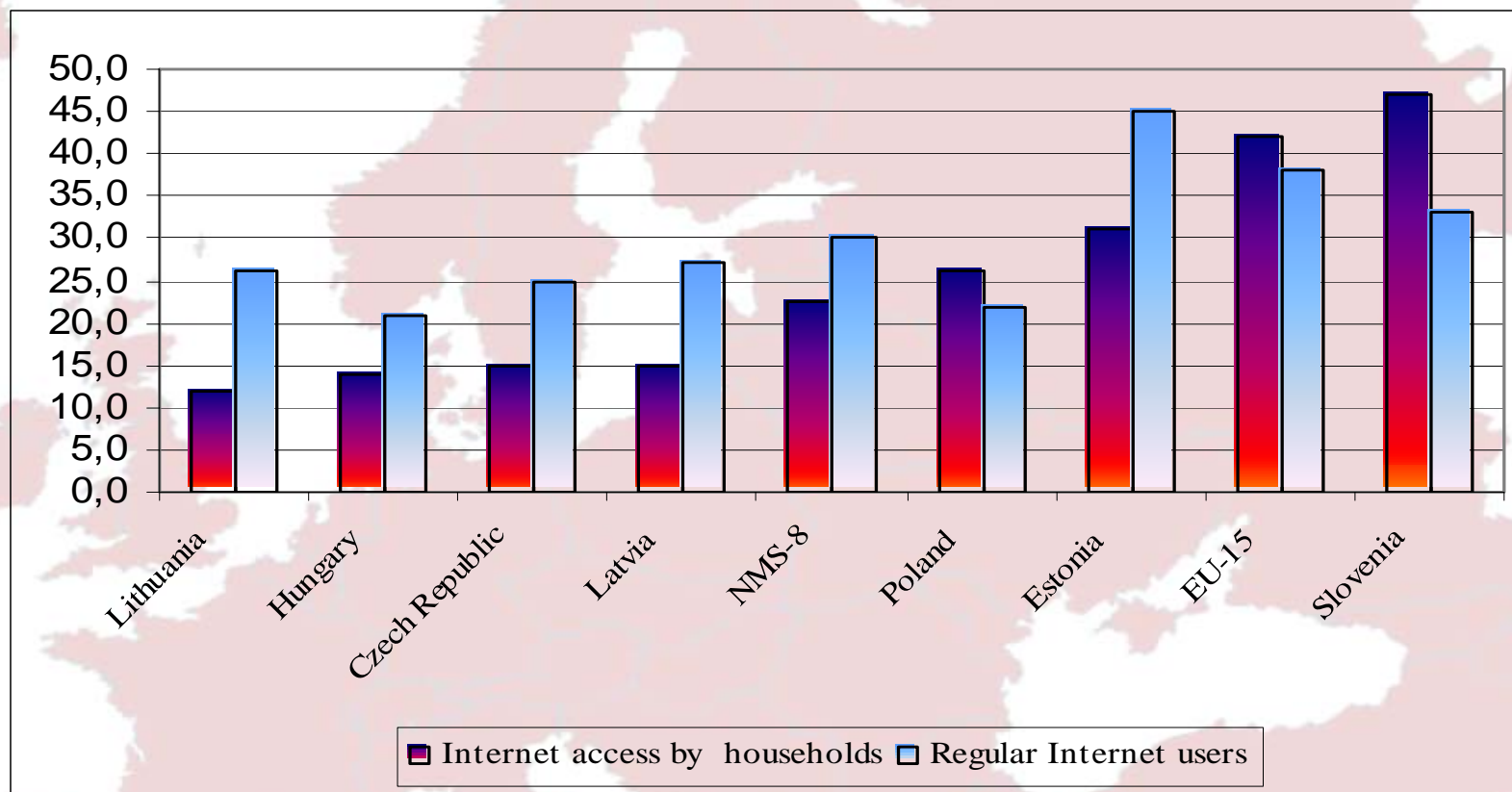


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Internet Use in the Household Sector

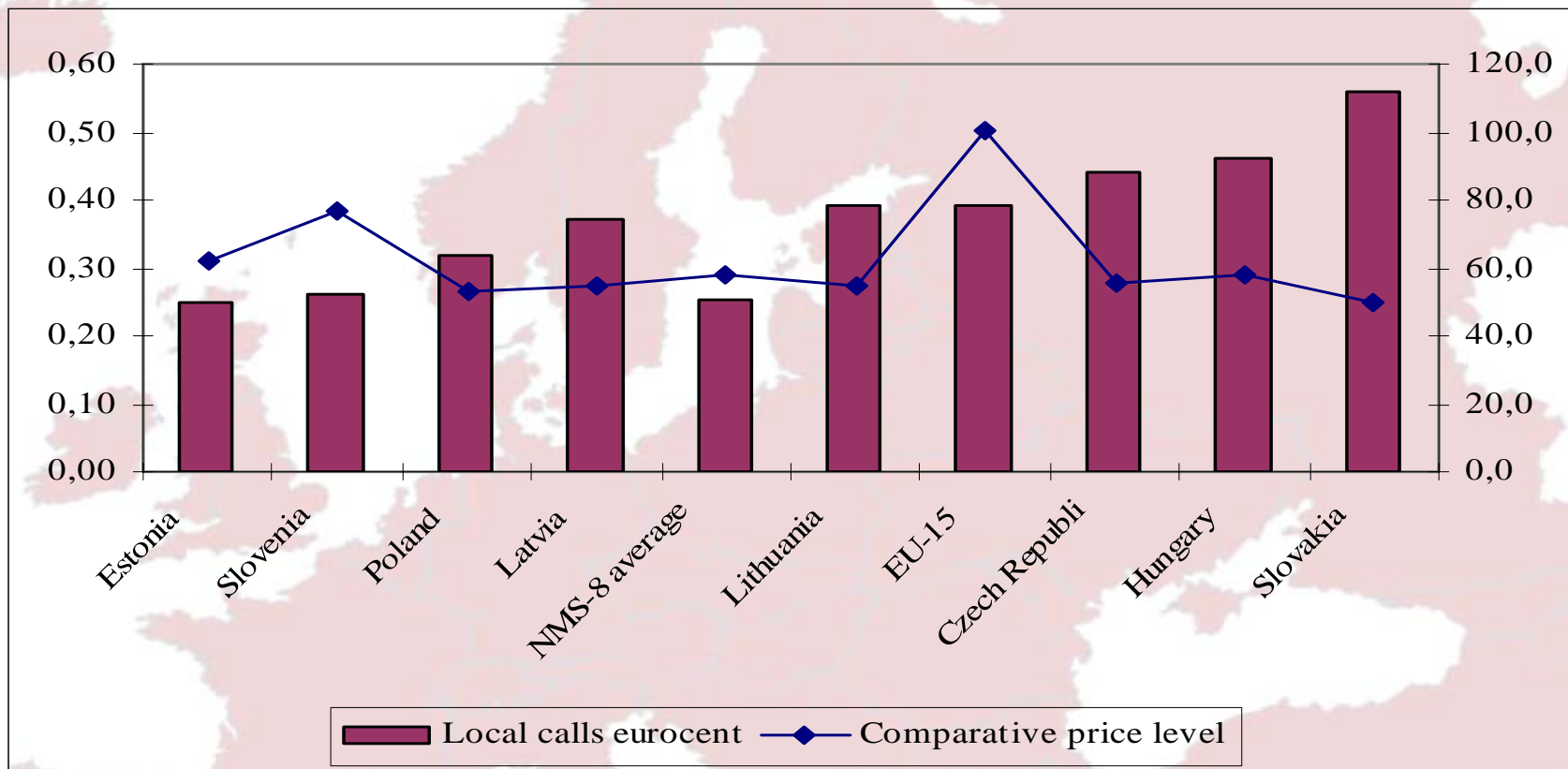


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Price of Local Calls

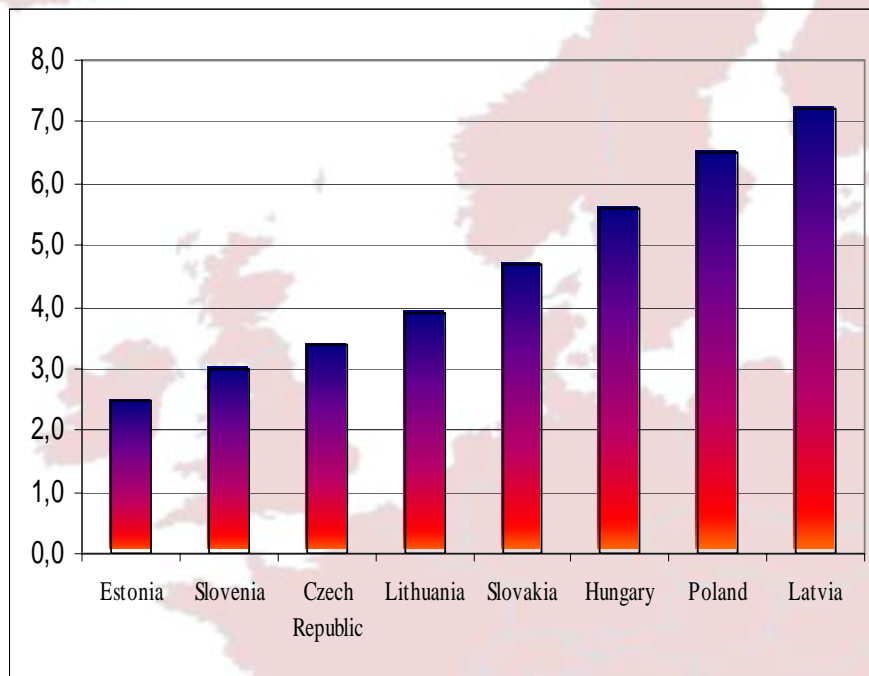


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Summary on Indicators



- Most of IST indicators show bigger gaps than income related or Lisbon indicators
- Especially significant gaps in access indicators (e.g. broadband penetration), affordability (prices in comparable units), sizes of eGovernment and eBusiness
- Sizeable gaps between the NMS
- Differences in the business, households and public sector figures

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Factors explaining the differences in performance

- **Macroeconomic:** economic growth and macroeconomic stability
- **Structural:** restructuring in the public and private sectors
- **Policy:** IS policies, regulation, institutional framework
- **Equity:** social, regional divides

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IV. How do gaps in IST Indicators Reduce the Competitiveness in the NMS?

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I. Growth and Productivity in NMS

1. Growth in NMS-8 driven less by capital and labour supply but by the rise of TFP
2. The share of ICT producing sector (except HU, EE) is smaller or similar to EU-15 and ICT contributes to growth mainly indirectly through the TFP rise
3. But as penetration and other IST indicators are low in NMS-8, while structural reforms (leading to higher capital and labour productivity) were fast, the contribution of IST has been relatively small either to TFP increase or to capital stock
4. There is a double possibility of increased contribution of IST to growth and competitiveness: higher investments due to ICT needs, and also higher productivity due to capital deepening and accompanying organisational etc. changes leading to faster rise in TFP

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The role of ICT expansion for competitiveness and growth

The poor IST indicators reduce growth potential and competitiveness of NMS in various ways:

- a) returns and spill-over effects from ICT investments are higher due to lower level of capital (and ICT capital) stock, capital/labor ratio
- b) expansion of ICT may allow more efficient savings at the level of general governments especially in the areas of public administration, health and education
- c) Higher ICT use requires more investments at the micro level, accompanying organisation and „in-house“ changes, leading to higher productivity
- d) Wider ICT application reduces transaction costs, improves access to information,
- e) The improvement in IST indicators leads to better Lisbon indicators (R+D, spending on human capital, investment rate, FDI intensity, etc.) which may enhance further the competitiveness of the NMS countries.

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IV. Measures to Enhance the Contribution of IST to Competitiveness in the NMS

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Three major policy areas

Public sector reform

- Streamlining and restructuring excessive public sectors
- Redistribution side:
 - a) Health care and eHealth
 - b) Education and eLearning
 - c) Public (local and national) administration and eGovernment
- Centralisation side: tax competition, simplifying tax administration with IST
- eProcurement and lower level of corruption

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2. Product market reforms

- Labour market reforms: allowing atypical, flexible employment structures, supporting labour mobility and increasing employment levels
- Liberalising network industries: more competitive market structures, price competition
- Product market deregulation: easier market entry and exit

3. General and IST related government policies

- Broader use of structural funds for IST related developments
- Stimulating households and SME sectors in IST use
- Simultaneous priority to access and content in IST policies

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Thank You!

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