Information Society in Poland

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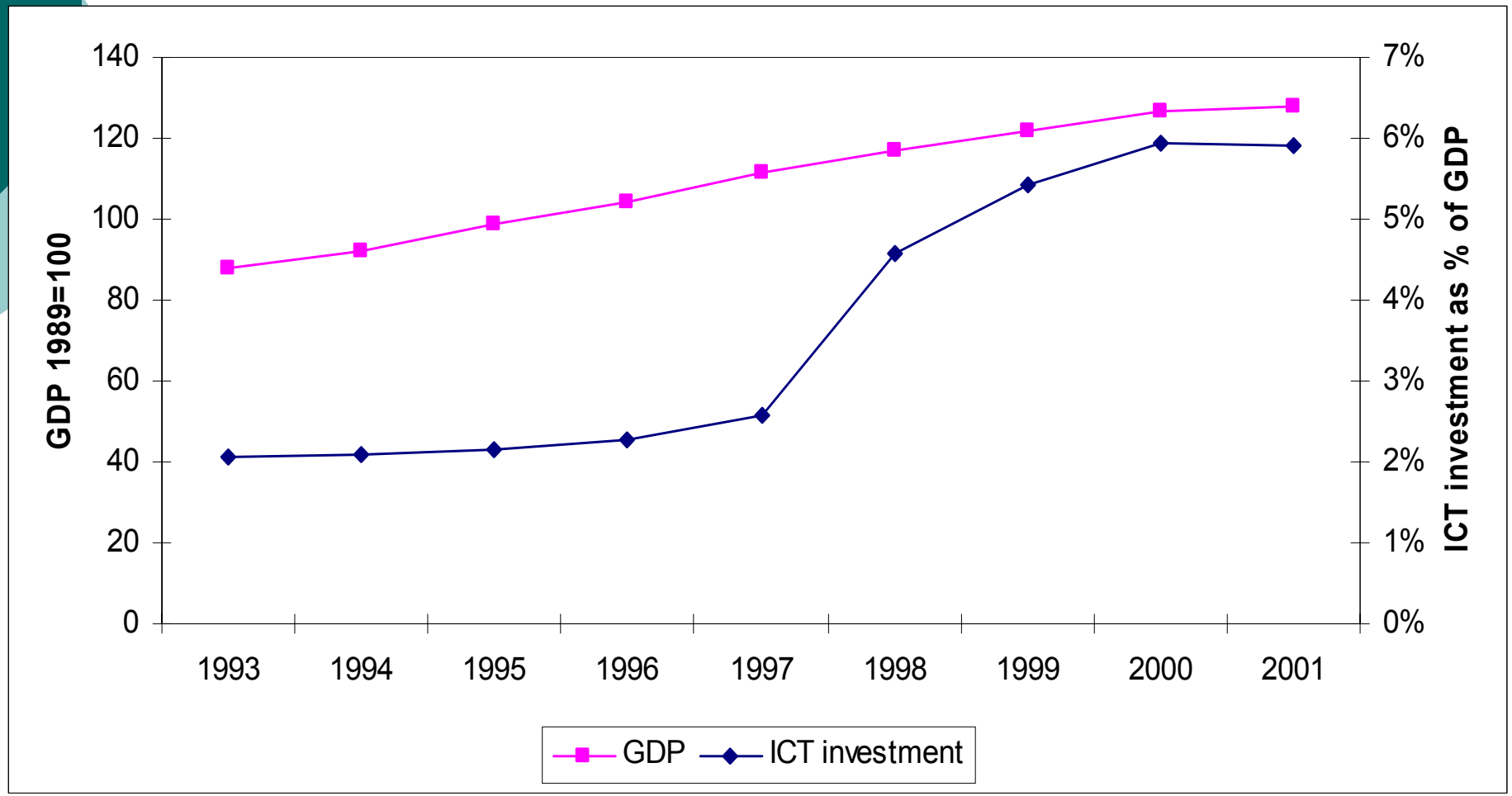
Determinants of development of the Information Society in Poland

- Macroeconomic situation
- Changes in the structure of the economy
- The role of ICT production
- ICT investment and penetration rates
- Public institutions, policies and regulatory enforcement
- Access to and quality of education
- Regional divergence
- Demography and culture

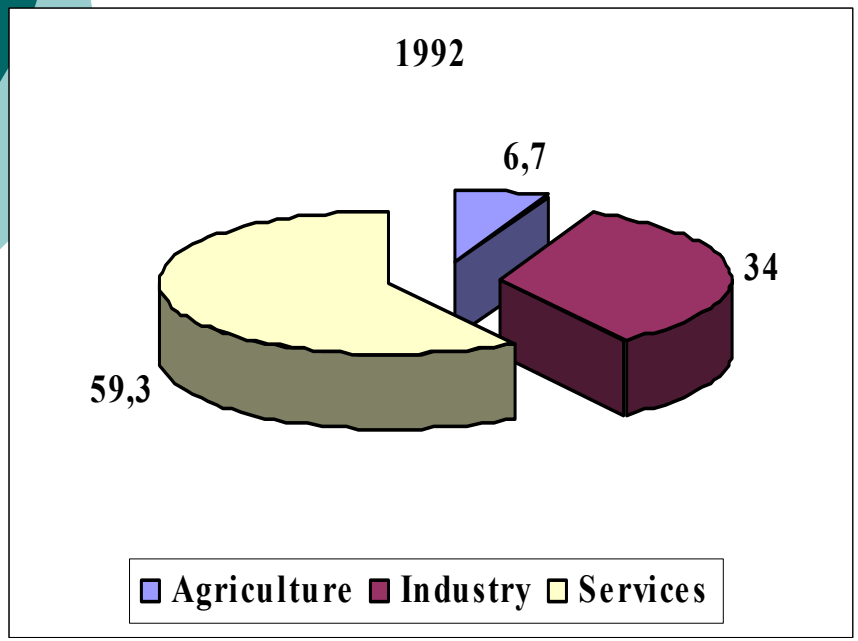
I. Economic growth and ICT investment in Poland is closely linked

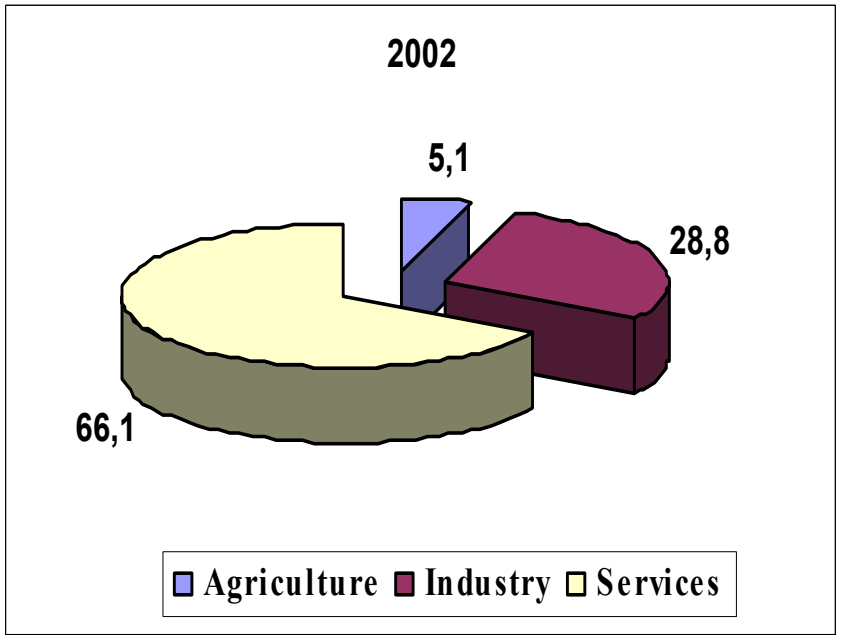


Source: WITSA (2002)

II. The structure of the economy shifted towards modern manufacturing and services, which tend to use ICT more intensively...

Figure 2. Changes in composition of GDP, 1992 and 2002





In manufacturing, ICT-using industries have become more important…

Table 1. Structure of industrial production by sections and divisions in selected years, in % of total industry production

	1995	2001
Mining and quarrying	5.9	3.7
Food products and beverages	19.1	20.1
Wood and wood products	2.8	3.1
Publishing and printing	2.7	3.3
Coke and petroleum products	4.1	4.9
Chemicals and chemical products	6.8	5.6
Rubber and plastic products	3.2	4.0
Non-metallic mineral products	3.7	4.6
Basic metals	6.6	4.0
Metal products	3.8	5.0
Machinery and equipment	5.6	4.3
Office machinery and computers	0.2	0.3
Radio, TV, and communication equip.	1.4	1.9
Motor vehicles	3.6	5.4
Furniture	3.1	3.7
Electricity, gas, water supply	10	11.3
Other	17.4	14.8
Total	100.0	100.0

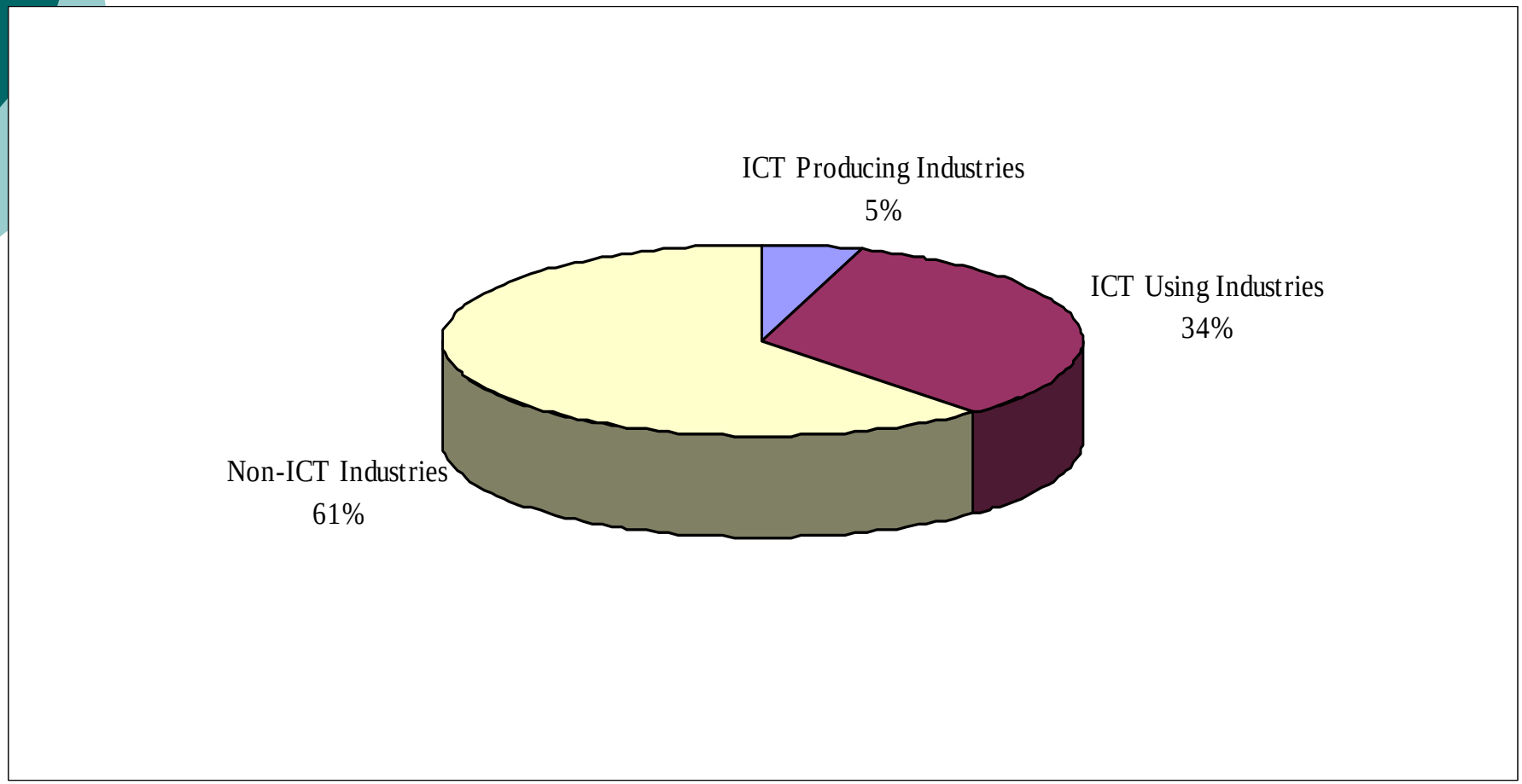
…while ICT producing sector partly replaced old industries...

Table 2. Increase in production in selected industries, 2001, 1995=100

Sector	2001 (1995=100)
Basic metals	**88.2**
Mining of coal and lignite	**78.2**
Textiles and clothing	**103.5**
Medical and precision instruments	**172.3**
Radio, TV and communication equipment	**222.9**
Office machinery and computers	**342.9**

ICT producing sector is however still small relative to GDP...

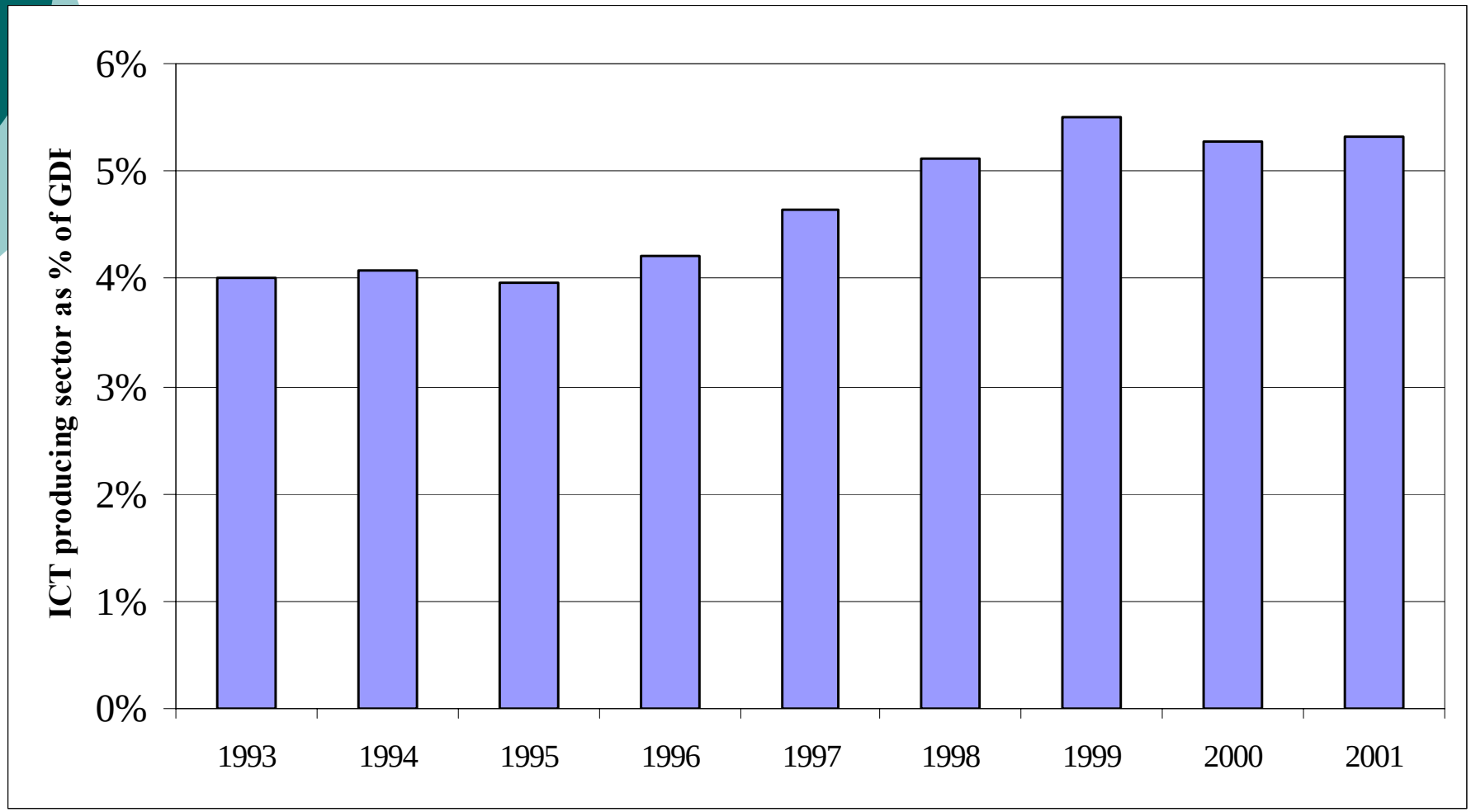
Figure 3. Shares of ICT-producing, ICT-using and non-ICT industries in GDP in Poland, 2001



Source: Piatkowski (2004)

… even though its share in GDP has been growing...

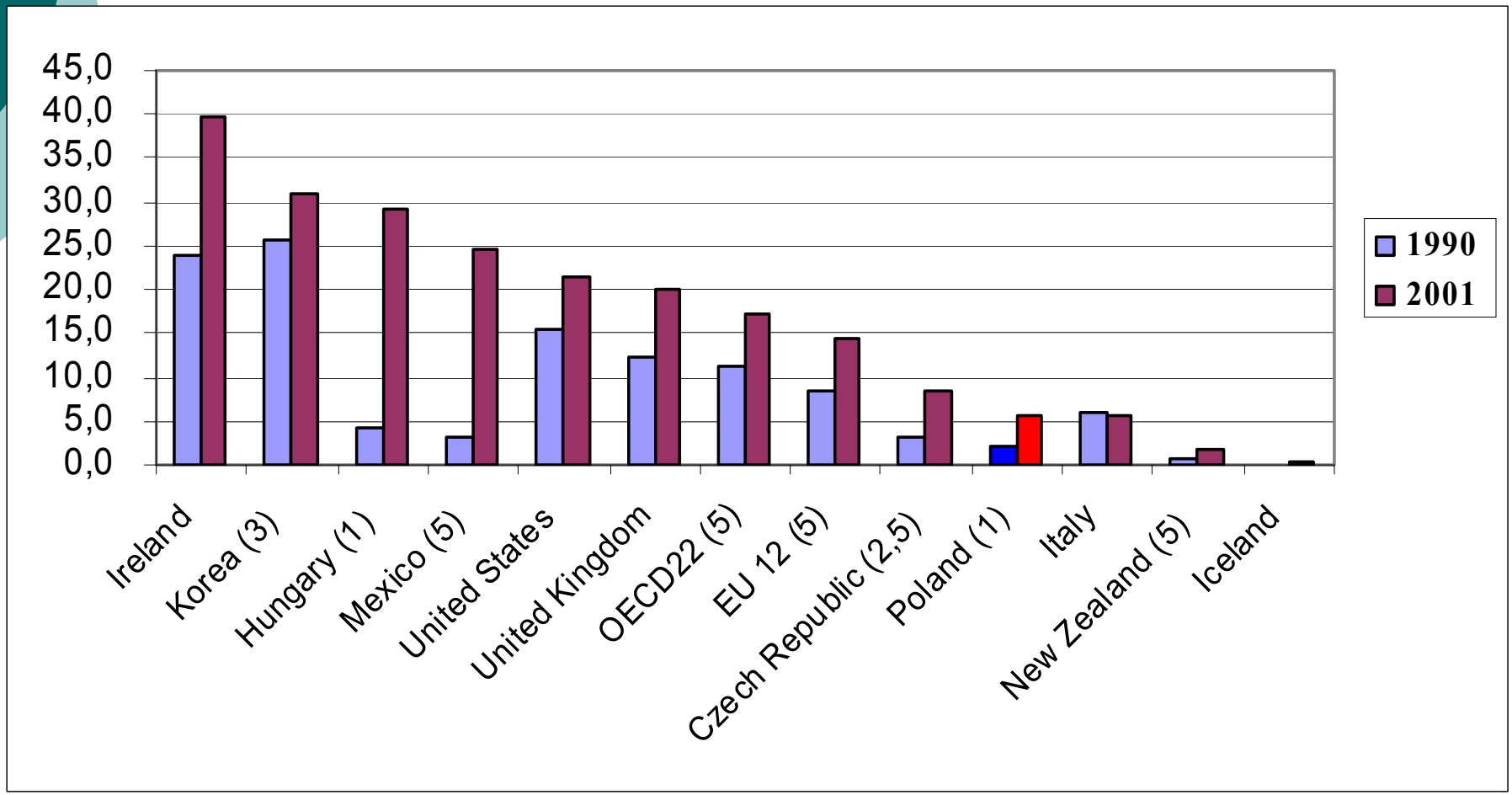
Figure 4. ICT manufacturing and services as percent of GDP, 1993-2001



Source: Piatkowski (2004)

ICT sector's share in exports is still minimal...

Figure 5. Share of ICT sector exports in total merchandise exports, 1990-2000 (in %)



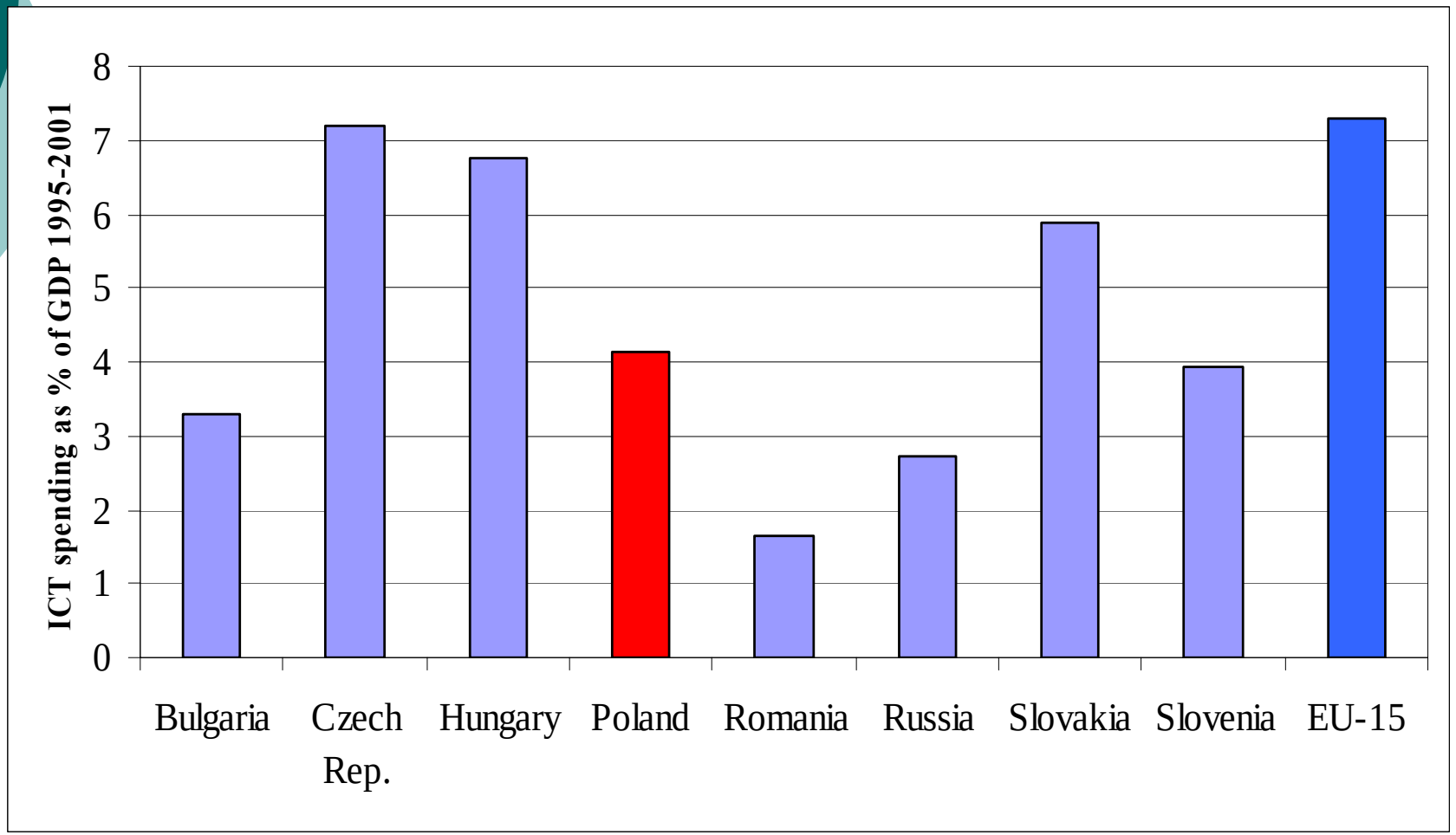
Source: OECD

ICT sector is too small to be a main driver of growth, yet it can substantially contribute to GDP thanks to its high productivity: SWOT analysis...

Strengths	**Weaknesses**
1. Positive changes in the structure of the economy, which promote ICT use 2. Large investments in ICT infrastructure 3. Fast growth of the ICT sector	1. Large negative imbalance in trade in ICT products 2. Large regional disparities in distribution of ICT production 3. Insufficient venture capital financing for ICT start-up companies
Opportunities	**Threats**
1. Accelerating economic growth will increase demand for ICT products 2. Opening of the EU market upon accession will create new opportunities for exports 3. Production of IT applications for global market niches	1. Increased competition from the EU countries 2. Growing regional disparities in ICT production may lead to further technological retardation of specific regions of the country 3. Continued poor access to start-up financing

III. ICT investment is still low relative to EU-15 and some other CEE countries

Figure 7. ICT investment in eight transition countries and EU-15, 1995-2001 average, as % of GDP



Source: WITSA (2002)

ICT penetration rates in households are lower than in most CEE and EU-15

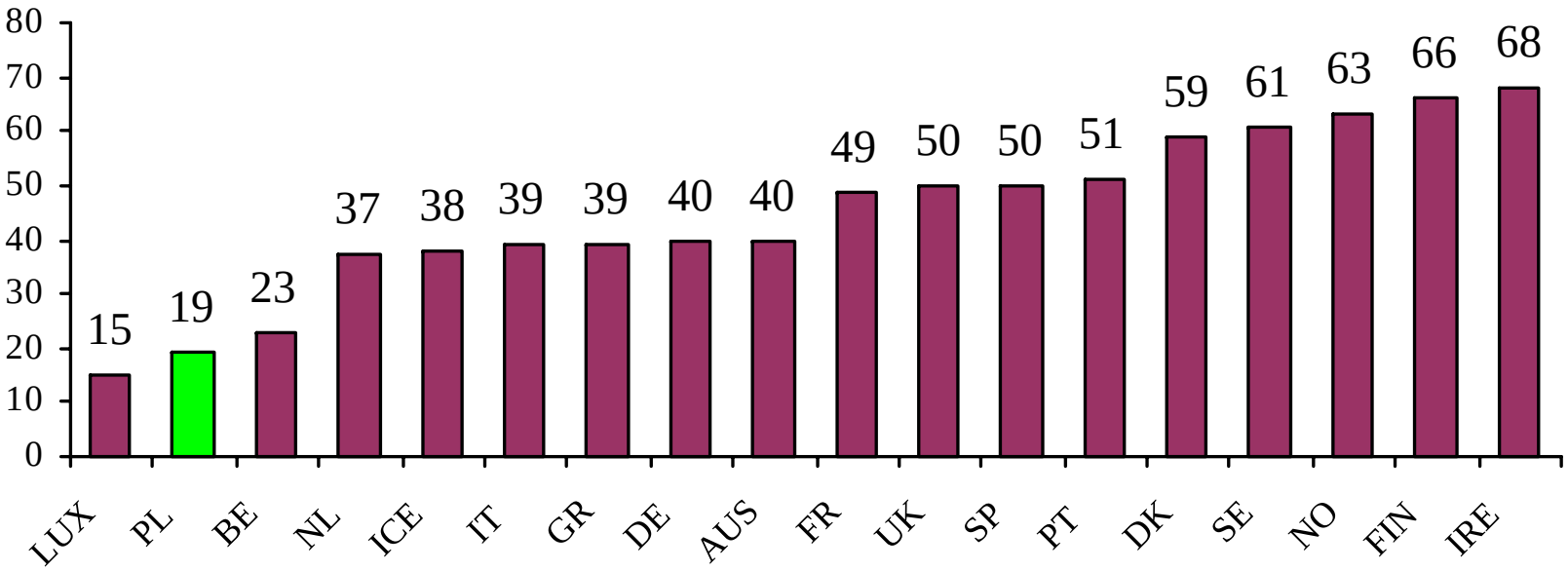
Table 3. ICT penetration rates for EU member and candidate countries (per 100 inhabitants)

Country	PCs (2002)	Internet hosts (2003)	Mobile subscribers (2003)
EU-15	**31.0**	**545.33**	**86.02**
Bulgaria	4.4	66.57	33.3
Czech Republic	12.1	274.41	96.46
Cyprus	25.1		58.44
Estonia	17.5	498.86	65.02
Hungary	10.0	357.76	67.6
Latvia	15.3	178.93	52.86
Lithuania	7.1	203.79	66.62
Malta	23.0	177.93	72.50
Poland	**8.5**	203.93	**45.09**
Romania	3.6	22.53	32.87
Slovakia	14.8	212.18	68.42
Slovenia	27.6	214.76	87.09
Turkey	4.1	52.60	40.84
CC13	**6.9**	**168.25**	**48.78**

Source: International Telecommunication Union (ITU). From: http://www.itu.int/ITU-D/ict/statistics/

…similarly as with ICT penetration in public services…

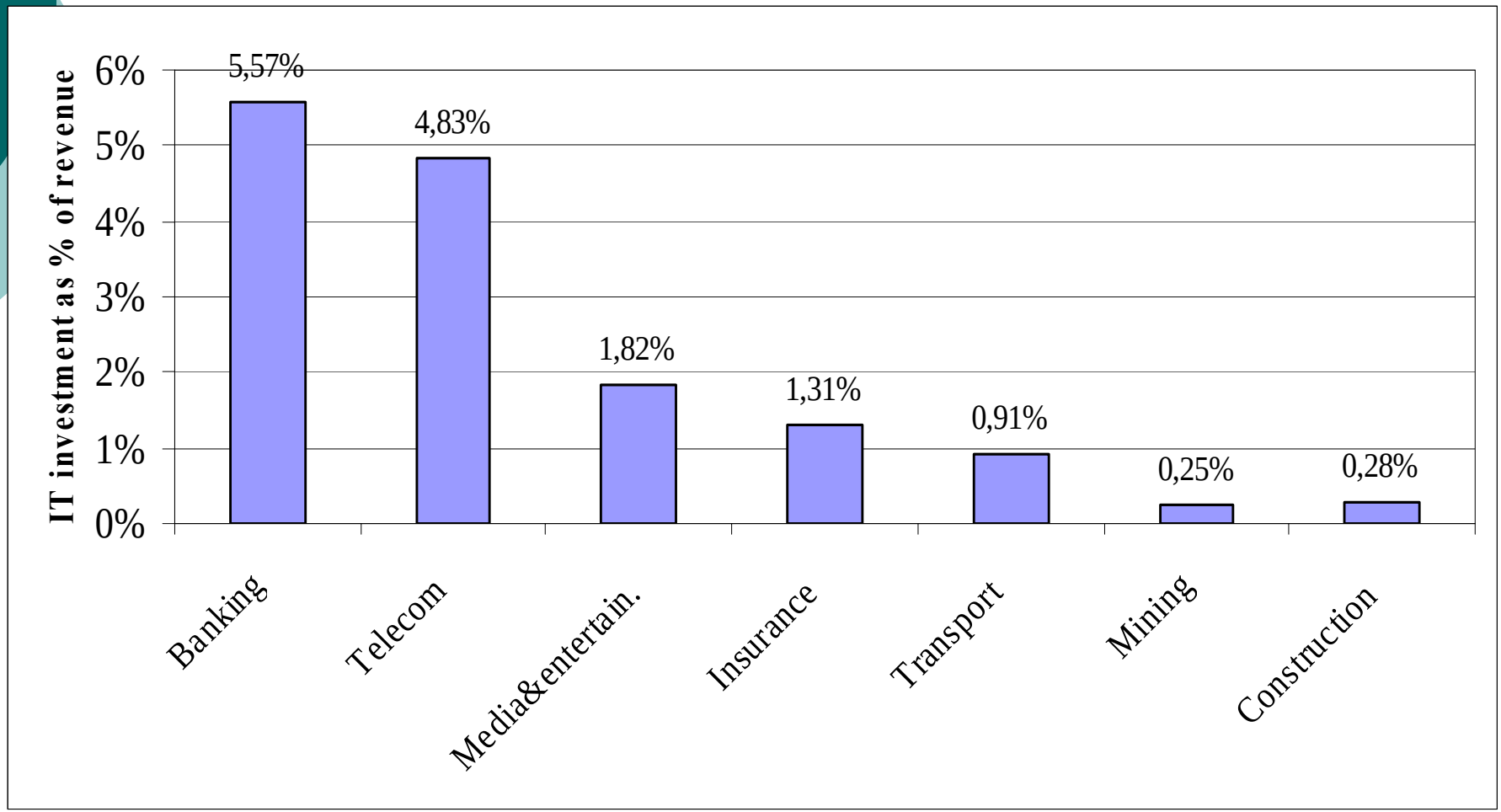
Figure 7. Level of electronic public services in Poland and in the EU in 2002 (in per cent)



Source: Cap Gemini Ernst & Young Polska, www.pl.cgey.com

There is divergence in ICT investment rates in the business sector…

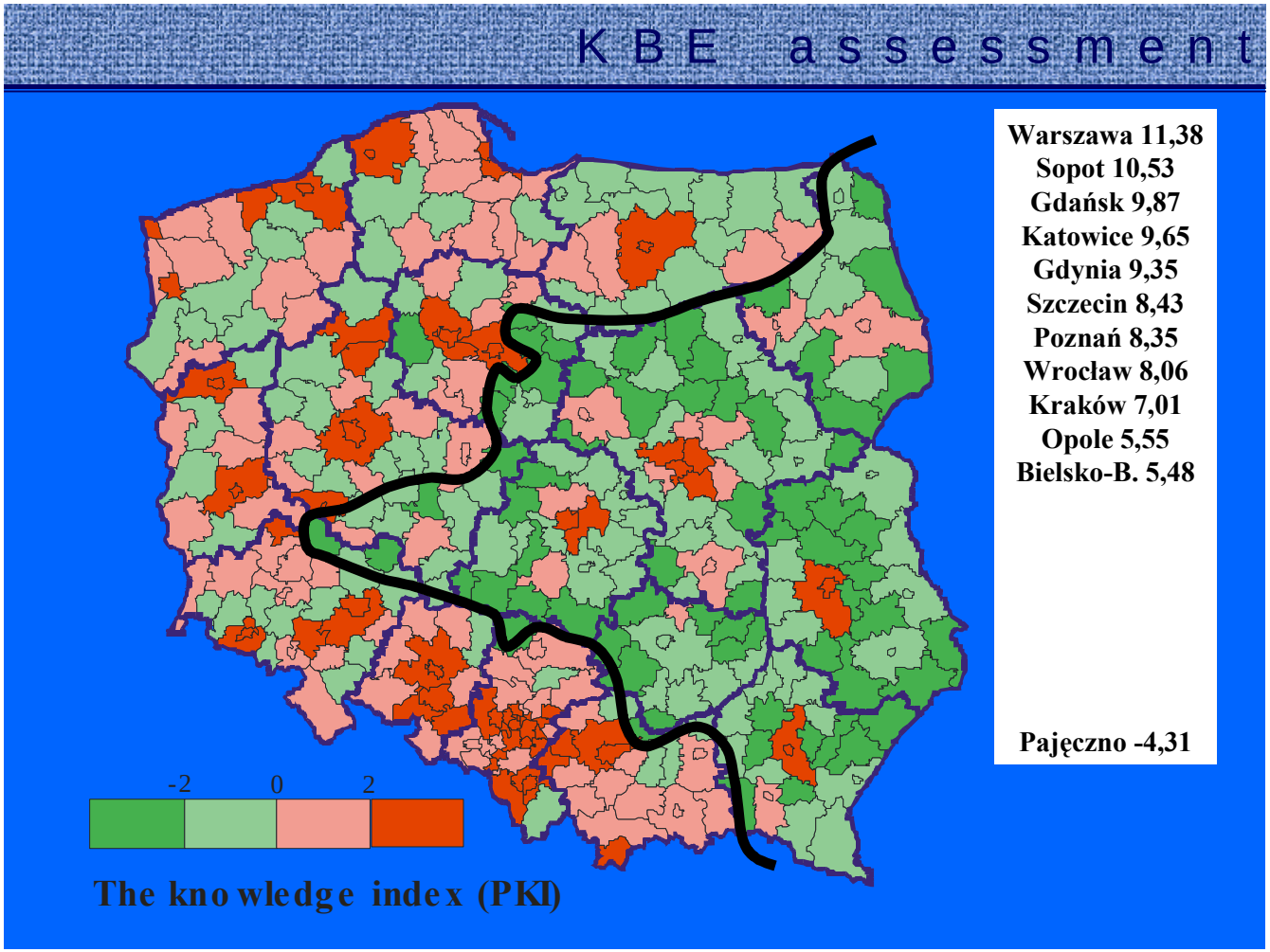
Figure 8. IT investments as percent of revenue among the 100 largest Polish enterprises (in terms of revenue), 2003



Source: DiS (2004)

… but there are large regional differences in distribution of ICT…

Figure 9. Regional ICT penetration based on the „Knowledge Index”, 2002



Source: Guzik (2003)

Overall, much needs to be done to increase ICT penetration: SWOT analysis…

Strengths 1. Substantial progress in ICT infrastructure and penetration 2. Steadily increasing public and private interest in the use of Internet 3. Clear, comprehensive and coherent state strategy for development of eGovernment	**Weaknesses** 1. In spite of progress, still low ICT penetration rates 2. Regional digital divide in uptake of IST 3. Insufficient level of internetization and informatization of public administration
Opportunities 1. EU sponsored investments in technologically disadvantaged regions 2. Larger FDI investments and increased competition should increase uptake of ICT and create spillover effects 3. Successful implementation of the state "Strategy for Informatization of Poland"	**Threats** 1. Widening regional digital divide in ICT use 2. Failure of the state-driven development of eGovernment 3. Lack of interest in Internet use of the older part of the population (aged 50 and more)

IV. Assessment of IS policies is mixed...

Strengths	**Weaknesses**
1. Adoption of the IS program documents and most of the EU legislation on the e-economy. 2. Creation of a single coordinating institution for IS policies 3. Growing commitment of non-governmental actors: IT corporations, IT business alliances, NGOs.	1. Low efficiency of public administration in implementing IS policies 2. Insufficient coordination of IS policies and lacking political support 3. Insufficient financial resources for investment in IS
Opportunities	**Threats**
1. EU financial support for IS development 2. Higher political interest in IS driven by EU peer reviews and local NGOs 3. Regional cohesion policies and IS plans	1. Further focus on politically sensitive issues rather than on IS policies 2. Continuous lack of financial resources for investment in IS 3. Delays in implementation of IS due to opposition from various interest groups and low quality of public administration

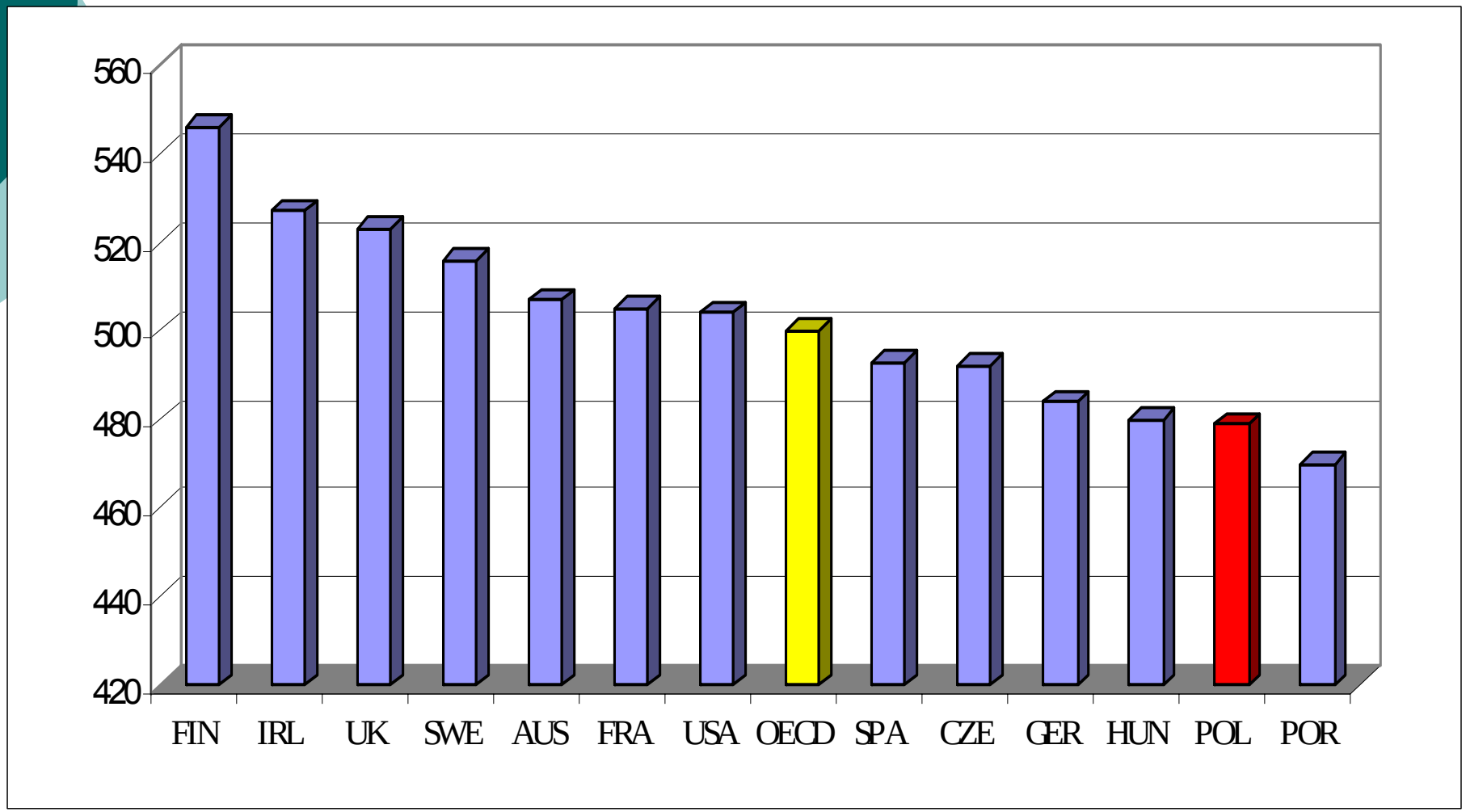
… similarly as regards the quality of law and regulatory enforcement…

Strengths	**Weaknesses**
1. Advanced stage of institution-building 2. Predominant part of laws and regulations compliant with the EU 3. Institution building mostly complete	1. Incomplete adoption of EU-regulations 2. Inadequate implementation and execution of law, also due to low level of human skills and lack of experience 3. Low political support for increase in market competition
Opportunities	**Threats**
1. Completion of institutional and regulatory compliance with *acquis communataire* upon accession to the EU 2. Gradual progress in efficiency of law implementation and execution 3. Positive effects of "learning by doing" of all stakeholders	1. Vested interests acting against increase in competition 2. Telecom tariffs maintained high above EU25 averages 3. Too slow progress in effective execution of laws (URTiP)

Source: Piatkowski (2004)

V. Educational achievement is quickly rising, yet its quality is lagging…

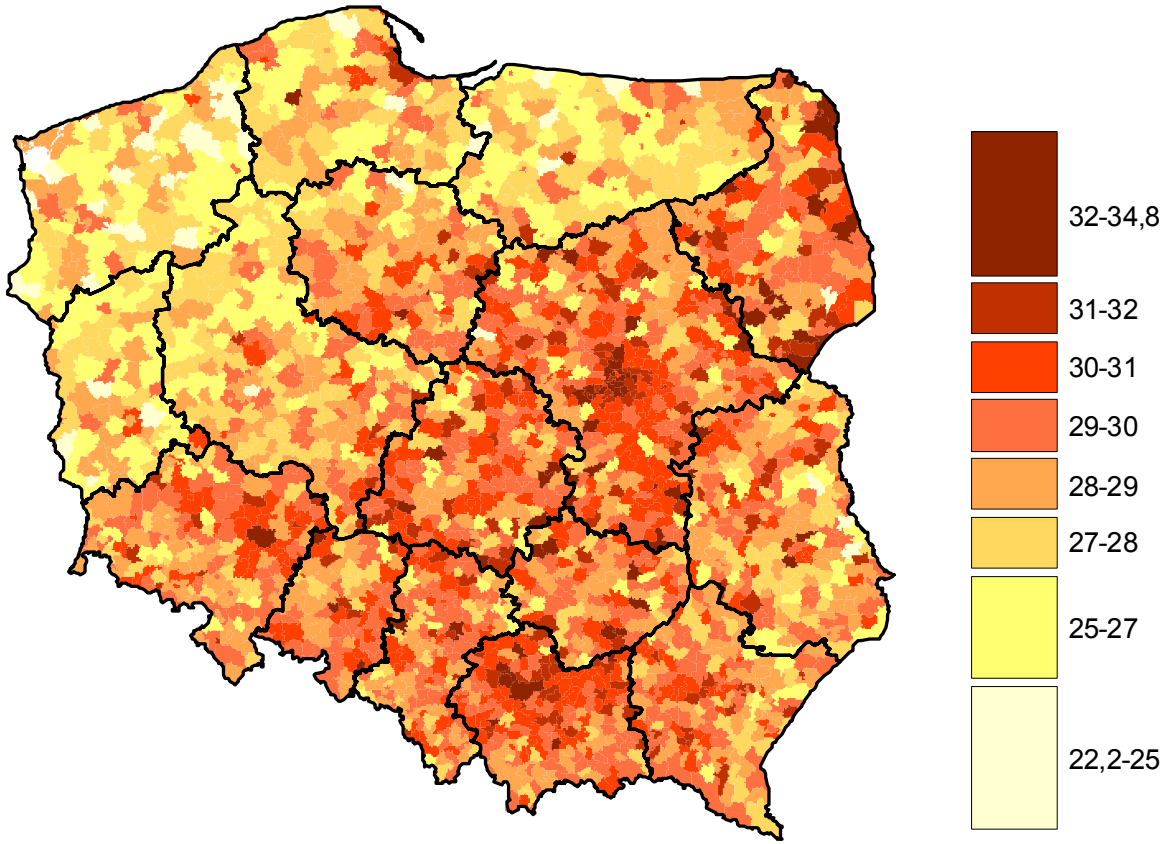
Figure 10. Reading literacy of 15-year-olds in selected OECD countries, in 2000, overall score



Source: OECD PISA database, 2001

There is an interesting regional divergence in the quality of education…

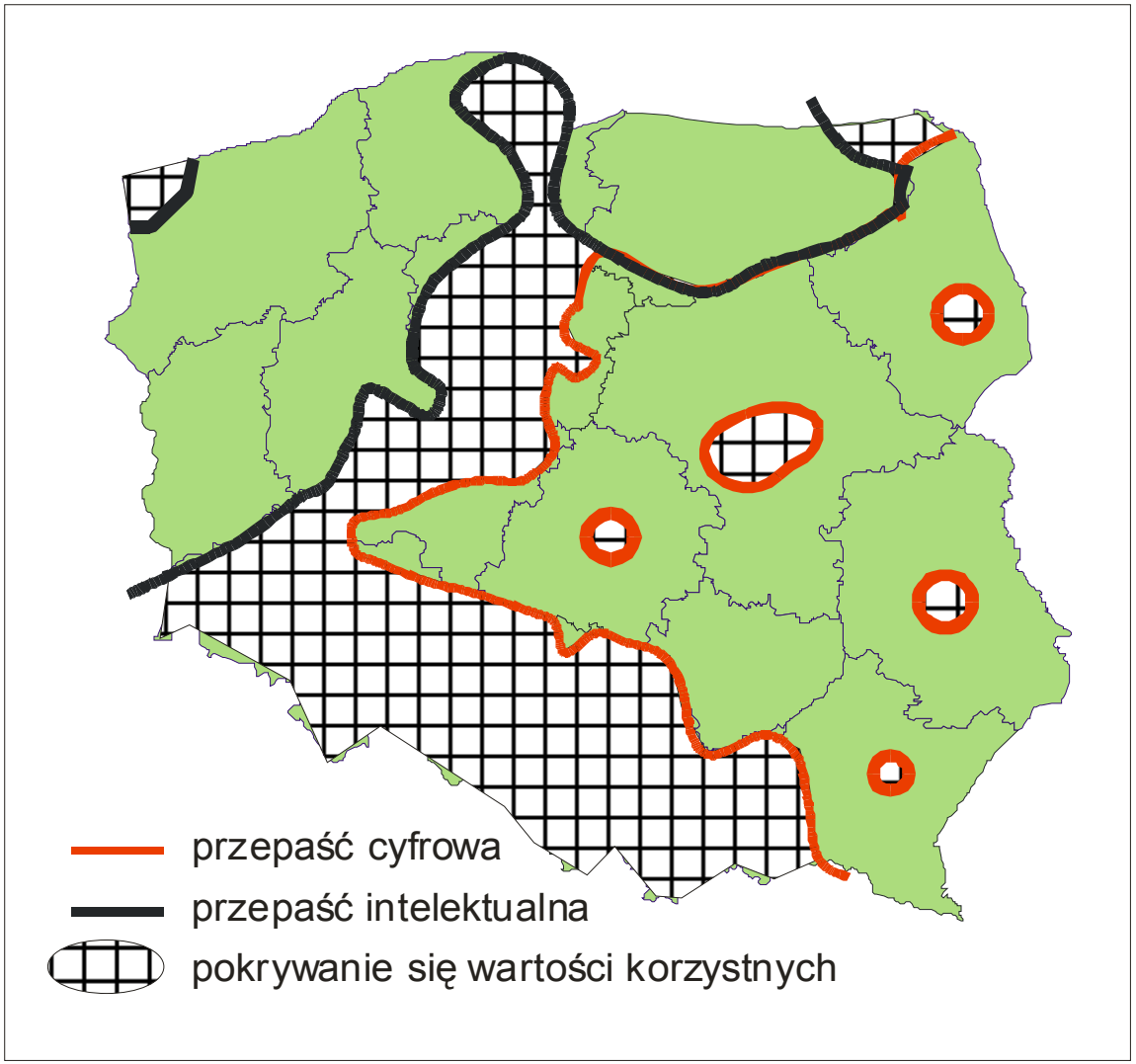
Figure 11: Regional distribution of results of entrance tests to gymnasiums (lower secondary level) in gminas, 2002



Source: Guzik (2003)

… which combined with a map of ICT penetration paints a gripping picture of digital and intellectual divide in Poland...

Figure 12: Digital and intellectual divide in Poland: combined maps of ICT penetration and educational achievement



Source: Guzik (2003)

Demography, culture, sociology: ongoing progress, but uncertain future

Strenghts	**Weaknesses**
1. Shift of employment towards ICT-using sectors 2. Relatively young society as compared to the EU countries 3. Positive trends in consumption and cultural patterns	1. Large proportion of the labour force employed in agriculture 2. Low internal mobility 3. Deteriorating demographic age structure
Opportunities	**Threats**
1. Temporary emigration to Western Europe, which should facilitate transfer of knowledge and skills. 2. Accelerating economic growth, which will create new employment opportunities 3. Inflow into the labour market of a generation of a demographic boom of the early 1980's, which can be productively utilized	1. Growing social exclusion related to high unemployment, particularly the long-term 2. Growing digital divide between urban and rural areas 3. Shift of financial resources from IS development to health protection for the aging population

Information Society development scenarios…

Table 6. Assessment of factors fundamental to the development of the information society in Poland: 2004-2010

	High	**Medium**	**Low**
Real GDP growth	X		
State of public finances		X	
Absorption of EU funds		X	
Benefiting from the EU market opportunities		X	
Inflows of FDI		X	
Quality of political leadership and IS policies			X
Reform of education		X	
Digital divide			X
Improvement in R&D and innovation culture			X
IST penetration rates		X	
Overall assessment		**X**	

Some policy recommendations

- Prioritize information society (IS) in the political agenda
- Proritize spending on IS development (increase spending or shift resources from other, less productive purposes)
- Strenghten the administrative and coordinating role of the IS policies of the Ministry of Information Technology and Scientific Research
- Continue reforms in the educational system: reduce functional illiteracy, increase opportunities for lifelong-learning and prioritize IST-related education of teachers and students
- Stimulate increase in IST penetration, particularly in the business sector and rural areas
- Stimulate competition in the telecommunication market through complete adoption of the EU legislation and efficient enforcement of the existing laws