KNOWLEDGE ECONOMY CHALLENGES FOR LIFEONG LEARNING

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Structure:

1. Innovation-driven demand for skills in enterprises
2. Public finance squeeze limiting resources for training
3. New division of labour bringing challenges for adjustment capacity

1. Innovation-driven demand for skills in enterprises

- innovative enterprises demand higher skilled labour and invest more in training and development
- internal innovation capacity as a key to quality-based competitiveness
- competitive advantage matrix – country-specific positions

Innovation performance

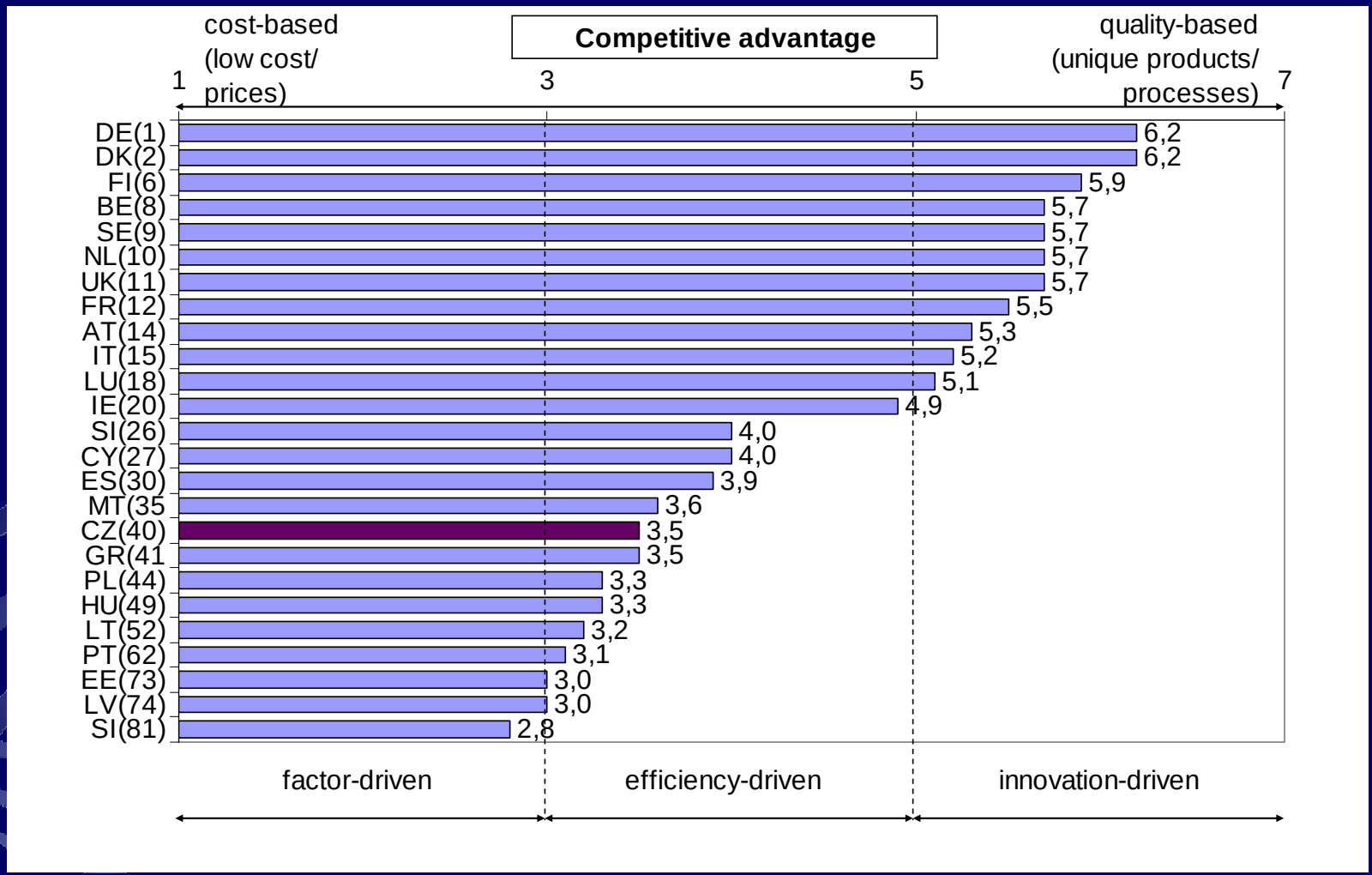
1. Inputs and preconditions of R&D
   - number of R&D workers, R&D intensity
   - venture capital, cooperation science and universities
2. Science and technology performance and innovation effects
   - innovation companies, publication and patent output
   - qualitative sources and results of competitive advantages
3. Information society
   - ICT usage and (economic) effects in businesses
   - advanced technology, internet in households
   - e-government (supply-side)

Human resource quality

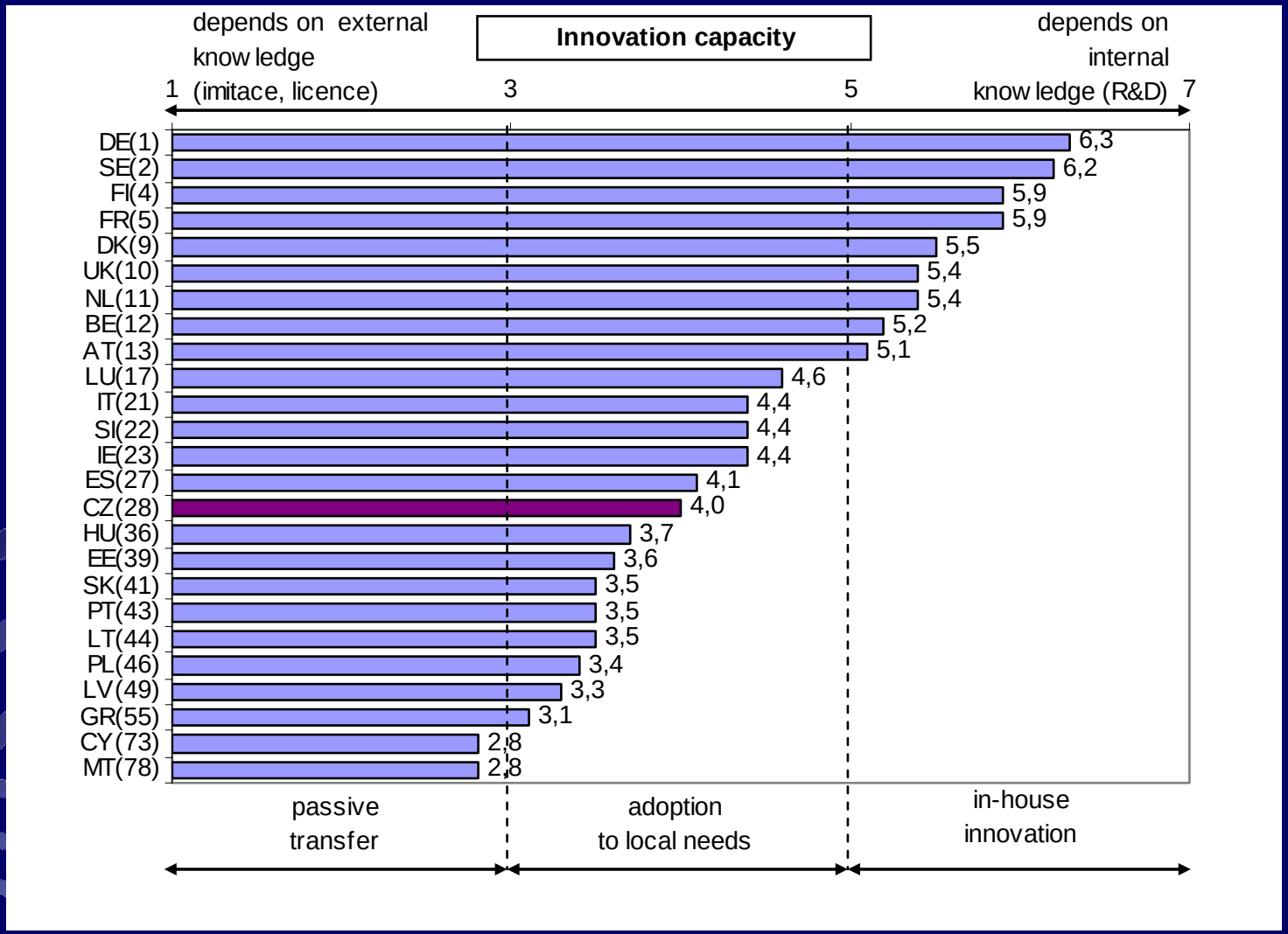
1. Qualifications, skills, competences
   - tertiary qualifications
   - ICT literacy
2. Participation in education and expenditure
   - tertiary education
   - continuing training
   - business and public expenditure (GDP, per pupil/student)
3. Human resources for science and technology
   - science and technology graduates
   - quality-intensity

Competitive advantage - matrix

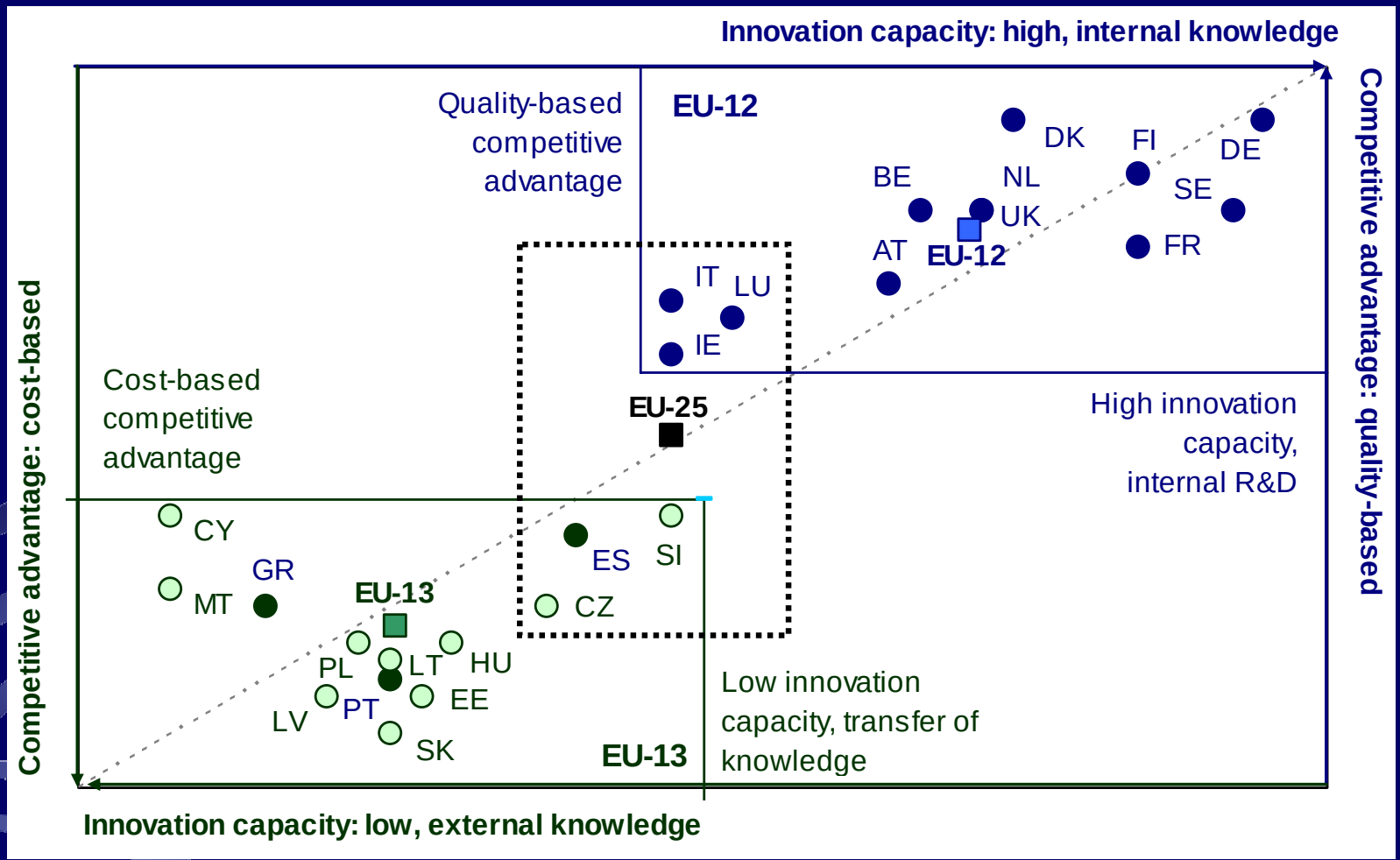
A. Sources of competitive advantage



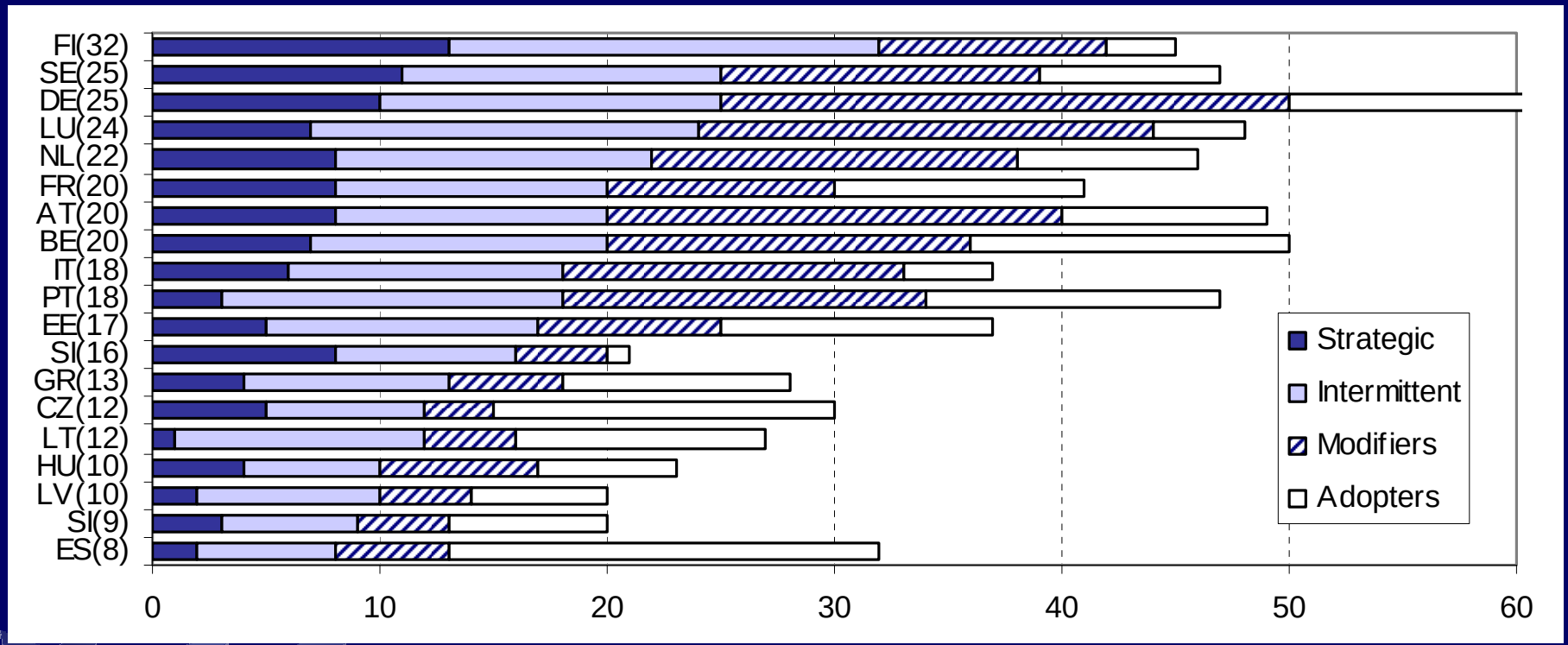
B. Sources of knowledge (level of innovation capacity)



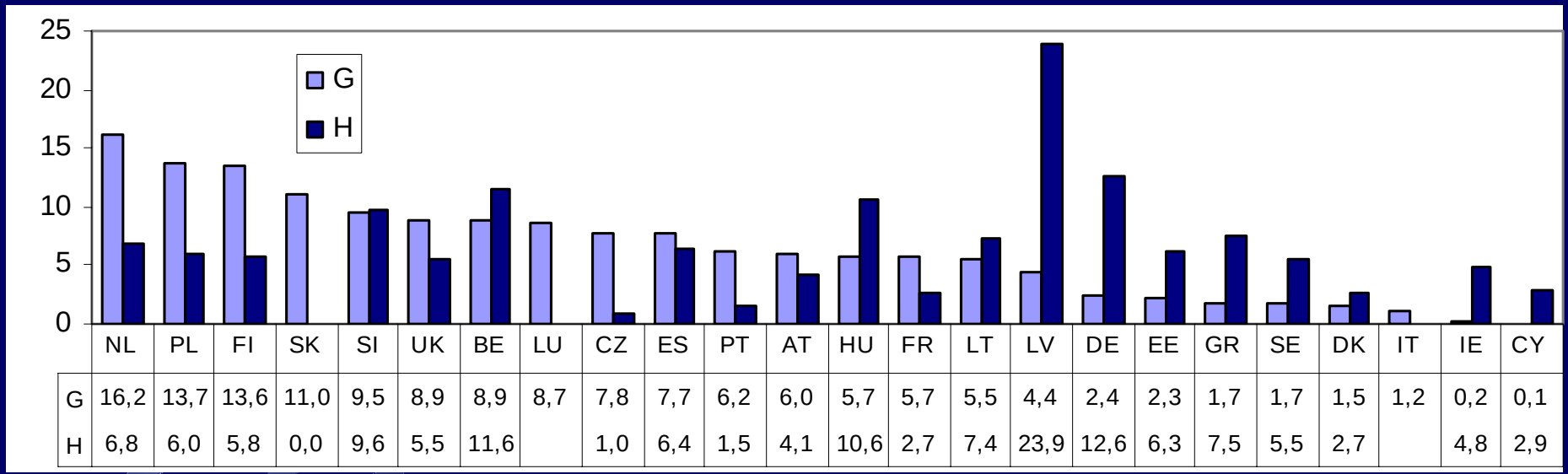
C. Matrix of competitive advantage



Innovation capacity - typology of innovators (% of total), 1998-2000

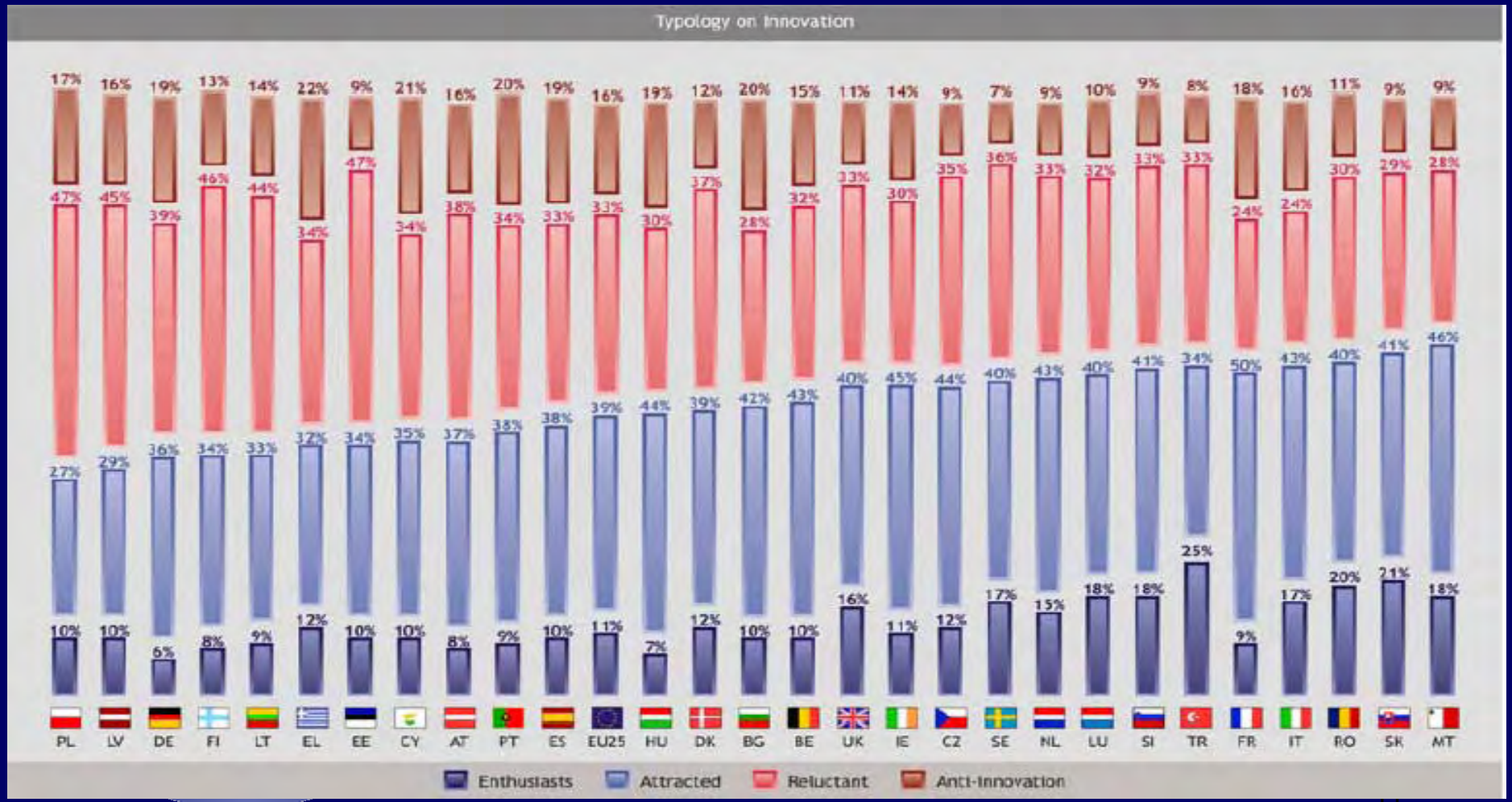


Linkages and interactions - Business sector share in R&D performed in government (G) and higher-education (H) sectors, 2003 (%)

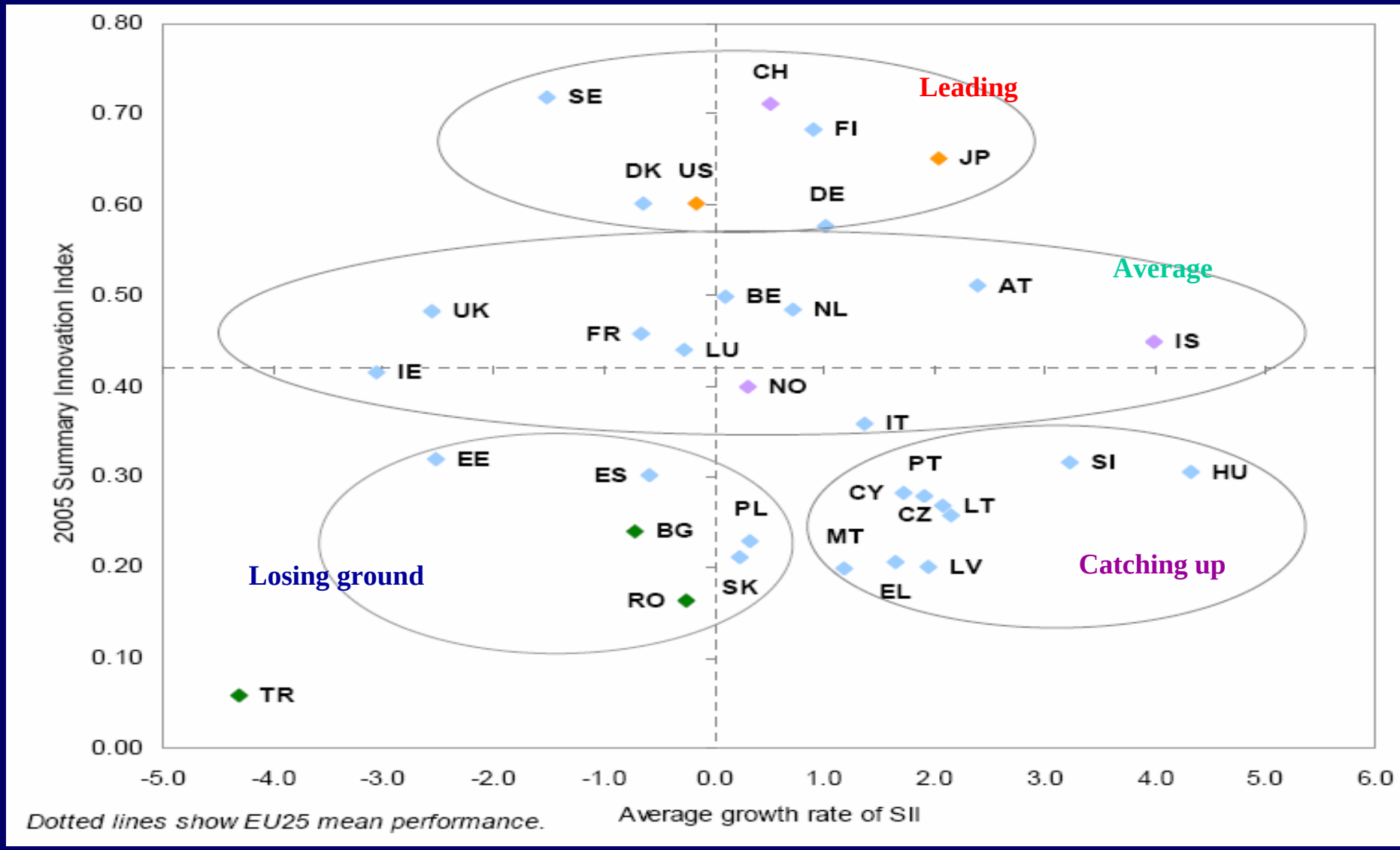


	NL	PL	FI	SK	SI	UK	BE	LU	CZ	ES	PT	AT	HU	FR	LT	LV	DE	EE	GR	SE	DK	IT	IE	CY
G	16,2	13,7	13,6	11,0	9,5	8,9	8,9	8,7	7,8	7,7	6,2	6,0	5,7	5,7	5,5	4,4	2,4	2,3	1,7	1,7	1,5	1,2	0,2	0,1
H	6,8	6,0	5,8	0,0	9,6	5,5	11,6		1,0	6,4	1,5	4,1	10,6	2,7	7,4	23,9	12,6	6,3	7,5	5,5	2,7		4,8	2,9

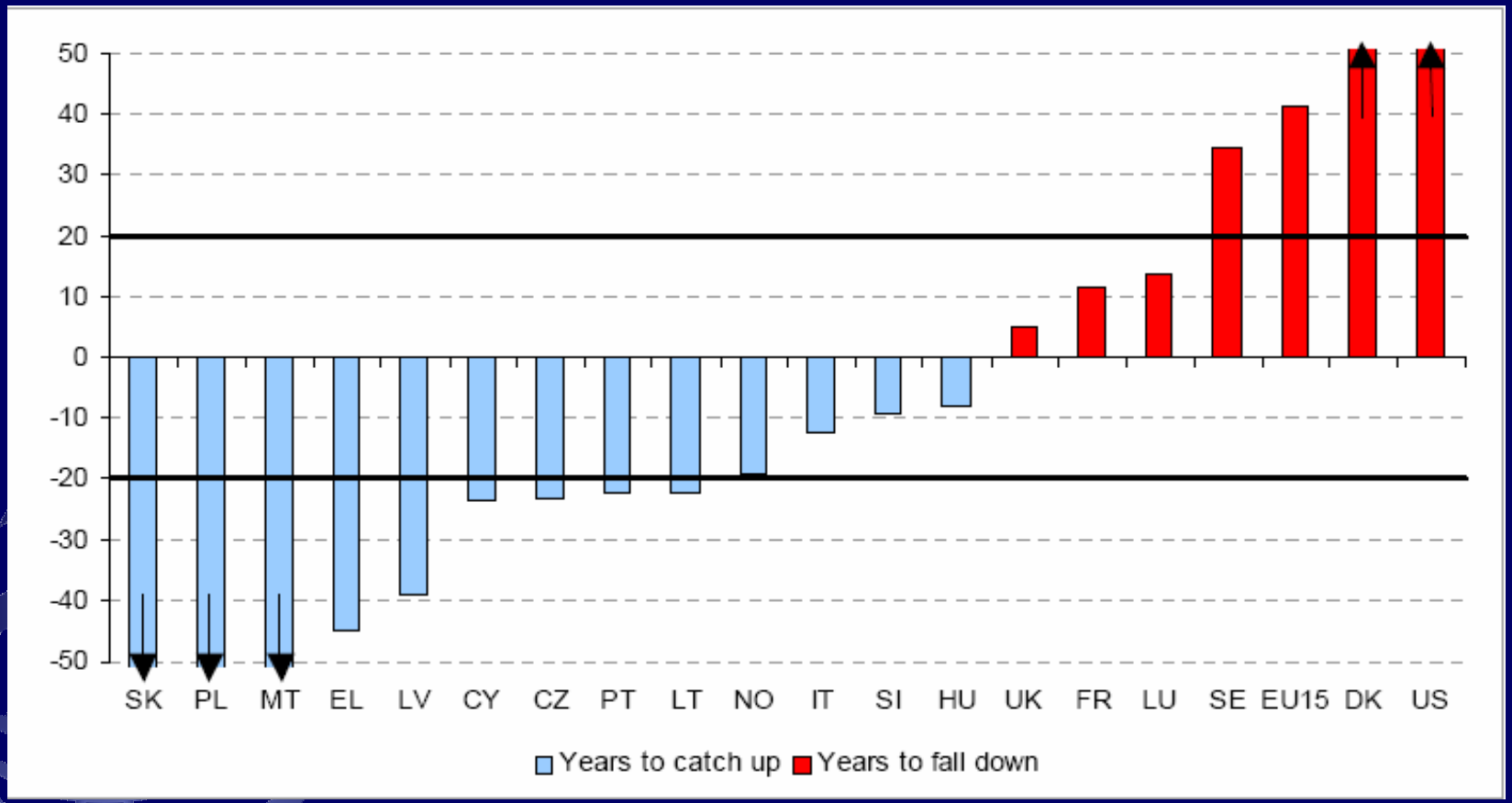
Sophistication of demand 2005



Innovation scoreboard 2005



Years to catch-up or decline to EU-25 average performance



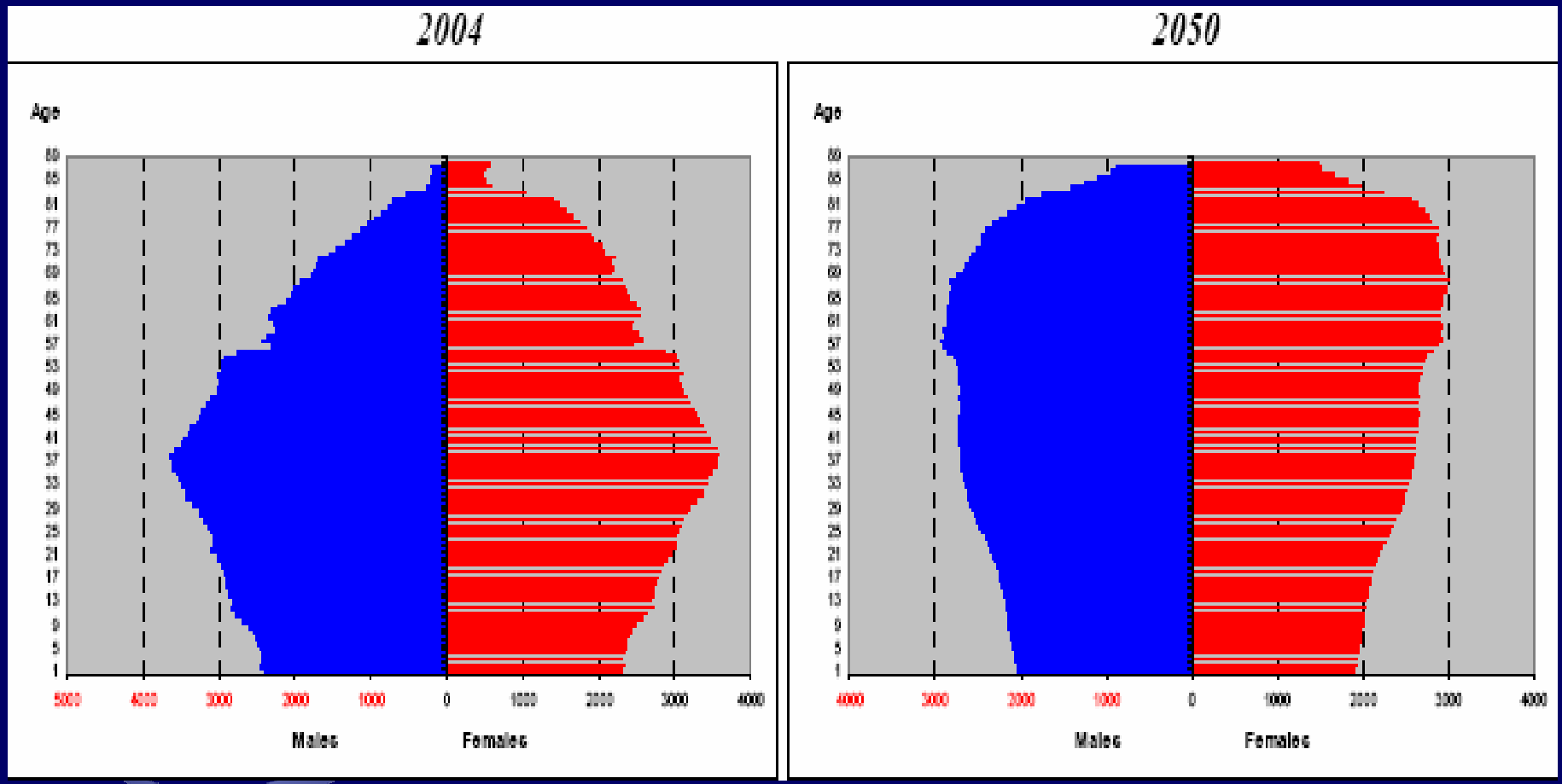
Conclusions and implications for less developed countries

- efficiency-driven competitiveness, cost-based
- dependence on external technology knowledge, adoption to local needs, limited development of internal innovation capacity
- lower technology level, qualitatively less intensive position in supra-national value chain, weak technology transfer, less sophistication of demand, non-specific support to innovation, weak intensity and low diversity of linkages and interactions
- remarkable differences between country groups in terms of sources and achievements of competitiveness, increasing role of foreign owned companies for competitiveness
- country-specific and focused policies necessary reflecting broader societal context

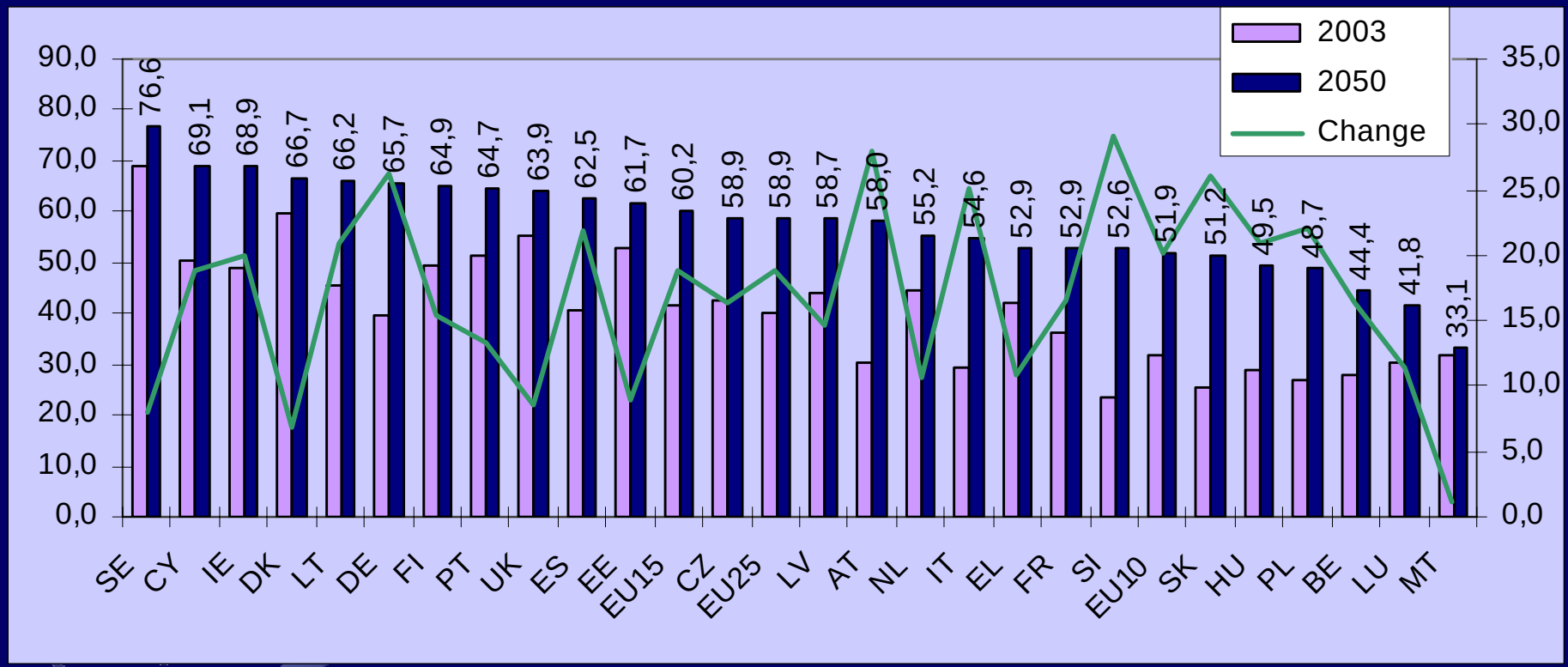
2. Public finance squeeze limiting resources for training

- public finance complementing private resources for training
- effective incentive schemes necessary for the disadvantaged and excluded groups
- ageing population/fiscal imbalances bringing pressure on redistribution of expenditure priorities
- strong political commitment necessary

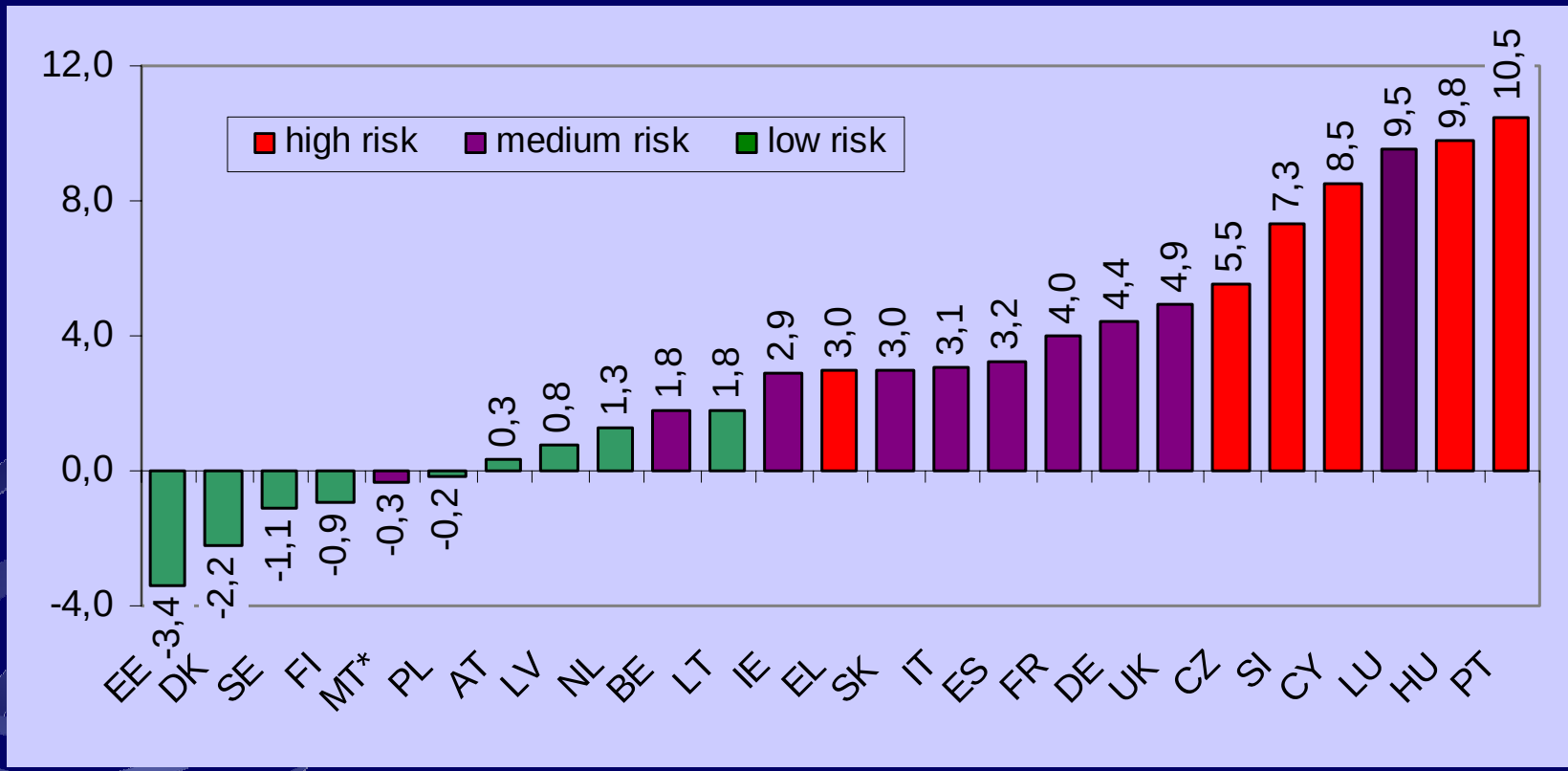
Age pyramids for EU25 population in 2004 and 2050



Employment rates in the EU in 2003 and in the projections – 55-64 years (%, p.b.)



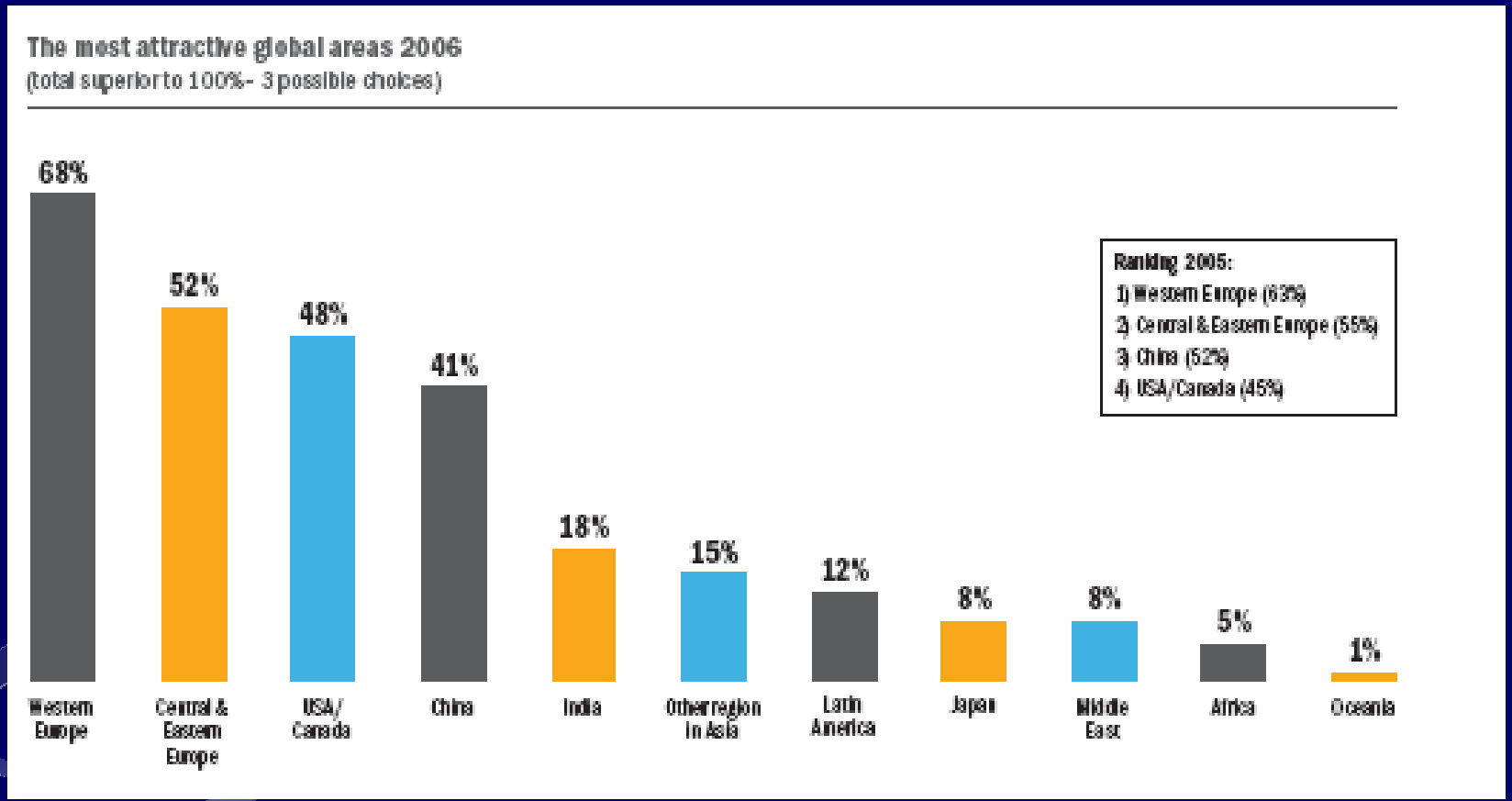
Overall classification of public sustainability risks (EC baseline scenario)



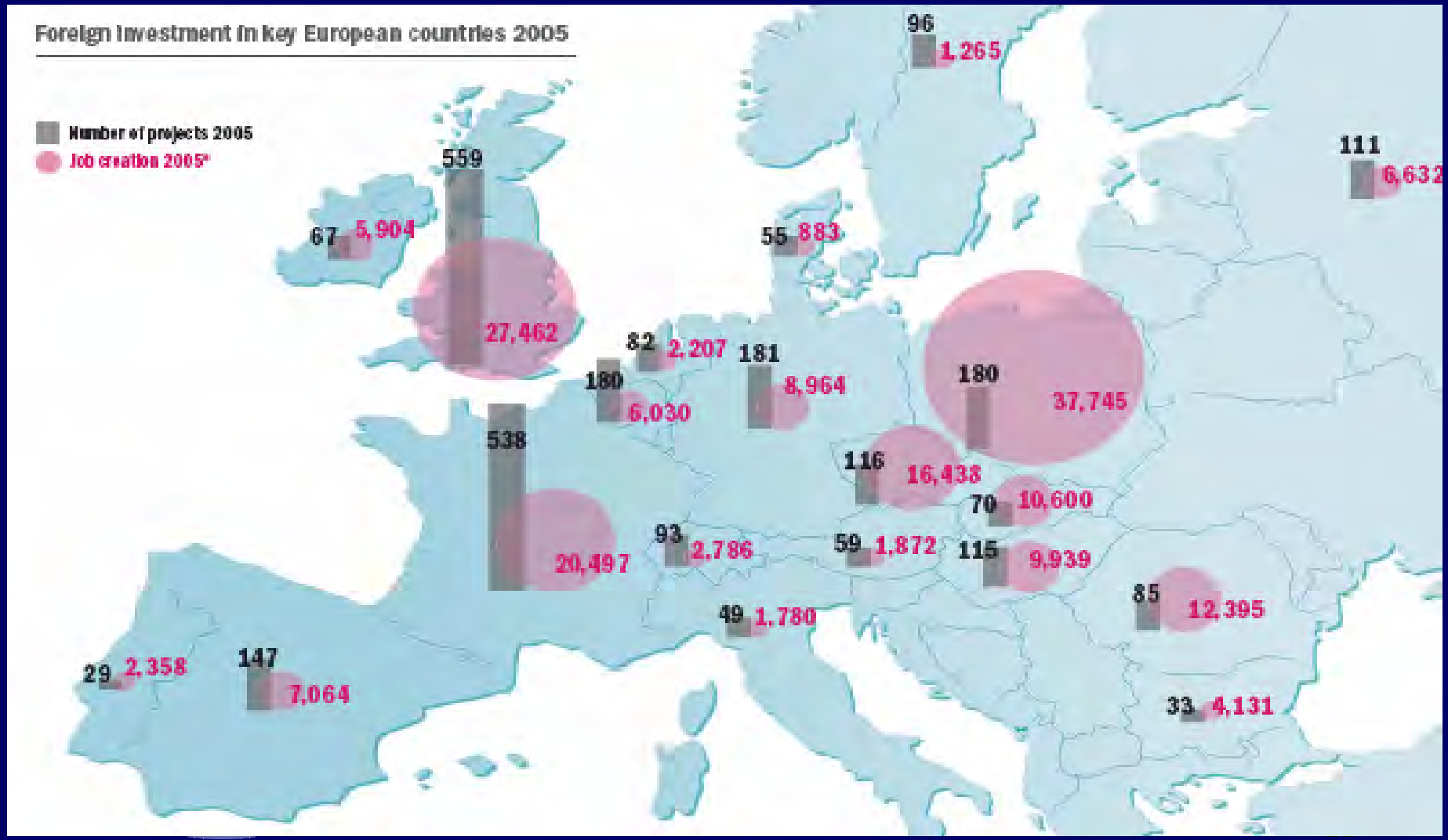
3. New division of labour bringing challenges for adjustment capacity

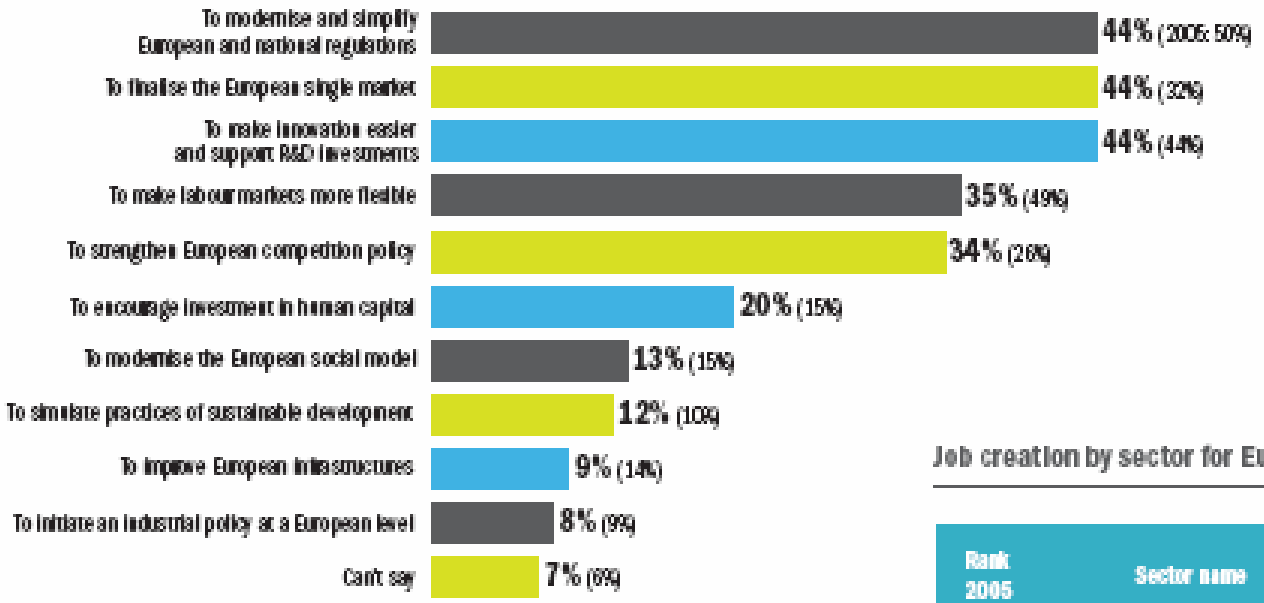
- Skills levels are going up globally, but much more rapidly in fast growing emerging markets. Trade, FDI, and R&D with the emerging markets have the potential to cover a whole range of products, including skills-intensive products, not just in low value added segments of goods and services.
- Emerging markets share of total FDI will continue to increase while the composition of trade and FDI will see emerging markets attracting a higher share of FDI in high value added manufacture, services, and R&D.
- Advances in technology, particularly ICT, the relative rise of the service sector and change of business models have ensured that cross border flows are increasingly composed of services, R&D, financial capital and human capital, and not just physical goods.

Europe attractiveness in global economy



Europe attractiveness – West and East





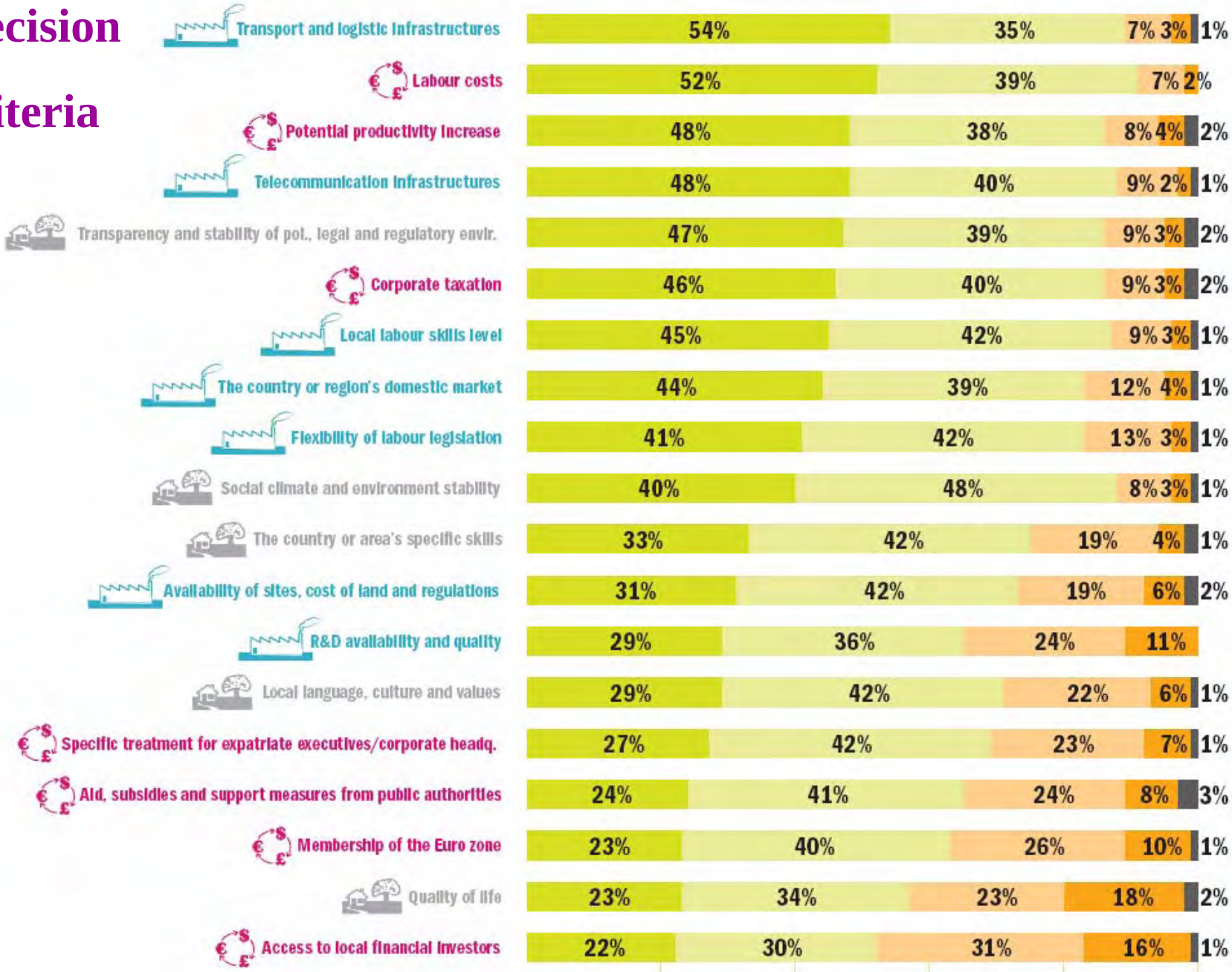
CES
CENTRUM EKONOMICKÝCH STUDIÍ

Job creation by sector for European FDI 2005

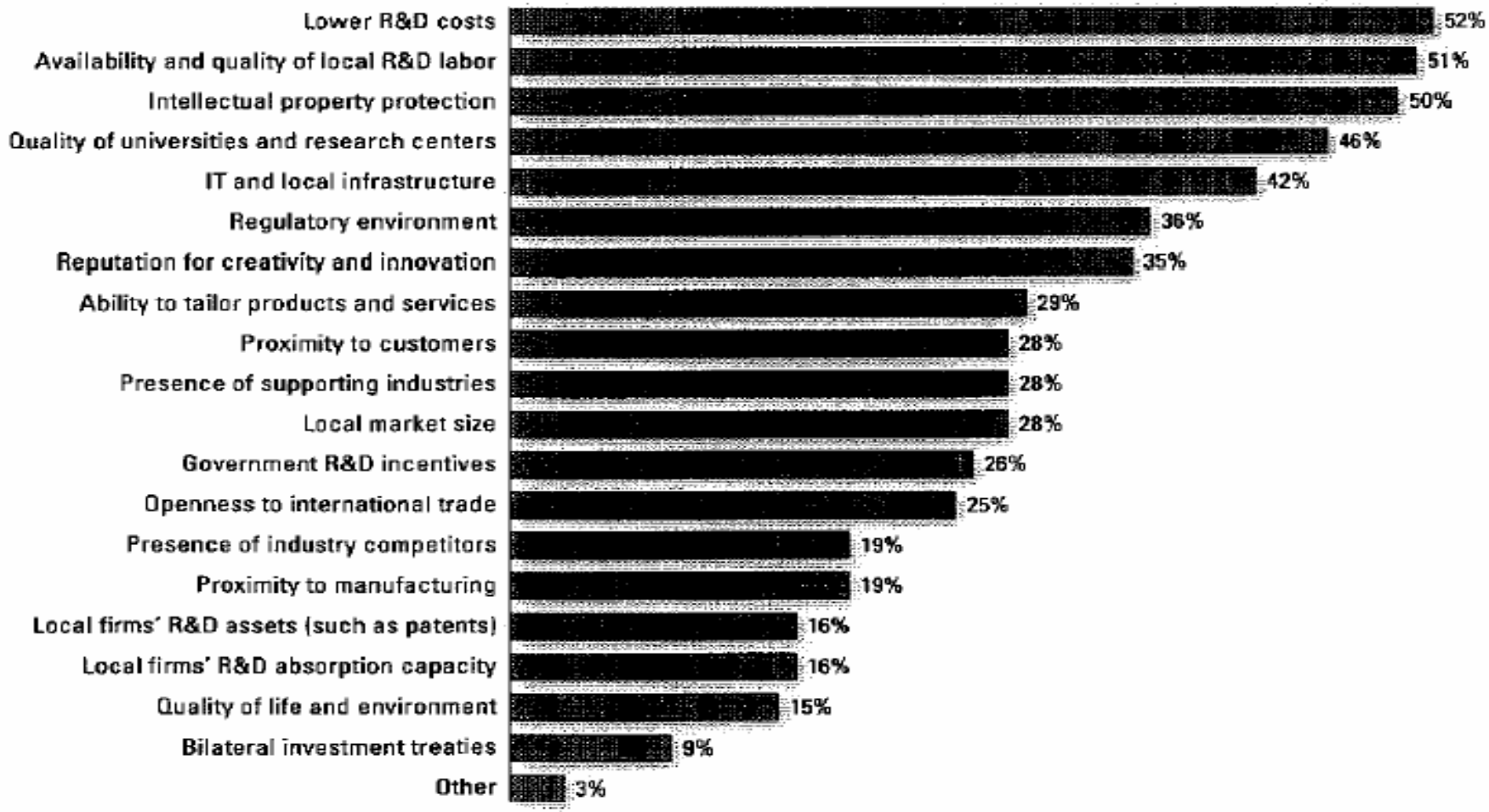
Rank 2005	Sector name	Total job creation in 2005*	Jobs created by project (average 2005)*
1	Automotive	40,704	180
2	Electronics	26,172	153
3	Business Services	14,297	69
4	Electrical	9,472	179
5	Machinery & Equipment	9,282	71
6	Software	8,130	36
7	Food	8,091	90
8	Logistics	7,975	84
9	Fabricated Metals	5,861	105
10	Computers	5,216	158
11	Plastic & Rubber	5,072	64
12	Other Transport Equipment	4,941	150
13	Retail	4,793	137
14	Wood	4,277	186
15	Pharmaceuticals	4,176	62

Technology and services lead the way

Decision criteria

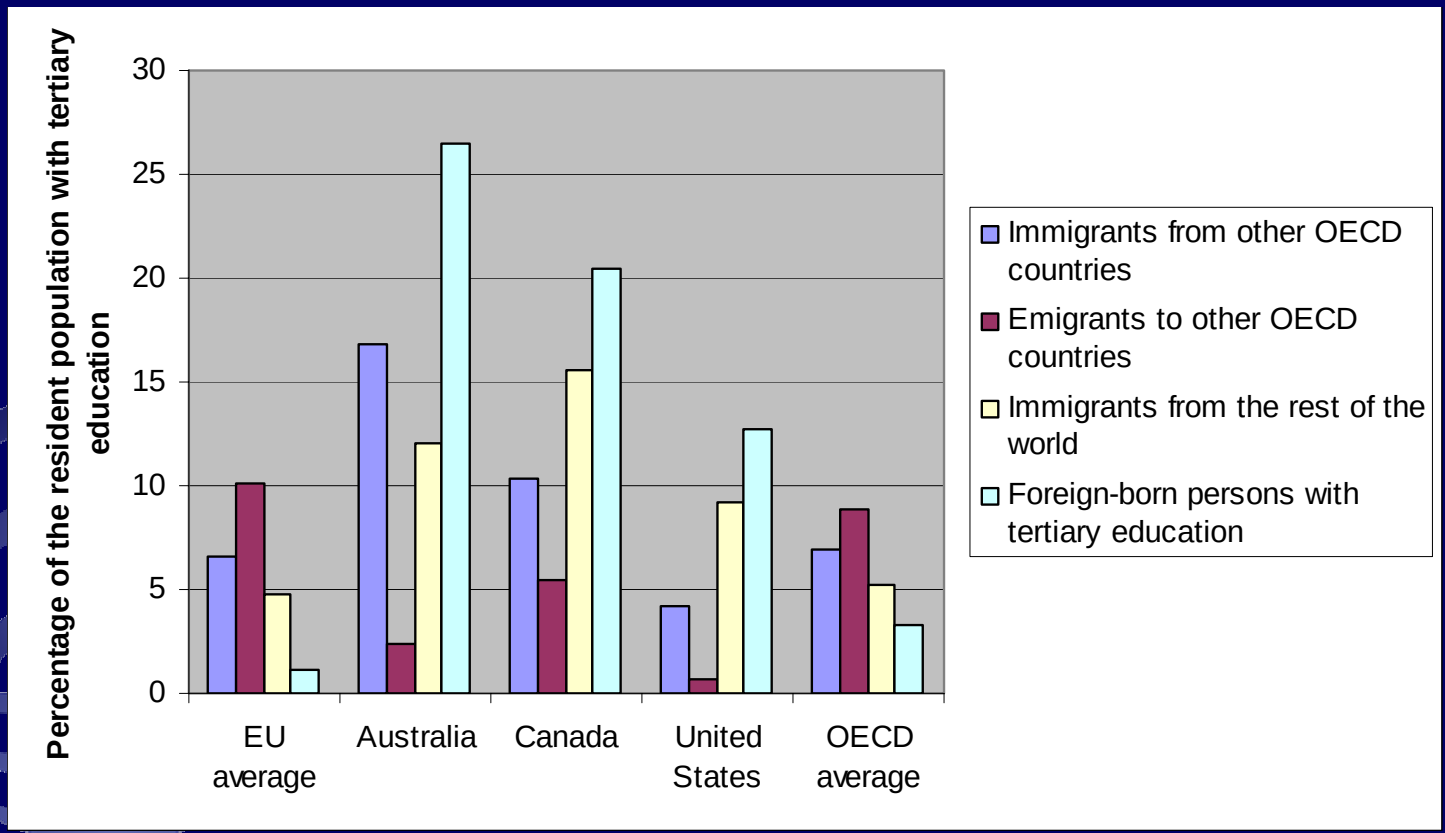


R&D investment location factors



Human capital mobility

- migration flows to Europe limited, but rising political concerns
- higher share of less skilled, socially excluded, unemployed immigrants – less adaptable



Community action for free movement of labour

- A directive on mutual recognition of qualifications (September 2005): it consolidates, simplifies and modernises 15 existing directives, must be implemented by October 2007.
- A proposal for the establishment of the European Qualifications Framework for lifelong learning (EQF): as a translation device and neutral reference point for comparing qualifications across different education and training systems (September 2006).
- European Blue Card: a work permit would grant the holder permanent access to the entire EU labour market, favouring skilled young migrants with proficiency in the relevant languages and good job prospects. Students graduating with a Masters degree or equivalent from European universities or good universities abroad could be made automatically eligible.

Conclusions and implications

- successful catch-up in knowledge-based economy requires development of local knowledge base able to substitute for weakening cost-based advantage
- emerging markets are increasingly able to compete in knowledge-based segments, improving their skill levels markedly and attracting higher shares of global FDI in R&D
- the share of less skilled occupations in Europe has been decreasing, a remarkable inter-industry turnover has been projected requiring an adequate adaptability of labour force
- rate of technology progress is fastening bringing about new and life-long changing skill requirements both to workforce and education and training systems
- instead of sectoral or specific job protection individuals must be equipped to adapt through providing social bridges – skills (including the soft) and retraining
- less regulation in labour markets necessary for improving their flexibility, (horizontal) support to business innovation activities contributing to investment in human resource development