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Institut Arbeit und Qualifikation

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Varieties of Vocational Education and Training Systems

ACTVET

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Structure of presentation

1. Same technologies - different VET systems
2. Traditional meaning of VET
3. Decline of VET – Examples USA/South Korea
4. Modernization VET: German apprenticeship-system
5. Transition from education to work in different VET systems
6. Conclusions

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1.1 Same technologies - different VET systems

Examples of national differences

- **Assembling the Airbus: intensive on-the-job training in UK, FR, ES, vocational training in DE *(Bremer 2008)***
- **Retail trade: No or short on-the-job-training in FR, UK, USA, vocational training in DK, NL and DE *(Carré et.al. 2010)***
- **Nurses: Vocational training in DE, bachelor/master in UK and USA**

VET in a sandwich-position between academic education and training and on-the job training

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1.2 Same technologies - different VET systems

Catch-phrases like “knowledge” or “information” – society cannot explain differences in VET-systems

Different form of work organization possible:

- “Hour-glass“: Hierarchical – high level of supervision
- “Egalitarian”: Flat hierarchies, high autonomy

No technological determinism – VET-systems are made by actors, there are choices, of course also political and economic constraints

For example: UK had an excellent apprenticeship in the 1950’s – it was ***sustainable, but not sustained*** by important actors (employers, unions and the state)

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1.3 Same technologies - different VET systems

- Upgrading of job structure slower than educational expansion
- Up to 25% of jobs for highly skilled in developed countries
- Share of graduates from tertiary education above 25% in many countries
- "Academic drift" not only driven by "needs" of the labour market but also by "status" considerations
- "Elevator effect" of education expansion *(Beck 1992)*: Parents discover that their children's high educational attainments are devalued by the even higher or more prestigious qualifications obtained by others

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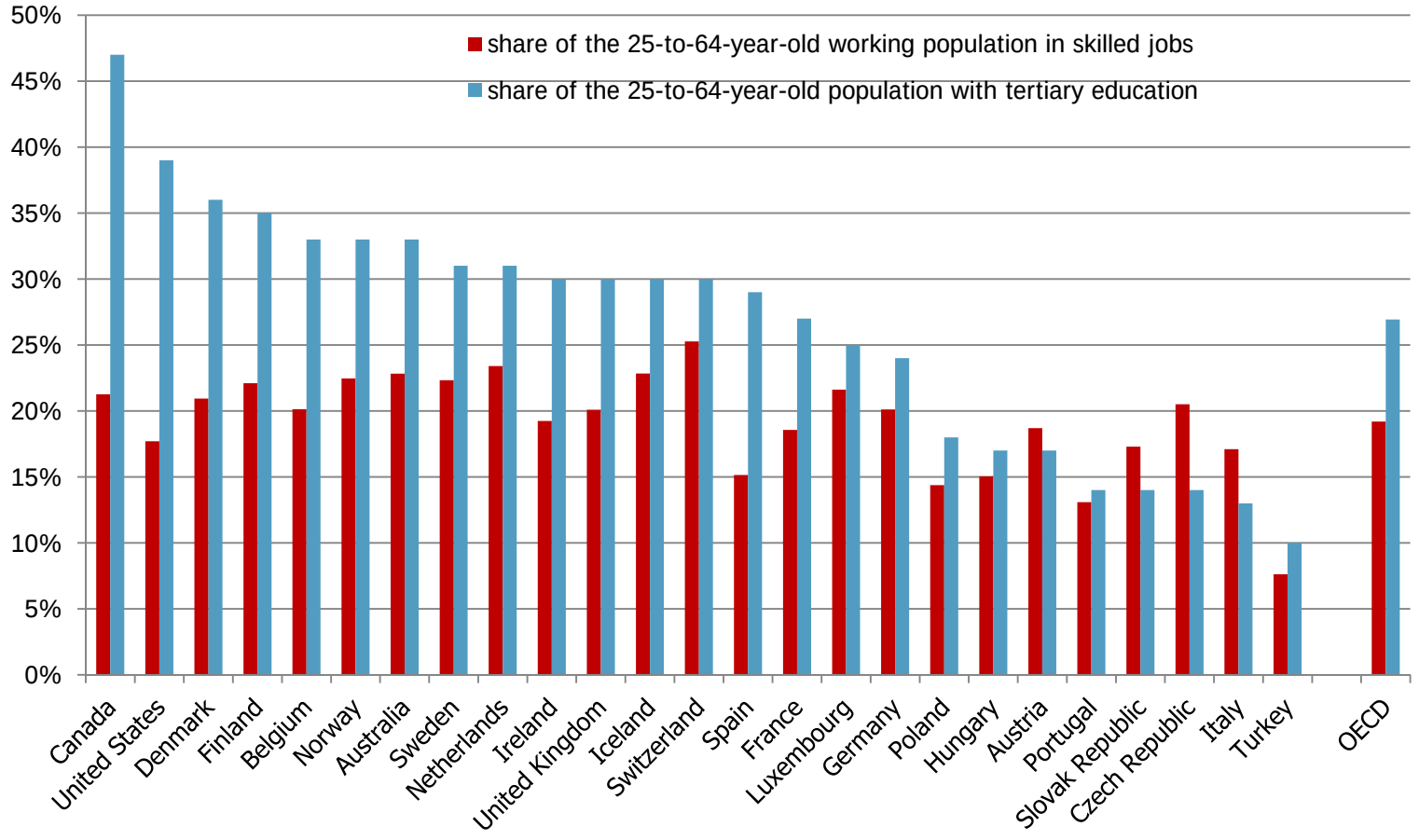
1.4 Share of population in highly skilled jobs and share of population with tertiary education (2006)

Share of the 25-to-64-year-old working population in highly skilled jobs (ISCO 1-3 Managers, Professional, Technicians and Associate Professionals) and share of the 25-to-64-year-old population with tertiary education (2006)



Source: Müller 2009: 45; BIBB, BWP 2, 42-46

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2.1 Vocational education and training

Traditional Meaning:

- **Work related preparation for specific jobs or occupations**
- **Educational level less than a bachelor's degree** (above this level professional education which is wrongly often regarded as general education)
- **Preparation for immediate work not for subsequent education**

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2.2 Vocational training in the past

- Only small minority of young people went to university
- Most industrial countries (also US or UK) had developed vocational training systems
- Strong links between work and training - access to well-paid middle-class occupations with high social prestige
- Often high influence of social partners depending on the industrial-relations-system (craft or industrial unions)

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3.1 Decline of traditional VET

- "Academic drift" - Expansion of higher education
- High supply of graduates from tertiary education - less investment of companies in VET
- Declining reputation of VET among parents and school leavers. Different reasons: low quality, risk of low pay, "academic ceiling" blocking careers, early tracking with few opportunities for further study
- VET controversial issue between employer's and unions because of job demarcations – therefore lack of cooperation to sustain apprenticeship-systems
- Vocational training did not keep pace with structural change – lack of modernization

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3.2 Decline of VET in the USA (I)

Apprenticeship systems

- Based on collective agreements
- Not formally integrated into the school system – state plays marginal role
- Decentralized collective bargaining – no strong federal unions or employer associations
- 1980‘s: Creation of National Skill Standards Board in USA, – Failure: No creation of national standards
- Craft unions locked into fights on demarcations – barriers to flexible work organization
- Number of apprentices fell with the decline of unions
- Substantial skill shortages

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3.3 Decline of VET in the USA (II)

- Most vocational training school-based (2000 16,2% of credits earned in US High Schools were vocational) – mostly terminal in the past
- With expansion of tertiary education increasing importance of VET in college/ university
  - „College for all“: USA 2000 45% of undergraduates enrolled in community colleges of those 65% in vocational programmes – Transfer from two year to four year college
  - „Bachelor for all“: Vocational tracks at bachelor level – 25% in Canada
- Distinction between vocational and general education blurred
- Weak links with labour market: Vocational certificates only signals for skill level, but strong links for professions like nurses, doctors and lawyers and in regulated labour markets (licensing)

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3.4 Decline of VET: South-Korea (I)

- Korea‘s strategy of industrialization required trained work force – strong state intervention
- Promotion of VET through levy exemption system: between 1976 6% participants, since 1999 0,7% of gross wages /SME’s < 150 employees 0.1%
- Highly dualistic labour market (52% irregular workers) - in-company training mostly covers only regular workers
- Seniority-based wage systems reduces incentives for training
- Decentralized industrial relations – weak national actors
- State develops standards for vocational training by Human Resource Development Service – not accepted in the labour market

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3.5 Decline of VET: South-Korea (II)

- Vocational training school based
- Vocational tracks in high schools and colleges
- High state investments in vocational tracks
- Declining share of pupils in vocational tracks (in high schools from 41,2% 1997 to 29,1% 2004)
- Increasing advancement rates to university (80% of high school graduates go on to university – much lower advancement rates from vocational tracks)
- No link between vocational training and the labour market: entry as unskilled worker
- Access to good jobs only with a university degree

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4.1. Revitalization of the German apprenticeship-system

- Apprenticeship-contract with a firm
- Modern duality with more theoretical learning: Now 2 days in public vocational schools – before 1 day
- Social partners responsible (develop occupational profiles, curricula, examination procedures with support from the Federal Institute of Vocational Training, , control and supervision by chambers)
- Around 360 standardized national occupational profiles – cannot be split up in modules
- 2 - 3,5 years of training (around 85% 3 years+)
- promotional training curricula in all occupations (master, technicians, business administrator) on bachelor level (Level 6 European Qualification Framework)

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4.2 Modernization of the German apprenticeship system

System requires continuous pro-active modernization:

- **„ employer demands“ not reliable signals for modernization - High diversity of employers „demands“ depending on work organization, time horizon of planning, average tenure of employees, low road vs. high road strategies,**
- **Therefore modernization based on early warning systems - analysis of new technologies and forms of work organization, training in most advanced companies, trends in further training….**
- **Basic decision for broad vocational training in Germany - Goal of training: *„Working and acting competently and autonomously in an occupation” (“Berufliche Handlungsfähigkeit”)***

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4.3 Modernization of the German apprenticeship system

Last two decades several waves of modernization:

- **Fast track (6 months for modernization, 1 year new occupation)**
- **Creation of broader occupations**
- **New learning forms reflecting modern work organization (team work, customer orientation)**
- **Reforms always compromise between modern and traditional companies – implementation of new curricula a challenge for traditional companies**
- **Increasing importance of vocational schools and regional partnerships for SME‘s – boarding schools for some occupations**
- **Growth of dual-study - 64 000 in 2012 – combination of VET and tertiary study – apprenticeship contract with a company**

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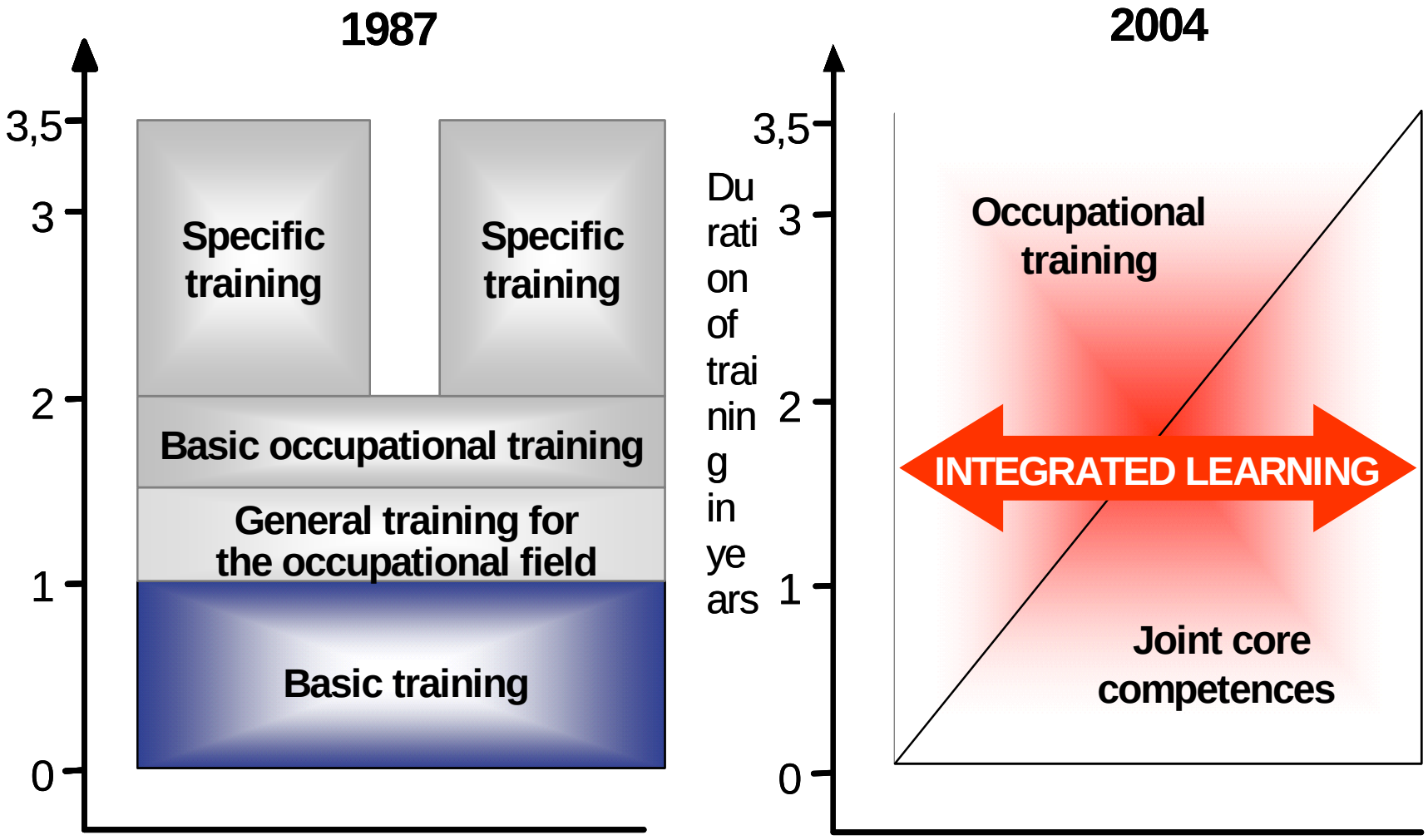
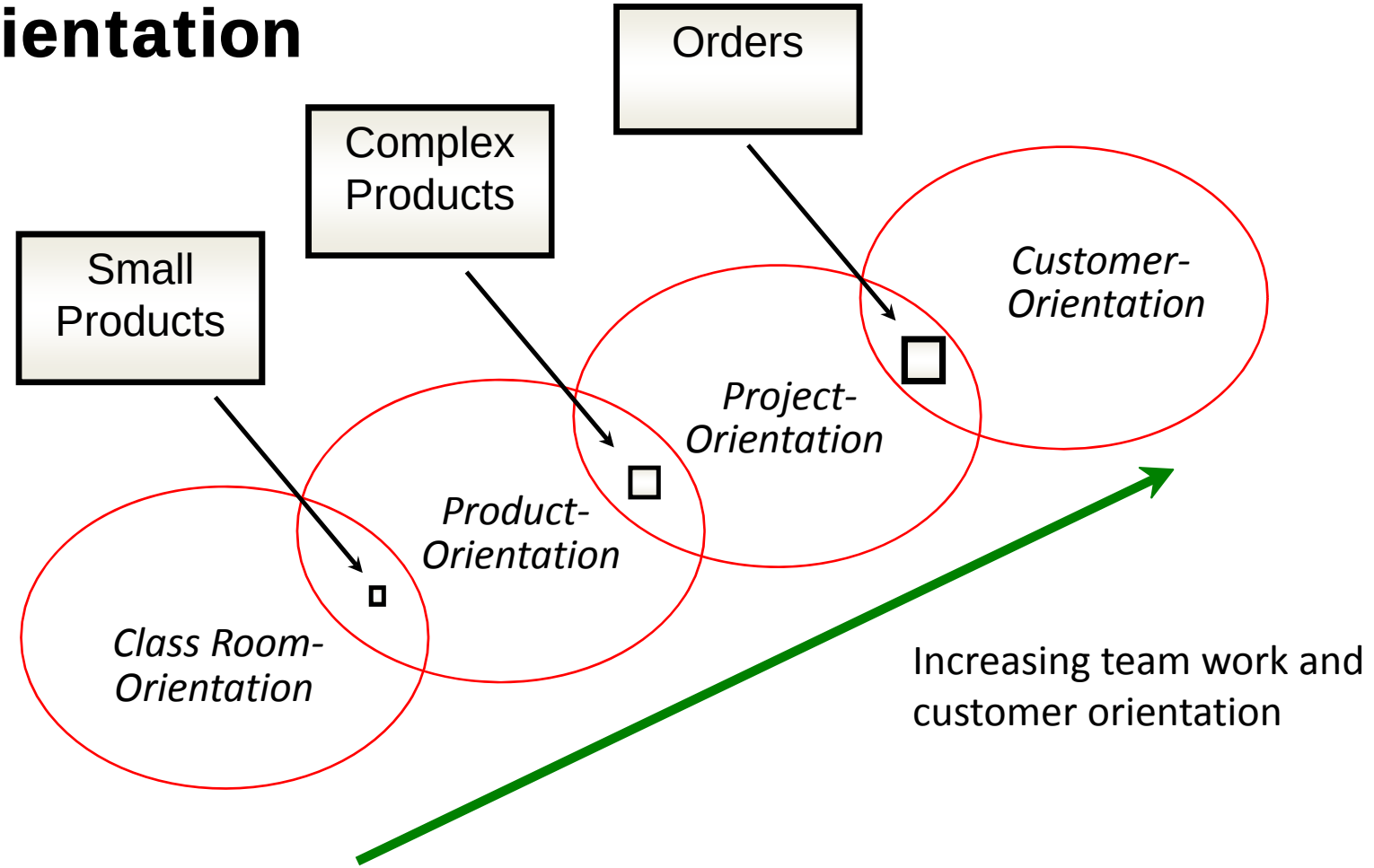
4.4 Example: Training curricula in the German metalworking trades 1987 and 2004 (1987 - 45, 1987 - 16, 2004 – 5 occupations)



4.5 Example of new service occupations

Source: http://kib-net.de, 2003

4.6 New learning forms: From product towards team work and customer-or business process orientation



Source: Bosch 2000a

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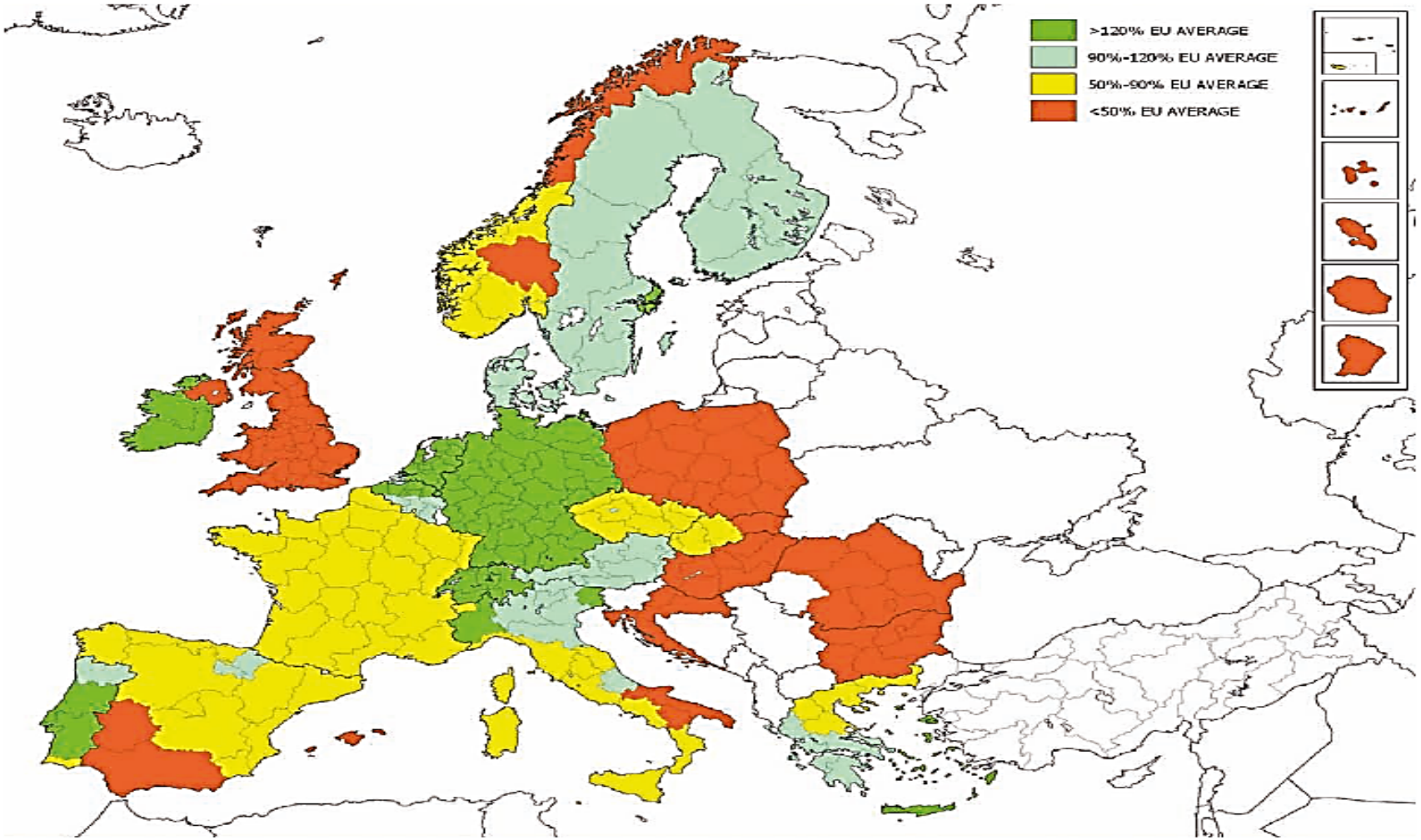
4.7 Outcomes of broad apprenticeship training

Advantages of "egalitarian" systems:

- **Short learning curves after technological change**
- **Better communication flow if middle managers are recruited from the skilled shop floor**
- **Less supervisors: in German machine-tool companies 4% of employees in bottom layer of management compared with 11% in the UK (Ryan et. al. 2011)**
- **More multi-skilling: Example retail-trade – in NL, DE, DK employees take on typical management functions, such as ordering stock (Carrée et.al. 2010)**
- **More incremental innovation – specialisation in products of higher value** (Prais et. al 1989; Steedman/Wagner, 1989)
- **Dissemination of innovation into SME's: Example SME's In DE**

4.8 SME‘ introducing product and process-innovation 2010 as % of SME‘s



Quelle: European Commission (2014): Regional Innovation Scoreboard, p. 59.

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5.1 Transition from education to work in different VET and employment systems

Myriad studies:

- Fast and stable transitions in countries with apprenticeship systems
- Difficult transitions in countries with school based VET and even more with general education systems

Reasons:

- Apprentices are employes not pupils – are represented by unions and works councillors – are „insiders“
- Social consensus to recruit apprentices – pressures from employer organizations, unions and the state
- High reputation of VET among employers and young people: Modernized occupations not second choice for poor school performers
- High scale – apprenticeship rate 6% in Germany

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5.2 Types of VET in the EU

A Heuristic Typology of European VET Systems *(Sabates et. al. 2011)*

Type of VET system	*Countries*
Apprenticeship-based	Austria, Germany, Denmark
Continental school-based	Netherlands, France
Market-led	UK, Ireland,
General Education	Greece, Spain, Poland, Hungary
Egalitarian School-based	Finland, Sweden

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5.3 Population that has Attained Upper Secondary Education and Upper Secondary Enrolment Rates by Orientation of Programmes (2006)

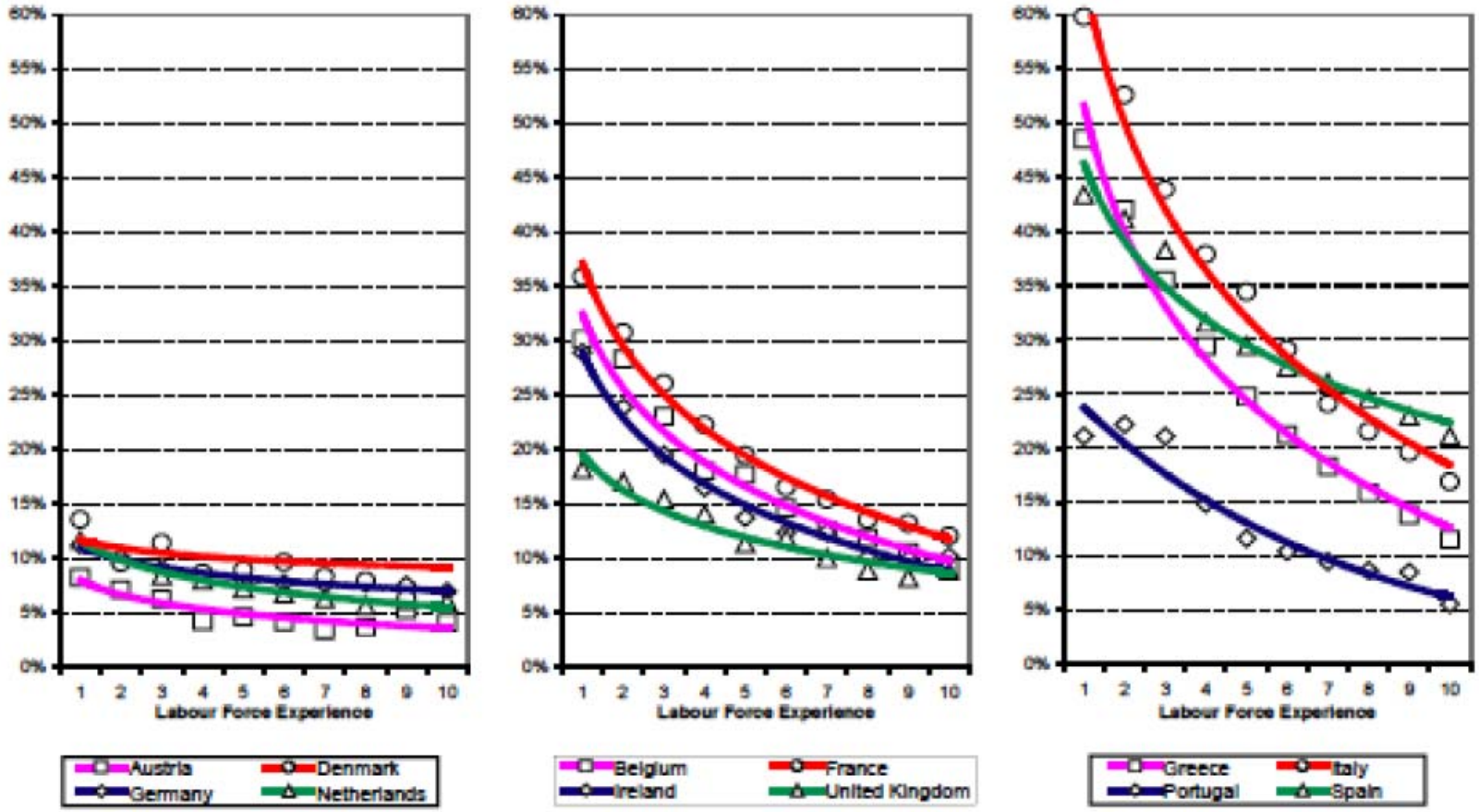
	*Upper secondary enrolment rates**		
	General programmes	*Vocational programmes*	
		All programmes	*Of which: combined school and work based*
Apprenticeship-based			
Austria	22,7	**77,3**	**33,3**
Denmark	52,3	**47,7**	**47,2**
Germany	42,6	**57,4**	**42,2**
Continental school-based			
Netherlands	32,4	67,6	18,5
France	56,2	43,8	12,1
Market-led			
UK	58,6	41,4	m
Ireland	65,5	34,5	2,2
General Education			
Greece	68,3	31,7	a
Spain	56,6	43,4	1,9
Hungary	76,4	23,6	13,2
Egalitarian School-based			
Sweden	42,9	57,1	a
Finland	33,3	66,7	11,5

Source: OECD (2009), Education at a glance Table C1.4

*Note:** Percentage of upper secondary graduates in the population at the typical age of graduation by programme orientation.

m = missing; a = not applicable

5.4 Transition from Education to Work: Unemployment rates and labour force experience (in years): ISCED 3 leavers (1990‘s)



Source: Müller/Gangl, Transitions from Education to Work in Europe, Oxford 2003

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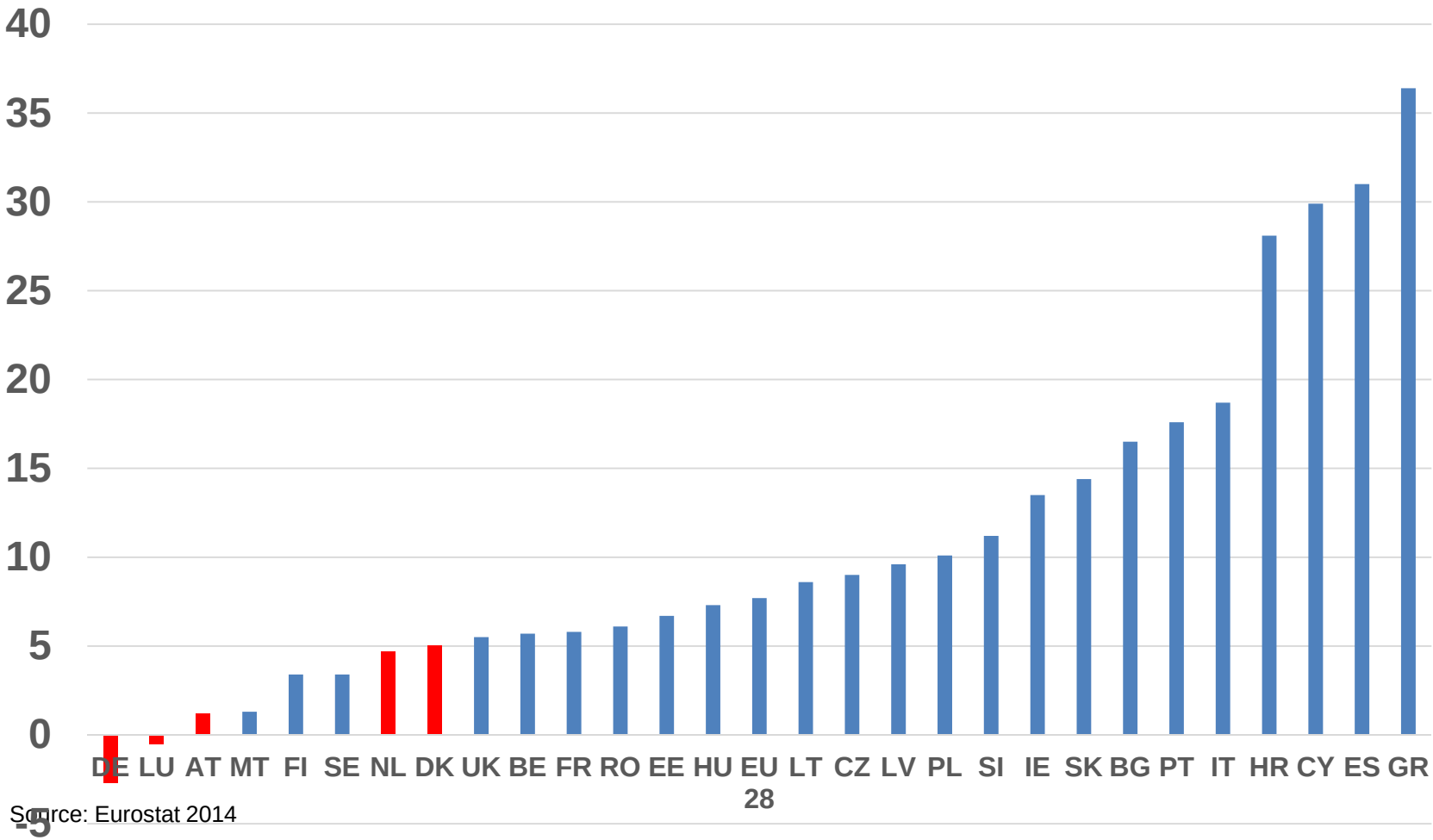
5.5 No or low increase of youth unemployment rates (YURs) in countries with apprenticeship systems (*increase of YUR's in the EU 2008 – 2013 in percentage points)*



Source: Eurostat 2014

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Conclusions

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- New meaning of VET: less early tracking, more subsequent study, increasing share of VET on tertiary level
- High diversity of VET across countries
- Strong impact of VET on work organization: “Egalitarian” work organization higher efficiency
- Transplantation of apprenticeships systems difficult - Reasons: low reputation of VET, low investment of companies in training, weak national actors, low acceptance of standards in the labour market
- Possibilities for transplantation:

  (1) Licensing; (2) Levy systems; (3) Subsidies (UK); (4) More school-based approach like in Austria; (5) Self-obligation of the state including its suppliers to train (London); (6) Self-obligation of key employers incl. suppliers

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