



WZB

Wissenschaftszentrum Berlin
für Sozialforschung

Institutions and Costs –

Determinants of Firm Financed Training Activities in four
European Countries

Presentation at the Labour Seminar, 7th of March 2006

ROA – Research Centre for Education and the Labour Market, Maastricht

Ralf Mytzek-Zühlke

WZB Social Science Research Center

Labour Market Policy and Employment

Project “Qualifications needs in OECD countries”

mytzek@wz-berlin.de

Structure of presentation

1. Background and research question
2. Theoretical considerations
3. The data
4. Models and estimation results
5. Conclusions and research perspectives

Structure of presentation

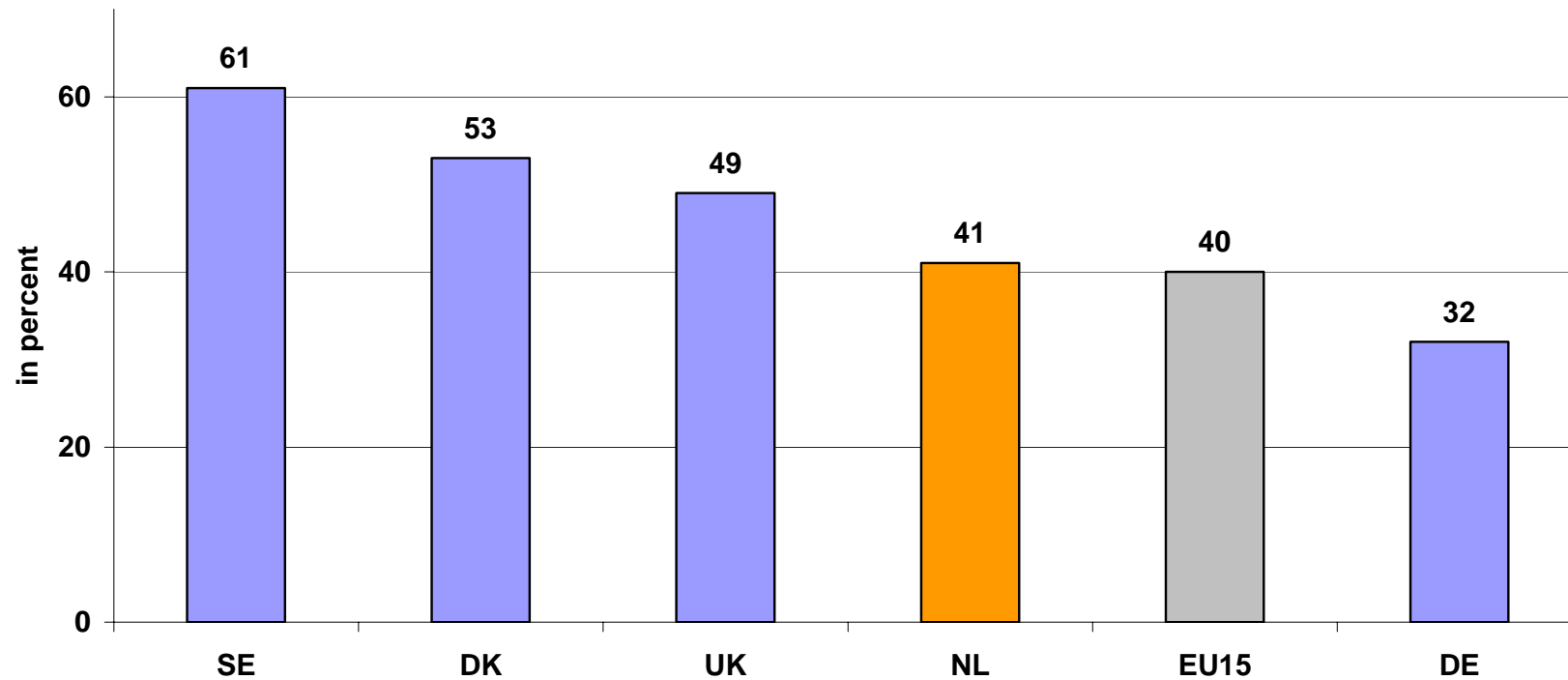
1. Background and research question
2. Theoretical considerations
3. The data
4. Models and estimation results
5. Conclusions and research perspectives

Background and research questions

- More than **three quarters** of the investments in training (CVT) in most European countries are borne by the employers
- CVT plays important role in European Employment strategy (**productivity, quality of work**)
- Large **differences** between European countries in CVT, but also between industries, firms of different size, employee participation rates
- Comparative **research** on firm-financed training on the basis of employer surveys is scarce

Participation rate in firm financed CVT 1999

(as per cent of all persons employed in companies with 10 or more employees)



Participation rate in CVT (all employees)

Research questions

- How can the differences in training activities between countries be explained?
- Which are the **determinants** for the training participation rate?
- Are there **differences** between the compared countries?
- Where is the **scope for** (political) **action** for promoting training of the employed?

Structure of presentation

1. Background and research question
- 2. Theoretical considerations**
3. The data
4. Models and estimation results
5. Conclusions and research perspectives

Theoretical considerations

- No comprehensive theoretical framework for workplace training so far
- Distinction between (1) institutional factors and (2) financial aspects and (3) management strategy to structure the analysis
- Theory on Transitional Labour Markets (TLM) and Social Risk Management approach (Schmid 2002, 2004, 2006) for institutional level
- Economics of education and training to analyze cost aspects

Transitional labour markets and social risk management

- Theory of transitional labour markets (TLM) understands education and training as “transitional labour markets” that eases **transitions**
- The social risk management perspective extends TLM and highlights the **risk mitigating effects of training** (employability, life course perspective)
- TLM are backed by **institutional arrangement** (training leave schemes, collective agreements, activating and preventive labour market policy)
- **Indicators:** assessment of skill needs, evaluation of training, training funds, collective training agreements, public subsidies for training

Economics of education and training

- Human capital approach: training as **investment** that raises future productivity and wages (Becker 1964)
- Profit driven companies will invest in training if they expect **positive returns**
- **Costs** of training plays a major role for training decisions
- **Indicators:** directs costs of training, wage costs, refunds for training expenditures, subsidies

Theoretical expectations: influences on firm's training decisions

- Institutional arrangements that either **reduces insecurity** connected to training decisions or constitute **legal obligations** for training are expected to have a positive influence on training decisions

⇒ **positive** influence of: training agreements, training funds, assessment of skill needs, evaluation of training

- Factors that reduces **costs** connected to training decisions are expected to have a positive influence on training decisions

⇒ **positive** influence of: low direct costs, subsidies and receipts for training

⇒ **positive** or **negative** influence of wage level

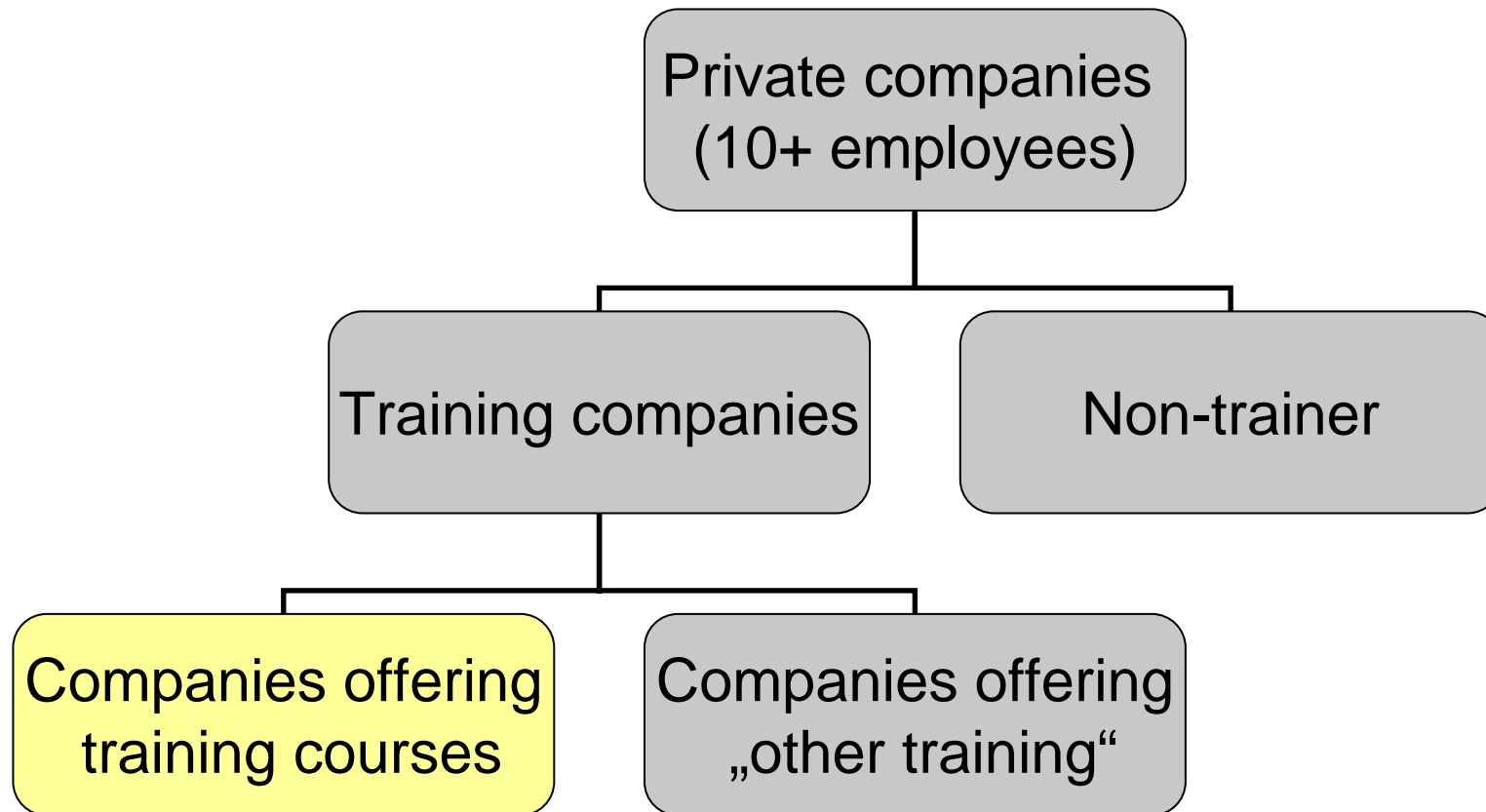
Structure of presentation

1. Background and research question
2. Theoretical considerations
- 3. The data**
4. Models and estimation results
5. Conclusions and research perspectives

The data: Continuing Vocational Training Survey 2 (CVTS2)

- Continuing Vocational Training Survey 2 (CVTS2) took place in 2000 in 25 European countries.
- For countries of interest (Denmark, Sweden, UK, Germany) micro data is available for econometric analyses
- Statistical unit is the company (10 or more employees), contains field of economic activity (NACE 4digit), size and other structural indicators
- Contains information about training policy, hours and costs of CVT courses, no. of participants, average wage, male-female participation rates

Structure of CVTS data set

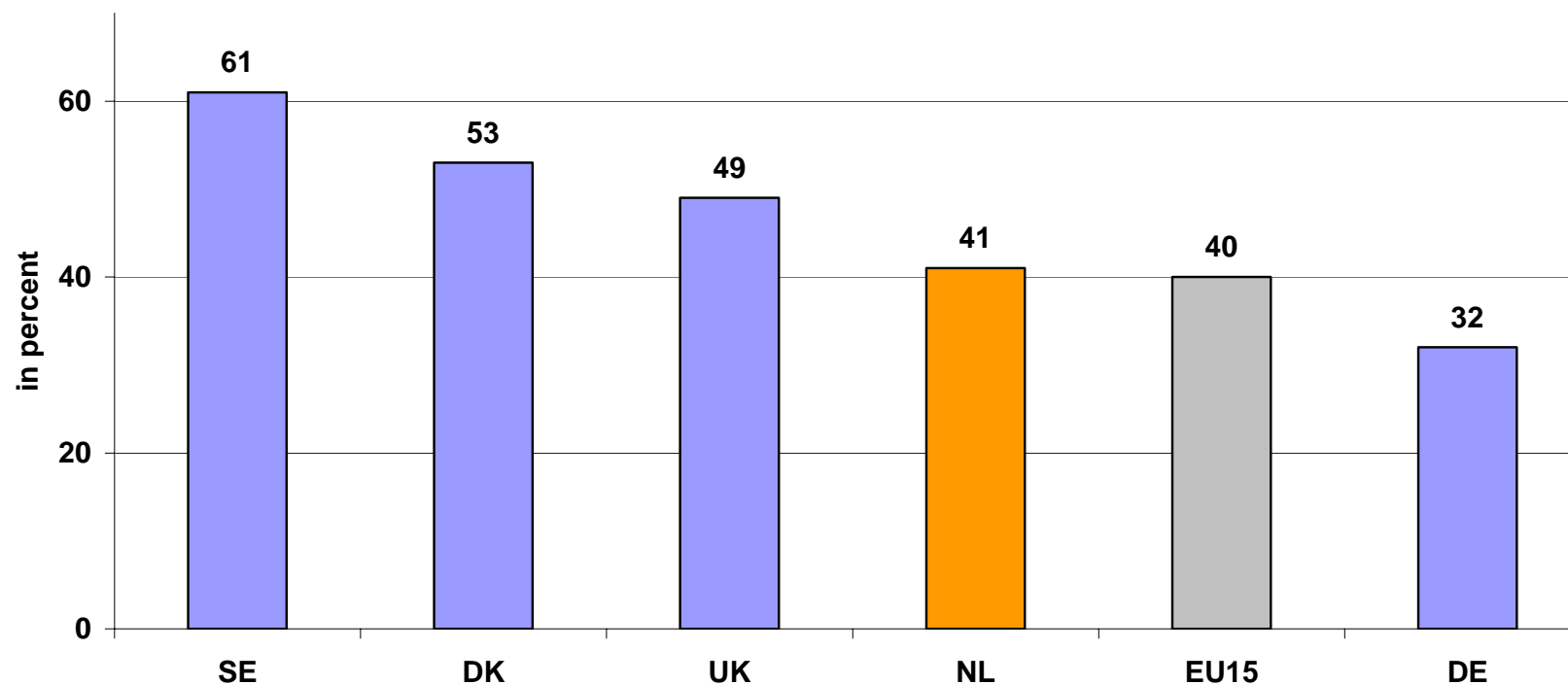


Selection of countries

- The determinants of firm financed CVT in **Sweden, Denmark, the United Kingdom, and Germany** are analyzed
- **Sweden** and **Denmark** represent countries with a history of strong state intervention, strong trade unions, and social democratic welfare regimes
- The **United Kingdom** represents a liberal welfare state with a history of declined union influence and limited state intervention
- **Germany** represents a corporatist welfare regime with significant trade union influence, moderate or weak state invention in training system and strong self-governance of corporatist bodies (employer associations, unions) in that field

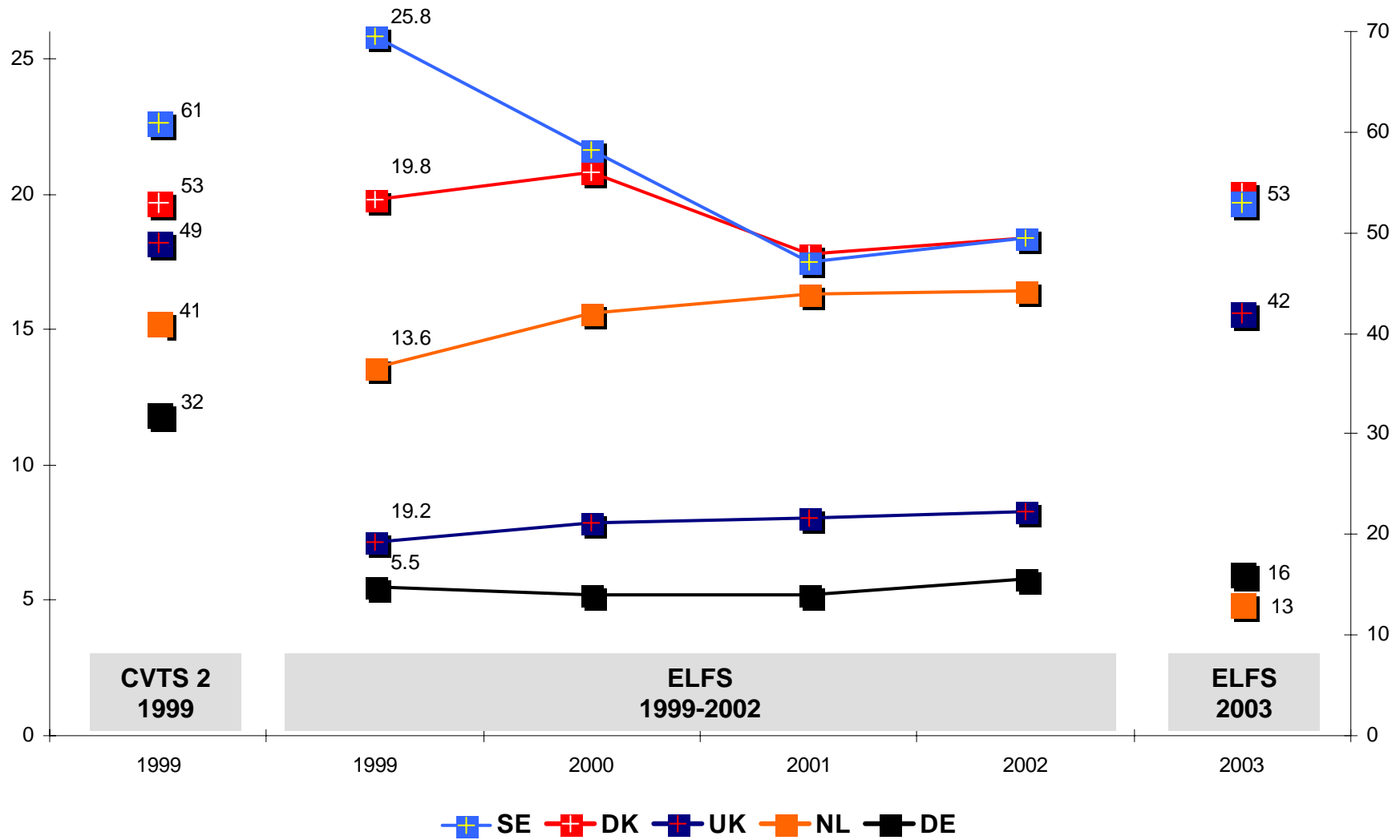
Participation rate in firm financed CVT 1999

(as per cent of all persons employed in companies with 10 or more employees)

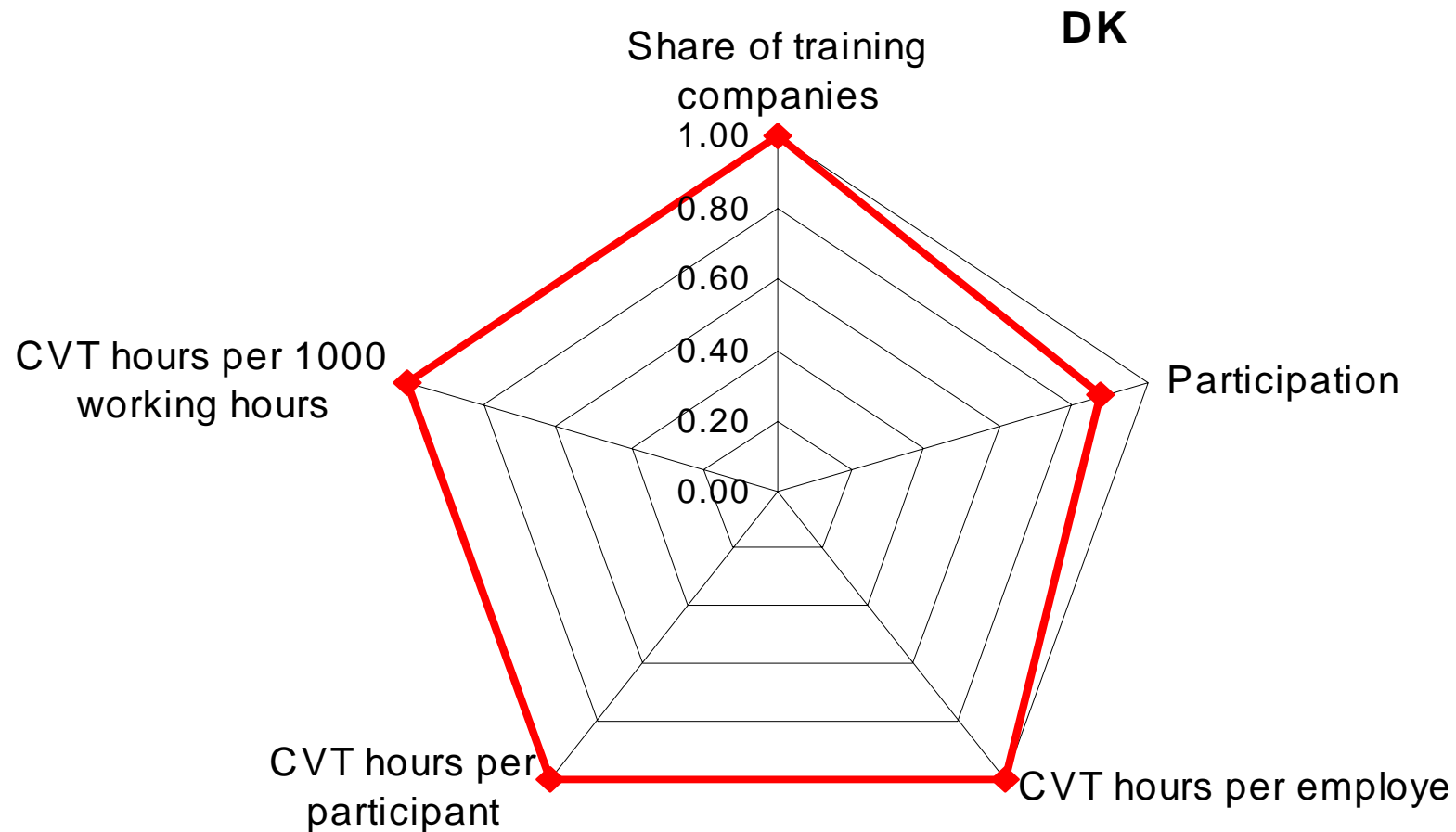


Participation rate in CVT (all employees)

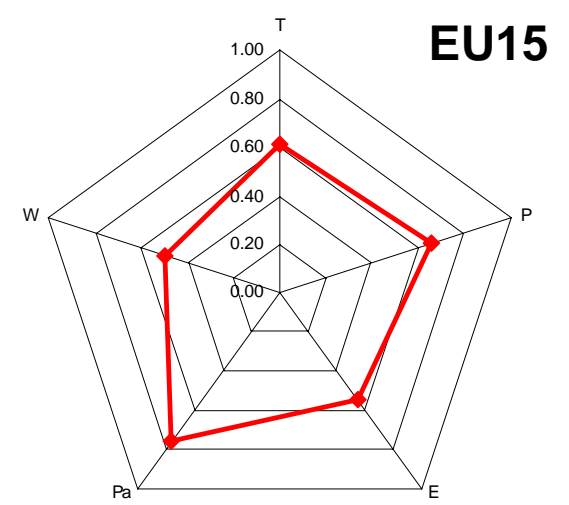
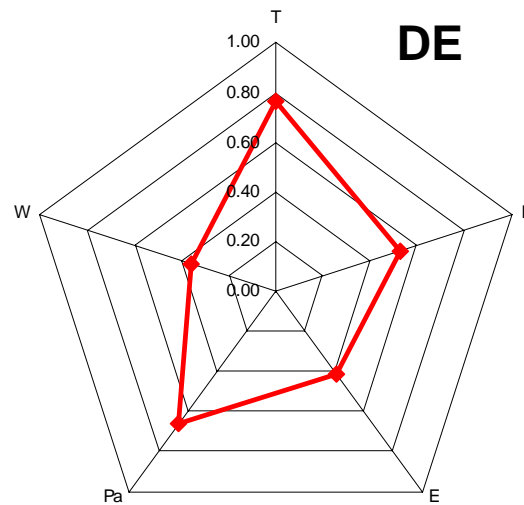
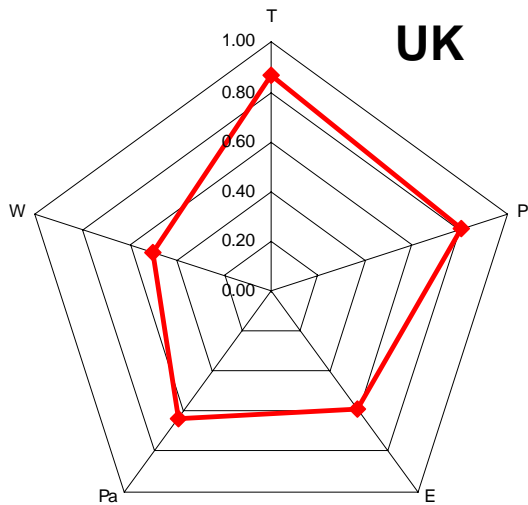
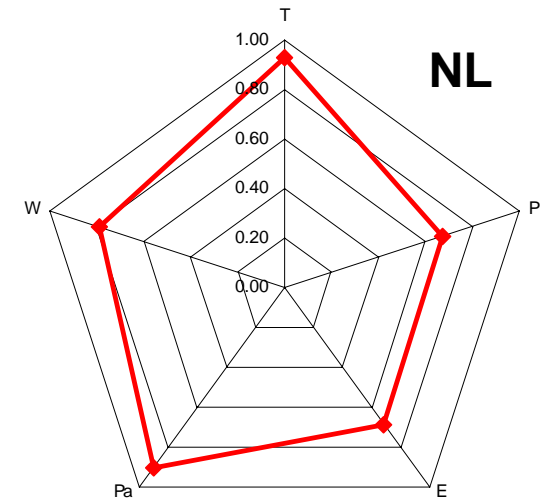
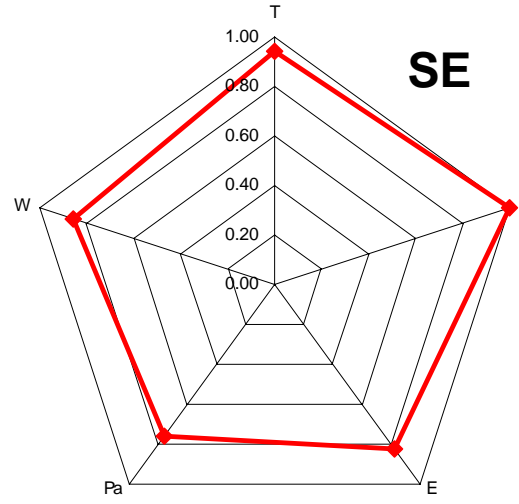
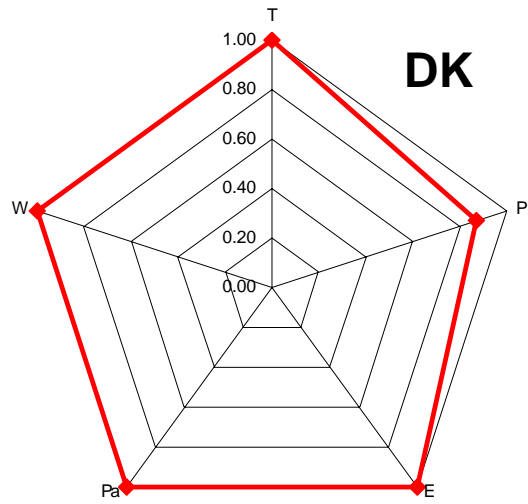
Comparison of indicators – CVTS 2 / ELFS



Summary of indicators for training activity / example



Indicators for training participation and intensity



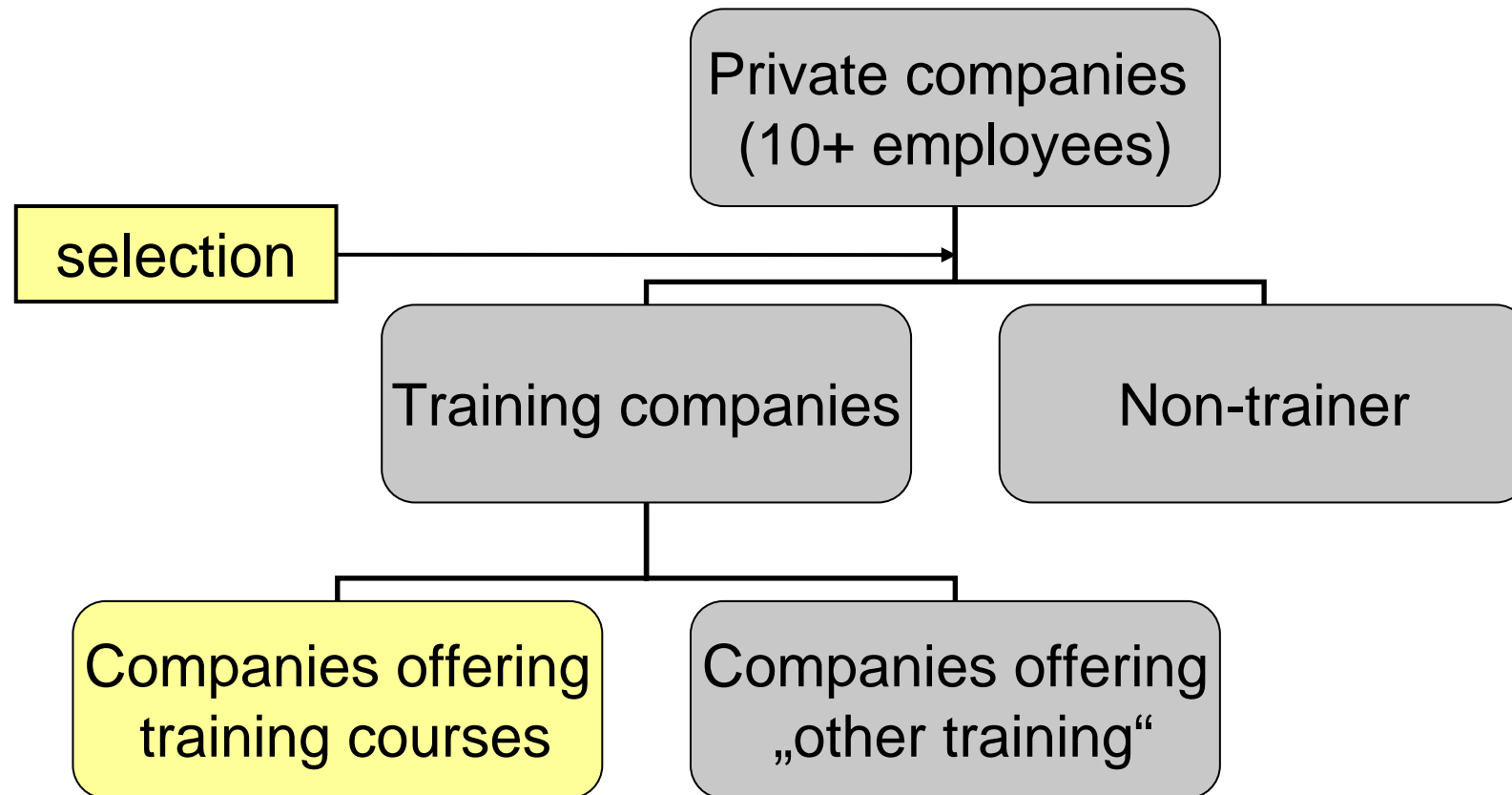
Structure of presentation

1. Background and research question
2. Theoretical considerations
3. The data
- 4. Models and estimation results**
5. Conclusions and research perspectives

Model development (1)

- Dependent variable is the participation rate in training among employees in companies providing training courses (= training participation rate)
- Factors that influence the training participation rate shall be estimated in a regression framework
- Estimates are influenced by selection, i.e. whether a company is offering training courses or not
- Due to the design of the questionnaire, the selection constitutes cases where values of the *regressors* are missing -> sample selection bias

Structure of CVTS data set

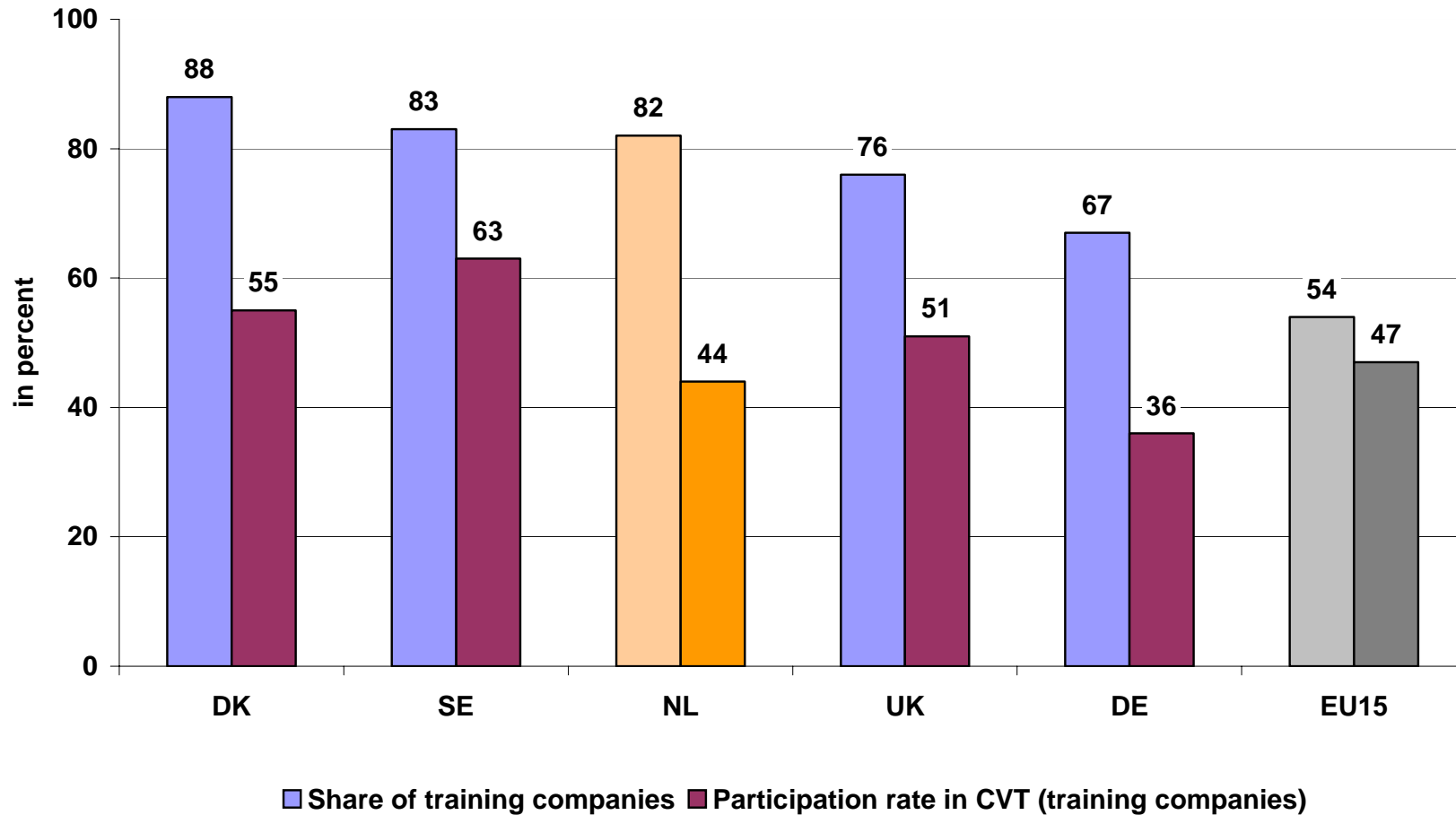


Model development (2)

- The selection process is interpreted as “self-selection” (Heckman 1979), where the dependent variable is censored due to non-randomly missing values in the independent variables
- OLS regression would lead to biased estimated of the coefficients in the model
- Applied method is the Heckman-correction (Heckman 2-step model) to account for selection bias
- Heckman-correction is based on a selection equation estimated by a probit model and a linear regression equation that is corrected for the selection bias

Share of course participants in training companies (1999)

(in percent of all employees in companies providing training courses)



Regression results (Heckman): estimates of CVT participation rates

Variable \ Country	Germany	Denmark	Sweden	United Kingdom
Training agreement on company level (y/n)	0.097 (1.51)	0.093 (1.12)	0.084** (2.21)	0.035 (0.47)
Training agreement with social partners (y/n)	0.075 (0.72)	0.075 (0.75)	0.058 (0.87)	Not available
Initial training / apprenticeships as instrument to develop skills (y/n)	0.074 (1.62)	0.050 (0.86)	0.022 (0.48)	0.003 (0.05)
Contributions to collective funds for CVT (y/n)	0.076 (0.94)	0.128** (2.19)	-0.095 (-0.87)	0.085 (1.39)
Receipts from public sources or funds for training (per employee in Euro, log)	0.083*** (2.59)	0.029** (2.18)	0.070*** (9.93)	0.012 (0.36)
Direct costs of CVT-courses per hour (in Euro, log)	-0.148*** (-7.19)	-0.055*** (-2.71)	-0.158*** (-8.32)	-0.093*** (-4.77)
Wage - average hourly wage of employees (in Euro)	0.006*** (2.87)	0.008*** (2.96)	0.008*** (3.99)	Not analysed
Assessment of skill needs for all employees (y/n)	0.530*** (11.22)	0.238*** (3.51)	0.210*** (5.65)	0.337*** (3.82)
Assessment of future qualification needs on firm level (y/n)	0.098** (2.17)	0.110* (1.69)	0.052 (1.40)	0.185** (2.48)
Evaluation procedures to assess the effect of CVT courses applied (y/n)	0.158*** (4.05)	0.027 (0.50)	0.111*** (3.11)	0.162** (2.45)
Mills Lambda	0.615*** (6.03)	0.492** (1.97)	0.215** (2.33)	0.347** (2.06)
Rho	0.672	0.681	0.291	0.431

Control variables: **Training infrastructure, new products, new technologies, organisational change, 10 NACE-categories, size**
 Values of z-statistics in parentheses; * significant at 10 percent-level; ** significant at 5 percent-level; *** significant at 1 percent-level

Summary of results

- Impact of **institutional** indicators is weaker than for the **cost** indicators
- Indicators that are were institutional and financial aspects are interwoven show clearer results
- **Assessment of skill needs** and **evaluation** of training show mostly positive and significant results, but have to be interpreted with caution
- The **wage** level could be positively related because of its relation to qualification and productivity. Costs of forgone production plays minor role.

Structure of presentation

1. Background and research question
2. Theoretical considerations
3. The data
4. Models and estimation results
5. Conclusions and research perspectives

Conclusions

- Variables associated to training **costs** have the strongest effect on training
- **Scope for policy** lies in influencing institutional factors that affect the costs for training
- The positive effects of collective **training agreements** have to be questioned
- **Assessments of skill needs** and **evaluation** of training might also be a field of action for public actors in order to stimulate training activities

Remaining questions

- How can the **differences** between countries technically be examined?
- Is there an appropriate way to deal with large **heterogeneity** between firms?
- Theoretical categories: cleaner **distinction** between institutions, costs and strategy?
- Way to create a comprehensive **indicator** for “training intensity”?

Research perspectives

- Development of **next model**: training intensity index (computed from training participation rate and hours of training) as dependent variable
- Inclusion of more **context variables** in model or interpretation: e.g. unemployment rate (regional or industry level if possible), labour turnover rates, CVT system
- Systematic analysis of **retrospective and prospective questions** on training activities in order to address time lags
- **CVTS3** data will be available in 2007, covering training in 2005

Thank you!

Ralf Mytzek-Zühlke
WZB Social Science Research Center
Labour Market Policy and Employment
Project "Qualifications needs in OECD countries"
mytzek@wz-berlin.de