

Institutional effects of apprenticeship training on employment success in Germany

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Characteristics of German apprenticeship training

Dual principles:

- State and enterprise
- School and working place
- General and vocational education and working experience

Highly standardized:

- Upper secondary level
- Countywide curricula and certificates
- Fixed term training contract and strong recognition of apprenticeship certificates

Low stratified:

- No formal vertical stratification, however horizontal stratification into 346 different vocations

Findings from literature I

Empirical results

Two thirds of each age cohort joins the apprenticeship system

More than 50% of the apprenticeship leavers become employed in the training firm in the old Länder (Hillmert 2001; Konietzka 1999)

50% become employed in the vocation trained for (Witte/Kalleberg 1995, Haas 2002; Seibert 2007)

Youth unemployment of young people with vocational degree (apprenticeship training) is moderate low

Findings from literature II

Empirical results

Sector- and segmentspecific strategies (Franz/Soskice 1994; Neubäumer 1999)

Firms training activities reflect strongly firm specific structures of production and workforce (Niederalt 2005; Dietrich/Gerner 2007)

Cost-benefit relation varies over sectors and fields of occupation (Bardeleben 1993; Beicht/Walden 2004; Hanhart/Bossio 1998; Wolter/Schweri 2002)

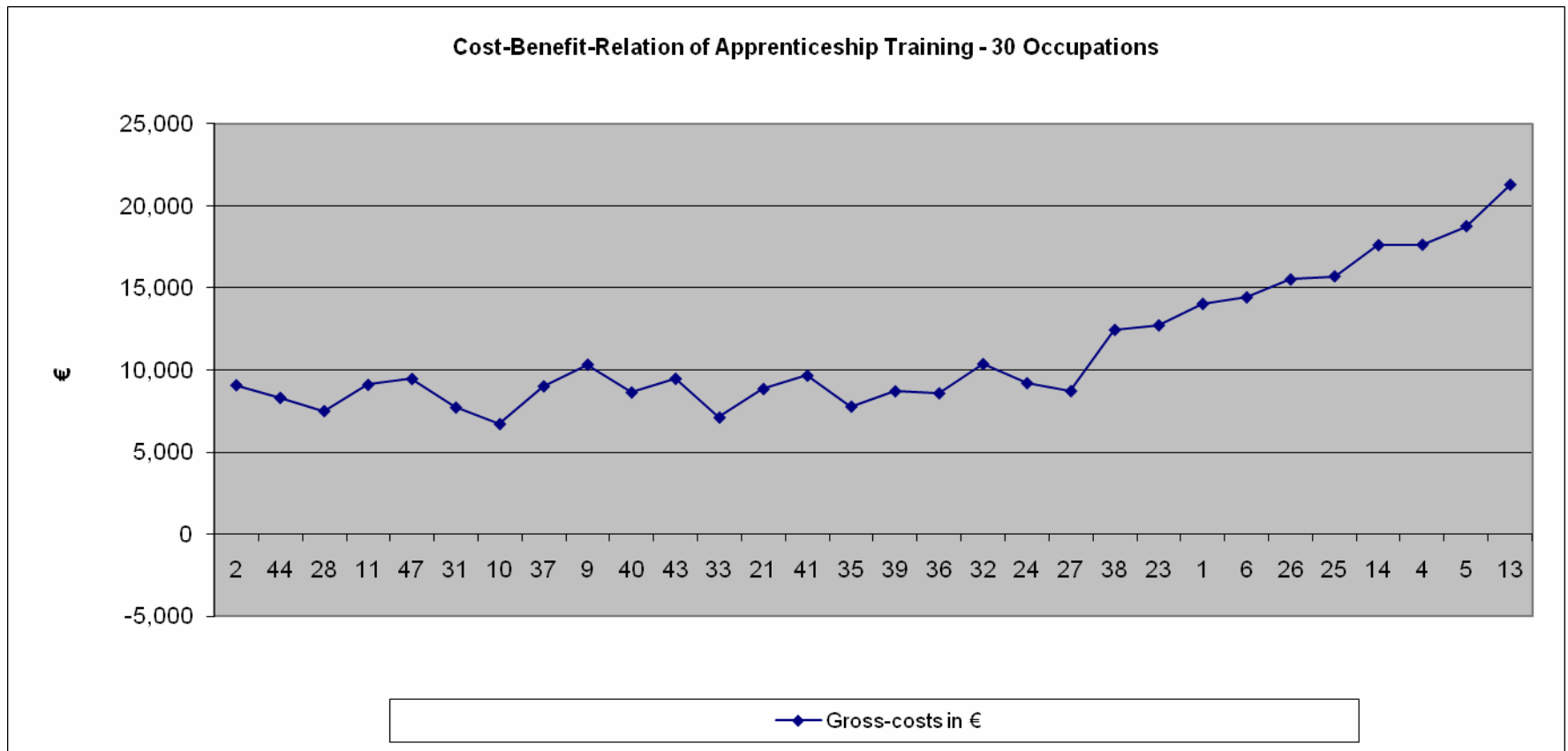
Theoretical considerations I

Theoretical concepts

- Human capital theory
 - Why do firms train? Firm specific qualifications versus marketable qualifications (general and vocational specific)
- Segmentation theory
 - Firms train for a specific labour market segment, assumption of reciprocity, up to now no empirical evidence
- Cost-benefit theory and imperfect markets
 - Different cost-benefit structures for firm size, sector, and occupation
 - Weak indicators of individuals productivity and wage compression

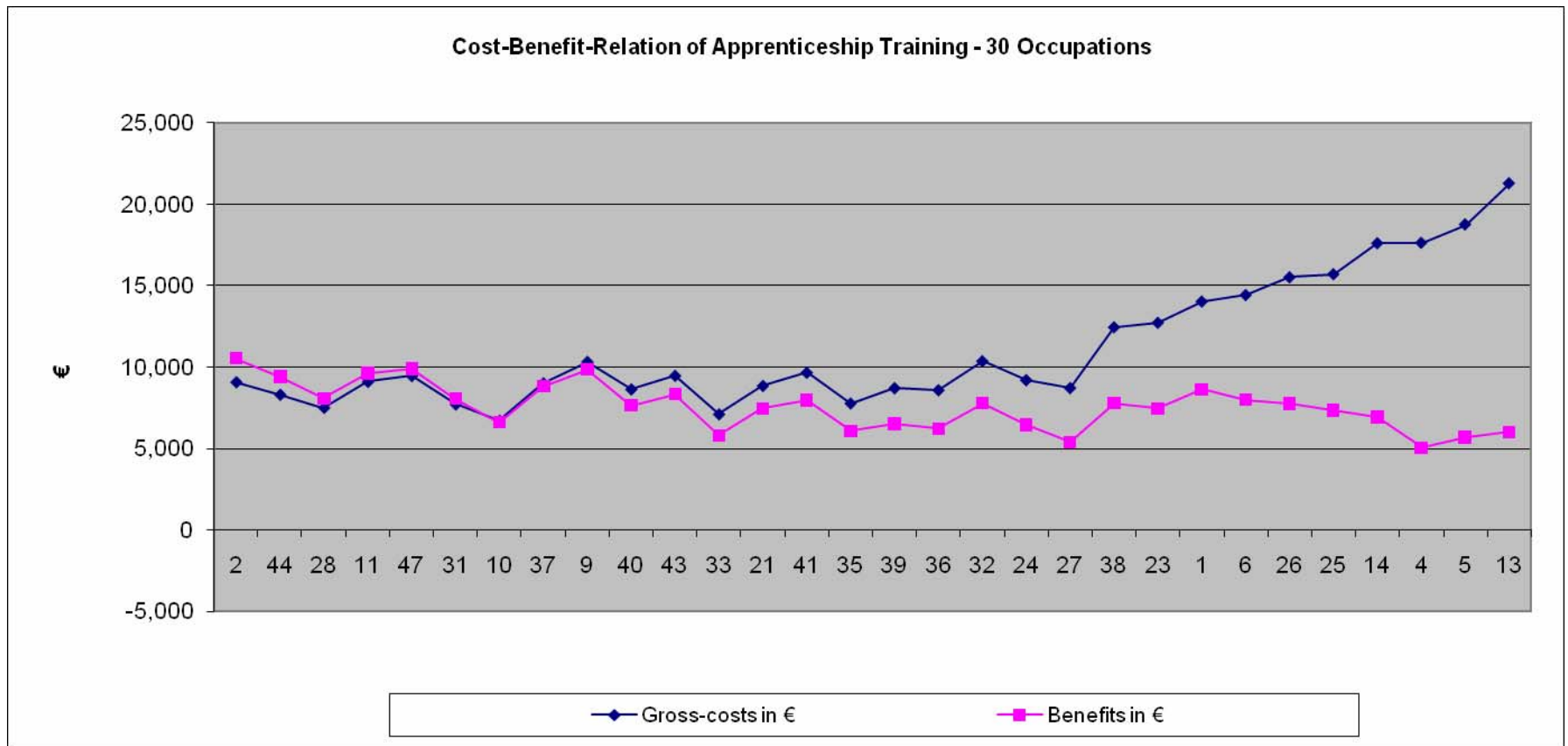
Theoretical considerations II

Annual training costs and benefits (in €)



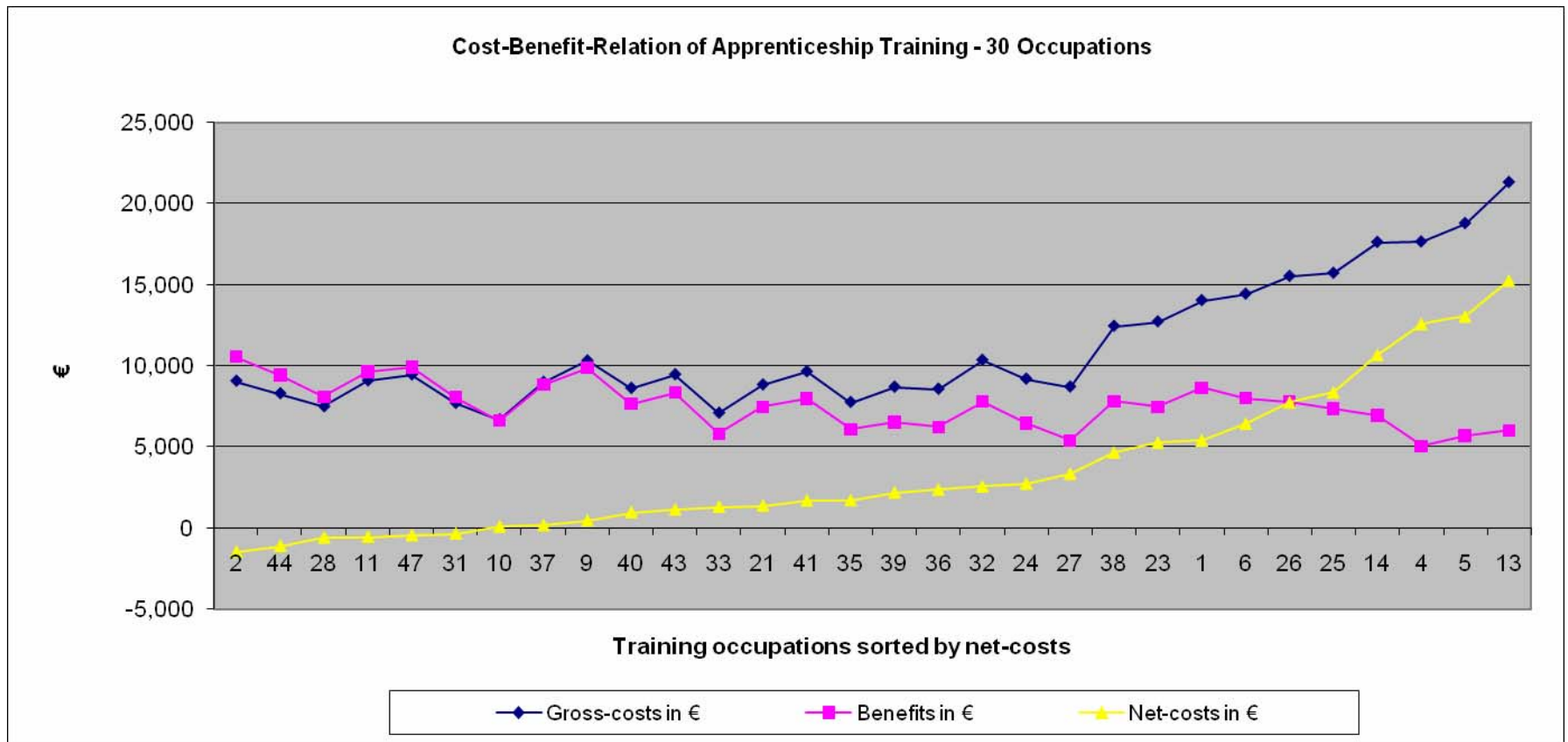
Theoretical considerations II

Annual training costs and benefits (in €)



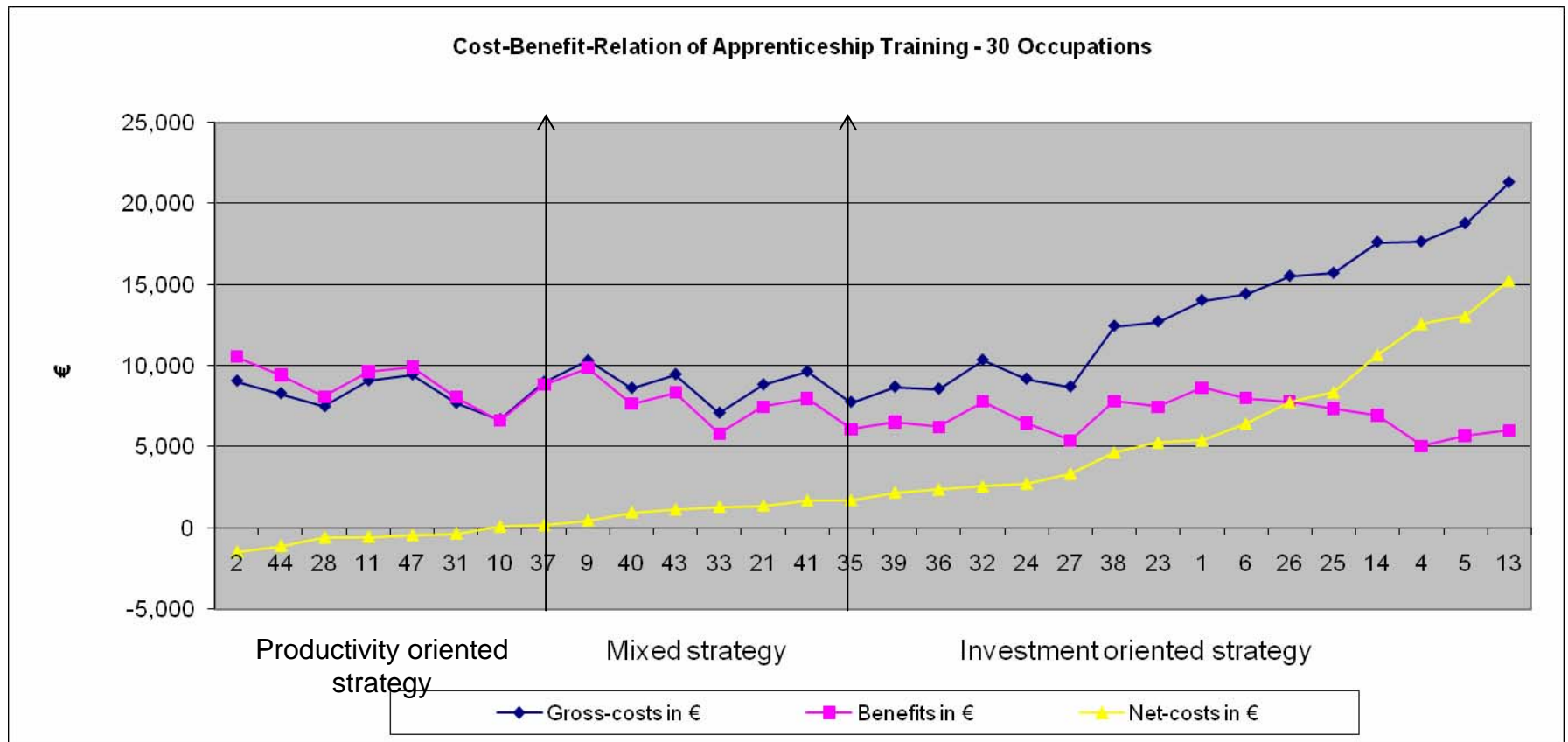
Theoretical considerations II

Annual training costs and benefits (in €)



Theoretical considerations II

Annual training costs and benefits (in €)



Theoretical considerations II

Three training regimes

- Investment oriented strategy

Firms invest intensively into the human capital of their apprentices. This training creates significant net cost over the whole training period. Firms reward of the training results out of the future productivity of these trainees within the firm

- Productivity oriented strategy

Independent form firms need for new trained employees, the firms who train under this regime gain benefits from apprenticeship training already whilst the training period. The productivity of the trainees exceeds the relatively low gross costs of training

- Mixed strategy

Training firms may switch between both regimes. Motives like collective agreements between firms in specific branches (e.g. construction industry), public reputation, social obligations or public sponsored subsidies supplies additional benefits, so that training benefits overcome the moderate training costs

Theoretical considerations III

Institutional theory (Kerckhoff 1995; Ryan 2001; Streek 1992)

- Covered by federal law and agreements of employers organisations and trade unions
- Mandatory and occupation specific training curricula and exams
- Fixed term training contracts
- Recognition of vocational degrees as precondition for labour market access, largely independent from the type of job and occupation

Empirical research question

Does the type of training regime influence the transition pattern from training to work under control of characteristics of the training firm and individual characteristics?

Data I

Combined data

Data source 1: The German Integrated Employment Biographies (IEB)

Complete and integrated data from different process produced register data from German social security system covering all dependant employed and unemployed people

Data source 2: Information of training cost from the BIBB study 2002 Costs and benefits of apprenticeship training

The BIBB cost study supplies information for 52 out of 300 fields of vocational training (matched by occupation)

Data source 3: IAB-enterprise file

Covering all firms in Germany with dependant employees; enriched with regional labour market information (matched by firm ID)

Data II

Sample selection

- Young people aged up to 25 years at the end of apprenticeship training (no further education)
- West Germany (no public sponsored economy)
- No professional training sector (no out of enterprise training)
- No public services (no non-market based training)
- Only vocations with detailed cost information (n= 30 out of 300 vocations)

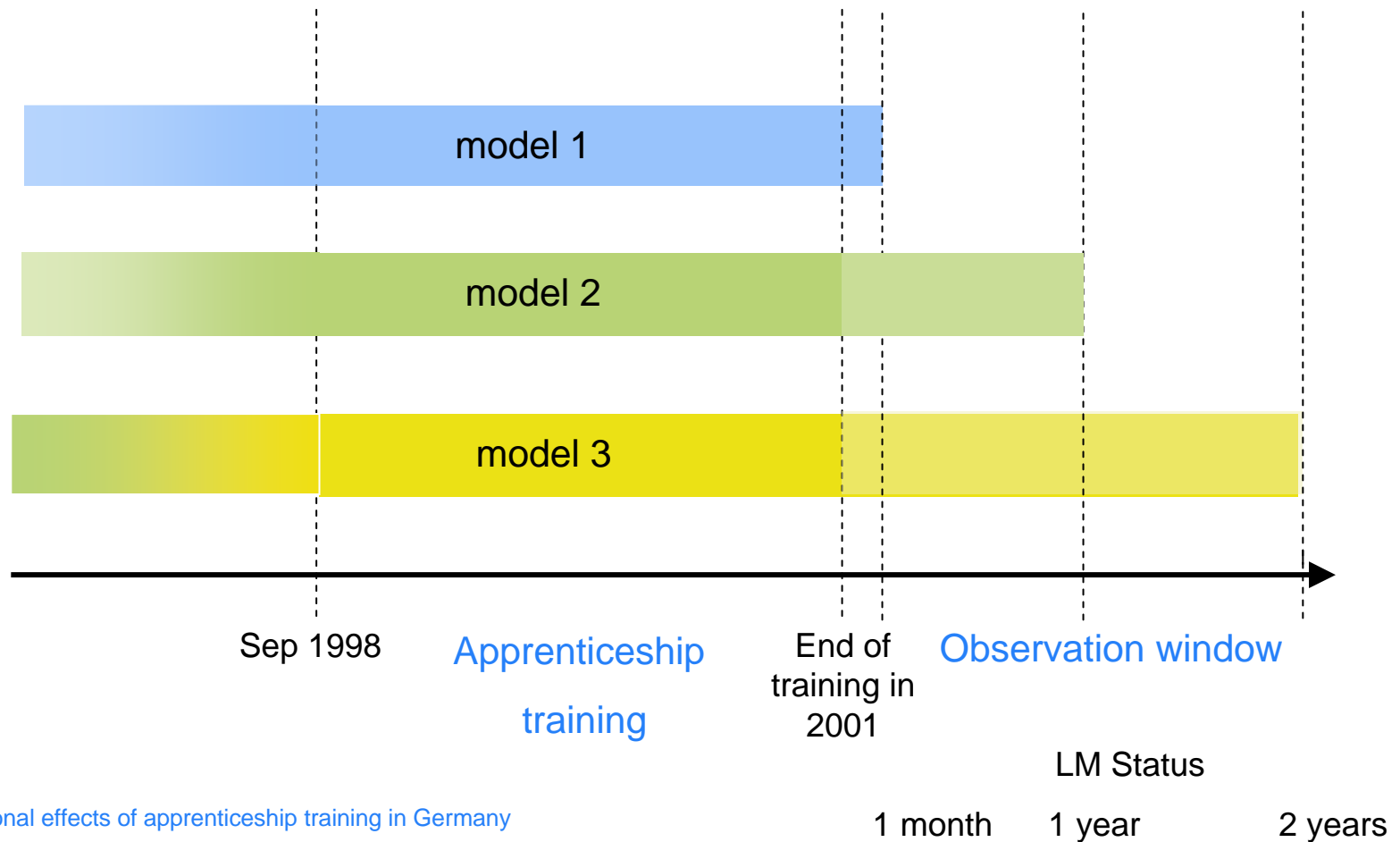
Observation period

- Two years time after graduation from apprenticeship training

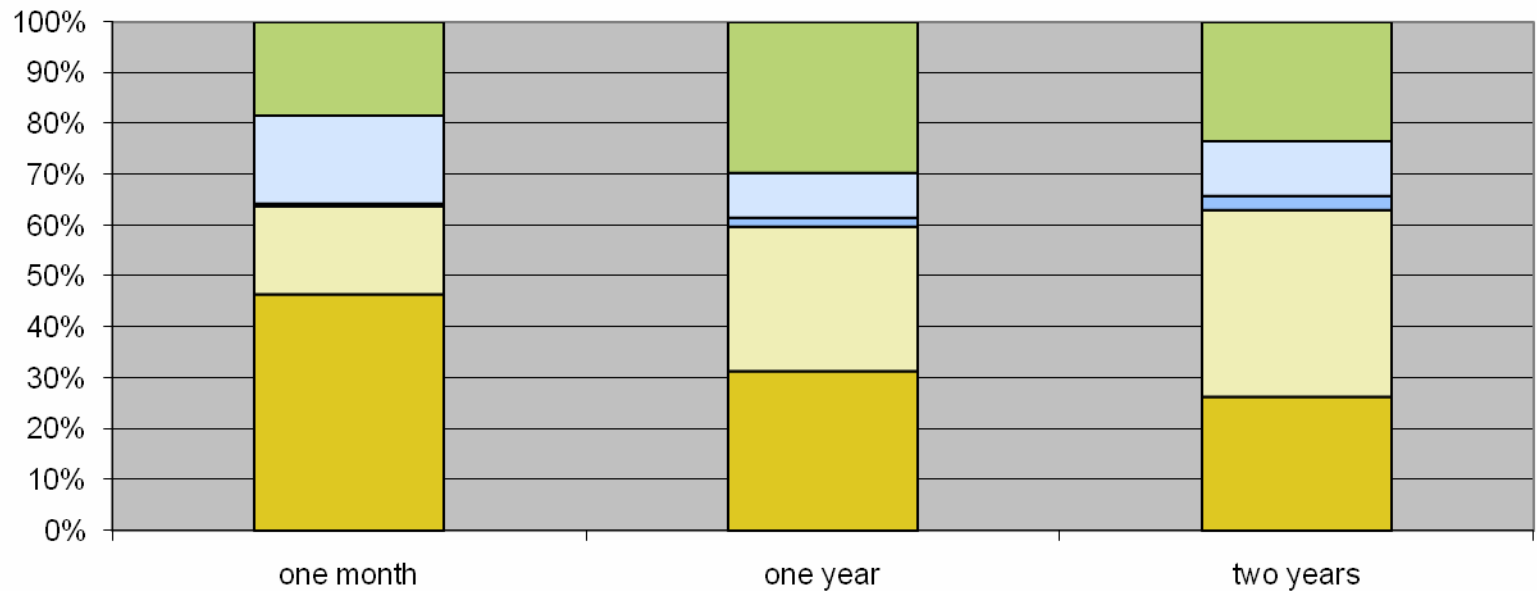
Sample size

- 135.338 persons with 1.522.259 spells

Design and observation window for analysis



Outcome of apprenticeship training



■ others □ unemployed ■ scheme participation □ employed in another firm ■ employed in training firm

Explaining variable: Training regime

Variable	Value
Productivity oriented training strategy	40,6%
Mixed training strategy	27,8%
Investment oriented training strategy	31,6%

Control variables

Variable	Coding
Firm level (training firm)	
Size of training firm (N employees)	Grouped (8 classes)
Daily wage (average, all employees)	Cont.
Daily apprentices wage (individual)	Cont.
Industry	5 types of cambers
Individual level	
Gender = female	Dummy
Nationality=non German	Dummy
Qualification = Abitur	Dummy
Unemployment experience before training	3 groups
Regional level	
Regional labour market type	9 types

Findings I

Strong effects of training regimes

- **Investment oriented training contracts** offer high employment perspectives (79%), mostly in the training firm (60%) immediately after completion of training. The employment perspective decreases slowly in the first year after training (68%) and increases again up to 72% two years after. Unemployment experience and scheme participation is low,
- Apprenticeship training in the **production strategy** shows weak employment perspectives (56%), employment only partly within the training firm (41%). Employment perspectives do not improve remarkably within two years (58%)
- Trainees in the **mixed group** show comparable weak employment perspectives at the end of training (55%; 39% within training firm), and weak improvement within two years 61%
- Increasing effect of training strategy on firm mobility and weakening effect on unemployment and out of labour market within the observation window of two years

Findings II

Firm size effects

- Firm size reduces inter firm mobility, reduces risk of unemployment experience and scheme participation
- Firm specific wage level increases mobility immediately after training, but no long term effect

Ambiguous individual effects

- Strong gender effect on transition into other LM status (military service), lower female transition into scheme and unemployment
- No effects of nationality on firm change but on unemployment and scheme participation
- Positive and increasing effects of general qualification
- Early unemployment experience (unemployment before training) matters

Findings III

Regional effects

- Strong effect of regional LM on transition into unemployment and out of LM;
- Weak effect on firm mobility

Discussion and perspectives

Apprenticeship training is **no homogenous institution** but includes ambiguous logics and training strategies

Firms use the apprenticeship training as a powerful **two step sorting machine** which takes strong influence on individuals transition perspectives from school to work

Cordial sorting mechanisms:

- selection of individuals for specific fields of training (more research work is to be stressed on this topic)
- selective employment offers to trainees at the end of training

What's to be done next?

Long term effects of training strategies and type of job

Thank you for your attention



Data base I

Data source 1: Information of training cost from the BIBB study 2002 Costs and benefits of apprenticeship training

The BIBB cost study supplies information for 52 out of 300 fields of vocational training;

For these 52 training schemes cost and benefit information are collected from the enterprises

Net costs of training as the result out of training costs and benefits from the apprenticeship trainees are calculated and three modi of training motivation identified:

- Production oriented strategy
- Mixed strategy
- Investment oriented strategy

Data base II

Data source 2: The German Integrated Employment Biographies (IEB)

Complete and integrated data from different process produced register data from German social security system covering all dependant employed and unemployed people:

- unemployment records;
- job search records
- dependant employment records
- scheme participation records

Individual variables: age, gender, nationality, qualification, vocational field of apprenticeship training, apprenticeship wage, biographical information on all episodes of dependant employment, registered unemployment, scheme participation and job search

Data base III

Data source 3: IAB-enterprise file

Covering all firms in Germany with dependant employees; enriched with regional labour market information

Enterprise variables: firm size of training firm; industry of training firm; average wage level in training firm