You Live and Learn: Private-Sector Training in Germany

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① MOTIVATION

Background

❶ Speed with which knowledge changes is enormous

❷ Need to extend working life (demographic change)

▶ These facts necessitate a broader provision of training (e.g., Brenke and Zimmermann, 2005)

▶ Consequence applies to many industrialized countries, but this study focuses on Germany

• Dominant view in Germany for many decades:
  • School education and initial training provide a sufficient endowment for the entire working life
  • Further qualifications – if necessary at all – can be obtained through experience on-the-job
• This view has changed: Lifelong learning is now viewed as a necessary complement to school education and initial training

Research Questions

❶ Who participates in private-sector training?

❷ What are the effects of private-sector training on wages and earnings?

❸ What are the effects of different types of private-sector training on wages and earnings?

❹ What are the effects of private-sector training on subsequent employment?

② RELATED LITERATURE

Theoretical Background

Theoretical literature on workplace training comprehensively surveyed by Leuven (2005):

• First milestones: Mincer (1962) and Becker (1962, 1993) which can still be considered as the dominant perspective on private-sector training
• Important distinction: general vs. specific training
• Further development: assumption of perfect competition was dropped and non-competitive theories of training evolved (Acemoglu and Pischke, 1999)
• Important question: Does the worker or the firm pay for the training?

Empirical Literature

• Empirical studies of workplace training exist for a number of countries:
  • Pfeiffer (2001) summarizes findings for Europe
  • Frazis and Loewenstein (2005) summarize findings for the U.S.
• General finding: estimates of the wage returns to private-sector training typically very high
• High wage returns may be actually the returns to some unobservable characteristic (e.g., Leuven and Oosterbeek, 2008)

③ DATA

Data Set

• German Socio-Economic Panel Study (SOEP)
• Wide range of subjects covered annually, but some subjects are covered in modules which are not collected in every wave
• One example: module "training"
  • Included in 1989, 1993, 2000, and 2004
  • Information on training activities collected retrospectively for a period of three years prior to the interview
  • Participation at all, number of courses
  • Additional information available for the three most recent courses: start dates, duration, financing, etc.
• This study: training information in 2000 and 2004
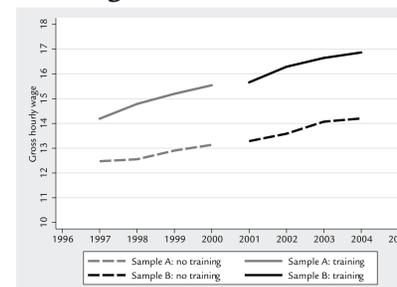
Sample Selection:

• Construction of two panels:
  ❶ 1997–2000
  ❷ 2001–2004
• Samples include individuals who …
  … belong to the target group of the training questions
  … are between 25 and 55 years old
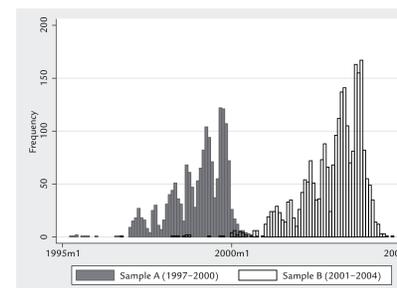 … employed during the entire observation period
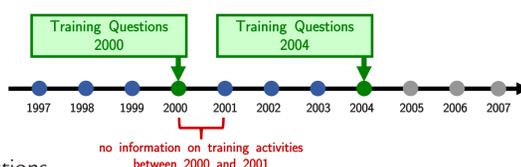
Descriptive Statistics

	Sample A (1997–2000)	Sample B (2001–2004)
Male	0.594	0.578
Age	38.001	39.471
German	0.870	0.913
Full time	0.867	0.830
East Germany	0.286	0.247
Years of schooling	11.962	12.261
Potential Experience	20.039	21.210
Training participant	0.340	0.337
Number of courses (uncond.)	1.282	1.219
N	2,394	3,432

Raw Wage Growth

Start Dates of Courses

Training Questions 2000 — Training Questions 2004

1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007

no information on training activities between 2000 and 2001

④ RESULTS

Training Incidence

• **Both samples:**
  • Significantly more likely to participate: More qualified individuals, German individuals, employees in larger firms
  • Likelihood decreases with potential experience (age)
  • After additionally controlling for the occupational level, East Germans are significantly more likely to participate

Wage and Earnings Effects

• **Fixed effects model (FE):**
$$\ln w_{it} = X_{it}\beta + \gamma T_{it} + \alpha_i + \varepsilon_{it}$$
• Wage equation augmented with training variables T_{it}
• Unbiased estimates if unobserved individual effects are permanent
• Biased estimates if wage growth is different for trainees and non-trainees
• **Random growth model (RG):**
$$\ln w_{it} = X_{it}\beta + \gamma T_{it} + \alpha_i + \delta_i t + \varepsilon_{it}$$
• Estimated by applying fixed effects to the differenced equation

Wage and Earnings Effects

	Hourly Wages		Earnings	
	FE	RG	FE	RG
Sample A (1997–2000)	0.040	0.041	0.050*	0.049
Sample B (2001–2004)	0.060*	0.001	0.048	-0.018

Notes: Coefficients on training duration (in years). All regressions additionally include variables measuring experience, tenure, regional unemployment rate and regional GDP growth as well as dummy variables for job change, full-time employment, East Germany and a full set of year dummies.

*** significant at 1%; ** significant at 5%; * significant at 10%.

Wage and Earnings Effects by Type of Training

	Hourly Wages		Earnings	
	FE	RG	FE	RG
Sample A (1997–2000):				
Without sponsor	0.028	0.510*	0.023	0.563**
Sponsored by employer	0.013	0.030	0.060	-0.028
Sponsored by employee	0.009	-0.068	-0.002	-0.039
Sponsored by both	0.134**	-0.075	0.183***	-0.063
Sample B (2001–2004):				
Without sponsor	-0.028	-0.006	-0.009	-0.021
Sponsored by employer	-0.016	0.012	0.001	0.048
Sponsored by employee	0.093*	0.009	0.054	-0.062
Sponsored by both	0.063	-0.006	0.062	0.041

Notes: Coefficients on training duration (in years) by type of financing. All regressions additionally include variables measuring experience, tenure, regional unemployment rate and regional GDP growth as well as dummy variables for job change, full-time employment, East Germany and a full set of year dummies.

*** significant at 1%; ** significant at 5%; * significant at 10%.

Subsequent Employment

	2001	2002	2003	2004	2005	2006	2007
Sample A (1997–2000):							
Any Training	0.009	0.018	0.024*	0.030**	0.015	0.008	0.012
Training Dur.	-0.003	0.016	0.030	-0.017	-0.003	0.018	0.033
Sample B (2001–2004):							
Any Training				0.026***	0.014	0.017*	
Training Dur.				-0.019	-0.011	0.023	

Note: Coefficients on training duration (in years). Regressions additionally include a dummy for any training receipt, years of education, experience, sex, citizenship, East/West Germany, regional unemployment rate, and regional GDP growth.

*** significant at 1%; ** significant at 5%; * significant at 10%.

⑤ CONCLUSIONS

• Our results with regard to the incidence of private-sector training indicate a similar pattern in both periods
  • Better educated and German individuals as well as employees in larger firms are significantly more likely to receive training
  • The propensity to participate significantly decreases in potential experience (age)
• The effects of private-sector training on wages are not very robust to the econometric approach
  • We find positive wage effects of about 4–6 percent in both samples in the fixed effects specifications
  • These effects generally decrease quite substantially in the fixedgrowth rates specifications
• Participation in private-sector training raises the probability of being employed in subsequent years by 2-3 percentage points
  • However, this positive employment effect disappears after around 5 years