„Economics of Education, Firm Behaviour and Training Policies“
(Berufsbildungsökonomie)

Prof. Dr. Uschi Backes-Gellner, Zurich University, Switzerland

Conference of Research on Vocational Education and Training for International Comparison and as International Comparison

DGfE-Conference
Leading House
Economics of Education, Firm Behaviour and Training Policies

Aims and Purpose
- Joint programme under the direction of Prof. Dr. Uschi Backes-Gellner (University of Zurich) and Prof. Dr. Stefan Wolter (University of Bern).

Three Fields of Activities
- Research projects on the economics of vocational education and training (particularly apprenticeship training), firm behaviour and training policies
- Creation of an advanced study programme for young researchers (PhD students).
- Infrastructure-building for network activities.
Leading House

Economics of Education, Firm Behaviour and Training Policies

Organisational Features
- Financed by Swiss Federal Office for Professional Education and Technology (OPET) (→ 3 years)
- International evaluation after 3 years; extension subject to positive evaluation results

International Advisory Board (meetings at least once a year):
- Prof. Dr. Ludger Wössmann, University of Munich and ifo institute (Chairman)
- Prof. Stephen Machin, University College London
- Prof. Paul Ryan, King’s College London, University of London
- Prof. Catherine Sofer, Université der Paris - Sorbonne

Start
- November 1, 2005
I. Research Projects

6 internal
3 external
Overview: Research Projects and Researchers
- Project 1 -

Vocational Training and Firm Productivity

- Aims and purpose:
  - study the effects of vocational education (apprenticeship training) on the productivity of enterprises
  - Productivity gains (immediate or long-term) are crucial for companies willingness to supply apprenticeships
  - Productivity effects depend on different training motives (substitution vs. investment motive)

- Data and Methods
  - Development of an identification strategy of training motives in a linked employer-employee-data set (LIAB)
  - Analysis of (short-term and long-term) effects of training on productivity depending on training motive

- Results so far
  - 33% of companies train with pure substitution motive,
  - 40% with a pure investment motive
  - both seem to have positive productivity effects
  - Although multinational companies train less than domestic firms, their probability to train is higher if it is for investment motives (compared to substitution motive).
Overview: Research Projects and Researchers
- Project 1 -

Vocational Training and Firm Productivity

Researchers
- Uschi Backes-Gellner, University of Zurich
- Jens Mohrenweiser, University of Zurich
- Thomas Zwick, ZEW Mannheim (external senior researcher)

Publications and Working Papers on the topic:
  - analyzes signaling effect of apprenticeship training
  - significant positive effect
  - economically important
Overview: Research Projects and Researchers
- Project 2 -

Quality of Apprentices and Effect on Net Cost of Training – The Firm’s Perspective

Aims and purpose
- study the effects of differences of the quality of apprentices on cost-benefit ratio.
- Quality differences are measured by
  - formal indicators like
    - school marks before entering the apprenticeship training and
    - school marks at the final exams of the apprenticeship training
  - and subjective measures like the motivation or vocational skills of apprentices.
- All data are gathered at the firm level and the source of all information are the employers.

Results so far
- Differences in motivational and vocational skills of apprentices explain differences in the cost-benefit ratio between firms to a high degree
  → Importance of apprentice selection.
Overview: Research Projects and Researchers
- Project 2 -

Quality of Apprentices and Effect on Net Cost of Training – The Firm’s Perspective

Researchers

- Stefan C. Wolter, University of Bern.
- Samuel Mühlemann, University of Bern.
- Marc Fuhrer, University of Bern, Junior Assistant.

Publications and Working Papers on the Topic:
The project started at the beginning of 2007


Overview: Research Projects and Researchers
- Project 3 -

Regional Mismatches in the Demand for Apprentices

Aims and purpose
- use information on regional labour markets, the industry structure and the educational system to better explain the training decisions of firms and make statements about the future of the apprenticeship system.
- first papers uses cost-benefit-survey (2000) of the University of Bern.
- In a second phase we use matched data from 2000 and 2004 to replicate the findings, also with extensions in the econometric modelling.

Results so far
- firms are less likely to offer training if the number of competing firms situated in the same geographical area is high.
- much more important is
  - expected quality of potential apprentices,
  - development of full-time schooling options at upper secondary level and
  - quantitative supply of potential apprentices.
Overview: Research Projects and Researchers
- Project 3 -

Regional Mismatches in the Demand for Apprentices

Researchers

- Stefan C. Wolter, University of Bern.
- Samuel Mühlemann, University of Bern.

Publications and Working Papers on the Topic:

Overview: Research Projects and Researchers - Project 4 -

Economic Analysis of Causes and Consequences of Premature Termination of Apprenticeships

Aims and purpose

- study importance of and reasons for (ultimate) dropouts:
  - 10 - 23% of youths with an early termination stop any educational attainment afterwards (=ultimate dropouts)
  - ultimate dropouts often run into long term labour market problems.
- project studies the determinants of ultimate dropout behaviour:
  - Individual characteristics
  - Identification of risk groups
  - Impact of regional differences

Results so far

- individual characteristics:
  - ultimate dropouts are more short-term oriented than other apprentices who decide to finish their contract prematurely
  - current costs of an apprenticeship (including non-monetary costs like learning stress e.g. due to bad learning experience) seem to be more important than long-term benefits
- company and occupation characteristics are important too, but less important than individual characteristics
- in thinner labour markets there are fewer incentives to follow through with an apprenticeship (due to poorer expected match qualities after the apprenticeship)
Overview: Research Projects and Researchers
- Project 4 -

Economic Analysis of Causes and Consequences of Premature Termination of Apprenticeships

Researchers

- *Uschi Backes-Gellner*, University of Zurich
- *Donata Bessey*, University of Zurich

Publications and Working Papers on the Topic:

Returns to Training in Individual Employment Histories

- Comparison of individual outcomes of different paths of education
  - study *lifelong education paths* and the associated differences in returns between individuals with different educational backgrounds.
  - first results: individuals switching from vocational education back to general education (or vice versa) are *not* disadvantaged in terms of lifetime income (in comparison to people choosing a straight vocational or a straight general education path).

- Effects of specificity of human capital-investments on employer incentives to train and employee mobility
  - first results: 1. specificity of the firm’s and 2. the industry’s skill combinations and 3. external labour market thickness significantly affect (a) firm's incentive to invest and (b) life long mobility of skilled workers

- Vintage Effects in Human Capital Investments (Apprenticeships and Vocational Training)
  - study changes in skill demand and supply over time (vintage effects) and its labour market consequences.
  - are there vintage effects in returns to skills acquired in different occupations with different types of technology at different times?
Overview: Research Projects and Researchers
- Project 5 -

Returns to Training in Individual Employment Histories

Researchers

- Uschi Backes-Gellner, University of Zurich
- Simone Tuor, UCLA and University of Zurich
- Simon Janssen, University of Zurich
- Johannes Mure, University of Zurich

Publications and Working Papers on Topic 5:

Overview: Research Projects and Researchers

- Project 6 -

Analysis of Governmental Expenditures on Education

Research question, data problems and research design

- Question: What determines public investments in (vocational) education?
- previous research with data on compulsory schooling showed a large negative impact of proportion of elderly in a population on the willingness to spend public money on education
  - In light of the demographic changes ahead, the results are of high relevance for policy makers in the field of education.
- Research design: large scale, representative survey of Swiss voters is analyzed to assess the importance of socio-economic factors for the willingness to spend money on (vocational) education
  - depends on conservatism of elderly (minimize public spending in general)
Overview: Research Projects and Researchers
- Project 6 -

Analysis of Governmental Expenditures on Education

Researchers

- Stefan C. Wolter, University of Bern.
- Maria A. Cattaneo, SKBF and University of Zurich.

The survey starts in June 2007.

Publications and Working Papers on Topic 6:

External Projects
Overview: Research Projects and Researchers
- Project 7 -

Supply of Apprenticeships in Start-ups and Innovative Industries

- Call for Tender launched in fall 2006; project started spring 2007

- study what type of young (start-up) companies currently offer apprenticeship training and for what reasons.

- The project is run by Konjunkturforschungsstelle (KOF) of ETH Zürich.
- The project started February 2007 and ends July 2008.

Results so far
- probability to train apprentices is positively correlated with complementarities between academically educated employees (ratio) and apprenticeship supply;
- firm size does not seem to have its own impact
Overview: Research Projects and Researchers
- Project 8 -

- Project 8: Individual Returns to Vocational Education and Training – returns to changing occupations

- study individual benefits of vocational training while changing occupations (uses panel data: SAKE).
- The project is run by Eidgenössisches Hochschulinstitut für Berufsbildung (EHB), Zollikofen
- Senior Researcher: Jürg Schweri.
- The project started February 2007 and ends August 2008.

Results so far
- Occupational mobility of apprentices is widespread
- Occupational mobility is increasing
- is not generally negative for longterm prospects
Overview: Research Projects and Researchers
- Project 9 -

Apprenticeship Training and HRM Strategies in Swiss, German and British Companies - an International Comparison

- Aims and purpose
  - Study alternative sources of skills on an intermediate skill level
    - Apprenticeships
    - Recruitment of recent graduates
    - Upgrade training of less skilled employees
  - Study the effect of HRM-strategies, corporate ownership, finance on training activities
    - Hierarchy and Career Ladders
    - budgeting rules of firm and spending on (apprenticeship) training
    - host country versus home country „company cultur“-effects
  - Data
    - min. 20 case studies in two industries in three countries (=60 cases).
  - Industries
    - Mechanical Engineering, ICT, Banking, Retailing, Telecommunication services
Overview: Research Projects and Researchers - Project 9 -

Apprenticeship Training and HRM Strategies in Swiss, German and British Companies - an International Comparison


Researchers

- *Uschi Backes-Gellner*, University of Zurich
- *Johannes Mure*, Senior Researcher, University of Zurich
- *Paul Ryan*, University of London, Advisory Board Member.
- *Regula Geel*, University of Zurich, Junior Assistant.

Latest development in the project: extension to Japan

- Guest Professor: Prof. Shiho Futagami, Japan
Additional Projects of the Leading House financed by OPET

- 2nd „Cost-Benefit Survey“ (4500 training and non-training companies; 2004 – results expected for September 2007; Collaboration with Germany. BiBB will launch a new survey in 2008)
- Experimental test of vouchers for adult education (2006-2008)
Course Programme for Doctoral Students
## Course Programme for Doctoral Students

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<tr>
<th>Core Courses</th>
<th>Winter Term 2006/07</th>
<th>Summer Term 2007</th>
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<tr>
<td>Microeconomic Foundations of Economics of Education</td>
<td><strong>Prof. Dr. Ludger Woessmann</strong>, CESifo and Munich University</td>
<td><strong>Prof. Niels Westergaard-Nielsen</strong> &amp; <strong>Prof. Paul Bingley</strong>, Aarhus School of Business</td>
</tr>
<tr>
<td>Econometric Analyses in Economics of Education</td>
<td><strong>Prof. Dr. Rainer Winkelmann</strong>, UCLA and University of Zurich</td>
<td>Apr 16-20, 2007</td>
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<tr>
<td>Economics of Education and the Labour Market</td>
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<td><strong>Prof. Tor Eriksson</strong>, Aarhus School of Business</td>
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<td>Personnel Economics for Education Economists</td>
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<td>May 21-25, 2007</td>
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**Course Programme for Doctoral Students**

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<th>Electives</th>
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<tbody>
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<td><strong>Winter Term 2006/07</strong></td>
<td>Lecture Introduction to the Economics of Education</td>
<td><em>Prof. Dr. Stefan C. Wolter,</em> University of Bern</td>
<td>Oct 24 - Jan 23, 2007</td>
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<td></td>
<td>Literature Seminar: Empirical Analysis of Rates of Return to Education</td>
<td><em>Prof. Dr. Uschi Backes-Gellner,</em> University of Zurich</td>
<td>Oct 23 - Feb 05, 2007</td>
</tr>
<tr>
<td><strong>Summer Term 2007</strong></td>
<td>Scholarly Writing</td>
<td><em>Prof. Dr. Uschi Backes-Gellner,</em> Guest lectures by Prof. Dr. Ernst Fehr, Prof. Dr. Josef Zweimüller, Zurich</td>
<td>June 18 - 21, 2007</td>
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# Course Programme for Doctoral Students

## Electives

<table>
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<tr>
<th>Term</th>
<th>Course</th>
<th>Instructor(s)</th>
<th>Dates</th>
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<tbody>
<tr>
<td>Fall Term 2007</td>
<td>Programme Evaluation</td>
<td>Prof. Guido Imbens, Harvard University</td>
<td>September 10-13, 2007</td>
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<tr>
<td></td>
<td>Literature Seminar on Economics of Education</td>
<td>Prof. Dr. Uschi Backes-Gellner, University of Zurich</td>
<td>Sept 17- Dec 17, 2007</td>
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<tr>
<td></td>
<td>Proposal Writing and Proposal Presentation</td>
<td>Prof. U. Backes-Gellner and Prof. Dr. Kerstin Pull, University of Tübingen</td>
<td>November 12-16, 2007</td>
</tr>
<tr>
<td>Spring Term 2008</td>
<td>Vocational Education and Training Institutions: Theories and Evidence</td>
<td>Prof. Paul Ryan, University of London</td>
<td>March 31 - April 04, 2008</td>
</tr>
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<td></td>
<td>Vocational Education in Switzerland: Institutions and Data</td>
<td>Prof. Dr. Stefan C. Wolter, University of Bern</td>
<td>tba.</td>
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<td></td>
<td>Research Colloquium</td>
<td>Prof. Dr. Uschi Backes-Gellner and Prof. Dr. Stefan C. Wolter</td>
<td>April 2008</td>
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</tbody>
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# Course Programme for Doctoral Students

Participants from Leading House, from other Swiss Institutions and from Abroad

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution 1</th>
<th>Position/Institution 2</th>
<th>Institution 3</th>
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<tbody>
<tr>
<td>Ammann, Carolin</td>
<td>TU München</td>
<td>Prof. Dr. Robert von Weizsäcker</td>
<td>Universität Zürich</td>
</tr>
<tr>
<td>Bessey, Donata</td>
<td>Universität Zürich</td>
<td>Prof. Dr. Uschi Backes-Gellner</td>
<td>Universität Zürich</td>
</tr>
<tr>
<td>Birkenfeld, Florian</td>
<td>Universität Passau</td>
<td>Prof. Dr. Gerhard Kleinherz</td>
<td>Universität Bern</td>
</tr>
<tr>
<td>Dr. Bossi, Fabio</td>
<td>Instituto di Ricerche</td>
<td>Dr. Spyros Arvanitis</td>
<td>ZEW Mannheim</td>
</tr>
<tr>
<td>Brandenburg, Bianca</td>
<td>IFW Halle</td>
<td>Prof. Michael Burda, Ph.D.</td>
<td>EHB</td>
</tr>
<tr>
<td>Coneus, Katja</td>
<td>ZEW Mannheim</td>
<td>PD Dr. Alexander Kemnitz</td>
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<tr>
<td>Denzler, Stefan</td>
<td>SKBF</td>
<td>Prof. Dr. Stefan Wolter</td>
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<tr>
<td>Eisenkopf, Gerald</td>
<td>Universität Konstanz</td>
<td>Prof. Dr. Uschi Backes-Gellner</td>
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<tr>
<td>Foureaux Koppensteiner,</td>
<td>Queen Mary University</td>
<td>Ass.-Prof. Dr. Imran Rasul</td>
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<td></td>
<td>of London</td>
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<tr>
<td>Görlitz, Katja</td>
<td>RWI Essen</td>
<td>Prof. Dr. Christoph Schmidt</td>
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<tr>
<td>Hyll, Walter</td>
<td>Universität Klagenfurt</td>
<td>Prof. Dr. Bodenhöfer</td>
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<tr>
<td>Janßen, Simon</td>
<td>Universität Zürich</td>
<td>Prof. Dr. Uschi Backes-Gellner</td>
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<tr>
<td>Kull, Miriam</td>
<td>SKBF</td>
<td>Prof. Dr. Stefan Wolter</td>
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<tr>
<td>La Faucci, Manuela</td>
<td>Universität Fribourg</td>
<td>Prof. Dr. Bernard Dafflon</td>
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Networking
Networking: Conference Presentations

Target Group: Scientific Community – Scientific Conference Presentations -

Research has been presented at the following international conferences:

- European Society for Population Economics (ESPE), Verona, Italy
- European Economic Association (EEA), Vienna, Austria
- European Association for Labour Economics (EALE), Prague, Czechia
- Canadian Economics Association, Halifax, Canada
- Scottish Economic Society Annual Meeting (SES), Perth, Scotland
- Society for the Advancement of Socio-Economics (SASE), Trier, Germany
- European Educational Research Association (EERA), Geneva, Switzerland
- Annual Conference of German Economic Association (VfS), Bayreuth, Germany
- Annual Meeting of Economics of Education Session of the German Economic Association (VfS), Konstanz, Ger.
- Annual Conference of German Association of Business Economists (VHB), Dresden, Germany
- Colloquium on Personnel Economics, Zurich
- 12th meeting of the IAB Establishment-Panel Research Group on the Economics of Vocational Training, Zurich
- Spring Meeting of Young Economists, Hamburg, Germany
- European Science Days, Steyr, Austria.
- Colloquium on Personnel Economics, Tübingen, Germany
- Spring Meeting of Young Economists, Sevilla
- IAB Panel Data User Conference, Nuremberg, Germany
Networking: Conference Presentations

Target Group: Scientific Community – Invited Speakers, Guest Lectures –

- Prof. Joshua Angrist (MIT) taught a seminar in January 2006.
- Prof. Edward P. Lazear (Stanford) presented a paper in September 2006.
- Prof. Dr. Ludger Wößmann, CESifo and University of Munich, taught a seminar (Microeconomic Foundations of Economics of Education) in November 2006.
- Prof. Dr. Rainer Winkelmann, UCLA and University of Zurich, taught a seminar (Econometric Analyses in Economics of Education) in January 2007.
- Prof. Paul Ryan guided a workshop for Leading House researchers in April 2007.
- Prof. Niels Westergaard-Nielsen and Prof. Paul Bingley, Aarhus School of Business taught a seminar (Economics of Education and the Labour Market) in April 2007.
- Prof. Tor Eriksson, Aarhus School of Business, teaches a seminar (Personnel Economics for Education Economists) in Zurich in May 2007.
- Prof. Dr. Kerstin Pull, University of Tübingen, Guest Professor October to December 2007
- Prof. Shiho Futagami, Yokohama National University, Guest Professor August 2007 to August 2008 (Comparative Project on Training in Japan, Switzerland, Germany and Great Britain)
Networking: Conference Presentations

Target Group: Practitioners

- Meeting of the Business Colleges Zurich (Kaufmännische Vereinigung (KV), Zürich)
- Annual Meeting of Rectors of Business Colleges (Rolle)
- Meeting of Economic Commission of the Cantonal Parliament of Solothurn
- Annual Conference of the Swiss Metal Union (Berne)
- Annual Conference of the German Institute for Vocational Training (BIBB) on „Costs, Benefits and Financing of Vocational Training“, Bonn, Germany.
Networking: Organization of Conferences and Workshops

The Following Conferences and Workshops have been organized by or in cooperation with the Leading House:

- Colloquium on Personnel Economics, Zurich, March 2006.
- Network Meeting of labour economists, Tübingen, Germany, October 2006
- The Meeting of the Advisory Board took place in November 2006 in Zurich.
- Start of the course programme for doctoral students in economics of education, November 2006.
- Annual meeting of the economics of education session of the German economic association, Bielefeld, Germany, March 2007.
- Workshop guided by Prof. Paul Ryan for the Leading House researchers, April 2007.
- Presentation of the results of the second Cost-Benefit-Survey (national press conference), May 2007.
Further Planning and Scheduled Activities
Further Planning and Scheduled Activities

2007

- Further research presentations at national and international conferences.
- Annual Conference of German Economic Association (VfS), Munich, October 2007:
  - Keynote speech Stefan Wolter, and
  - Organisation of an “invited panel” on the future of vocational training
    (Organiser: Uschi Backes-Gellner, Participants: Dr. Ursula Renold, OPET, PD Dr. Thomas Zwick, ZEW and Zurich, Chairmen: Dr. Karen Horn, FAZ).
- Further courses in the study programme for doctoral students.

2008

- Host to the annual meeting of the ‘economics of education session’ of the German Economic Association (VfS) on “vocational education and apprenticeship training”, University of Bern, April 2008.
- Organisation of an international workshop for young economics of education researchers, Zurich, June 2008 (Pre-Conference to International Conference of Leading House).
- Leading House Lectures (distinguished guest speakers, 2 x per semester)
- Prof. Paul Ryan, King’s College and University of London, will teach a course on Vocational Education and Training Institutions: Theory and Evidence in Zurich in April 2008.
Publication Output of Network Activities

Three Strategies:

1. **Special Issues of Established Journals (Conference Output)**
   - Special Issue of the “Journal of Labour Market Research (Zeitschrift für Arbeitsmarktforschung, ZAF)” on “Socio-Economic Analyses of Apprenticeship and Further Training in Germany and Switzerland”, Fall 2007 (Results of Conference in Fall 2006)
   - Special Issue of international Journal on Conference in July 2007

2. **Working Paper Series**
   - Results of Work in Progress
   - Leading House Lectures etc.
Regional Effects on Employer Provided Training: Evidence from Apprenticeship Training in Switzerland

Samuel Mühlemann and Stefan C. Wolter
Last but not least:

3. Internet

in March 2006 the homepage of the Leading House went online

www.economics-of-education.ch

connecting the Leading House to the international economics of education community.
Thank you for your attention!