The FDZ at UM: Access to German Labor Market Data at the University of Michigan

Princeton University, Dec 8th, 2011

Stefan Bender
Joerg Heining
1. The FDZ

- FDZ: Research Data Center of the German Federal Employment Agency (BA)
- Located at the Institute for Employment Research (IAB) in Nuremberg, Germany
- Established in 2004
- Since 2011: Field Office at UM’s Institute for Social Research (ISR) in Ann Arbor
1. The FDZ

- Micro labor market data on individuals/households and establishments
1. The FDZ

- **Availability**
  - On-site: Confidential microdata
  - Off-site: De-facto anonymised microdata
  - Fully anonymised microdata

**Degree of analysis potential**
- Complete microdata
- Anonymisation method
- Stronger anonymisation method

Available at FDZ
Agenda

1. The FDZ
2. The FDZ at UM
3. Administrative Data
4. Data available at the FDZ
5. Demand for Data
6. Data Access
7. Other Services Provided by the FDZ
2. The FDZ at UM

- **RDC-in-RDC approach:**
  - Comparable standards in nearly all RDCs over the world
  - Access to BA/IAB data can be granted from other RDCs or comparable institutions

- in Germany

- and **abroad:**

  **MICDA Enclave at ISR in Ann Arbor**

- Funding provided by Federal Ministry of Education and Research
2. The FDZ at UM

Technical Implementation: Citrix thin client solution

- Terminal Server with RDC Data
- Management Server
- Thin Client
  - ICA connection using a Citrix Access Gateway
  - Connection to Management Server

Locations:
- Ann Arbor, Mi
- Bremen
- Berlin
- Dresden
- Nuremberg
- Düsseldorf
3. Administrative Data

Social Security Notifications

- **Procedure**
  - Employers notify to the social security system
  - For every employee and marginal worker covered by the social security system (notification requirement)
  - Annually. Or: Begin or end of employment, employment interruption, change of health insurance
  - Identification: social security number and establishment number

- **Intention of data collection**
  - Calculation of social security contributions and (unemployment) benefits
  - Statistics
Meldung

Notification to the Social Security System:

- Social Security Number
- Establishment Number
- Last Name
- First Name
- Address
- Reason for Notification
- Times of Employment (on a daily basis)
- Nationality
- School Education
- Vocational Training
- Type of Employment
- Wages
- Occupational Status
3. Administrative Data

- No information about civil servants, freelancers or self-employed

- Internal processes of the Federal Employment Agency
  - Payment/Receipt of unemployment benefits
  - Participation in labour market programs
  - Registered job search

- Exact start and end dates
- Computer-aided processes
3. Administrative Data

- Federal Employment Agency transmits data to IAB
- IAB merges social security notifications and BA data
  ⇒ (complete) individual employment biographies

apprenticeship → pension

Employment history covered by social security system (since 1975)
Unemployment benefit receipt (since 1975)
Registered job search (since 2000)
Participation in labor market programs (since 2000)
4. Data available at the FDZ - SIAB

Sample of Integrated Labour Market Biographies (SIAB)

- Approximately 2 % random sample drawn from the Integrated Employment Biographies of the IAB

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<tbody>
<tr>
<td>Time reference</td>
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<td><strong>Socio-demographic characteristics (examples):</strong></td>
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<td>Gender, year of birth, nationality, marital status, number of children, school leaving qualification, etc.</td>
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### 4. Data available at the FDZ - SIAB

<table>
<thead>
<tr>
<th>Topics (continued)</th>
<th>Information on employment, benefit receipt, job search (examples): Begin and end of employment, benefit receipt and job search, daily wage, daily benefit rate, occupation, termination of last job, etc.</th>
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<tr>
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<td><strong>Information on location (examples):</strong> Place of residence, place of work (federal state, county, regional directorate, employment agency)</td>
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<td><strong>Information on establishments (examples):</strong> Branch of industry, total number of employees, median wage of the establishment, etc. ⇒ <strong>Establishment History Panel</strong></td>
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4. Data available at the FDZ - BHP

Establishment History Panel (BHP)

- Cross sectional dataset on all establishments in Germany with
  - at least one employee liable to social security (until 1998)
  - since 1999 also with at least one marginal worker

- Aggregations of the individual administrative data by establishment ids

- May be combined with SIAB

- 50% random sample or random sample stratified by 8 establishment sizes
4. Data available at the FDZ - BHP

| Period covered       | West-Germany: 1975 - 2008  
|                     | East-Germany: 1992 - 2008  |
| Time reference      | June 30                    |
| Number of cases     | Between approx. 650,000 and 1.3 million establishments p.a.  
|                     | (in the samples)            |
| Topics              | **Establishment information (examples):**  
|                     | • Total number of employees  
|                     | • Number of employees by main occupation  
|                     | • Employee age structure  
|                     | • Division of employees by educational and vocational qualifications  
|                     | • Wage structure of full-time employees  
|                     | • Branch of industry  
|                     | • Number of inflows and outflows  
|                     | • Classification of establishment entry and exit  
|                     | • Etc.                      |
4. Data available at the FDZ – Establishment Panel

IAB Establishment Panel

- Annual establishment survey
  - West-Germany since 1993, East-Germany 1996
  - Representative on federal state level since 2001

- Tries to follow establishments continuously over time

- Sample, stratified according to establishment size, industry and federal state \(\Rightarrow\) weights

- Annually repeated topics, special focus every year
4. Data available at the FDZ – Establishment Panel

| Period covered      | West Germany: 1993 to 2009          
|                    | East Germany: 1996 to 2009          |
| Time reference     | June 30                              |
| Number of cases    | Between 4,265 and approx. 16,000 establishments per year |
| Topics             | **Annually repeated topics (examples):** |
|                    | • General company information        |
|                    | • Development of employment,         |
|                    | • Business policy and development,   |
|                    | • Investments, in-house innovations, |
|                    | • Government subsidies,              |
|                    | • Vocational training and apprenticeship places, |
|                    | • Recruitments and dismissals,       |
|                    | • Wages,                             |
|                    | • Etc.                               |
4. Data available at the FDZ – LIAB

Linked-Employer-Employee Data (LIAB)

- **IAB Establishment Panel** matched with individual data from the Integrated Employment Biographies

- Simultaneous analysis of the supply and demand sides of the German labour market

- May be combined with **Establishment History Panel**
4. Data available at the FDZ – LIAB

- Two different models:
  - LIAB cross-sectional model:
    The cross-sectional LIAB model contains both information on individuals and data from the IAB Establishment Panel matched on a specific reference date (June 30).
  - LIAB longitudinal model:
    The data in the longitudinal LIAB model are not referenced to a specific date, but contains personal details related to a certain period of time.
4. Data available at the FDZ – PASS

Panel ‘Labour Market and Social Security’ (PASS)

- Annual household survey started in 2006/2007: Labor market and poverty situation in Germany
- Situation of recipients of benefits in accordance with the German Social Code Book II (recipients of Unemployment Benefit II (“Hartz IV”))
- Two random samples from two partial populations:
  - Persons and households in receipt of Unemployment Benefit II
  - All persons and households registered as residents of Germany
4. Data available at the FDZ – PASS

- First wave of the panel study was continued.

- Refreshment samples of households that newly claimed Unemployment Benefit II were drawn.

- Four waves are now available

- Combined data: PASS – administrative data
4. Data available at the FDZ – ALWA

Working and Learning in a Changing World (ALWA)

- Survey which contains information about more than 10,400 life histories

- Allows longitudinal analysis of
  - Schooling and training decisions
  - Labor market re-entries and labor market behavior
  - Processes of family formation
  - Regional mobility
  - Competence tests

- Combined data: ALWA – administrative data
4. Data available at the FDZ – in the future

- Geo coded data (total population)

- Patent data:
  - Data from the German Patent and Trade Mark Office (DPMA) linked to administrative data of IAB
  - Name and address of inventors for all registered patents in 2002

- Data of the Deutsche Bundesbank: Foreign Direct Investments, Annual Financial Statements

- Data on short-time allowance/work (individuals only Nuremberg region)

- Commercial business data (Bureau van Dijke)
4. Data available at the FDZ – in the future

- Health data (LIDA)
- Educational data (National Education Panel Study)
- Social security data from other countries combined with German administrative data
- Multinationals
5. Demand for Data - Projects

Number of New Projects
(in total, including on-site and off-site use)

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<tr>
<th>Year</th>
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<td>2010</td>
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5. Demand for Data – Journals

- American Economic Review
- Quarterly Journal of Economics
- The Review of Economics and Statistics
- European Economic Review
- Journal of Business and Economic Statistics
- The Scandinavian Journal of Economics
- Journal of Labor Economics
- Journal of Urban Economics
- Labor Economics
- Journal of Population Economics
- and many more
## 6. Data Access

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<th>On-Site Use</th>
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<td>Weakly anonymous (= confidential)</td>
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### 6. Data Access

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* combined data
6. Data Access

- Easy, Quick and Cheap

- Easy
  - Non-technical project proposal
  - Approval by RDC (off-site use) or Federal Ministry (on-site use)
  - Use agreement with the institution of the researcher

- Quick
  - (Estimated) Time until user/institution receives contract:
    - 2 weeks for off-site use (scientific use file)
    - 4 weeks for on-site use
6. Data Access

- **Cheap**
  - Data access is free of charge
  - No lab fees
  - No restrictions on hours/visits of on-site use facilities or runs of remote executions
  - Financial support
7. Other Services Provided by the FDZ

- Software available at the Ann Arbor site: Stata, TSP, MatLab, Gauss, R
- Remote Execution after on-site use
- Documentation
- Consultation and Assistance
  - Application Process/Proposal
  - Data issues
  - Preliminary Evaluations
  - Cooperation
- Financial support
Joerg Heining
University of Michigan
Institute for Social Research
330 Liberty Street, Room 4027
Ann Arbor, MI, 48104
734-763-2348
joerg.heining@iab.de
IAB Establishment Panel

Number of interviewed Establishments

- West-Germany
- East-Germany
IAB Establishment Panel

Special topics:

1994: Contact with the employment agency
1997: Business start-ups; recruitment of skilled labour
1998: Investments abroad
1999: Progressive retirement and pre-retirement; share of turnover in environmentally protective goods; revision of the DM 630 job regulation
2000: Skilled worker demand; elderly employees; financial incentives for employees
2001: Computer and Internet equipment; staff shares and profit-sharing
2002: Elderly employees; health protection; equal opportunities; contact with the employment agency
2003: Operational flexibility
2004: Personnel structure (senior management), working hours
2005: Environmentally protective goods, personnel recruitment
2006: Job security and locational security of industries
2007: Future staffing for qualified employees
2008: Job security and locational security of industries, equal opportunities
2009: Types of employment, vocational training and apprenticeship
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*Evaluable cross-sectional cases: 4265*
Linked Employer-Employee Data (LIAB)

- LIAB cross-sectional model

- IAB Establishment Panel: all establishments of the IAB Establishment Panel
  - Establishments: 4,114 to 16,280 per year, 46,182 in total

- All observations on employment, benefit receipt and job search on the reference date June 30th,

- Includes all individuals employed in an establishment of the IAB Establishment on that date

- Individuals: 1,885,684 to 2,586,048 per year, 9,784,888 in total
Linked Employer-Employee Data (LIAB)

- **Longitudinal Model 1**

- Observations of the IAB Establishment Panel that participated in the survey without gap from 1999 to 2001
- Only those with good matching quality
  - 2,100 establishments in East- and West-Germany respectively

- All individuals who were employed in one of the selected establishments between 01.01.1996 and 31.12.2002 for at least one day
- All observations on employment and benefit receipt from 1990 to 2006
  - Approximately 1,9 million individuals
Linked Employer-Employee Data (LIAB)

- **Longitudinal Model 1**

  Establishments in the IAB Establishment Panel from 1999 to 2001

  Employees from 1996 to 2002

  Employment histories from 1990 to 2006
Linked Employer-Employee Data (LIAB)

- **Longitudinal Model 2**
  - Observations of the IAB Establishment Panel that participated in the survey without gap from 2000 to 2002
  - Plus establishments already included in model 1
  - Only those with good matching quality
  - 4,360 establishments in East- and 5,293 in West-Germany

- All individuals who were employed in one of the selected establishments between 01.01.1997 and 31.12.2003 for at least one day
- All observations on employment and benefit receipt from 1993 to 2006
  - Approximately 3,6 million individuals
Linked Employer-Employee Data (LIAB)

- Longitudinal Model 2

Establishments in the IAB Establishment Panel from 2000 to 2002

Employees from 1997 to 2003

Employment histories from 1993 to 2006
Linked Employer-Employee Data (LIAB)

- **Longitudinal Model 3**

- Observations of the IAB Establishment Panel that participated in the survey without gap from 1996 to 2005
- Only those with good matching quality
  - Approximately 2,300 establishments

- All individuals who were employed in one of the selected establishments between 01.01.1993 and 31.12.2006 for at least one day
- All observations on employment and benefit receipt from 1993 to 2006
  - Approximately 1.8 million individuals
Linked Employer-Employee Data (LIAB)

- Longitudinal Model 3

Establishments in the IAB Establishment Panel from 1996 to 2005

Employees from 1993 to 2006

Employment histories from 1993 to 2006

Panel Study „Labour Market and Social Security“

Wave 1:
Recipients of Unemployment Benefit II in 7/2006:
Sample I: 9,386 individuals (living in 6,804 households)

Residents in Germany:
Sample II: 9,568 individuals (living in 5,990 households)

Wave 2:
Sample I: 4,753 individuals (living in 3,491 households)
Sample II: 6,392 individuals (living in 3,897 households)

Recipients and Residents in 7/2007 but without receipt in 7/2006:
Sample III: 1,342 individuals (living in 1,041 households)
Panel Study „Labour Market and Social Security“

Wave 3:

Sample I: 4,913 individuals (living in 3,754 households)
Sample II: 6,207 individuals (living in 3,901 households)
Sample III: 898 individuals (living in 694 households)

Residents and recipients in 07/2008 but without receipt in 07/2006 and 07/2007:
Sample IV: 1,421 individuals (living in 1,186 households)
The Unemployment Insurance System in Germany

Until 1984:

- Unemployment benefits (UB, „Arbeitslosengeld“):
  - Potential duration of UB: up to 12 months
  - Duration depends on the number of months worked in the base period prior to unemployment (least 12 months in the previous 3 years)
  - 68% of the last net wage, not means tested
- After UB, unemployment assistance (UA, Arbeitslosenhilfe)
  - Unlimited duration
  - 58% of the last net wage, other sources of income are subtracted
  - Means tested, reviewed once a year
- In case supplemented with social assistance (social welfare, „Sozialhilfe“)
The Unemployment Insurance System in Germany

1984 to 1987
- 1984: replacement rates were lowered for individuals without children (UB: 68 – 63%, UA: 58 – 53%)
- Expansion of UB durations for workers with higher experience levels ⇒ age dependency

1988 to 1997
- Fairly stable, only slight decrease in the replacement rate in 1994

1997 to 2004
- Potential UB durations were lowered for older individuals
- Age requirements for higher UB durations increased by 3 years
- Stricter sanction rules were introduced
The Unemployment Insurance System in Germany since 2005

- Unemployment benefits (UB, “Arbeitslosengeld”) for the first 6 to 12 months.
- Duration depends on age and the number of months worked in a base period prior to unemployment.
- 67% of income prior to unemployment (60% without children).

- After UB has expired: Arbeitslosengeld II (UB II, “Hartz IV”).
- Lump-sum, not earnings-based and means-tested.
- Less generous than former social assistance (welfare).
- Unlimited duration.
Data on Short-time Work

Short-time work/short-time allowance ("Kurzarbeit/Kurzarbeitergeld"):  
- Labor market program in Germany  
- Intended to avoid lay-offs during a temporary decline of business activity

Idea:  
- Temporary reductions of working hours (involuntary)  
- Government (partially) compensates wage loss of short-time workers ⇒ short-time allowance  
- Employer continues to pay all social security contributions for the affected workers
Data on Short-time Work

- Three types of short-time allowance in Germany:
  - Seasonal short-time allowance
  - „Transfer“ short-time allowance
  - Cyclical short-time allowance (due to economic trends)

Eligibility requirements:
- Substantial decline in business activity due to economic reasons (or an unpreventable event)
- Temporary decline in business activity (working hours)
- Decline in business activity is inevitable
- At least 1/3 of all employees in an establishment have to experience a 10% reduction in their gross pay
Data on Short-time Work

- Cyclical short-time allowance was promoted by the federal government during the economic crisis in 2009 and 2010 (“Konjunkturpakete I and II”):
  - Several extensions of the maximum length of entitlement (6 to 24 months, currently 12 months)
  - 10% decline in business activity (working hours) is regarded substantial
  - Suspension of “1/3 rule”
  - Reimbursement of social security contributions to the employers (since February 2009: 50%, since July 2009: 100% as of the 7th month of short-time work)
Data on Short-time Work

- Establishments apply for short-time work at the local field office of the Federal Employment Agency
- Monthly data on the establishment level
Data on Short-time Work

- IT systems of the Federal Employment agency do not allow to identify the recipients of short-time allowance
- Paper lists of affected workers are submitted monthly by establishments
- FDZ project to identify recipients of short-time allowance
  - in one region: Nuremberg (city)
  - for June 2008 to June 2010
- Manually copying/typewriting the information contained in the paper lists to a data base
Data on Short-time Work

Individual data on short-time workers:

- About 74,000 records
- 741 establishments
- 14,495 individuals
- Not included yet: establishments with more than 1,000 short-time workers \( \Rightarrow \) CD

- Future project: Combining data of individual short-time work data with administrative data
Procedure of Social Security Notifications (simplified)

- Establishments/Employers
- Receiving offices of the notification procedure (health insurance companies)
- German Federal Pension Fund
- Federal Employment Agency