

Linked Employer-Employee Data (LIAB)

IAB-Workshop

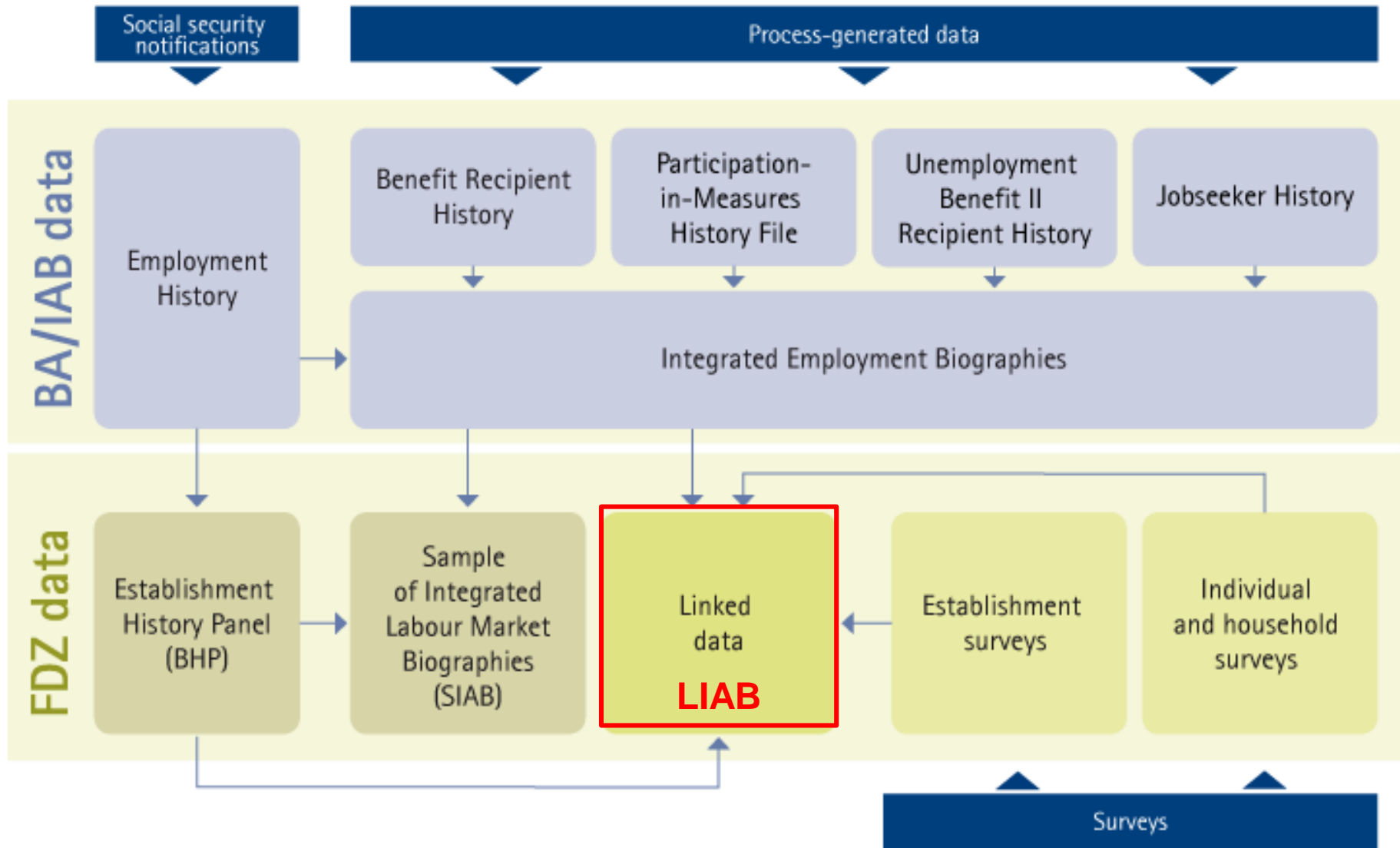
Data treasures at the Institute for
Employment Research

2014-01-23

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- Data overview
- LIAB in general
- Linkage
- Models of LIAB
- Research with LIAB
- Data access and further informations

1. Data Overview



Combination of

- establishment data (BP)
 - yearly survey of approx. 16.000 establishments
 - information about interviewed establishments with changing topics

and

- individual data (IEB)
 - employment biographies of working individuals from social security and administrative data
- rich set of socio-demographic variables

Linked Employer Employee Data

→ simultaneous analyses of
supply and demand side
of labour market

How can we connect these two data sources?

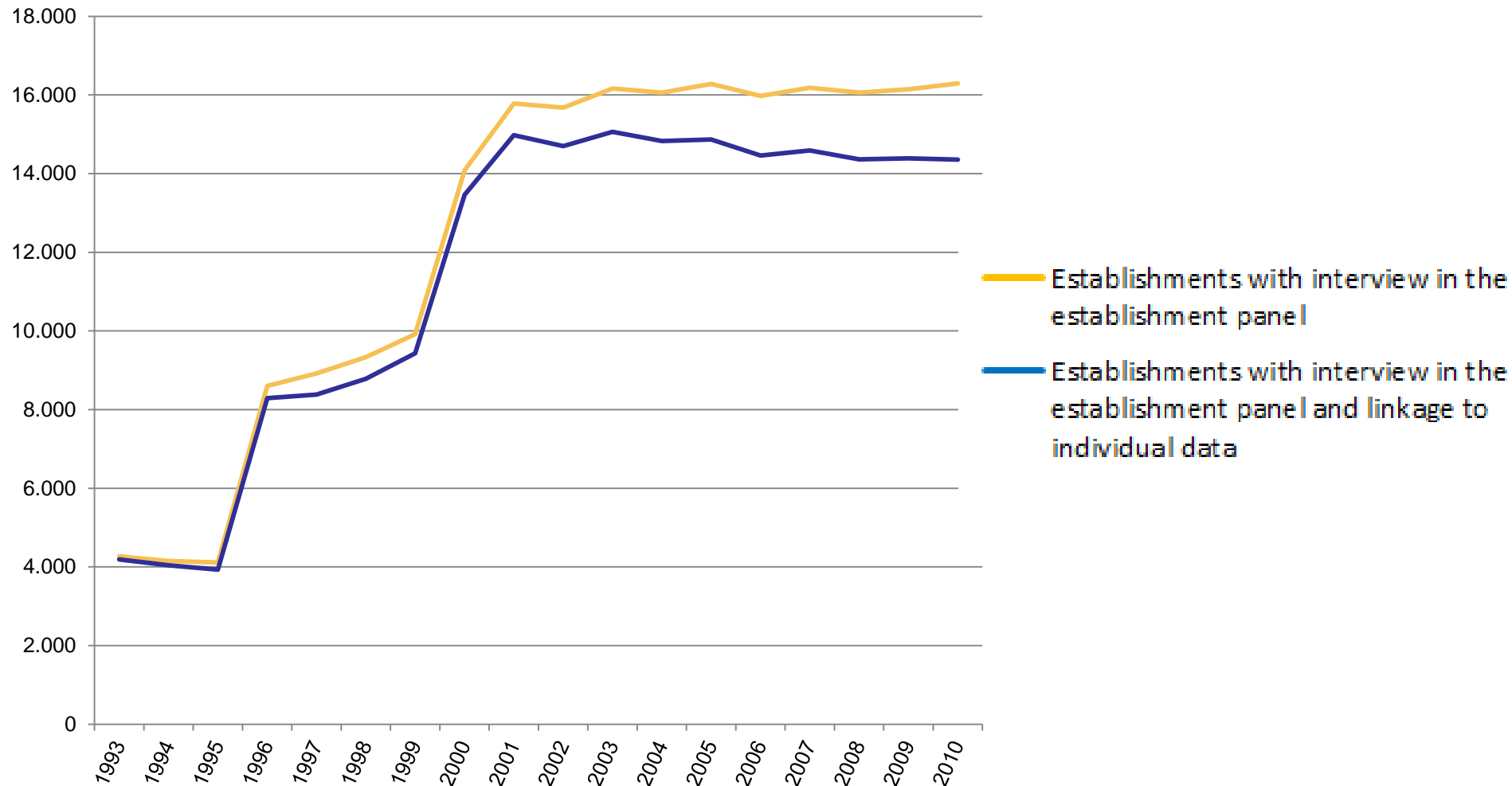


- What is the establishment number (EID)?
 - numerical identifier of notifying establishment, in which the respective individual is working
- Inclusion in individual data (IEB):
 - is required in notification process to the social security institutions in Germany
- Inclusion in Establishment Panel (BP):
 - is sampled from establishment file of Federal Employment Agency
 - contains universe of establishments including EID with at least one employee liable to social security

EID is only asked in first interview in the BP

- no adjustment of the EID for establishments asked a second time
 - Example: Change of EID because of new owner in 2000
- starting with wave 2000, false or no individual data is possibly linked with establishment data

3.2 Linkage quality

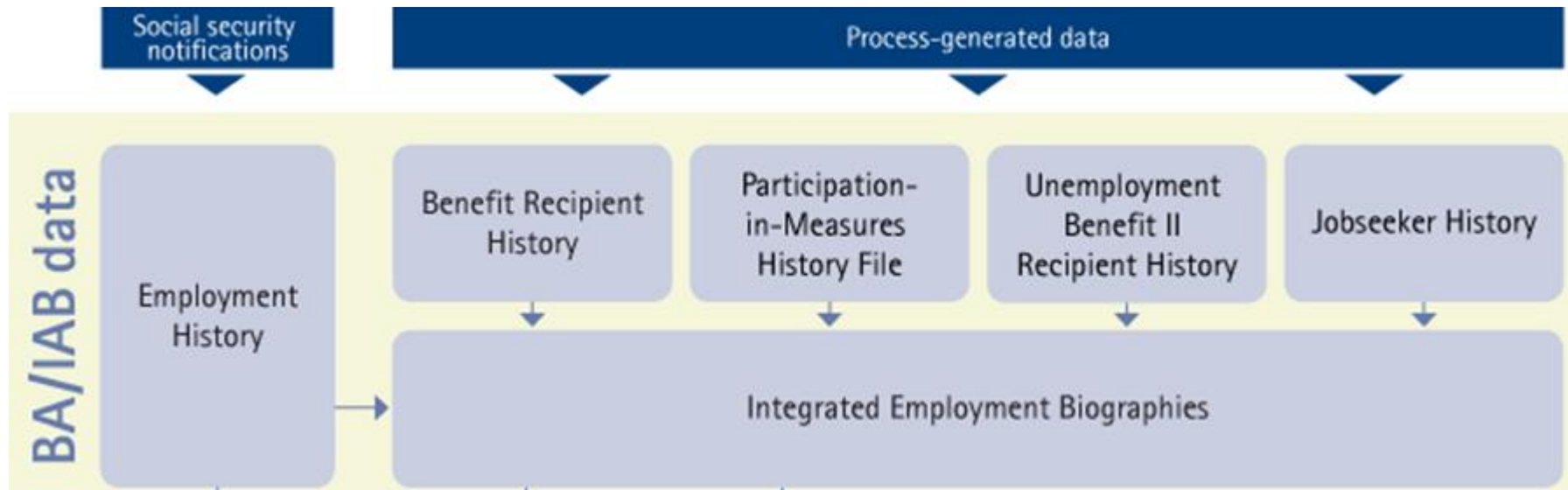


- Linked establishments : 4,188 bis 14,981 per year

Two different data models

- LIAB Cross-sectional Model (QM)
 - current model: Cross-sectional Model 2 1993 to 2010 (QM 2 9310)
 - updated every two years
- LIAB Longitudinal Model (LM)
 - new model: Longitudinal Model 1993 to 2010 (LM 9310)
 - Mover-Modell (MM 9308)
no more updates

5. Cross-sectional Model (QM2 9310)



- Cross-sectional Model 2 1993 to 2010 (QM 2 9310)
 - **annual** linkage of individual and establishment data on **reference date** (30 June) of respective year
 - Individual data base: BeH, LeH, (X)ASU, (X)LHG

- Step 1: Selection of Establishments (from BP)
 - all establishments with valid interview in respective year
- Step 2: Selection of individual data (from IEB)
 - all individuals, employed at one of these selected establishments at least one day
 - for these individuals only episodes which contain 30 June of respective year

→ identical procedure for every year (1993-2010)

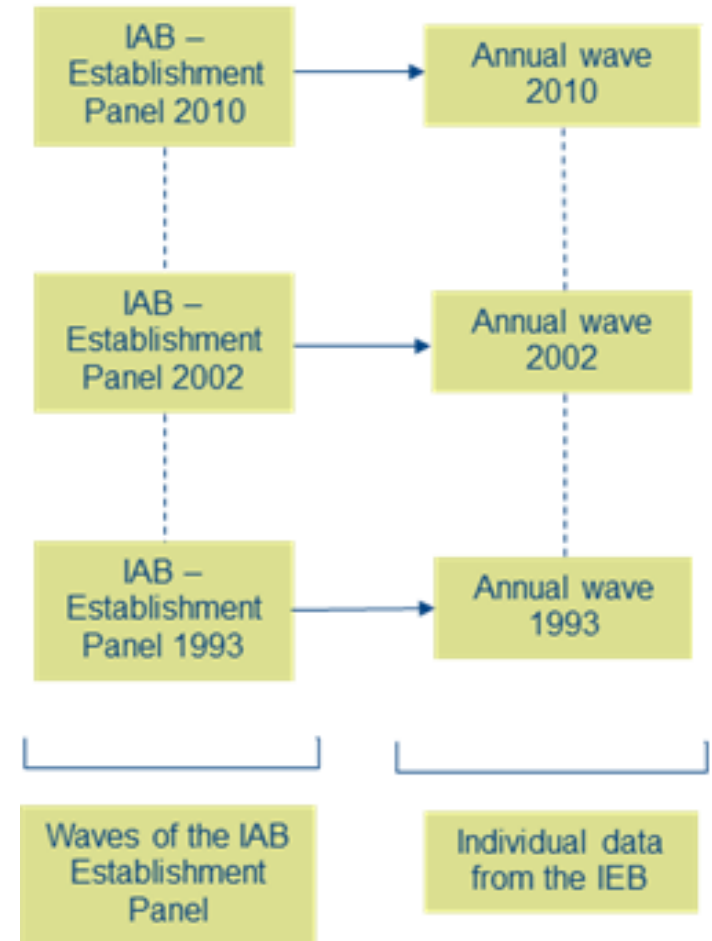
Linked Establishments: 4,188 to 14,981 per year

Individuals: 1,629,542 to 2,584,520 per year

5.2 Structure and size of QM2 9310

→ Linkage via EID

- Storage:
 - IAB Establishment Panel: 2 to 10 MB per year
 - Individual data: 180 to 270 MB per year



5.3 Example of linkage QM2 9310

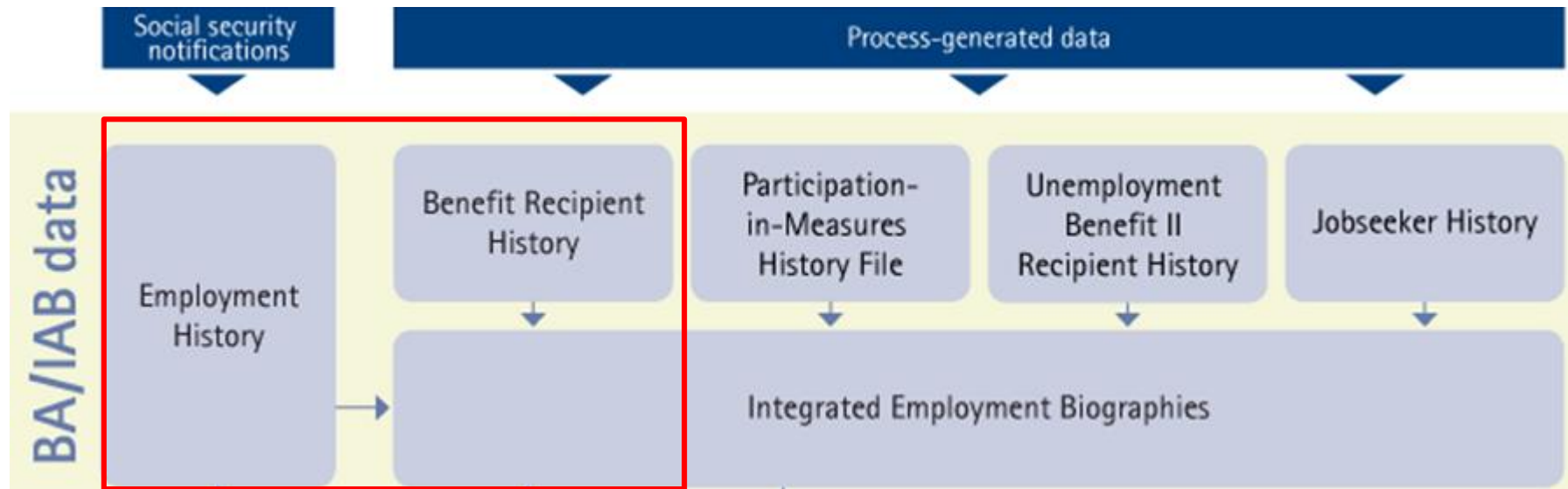
Establishment Panel

| EID | wave 2005 |
|-----|--------------|
| 1 | interview |
| 2 | interview |
| 3 | no interview |

data on individuals

| EID | persnr | start_date | end_date | |
|-----|--------|------------|------------|----|
| 1 | 20 | 01.01.2005 | 31.12.2005 | |
| 1 | 21 | 15.02.2005 | 31.10.2005 | |
| .z | 21 | 01.05.2005 | 30.08.2005 | * |
| 1 | 22 | 01.01.2005 | 31.12.2005 | |
| 2 | 42 | 31.03.2005 | 17.09.2005 | |
| 2 | 43 | 01.01.2005 | 31.12.2005 | |
| 3 | 43 | 01.06.2005 | 31.07.2005 | ** |

- * parallel employment in non-BP-establishments
- ** parallel employment in an BP-Establishment which was not selected for LIAB



- Longitudinal Model LM 9310
 - Individual data of IEB **continuously** available across observation period
 - illustration of complete employment biographies
 - Individual data base: BeH, LeH
- Mover Model 9308 MM 9308
 - focus on persons who changed the employer
 - data base: BeH LeH (X)LHG (X)ASU
 - no more updates

- Step 1: Selection of Establishments (from BP)
 - all panel cases from 2000 to 2008

 - What is a panel case?
 - establishments contained in the starting year
 - “new” establishments in the subsequent waves
 - establishments going out of operation

- Step 2: Selection of individual data (from IEB)
 - all individuals, employed at one of these selected establishments within 1999 and 2009 at least one day
 - for these individuals all episodes in the BeH and LeH from 1993 to 2010

Linked Establishments: 2,702 to 11,117 per year

Individuals: 1,090,728 to 1,536,665 per year

6.2 Structure of the sampling process LM 9310

Time period of establishments selected from
the IAB Establishment Panel; 2000 - 2008

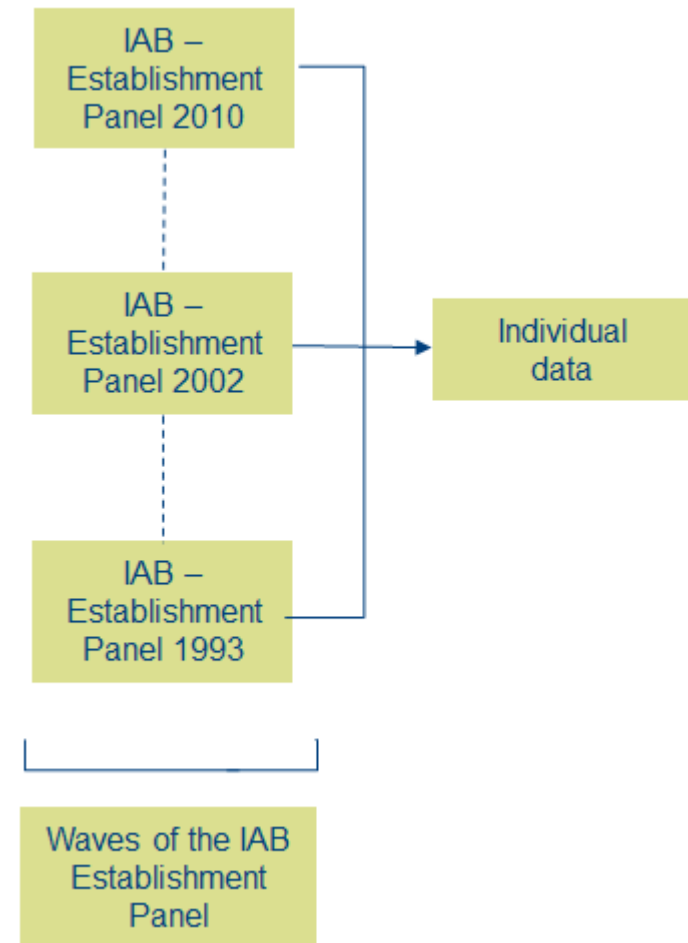
Period of employment of individuals in the
selected establishments; 1999 - 2009

Time period of employment biographies; 1993 - 2010

1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010

→ Linkage via EID

- Storage:
 - Establishment Panel: 2 to 10 MB per year
 - Individual data: 4GB



■ Individual data (IEB)

- Personal information
 - e. g. gender, family status, education and qualification
- Information on employment and benefit receipt
 - e. g. wage, employment and occupational status
- Establishment variables
 - e. g. economic activities, number of employees
- Location data
 - e. g. place of residence and work
- Generated biographical variables
 - first day and number of days in employment and establishment
 - Information on employment status and wage

■ Establishment data (BP)

→ Information on establishments with changing topics

- Development of employment
- business policy and development
- investments
- in-house innovations
- government subsidies
- personnel structure
- vocational training and apprenticeship places
- recruitments and dismissals
- training programmes
- wages
- ...

■ Sensitive variables:

- Individual data
 - nationality
 - health problems
 - sever disability status
 - place of residence and work
- Establishment data
 - sub-classes of economic activity
 - type of local authority
 - district key number
 - place of work

→ due to data protection explicit justification in the application process

■ Extension files BHP:

- Stock data
 - establishment characteristics, employment structure
- Worker flows
 - information about entries and exits of employees
- Entry and exit
 - information about establishment entries and exits

■ wage-specific research

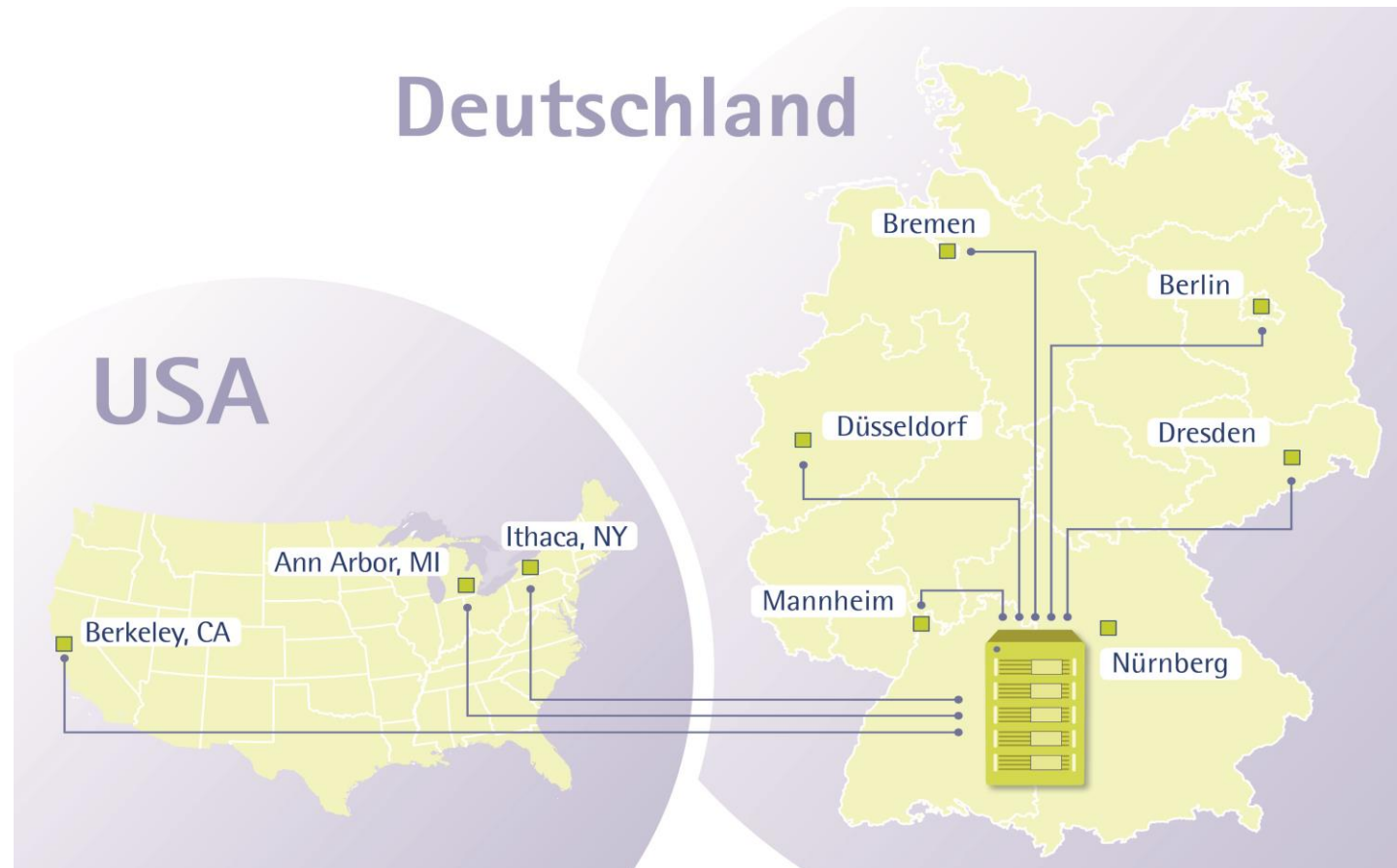
- Hirsch et al. (2010): Differences in labor supply to monopsonistic firms and the gender pay gap * an empirical analysis using linked employer-employee data from Germany. In: Journal of Labor Economics, Vol. 28, No. 2. S. 291-330.
- Peichl et al. (2012): “Accounting for labor demand effects in structural labor supply models.” in Labour Economics
- Blien et. al (2013): “The institutional context of an 'empirical law': The wage curve under different regimes of collective bargaining.” in British Journal of Industrial Relations

■ age and gender specific research

- Zwick (2011): “Seniority wages and establishment characteristics.” in Labour Economics.
- Hirsch et al. (2012): “Women move differently * job separations and gender.” in Journal of Labor Economics.
- Göbel et al. (2013): “Are personnel measures effective in increasing productivity of old workers?” in Labour Economics

9. Data access

- On-site use and remote data access afterwards
- in Nuremberg or in further locations



- Working tools
 - Datenreport and Methodenreport of LIAB, BP and BHP
 - Frequencies and Test data
- <http://fdz.iab.de>
- contact in the FDZ:
 - Dr. Jörg Heining
 - Wolfram Klosterhuber
 - Contact via iab.fdz@iab.de

Thank you for your attention!

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