

## European Data Watch

This section will offer descriptions as well as discussions of data sources that may be of interest to social scientists engaged in empirical research or teaching courses that include empirical investigations performed by students. The purpose is to describe the information in the data source, to give examples of questions tackled with the data and to tell how to access the data for research and teaching. We will start with data from German speaking countries that allow international comparative research. While most of the data will be at the micro level (individuals, households, or firms), more aggregate data and meta data (for regions, industries, or nations) will be included, too. Suggestions for data sources to be described in future columns (or comments on past columns) should be send to: Joachim Wagner, University of Lueneburg, Institute of Economics, Campus 4.210, 21332 Lueneburg, Germany, or e-mailed to (wagner@uni-lueneburg.de).

### The IAB-Establishment Panel

By Arnd Kölling

#### 1. Introduction

Labour administration, labour market research and firms are equally interested in systematic information about the labour market's demand side. The lack of data about this resulted in an imbalance in our knowledge of the two sides of the labour market as Hamermesh (1993, p. 400) states. The IAB-Establishment Panel may is a survey that helps to restore a new balance in scientific research. In 1993 the Institute for Employment Research of the Federal Labour Services in Germany ("Institut für Arbeitsmarkt- und Berufsforschung der Bundesanstalt für Arbeit" / IAB) started the panel in western Germany. In 1996 also the eastern states joined the survey, allowing for representative regional outcomes. From this year on, some western states aim for a regionalized sample, too. We hope to provide regional results for all federal states in the near future. Additionally, we try to link the data with information on individuals from the employment statistics register.

Sample unit is the establishment as the local business unit. This goes along with other firm studies in Germany. In 1993 the panel started with ca. 4,000 establishments; in 2000 around 13,000 units participate in the survey.

The project group responsible for the IAB-Establishment Panel has the task to organise the collection of data, the publication of basic results and to conduct empirical research. Since the number of research projects is not limited, the IAB seeks to find possibilities to overcome the problems caused by data protection rules in order to allow other researchers to perform their own analyses. Furthermore international comparative research is available in the fields of labour demand, in-house initial and continuing training, wage determination, development of firms with different size, for example. This paper aims to describe the characteristics of the sample and the variables.

Additionally, an overview about the studies in economics and social sciences based on the IAB-Establishment Panel are given. It also describes how the IAB-Establishment Panel Data Service (IPDS/“Schalterstelle“) works and provides results of requested research. Finally some remarks about some future developments of the data base are made.

## 2. Characteristics of the Sample

The basis for the German establishment panel is the employment statistics register of the Federal Employment Services (Bundesanstalt für Arbeit) which is collected via the social insurance procedure introduced in 1973. Every year all employers have to report all changes concerning the number of their employees who are subject to a social compulsory security scheme. There are legal sanctions for misreporting.

The employment statistics only contain characteristics of employees, no indicators of the economic performance of firms and no forecasts. Branches and firm size are calculated, the placement offices are the regional units of analysis.

As shown by comparison with microcensus data, the register covers all dependent employment in the private and public sector, i. e. almost 80% of the total employment in Western Germany. The remaining 20% consist of civil servants, unpaid family workers, self-employed and workers who are not eligible to social security because their earnings and/or working-time are too low (cf. Bellmann, Reinberg and Tessaring 1993). Individual plants are assigned separate identification numbers even when they belong to the same company. The unit in the survey is the establishment, not the company as a legal and commercial aggregate. By “establishment” is meant the local

unit in which the activities of a company, that is, the production of goods or services, are actually carried out. The concept “establishment” as a focus of study is also used in other panel studies in the Federal Republic of Germany, like the Hannover Firm Panel and the NIFA Panel in the German mechanical engineering industry (cf. Gerlach & Wagner 1997; Widmaier & Hauptmanns 1997). The “establishment” is generally adequate as a unit for the IAB-Establishment Panel, as employment or personnel policy and their determinants are reflected in the appropriate commercial entities or personnel structures in the establishment. At the same time, the data needed for the analyses, like turnover, working times, wage and salary bill etc. are immediately available to those questioned. Another crucial factor determining the choice of an “establishment” concept is that an up to date total quantity can be identified with the help of the establishment numbers in the Federal Employment Institute’s establishment data bank, formed from the employment statistics. This provides a reliable basis for both longitudinal and cross-sectional weighting and projection.

From those establishments included in the employment statistics register a stratified sample is drawn using selection probabilities which depend on the variation of the number of employees in the respective stratum. All in all 16 industries and 10 firm sizes are considered. In table 1 the selection probabilities and the number of establishments interviewed are presented. Since the size classification adopted leads to more heterogeneous establishments with respect to the number of their employees, the selection probabilities have to increase with the size of establishments.

The field work was done by Infratest Sozialforschung, Munich, whose well-trained interviewers and experts were given enough addresses from the employment statistics register to interview about 4.000 establishment representatives in Western Germany during the summer 1993. The participation of firms is not based on legal but on voluntary grounds. The project has been discussed widely in the tripartite organs of the German Federal Employment Services. The Federation of German Employer Organisations supports the interviews. Table 1 shows the number of responding establishments and the response rates according to the size of the establishment. The overall and size-specific response rates are over 70% (with exception of the first two classes). The response rate of repeatedly interviewed establishments in the following waves is higher than 80%. Both values are quite high compared to other establishment surveys.

For 9% of the establishments the number of employees obtained from the employment statistics register differs to such an extent that it seems necessary to test whether the answers given for a part of the establishment could be regarded as representative for the whole establishment. This method was



Table 1

**Number of interviewed and responding establishments, selection probabilities and response rates according to the establishment size (30. 6. 1992)**

Number of employees	Number of establishments interviewed	Selection probabilities	Number of establishments responding	Response rates
1–4	927	.0011	625	.67
5–9	390	.0015	250	.64
10–19	423	.0030	299	.71
20–49	777	.0089	542	.70
50–99	486	.0153	350	.72
100–199	491	.0304	376	.77
200–499	829	.0862	615	.74
500–999	426	.1504	304	.71
1000–4999	286	.8765	192	.72
> 5000	97	.9127	71	.73
Total	6132	.0043	4356 <sup>1</sup>	.71

Source: IAB Establishment Panel 1993

applicable in most cases, but 2% of the establishments could not be identified.

The sample of usable firm interviews contains 0.27% of all 16 million firms and covers 11% of total employment which was around 29 million in 1993. Proceeding from a base random sample in the first panel wave 1993 with 4,265 cases in the following years all the establishments were, where possible, questioned again. The number of establishments with usable interviews was 4,139 in 1994 and 4,096 in 1995. In the year 1996 the eastern German establishment panel started with 4,313 establishments representing 1.10% of all 391 thousand firms and covers 11% of total employment which is around 6 million. In 1998 the Institute for Economic Research Halle joined the common project. Altogether the number of establishments interviewed reached the number of 10,000 in 1999. In 2000 also some western German states start to participate with a larger sample, aiming for representative regional informations. Therefore, the number of establishments will increase up to 13,000.

<sup>1</sup> 91 cases belong to an undefined unit. Therefore only 4265 interviews are used for analysis.

With respect to other longitudinal firm data three major advantages should be mentioned: First, in the IAB-sample all firms are covered, not only those that purchase or sell credit as in the samples used e.g. by Birch (1981, 1987), Armington and Odle (1982) and Howland (1988). Secondly, the samples used for instance by Davis and Haltiwanger (1990) and Gerlach and Wagner (1993) have a minimum threshold scale of five or twenty employees respectively for inclusion of firms. Boeri and Cramer (1991) have shown that the exclusion of very small establishments may significantly affect the measurement of employment dynamics. Thirdly, the large number of units included in our data set allows consistency checks and data cleaning procedures, that might not be possible in small firm samples.

### **3. Information in the Data**

The panel is created for the needs of the Federal Labour Services. Its goal is to provide further and detailed information about the demand side of the labour market. Therefore, questions on the staff, the changes in employment and the structure of qualifications claim a big part of the questionnaire. Further, some questions deal with training, instruction and additional training of employees. Also, information about working time and overtime work is provided on a yearly basis. Next to these, questions on establishment policies, developments in business and investment are included in the questionnaire.

Other topics are asked biennially or triennially. For instant questions on public employment subsidies or the contact of the firm with the Federal Labour Services. Additionally, every year there is a special focus on an actual theme, e. g. in 2000 this has been the lack of qualified employees. This information is the basis of several studies and publications.

### **4. Selected Studies with the IAB-Establishment Panel**

The studies made with data from the IAB-Establishment Panel cover a wide range of topics. The work is not only limited to economic research, it also includes papers in social sciences and business administration. Especially users of the IPDS explore very different fields of research.

Publications of IAB staff deal with the following topics: wage setting, collective agreements, wage curve, dynamic labour demand, labour demand and technological change, working time, overtime work, training, further

training, skill shortages, entrepreneurship, small business economics, regional analysis (especially for east German states), methodology of panel data.

The IAB-Establishment Panel has also contributed to the OECD's "Flexible Enterprise" project (Bellmann, Düll, Kühl u. a. 1996). Recent international publications deal with changes in the structure of labour demand due to technological change (Kölling 1999, Bellmann & Schank 2000); the influence of panel attrition on the analysis (Bellmann & Kölling 2000), the possibilities to create a scientific-use file for firm information (Brand, Bender & Kohaut 1999), the employment dynamics of small and newly founded establishments (Brixy & Kohaut 1999), the flexible use of working time (Düll 1999) and the extended demand for freelancers and contract workers (Dietrich 1999). Additionally there are several clients of the IPDS from outside Germany (e. g. from Austria, Switzerland, France, Great Britain, The Netherlands) that use the panel for international comparison. A list of all publications is available at the IPDS.

## 5. Access to the Data

As mentioned before, external scientist are allowed to work with the panel data by using the IAB-Establishment Panel Data Service (IPDS). Due to the restrictive data confidentiality laws in Germany, it is not possible for researchers outside the Federal Labour Services to operate with the data directly. As the IAB is a department of the Federal Labour Services, the laws are also valid for the IAB-Establishment Panel. The attempts to create a scientific-use file are still quite experimental and will take some additional years (cf. Brand, Bender & Kohaut 1999). Therefore a post inside the IAB is installed to serve the research needs of scientists outside the Federal Labour Services.

The IPDS provides some material to become familiar with the survey. A codebook, the questionnaires and test data are published. All information is free of charge and available at the IPDS, too. The codebook contains a description of the data set and the way to get access to the data in detail. Also a time series of all questions asked, a list of all variables and some aggregated results are given. The test data are fake data files that mimic the structure of the original survey and enables the researcher to create a syntax file that fits the individual wishes.

On demand, the IPDS is giving lectures at universities or research institutes, where scientists and students are introduced to the data base, the research possibilities and the use of the IPDS in practice. Also it is likely to discuss special needs and to solve problems within these workshops.



The project group responsible for the IAB-Establishment Panel tries to avoid bureaucratic thresholds. Therefore, no contract has to be made, when the external staff wants to work with the panel. But we have installed some terms of behaviour, one should keep in mind. First, the IAB-Establishment Panel and the IPDS have to be cited correctly when the results are published. Secondly, copies of publications are requested by the IPDS. Finally, it is not allowed to alter the outcome that is estimated by the IPDS. The last point does not mean, that the external researcher is confined in the way he likes to present the results in his papers. It means, that the researcher need not change or remove some content of the outcome, especially remarks about the quality.

It is possible to formulate the required operations directly by contacting the IPDS. The IPDS will use the syntax file that was created by the external researcher with the original data to get the results wanted. Afterwards, data protection rules are employed to control the outcome. Again, this does not mean that there are limitations concerning the contents of research. It is only a control for reidentification of individual information. Results that fit the data confidentiality laws are conveyed to the scientist outside the IAB.

As the use of the data is not limited to graded researchers, the IPDS and the IAB-Establishment Panel is also relevant for students or doctorates. Thus, it is likely for them to enhance their thesis with empirical studies from this survey. Further, readers of applied research courses may contact the IPDS to increase the programming skills of their students by using the test data. Afterwards, it is possible to submit the outcome to the IPDS to control the student's work with the real IAB-Establishment Panel data. But as before, it is not allowed for external persons to work with the original data directly.

## 6. Future Developments

It looks, as if the IAB-Establishment Panel and the IPDS are quite successful stories. The number of firms participating in the data set is rising. It is planned to increase the sample, that representative regional outcomes for all federal states are possible. Also, the IPDS became quite popular in the first year of existence. More than 50 external researchers are using the data. In the future, the service and the existing material should be improved, e. g. through the extended use of the internet or more comfortable working material.

Methodologically, there are two developments which may have a crucial influence on the way of using the data. First, the IAB is going to create a

scientific-use file with the IAB-Establishment Panel data. As mentioned before, to anonymize the panel will take some additional years and has no actual effect on the IPDS, but in the future a scientific-use file may overcome the data service.

Secondly, the IAB tries to link the IAB-Establishment Panel data with the information from the employment statistics register of the Federal Employment Services in the near future. This will create the first linked employer-employee data in Germany that has the quality of panel data. Thus an explosion of research is made possible by the special nature of these linked data. This allows to analyse labour supply and demand factors simultaneously. Research topics include besides the flexibility of enterprises the evaluation of training measures, the training intensity, the personal incidence of training and the development of qualificational and skill needs. On a first stage, the IAB has linked its establishment panel with information available about employees from social security register data for the year 1995, input shares derived from a generalised Leontief cost function are estimated for six qualification groups (blue and white collar workers stratified into unskilled, skilled and highly-skilled employees) in the West German production industries (cf. Bellmann, Bender & Schank 1999). Further investigation in this field and the construction of a linked employer-employee panel data from both sources will create a powerful instrument for applied research. Also in the future, results from this data set should be available for all users of the IPDS.

Further information about the IPDS and the materials mentioned in the text are available at:

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