FDZ-DATENREPORT

Documentation of labour market data

08|2020 EN The Administrative Wage and Labor Market Flow Panel Extension for the IAB Job Vacancy Survey 2010–2014

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The Administrative Wage and Labor Market Flow Panel Extension for the IAB Job Vacancy Survey 2010–2014

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Die FDZ-Datenreporte beschreiben die Daten des FDZ im Detail. Diese Reihe hat somit eine doppelte Funktion: zum einen stellen Nutzerinnen und Nutzer fest, ob die angebotenen Daten für das Forschungsvorhaben geeignet sind, zum anderen dienen sie zur Vorbereitung der Auswertungen.

FDZ-Datenreporte (FDZ data reports) describe FDZ data in detail. As a result, this series has two aims: first, users can ascertain whether the data are suitable for their research; second, the reports can be used to prepare analyses.

Contents

Acknowledgements

Conceptual design of the AWFP: Christian Bayer (Universität Bonn), Christian Merkl (FAU), Stefan Seth (IAB), Heiko Stüber (FAU and IAB), and Felix M. Wellschmied (Universidad Carlos III de Madrid)

Preparation of the AWFP: Stefan Seth (IAB)

Preparation of the AWFP-JVS: Heiko Stüber (FAU, IAB, and IZA)

Zusammenfassung

Dieser Datenreport beschreibt das AWFP-JVS, die AWFP-Erweiterung für die IAB-Stellenerhebung. Das AWFP ist ein Datensatz, der Bestands- und Stromgrößen für alle Betriebe in Deutschland in den Jahren 1975–2014 beinhaltet. Auf der Betriebsebene enthält es Informationen zu Schwund und Aufbau von Jobs, zu Arbeitnehmerflüssen und zu Löhnen. Viele der Informationen sind auch für Personen-Untergruppen und gegliedert nach Charakteristika der Beschäftigten verfügbar. Das AWFP-JVS beinhaltet ausgewählte AWFP-Variablen für Betriebe, die in den Jahren 2010-2014 durch die IAB-Stellenerhebung befragt wurden. Das AWFP-JVS wird auf Jahres- und Quartalsebene angeboten.

Abstract

This data report describes the AWFP-JVS, the Administrative Wage and Labor Market Flow Panel (AWFP) extension for the IAB Job Vacancy Survey 2010–2014. The AWFP is a dataset on labour market flows and stocks for the universe of German establishments covering the years 1975–2014. It contains, for each establishment, data on job flows, worker flows, and wages. In addition, the AWFP comprises this information for partitions of the labour force according to various employee characteristics and for some subgroups of employees. The AWFP-JVS contains selected AWFP variables for establishments surveyed by the IAB Job Vacancy Survey (JVS) in the years 2010–2014. The AWFP-JVS data are available on an annual and on a quarterly basis.

1   Introduction and outline

1.1 Introduction

This data report introduces the AWFP-JVS, an extension dataset for the IAB Job Vacancy Survey (JVS). The AWFP-JVS contains selected variables of the AWFP for establishments which were surveyed in the JVS in the years 2010–2014. The AWFP-JVS is available on an annual and quarterly basis. Please note that the AWFP-JVS only contains variables of the AWFP; users need to order *both* datasets, the JVS and the AWFP-JVS.

Researchers just interested in the AWFP data should order the FDZ-AWFP. It contains the same AWFP variables as the AWFP-JVS, but for a 50% random sample of the establishments of the AWFP for the years 1976–2014.

1.1.1   The Administrative Wage and Labor Market Flow Panel (AWFP)

The Administrative Wage and Labor Market Flow Panel (AWFP, see Stüber and Seth 2017) is a dataset on labour market flows and stocks for the universe of German establishments. It contains data on job flows (changes in the number of employees per establishment), worker flows (information about the hiring and firing activity), and wages for each establishment. In addition, the AWFP contains this information for partitions of the labour force according to various employee characteristics (such as sex, education, age, and tenure) and for some sub-groups of employees (e.g., newly hired workers). Currently the AWFP covers the period 1975–2014. All data are available on an annual and a quarterly basis.

The main data source of the AWFP data is the Employment History (*Beschäftigten-Historik*, BeH) of the IAB. The BeH comprises all individuals who were at least once employed subject to social security in Germany since 1975.[1] Some data packages — concerning flows from or into unemployment — use additional data from the Benefit Recipient History (*Leistungsempfängerhistorik*, LeH). The LeH comprises, inter alia, all individuals who received benefits in accordance with Social Code Book III (recorded from 1975 onwards).

The AWFP was generated within the framework of the "Custom Shaped Administrative Data for the Analysis of Labour Market" (CADAL) project and the "Wages, Heterogeneities, and Labor Market Dynamics" project. Both projects are part of the priority program "The German Labor Market in a Globalized World" (SPP 1764), which is sponsored by the German Science Foundation (DFG).

1.1.2   The IAB Job Vacancy Survey (JVS)

The JVS collects information about the number and structure of vacancies, future labour demand, about the current economic situation, and the expected development of participating establishments. It is a quarterly, representative survey that has been carried out by the IAB

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[1] The BeH also comprises marginal part-time workers employed since 1999.

since 1989. The JVS identifies the entire number of vacancies on the German labour market, including those vacancies that are not reported to the Federal Employment Agency (BA). In addition, the survey enquires information about the most recent hiring and the last case of a failed recruitment effort. In special questionnaires, employers are asked about their attitudes and their use of current labour market instruments (for further details see Bossler et al., 2019).

The FDZ offers the datasets from the survey waves 2000 onward. For the survey waves 2010 onward, the IAB has the permission to link the survey to administrative data of the IAB. For that reason, the AWFP-JVS is only available for the years 2010-2014.

1.1.3 Further AWFP datasets

Besides the AWFP-JVS, the FDZ provides the FDZ-AWFP (see Stüber and Seth 2019a). The FDZ-AWFP contains the same AWFP variables as the AWFP-JVS, but for a 50% random sample of the establishments of the AWFP for the years 1976–2014. The FDZ also provides the AWFP-BP (see Stüber et al. 2020), an AWFP extension for the IAB Establishment Panel (see Fischer et al. 2009 and Ellguth et al. 2014) for the years 1993–2014. Furthermore, the FDZ provides aggregated public release datasets of the AWFP (see Stüber and Seth 2019b). Thus far, seven aggregated public release data sets are available. The datasets and data reports can be downloaded from the following FDZ website:

https://fdz.iab.de/en/FDZ_Establishment_Data/FDZ-AWFP/AWFP.aspx

1.2 Data access and use

1.2.1 Data access

The IAB Job Vacancy Survey and the AWFP-JVS may be analysed in the context of a research visit at the Research Data Centre (FDZ) of the German Federal Employment Agency (BA) at the Institute for Employment Research (IAB) and / or via remote data access. It is necessary to submit an application to the FDZ prior to being able to use the data.

Certain variables, which make it possible to identify individual establishments, are available in aggregated form only. These variables, which are particularly sensitive from the viewpoint of data protection legislation, are the location of the establishment and the establishment's industry classification. The location of the establishment is aggregated to the federal state (Bundesland) level. The imputed establishment's industry classification is aggregated to the subclass of economic activity (3-digit code).

1.2.2 Data use

In order to minimise the memory requirements of the AWFP-JVS, some variables are not explicitly included in the data if they can be calculated by the users themselves using available variables. For example, outflows to non- and unemployment can be calculated as the number of outflows (out_eop) minus the number of outflows into employment (out_e).

1.3 Content characteristics

Categories	Descriptions
Topics	**Core dataset:** • Establishment characteristics (e.g. artificial establishment number, industry classification, federal state) • Structure of employees (e.g. mean age and tenure) • Stock of workers (also by educational qualifications) • Mean (imputed) wages of full-time employees • In- / outflows of employees (also by educational qualifications) • Mean (imputed) daily wages of inflows, stayers, outflows (available only in the quarterly dataset) • In- / outflows from / to employment • Permanent / temporary outflows • New hires / re-hires
Research unit	Establishments in Germany with at least one full-time employee subject to social security.
Frequency of dataset	Annual and quarterly frequency
Number of cases	Annual dataset: 11,432–13,945 establishments Quarterly dataset: 11,432–14,091 establishments
Period covered	2010–2014
Time reference	Annual dataset: December 31 of each year Quarterly dataset: Last day of each quarter
Regional structure	Location of establishment: federal states (Bundesländer)
Data sampling	Establishments covered by the IAB Job Vacancy Survey
Institutions involved	Social security agencies, Federal Employment Agency
File format	Stata
File size	Core dataset, annual frequency: approx. 5 MB Core dataset, quarterly frequency: approx. 21 MB
File architecture	Annual dataset: AWFP-JVS_a_v1_00.dta Quarterly dataset: AWFP-JVS_q_v1_00.dta
Data access	On-site use or remote data access
Anonymisation degree	Weakly anonymous
Sensitive variables	None
Citation of the dataset	'This study uses the Administrative Wage and Labor Market Flow Panel Extension for the IAB Job Vacancy Survey 2010–2014. Data access was provided via on-site use at the Research Data Centre (FDZ) of the German Federal Employment Agency at the Institute for Employment Research and/or remote data access.' DOI: 10.5164/IAB.AWFP-JVS1014.en.v1
Citation of the documentation	Heiko Stüber, Stefan Seth, and Benjamin Lochner (2020): The Administrative Wage and Labor Market Flow Panel Extension for the IAB Job Vacancy Survey 2010–2014. FDZ-Datenreport, 08-2020(en), Nürnberg.

	DOI: 10.5164/IAB.FDZD.2008.en.v1
Current data version	The Administrative Wage and Labor Market Flow Panel Extension for the IAB Job Vacancy Survey 2010–2014 (AWFP-JVS 1014), v1; DOI: 10.5164/IAB.AWFP-JVS1014.en.v1

The dataset described in this document is available for use by professional researchers. Further information can be found on the website http://fdz.iab.de.

2   Data source: Employee history (BeH) and its establishment concept[*]

The data source regarding employment is the Employee History (*Beschäftigten-Historik*, BeH, V10.0.0) of the IAB. The data basis is the integrated notification procedure for health, pension and unemployment insurance, which came into effect as of January 1, 1973 and was extended to cover eastern Germany as of January 1, 1991 (for further details see Bender et al. 1996 and Wermter/Cramer 1988). Under the so-called DEÜV procedure (previously DEVO/DÜVO), employers are required to submit notifications to the responsible social security agencies concerning all their employees covered by social security. The BeH covers all white- and blue-collar workers as well as apprentices as long as they are not exempt from social security contributions. This means that civil servants, the self-employed and regular students (see Cramer 1985) are not recorded in the BeH. Employees in marginal part-time employment and unpaid family workers have been contained in the data from April 1, 1999 onwards. Employers are obliged to report the exact start and ending dates of an employment relationship and to yearly confirm an existing one, so that it is possible to track workers' careers on a daily basis. The observation period of the BeH V10.0.0 extends from January 1, 1975 to December 31, 2014.

It is important to understand that the BeH uses a specific definition of 'establishment': An establishment is a "regionally and economically delimited unit in which employees work". It may consist of one or more branch offices or workplaces belonging to one company. The term 'company' combines all establishment premises and workplaces belonging to the same employer. An 'employer' is any natural person or legal entity that is the party liable for the overall social security contribution and employs at least one employee subject to social security contributions or in marginal part-time employment (see Bundesagentur für Arbeit 2007).

The following principle applies to the allocation of establishment numbers: branch offices of one company which belong to the same economic class and which are located in the same municipality are given one joint establishment number. It is not possible to distinguish between branch offices with a joint establishment number in the data. Furthermore, no information is available as to whether establishments belong to the same company. Once an establishment has been allocated an establishment number, it remains unchanged in principle (see Schmucker et al. 2016 for more detailed information and exceptions).

3 Data preparation – correction and validation procedures performed on the micro-level data

For compiling the AWFP, the employment notifications of the BeH (see Section 2.1) are aggregated at establishment level using the establishment ID (see Section 2.1.1). Before the aggregation, the data on individuals are subjected to a number of validation procedures. Here we only address procedures which affect data of years covered by the AWFP-JVS.

3.1 Selection of the notifications in the BeH[*]

The data on individuals from the BeH are used as the basis for the AWFP, but not all the notifications are included:

- Only notifications with details about the following person groups are taken into account: 101, 102, 103, 105, 106, 109, 112, 118, 119, 120, 121, 122, 140, 141, 142, 143, 144, 149, 201, 203, 205, 209, 999, YYY (see Appendix 1).
- Notifications with a wage of zero are deleted. As these notifications concern de-registrations of individuals who were previously sick or on parental leave and received corresponding earnings replacement benefits, these individuals are not counted as employees.

3.2 Imputation of the education/training data[*]

The number of employment notifications with missing information on education and vocational training qualifications has grown substantially over time; this concerns people in marginal part-time employment to a disproportionately large extent. The switch to the Occupation Code 2010 in the notification procedure caused the rate of missing values to rise as high as 50 percent in 2011. Furthermore, from 2011 onwards, the employers no longer report qualifications in a combined variable, but split into school education (none, lower secondary, intermediate secondary, upper secondary) and vocational education and training (none, recognised vocational training, master craftsman, bachelor, diploma, doctorate). While this actually permits a more precise recording of education and training qualifications, no time-consistent information is available for the entire period. In order to achieve that, the methods of recording the data are being made compatible by assigning to every combination of values from the new code the most suitable details on education and training according to the old code. However, this has no effect on missing values. So, in addition, the evaluability of the education and training data is improved by means of an imputation procedure using a deterministic replacement rule that was suggested by Fitzenberger et al. (2005 and 2006) and enhanced by Kruppe et al. (2014). The result of this procedure is that there are now hardly any missing values, especially for employees who are not in marginally part-time employment. For more information on the imputation, please refer to Section 8.1 of Schmucker et al. (2016).

3.3 Imputation of the information on earnings

3.3.1   Addition of special payments[*]

As a rule, the employers include any special payments (such as holiday pay, 13th monthly salary etc.) in their regular annual notifications or de-registrations. In some cases, however, the special payment is reported separately (notification reason 54). These payments also have to be taken into account when calculating the earnings data of an establishment. For this, the earnings of the extra notification are added to the earnings of the regular notification in the same calendar year. If there are no such regular notifications, the special payment is disregarded when compiling the AWFP.

3.3.2   Imputation of data on earnings above the upper earnings limit[*]

In the social security notifications, earnings are only reported up to the upper earnings limit for statutory pension insurance contributions. This means that approximately 10 percent of the information on full-time employees' earnings is censored. This leads to biased estimation results as means of earnings are biased if the censored observations are not included in the calculation or if censored values are replaced by the censoring limit. No bias occurs for wage quantiles below the censoring limit. As the shares of censored wages can sometimes be very large (well over 50 percent) depending on the wage level in the establishment, in many analyses it would only be possible to use quantiles below the median. In order to mitigate these issues, the information on earnings (average daily wages) were imputed before the statistics (means and medians) were calculated. The procedure was implemented following Card et al. (2015) and is explained in more detail in Section 8.2 of Schmucker et al. (2016).

3.4 Imputation of the information on full-time and part-time employment[*]

For a transitional period after the introduction of the new occupation code in December 2011, it was permitted to leave out the information on the occupation and working time in the social security notifications. In a good 10 percent of the notifications submitted by the establishments between December 1, 2011 and May 31, 2012, the information regarding working hours is therefore missing. For this reason, a logit model has been developed at the IAB which can be used to impute the missing information (see Ludsteck and Thomsen 2016).

4   Data quality

The data quality of the AWFP(-JVS) depends on the data quality of the underlying BeH data, which we discuss below.

4.1 Under-recording of notifications in the latest available data[*]

Within the employment notification procedure, a certain time lag is unavoidable. Although changes in employment relationships have to be reported immediately and existing employment relationships have to be confirmed annually by April 15 (or by February 15 since the end of 2013) of the following year, some notifications actually arrive years later. The History File of the IAB is not updated continuously, however, but at certain intervals. This is done using files of employment notifications for one particular year which were submitted 36, 30, 18, 12 or 6 months after the end of the reporting year (e.g., the 18-month file for 2013 can be created in July 2015 at the earliest). Notifications submitted more than three years late are not taken into account at the IAB, which means that a 36-month file shows a 100 percent degree of completeness by definition. To generate the AWFP data of 2012, a 30-month file was used, for 2013 an 18-month file and for 2014 (only) a 6-month file. It can be assumed that the number of establishments is slightly under-recorded for the years 2012 and 2013. It can also be assumed that there are larger gaps for 2014. Comparing the 6-, 12- and 18-month files for 2013 one can observe that the 12-month file contains 0.8 percent more employees than the 6-month file. At establishment level the notifications that were submitted late had a stronger effect: after 12 months an additional 2.6 percent of the establishments are recorded. What is noticeable here is that most of these establishments are very small establishments with up to ten employees. Although the number of employees increases again by 1.3 percent between the 12-month and the 18-month files, the increase in the number of establishments is only 0.5 percent. During this period, more establishments with more than 200 employees were added to the data.

4.2 Classification of economic activities

During the observation period of the AWFP, the classification of economic activities changed several times. This makes longitudinal analysis difficult. The FDZ developed a method to impute time-consistent industry codes (see Eberle et al. 2011). The AWFP-JVS includes an imputed classification (w93_imp).

More information on the classifications is provided by the German Federal Statistical Office (https://www.destatis.de/DE/Methoden/Klassifikationen/Klassifikationen.html) and the German Federal Employment Agency (Bundesagentur für Arbeit 2010, Bundesanstalt für Arbeit 1973 and 1996).

5 Generating the Administrative Wage and Labor Market Flow Panel Extension for the IAB Job Vacancy Survey

5.1 Overview of the dataset

After the data on individuals have been preprocessed (see Section 3) the AWFP is generated as follows:

- Selection of all BeH observations that include the respective reference date.
- Deletion of multiple jobs held by one person in one and the same establishment. Here non-marginal jobs are given priority over marginal part-time jobs. If more than one non-marginal job is recorded for one person in the same establishment, the job with the higher daily wage is selected.
- Aggregation of all employment notifications as of the reference date to form selected statistics at establishment level.

The stocks and flows in the AWFP are generally calculated on a 'regular worker' basis. In the next section we will define the notion 'regular worker' and give our standard definition of how we calculate stocks and flows. Unless explicitly mentioned otherwise these standard definitions are used for the generation of the AWFP.

To generate the AWFP-JVS, we draw all establishments that were surveyed by the JVS in a given year for the years 2010–2014.

5.2 Definitions

The AWFP-JVS is available on an annual (a) and a quarterly (q) basis. Hence, when we talk about a "period", we think of a year or a quarter.

5.2.1   Regular workers

We define a person as a 'regular worker' when he/she is full-time employed and belongs to person group 101 (employees s.t. social security without special features), 140 (seamen) or 143 (maritime pilots) in the BeH. Therefore all (marginal) part-time employees, employees in partial retirement, interns etc. are not accounted for as regular workers. See Appendix 1 for more details on the person group in the BeH. The stocks and flows in the (FDZ-)AWFP are generally calculated on a 'regular worker' basis.

5.2.2 All workers

Some variables in the AWFP(-JVS) are not based on regular workers but 'all workers'. All workers include regular workers (as defined above), 'normal workers', and 'other workers' (as defined below).

5.2.3   Normal workers

Normal workers are defined like regular workers (see above) but they may work part-time. Therefore, each regular worker is also a normal worker but not vice versa.

5.2.4   Other workers

Other workers are neither normal workers, apprentices, workers in partial retirement nor workers in marginal part-time. This group consists mainly of interns (*Praktikanten/Werkstudenten*).

5.2.5 Stocks

The stock of employees of an establishment in some period *t* equals the number of employees on the last day of period *t*. Unless explicitly mentioned otherwise, we calculate stocks based on regular workers and using the 'end-of-period' definition.

5.2.6 Flows

Inflows of employees of an establishment for period *t* equals the number of employees who were regularly employed on the last day of period *t* but were not on the last day of the preceding period, *t*-1.

Outflows of employees of an establishment for period *t* equals the number of employees who were regularly employed on the last day of the preceding period (*t*-1) but were not on the last day of period *t*.

Unless explicitly mentioned otherwise, we calculate both inflows and outflows based on regular workers and using the 'end-of-period' definition.

Employees who join an establishment and leave it again between two reference dates are not recorded by this flow concept.

Note that a worker counted as an inflow is not necessarily a new hire. For instance, an apprentice who becomes a regular worker represents an inflow because an apprentice is not a regular worker. Analogously, a worker counted as an outflow might remain employed in the same establishment. A regular worker who, for instance, reduces hours and changes to a part-time job represents an outflow.

6 Description of the variables and characteristics

Remember, unless explicitly mentioned otherwise, all stock, inflows, and outflows are calculated based on regular workers and using the 'end-of-period' definition (see Section 5.2)!

6.1 Common identifiers

The AWFP-JVS contains the establishment identifier of the JCS and a time index (either year or quarter and year). Appendix 2 shows the end-of-period reference dates for all years (a) and quarters (q). A year variable can be generated by adding 1974 to the year index variable a:

```
gen int year = 1974 + a
```

6.1.1 Establishment identifier

Variable name	key
Origin	Generated variable
Detailed description	Identifies the observation unit (plant/establishment) in the JVS.

6.1.2 Index of year

Variable name	a
Detailed description	Starts with 1, signifying the year 1975. In the AWFP-JVS, the years 2010 (a = 36) to 2014 (a = 40) are included.

6.1.3 Index of quarter

Variable name	q
Detailed description	Starts with 1, with quarter no 1 being the first quarter of 1975. In the AWFP-JVS, the first quarter of 2010 (q = 141) to the fourth quarter of 2014 (q = 160) are included.

6.2 Variables available on the annual and quarterly basis

6.2.1 Establishment location

Variable name	state
Detailed description	The federal state (*Bundesland*) the establishment is located.

6.2.2 Establishment's industry classification

Variable name	w93_imp
Detailed description	Imputed / transcoded establishment's industry classification according to the German Classification of Economic Activities WZ 93.

6.2.3 Mean age of workers

Variable name	mean_age
Detailed description	The mean age within the establishment of workers at the end of the period (in years).

6.2.4 Mean tenure of workers

Variable name	mean_tenure
Detailed description	The mean tenure within the establishment of workers at the end of the period (in quarters); possibly left-censored.

6.2.5 Mean imputed wage of workers

Variable name	dw_imp_mean
Detailed description	Mean daily nominal wage of workers at the end of the period.

6.2.6 Standard deviation of imputed wage

Variable name	dw_imp_sd
Detailed description	Standard deviation of daily nominal wages of workers at the end of the period.

6.2.7 Stock of workers

Variable name	st_eop
Detailed description	Number of workers as of the last day of the period (end-of-period employment).

6.2.8 Stock of low-skilled workers

Variable name	st_qual_1
Detailed description	Stock of workers without formal vocational training (according to the imputed education variable).

6.2.9 Stock of medium-skilled workers

Variable name	st_qual_2
Detailed description	Stock of workers with formal vocational training (according to the imputed education variable).

6.2.10 Stock of high-skilled workers

Variable name	st_qual_3
Detailed description	Stock of workers with a university degree (according to the imputed education variable).

6.2.11 Stock of all workers (not calculated on a regular worker basis!)

Variable name	st_all
Detailed description	Number of all workers as of the last day of the period (end-of-period employment).

6.2.12 Inflows using the standard end-of-period definition

Variable name	in_eop
Detailed description	Number of workers employed at the end of the current period but not employed as regular workers at the end of the preceding period in the same establishment.

6.2.13 Inflows of low-skilled workers

Variable name	in_qual_1
Detailed description	Number of inflows without formal vocational training (according to the imputed education variable).

6.2.14 Inflows of medium-skilled workers

Variable name	in_qual_2
Detailed description	Number of inflows with formal vocational training (according to the imputed education variable).

6.2.15 Inflows of high-skilled workers

Variable name	in_qual_3
Detailed description	Number of inflows with a university degree (according to the imputed education variable).

6.2.16 Inflows from employment

Variable name	in_e
Detailed description	Inflows who were employed at the end of the preceding period (i.e., who changed the employer/establishment).

6.2.17 New hires

Variable name	in_new
Detailed description	Number of workers not employed (any status!) by the same establishment at the four preceding reference dates.

6.2.18 Re-hires

Variable name	in_rehire
Detailed description	Number of workers not employed by same establishment at the preceding reference date but employed (any status!) at one of the three reference dates before.

6.2.19 Total inflows (not calculated on a regular worker basis!)

Variable name	in_all
Detailed description	Number of new workers in the establishment, i.e., workers who were not employed by this establishment in the preceding period.

6.2.20 Outflows using the standard end-of-period definition

Variable name	out_eop
Detailed description	Number of workers employed at the end of the preceding period but not employed as regular workers at the end of the current period in the same establishment.

6.2.21 Outflows of low-skilled workers

Variable name	out_qual_1
Detailed description	Number of outflows without formal vocational training (according to the imputed education variable).

6.2.22 Outflows of medium-skilled workers

Variable name	out_qual_2
Detailed description	Number of outflows with formal vocational training (according to the imputed education variable).

6.2.23 Outflows of high-skilled workers

Variable name	out_qual_3
Detailed description	Number of outflows with a university degree (*Universität* or *Fachhochschule*) (according to the imputed education variable).

6.2.24 Outflows to employment

Variable name	out_e
Detailed description	Outflows who keep being employed (i.e., who changed the employer/establishment).

6.2.25 Permanent outflows

Variable name	out_perm
Detailed description	Number of workers regularly employed in the preceding period but not employed (any status) in this establishment in the current or any of the 3 subsequent periods.

6.2.26 Temporary outflows

Variable name	out_temp
Detailed description	Number of workers regularly employed in the preceding period, not employed (in this establishment) in the current period, and again employed by the establishment in at least one of the three subsequent periods.

6.2.27 Total outflows (not calculated on a regular worker basis!)

Variable name	out_all
Detailed description	Total number of workers who left the establishment.

6.3 Variables available only on the quarterly basis

6.3.1 Mean wage of new regular workers (inflows)

Variable name	dw_imp_mean_in
Detailed description	Mean daily nominal wage of new workers at the end of the period.

6.3.2 Mean wage of incumbent workers (stayers)

Variable name	dw_imp_mean_st
Detailed description	Mean daily nominal wage of incumbent workers at the end of the period.

6.3.3 Mean wage of outgoing workers (outflows)

Variable name	dw_imp_mean_out
Detailed description	Mean daily nominal wage of outgoing workers at the end of the period. Wages of outflows are calculated with respect to the preceding period.

7 Merging the AWFP-JVS with the IAB Job Vacancy Survey

To merge the JVS with the AWFP-JVS or vice versa, you need to merge by *key* and a common year variable / indicator.

The JVS already includes a year variable called *jahr* (German for year). The following command will generate the variable *jahr*, ranging from 1993 to 2014, in the AWFP-EP:

```
gen int jahr = 1974 + a
```

Alternatively, you can generate the year indicator *a* in the JVS. The following command will generate *a*, ranging from 36 to 40, in the JVS:

```
gen byte a = jahr - 1974
```

Having a common year variable / indicator, you can merge the datasets 1 to 1:

```
merge 1:1 key a using filename or
merge 1:1 key year using filename
```

Not all establishments of the JVS will be matched with the AWFP-JVS. There are several reasons for that. Some reasons are: (a) missing link between *key* and *betnr*; (b) an establishment does not exist (any more) on the reference data of the AWFP; (c) an establishment has no regular worker at the reference date of the AWFP.

8   References

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[2] The DP was updated and renamed in December 2018. The original DP version [Seth, Stefan; Stüber, Heiko (2017): Administrative Wage and Labor Market Flow Panel (AWFP) 1975–2014 (v1.0)] is available upon request.

9 Appendix 1: person group codes in the BeH[*]

Code	Name
101	Employees subject to social security with no special features
102	Trainees / apprentices with no special features
103	Employees in partial retirement
104	Freelance home workers
105	Interns
106	Student trainees
108	Recipients of early retirement benefit
109	Marginal part-time employees
110	Short-term employees
112	Family workers in agriculture
116	Recipients of compensation according to the Act on Support in the Case of Termination of Farming Activities
118	Casual workers
119	Old-age pensioners exempt from insurance contributions and recipients of old-age pension benefits
120	Persons who are presumed to be in employment
121	Trainees / apprentices (earnings not above the low-wage threshold)
122	Trainees / apprentices (external institution)
123	Persons completing a year of voluntary social or environmental work or Federal Voluntary Service
124	Home workers
140	Seamen
141	Trainees/apprentices in seafaring occupations with no special features
142	Seamen in partial retirement
143	Maritime pilots
144	Trainees/apprentices in seafaring occupations (earnings not above the low-wage threshold)
149	Old-age pensioners exempt from insurance contributions and recipients of old-age pension benefits employed in seafaring occupations
190	Employees who are insured solely in the statutory accident insurance
201	Employees in private households (reported via the "household cheque procedure")
202	Short-term employees
203	Artists and publicists subject to social security
205	Casual workers
207	Nurses in the sense of § 19 SGB XI/with no eligibility for financial assistance on the part of the person receiving nursing care
208	Nurses in the sense of § 19 SGB XI/with eligibility for financial assistance on the part of the person receiving nursing care
209	Marginal part-time employees in private households (reported via the "household cheque procedure")
210	Short-term employees in private households (reported via the "household cheque procedure")
301	Persons performing basic military service or voluntary military service
302	Persons performing reserve duty
303	Persons performing alternative civilian service
304	Persons completing a year of voluntary social or environmental work instead of alternative civilian service
305	Persons performing military service, special types
306	Special assignment abroad
599	Miscellaneous workers
999	No details available
XXX	No allocation possible
YYY	Error in original value
ZZZ	No details reported

10 Appendix 2: end of period reference dates

Reference date	Quarter (q)	Annual (a)
31-Mar-10	141	
30-Jun-10	142	
30-Sep-10	143	
31-Dec-10	144	36
31-Mar-11	145	
30-Jun-11	146	
30-Sep-11	147	
31-Dec-11	148	37
31-Mar-12	149	
30-Jun-12	150	
30-Sep-12	151	
31-Dec-12	152	38
31-Mar-13	153	
30-Jun-13	154	
30-Sep-13	155	
31-Dec-13	156	39
31-Mar-14	157	
30-Jun-14	158	
30-Sep-14	159	
31-Dec-14	160	40

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