IAB DiscussionPaper

Beiträge zum wissenschaftlichen Dialog aus dem Institut für Arbeitsmarkt- und Berufsforschung

No. 14/2007

Phillips Curve or Wage Curve?

Evidence from West Germany: 1980-2004

Badi H. Baltagi, Uwe Blien, Katja Wolf

Bundesagentur für Arbeit

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Evidence from West Germany: 1980 - 2004

Badi H. Baltagi, Syracuse University,
Center for Policy Research and Department of Economics,
Syracuse, New York 13244-1020 (315)443-1081,
E-mail: bbaltagi@maxwell.syr.edu
and
Uwe Blien, Katja Wolf (IAB)

Contents

Abstract

This paper reconsiders the West German wage curve using the employment statistics of the Federal Employment Services of Germany (Bundesanstalt für Arbeit) over the period 1980-2004. This updates the earlier study by Baltagi and Blien (1998) by 15 years for a more disaggregated 326 regions of West Germany. It is based on a random sample of 417,426 individuals drawn from the population of employees whose establishments are required to report to the social insurance system. We find that the wage equation is highly autoregressive but far from unit root. This means that this wage equation is not a pure Phillips curve, nor a static wage curve, and one should account for wage dynamics. This in turn leads to a smaller but significant unemployment elasticity of -0.02 up to -0.03 rather than the -0.07 reported in the static wage curve results reported by Baltagi and Blien (1998).

JEL-Klassification: C23, J30, J60

The authors thank Wolfgang Dauth, Cerstin Erler, Phan thi Hong Van and Melanie Stamm (all IAB) for excellent assistance with the complex data.

1 Introduction

This paper reconsiders the empirical evidence on the existence of a wage curve for Western Germany using an updated panel data set obtained from the IAB (Institut für Arbeitsmarkt- und Berufsforschung) employment sample which covers 326 regional labor markets over the period 1980-2004. See the data appendix for detailed description of this data set. This updates the earlier study by Baltagi and Blien (1998) by 15 years. In addition, this study looks at a more disaggregated 326 local labor markets rather than the 142 local labor markets considered in the earlier study. The effective sample size for the wage curve estimation a la Card (1995) becomes 8150 (326 regions over 25 years), rather than 1420 (142 regions over 10 years).

Following Blanchflower and Oswald (1994a,b, 1995), Baltagi and Blien (1998) found support for the wage curve in West Germany. While the "empirical law" of Blanchflower and Oswald quotes a -0.10 unemployment elasticity, Baltagi and Blien (1998) estimated a -0.07 elasticity which is higher for younger workers than older workers. In fact, a recent meta analysis on the empirical evidence on the wage curve across various countries, estimation methods and data sets, found that an unbiased estimate of the wage curve elasticity at the means of study characteristics is about -0.07, see Nijkamp and Poot (2005).

Blanchflower and Oswald emphasize that the wage curve is *not* a Phillips curve. The latter is estimated using macro time series data which relates the rate of change of wages to the aggregate unemployment rate, while the former is estimated using micro panel data which relates the level of wages to the local unemployment rate. When Blanchflower and Oswald (1994a) included lagged wages in their model, they found it to be statistically insignificant, thus rejecting the Phillips curve. Contrary evidence can be found in Blanchard and Katz (1997) for the U.S. and Bell, et al. (2002) for the U.K. More recently, Blanchflower and Oswald (2005, p.5) admit that, in hindsight, their 1994 book "..failed to examine sufficiently carefully the autoregressive nature of hourly pay in the United States". They find more autoregression in pay in the U.S. than in many nations and they emphasize wage dynamics arguing that it can be expected to play a central role. It is in this spirit that we re-examine the *static* formulation of the

West German wage curve considered by Baltagi and Blien (1998). We find that this wage equation is indeed *dynamic* and we apply the proper econometric panel data techniques to estimate it. We follow the approach used by Bell, et al. (2002) for the U.K. panel. There, they had 10 regions and 22 years (1976-1997). The basic data source was the U.K. New Earnings Survey which is a 1% sample survey of employees. We apply this to West German panel data of 326 local labor markets and 25 years (1980-2004). This is also a 1% random sample of the total population of people gainfully employed and included in the social insurance system in Western Germany.

2 The Model

Bell, et al. (2002) estimate a `first stage panel´ wage equation for each region j as follows:

$$W_{ijt}=\alpha_i+\alpha_{jt}+\sum_{k}^{K} X_{ijtk}\beta_{jk}+\varepsilon_{ijt} \qquad (1)$$

$i = 1,...,N \qquad j = 1,...,J \qquad \text{and} \qquad t = 1,...,T$

where W_{ijt} is the log wage rate of individual i observed in region j at period t. X_{ijtk} is a set of k=1,…,K measured characteristics of individual i (such as age, age^2, gender, education, occupation, etc.), α_i is the i-th individual effect, α_{jt} is the time effect for region j, and ε_{ijt} is the remainder error term. The estimate of α_{jt}, obtained from running a panel regression fixed effects for each region j, is denoted by the `composition corrected wage´ in the regional panel model. Bell, et al. (2002) also estimate a `first stage cross-section´ wage equation for each year t as follows:

$$W_{ijt}=\alpha_{0t}+\alpha_{jt}+\sum_{k}^{K} X_{ijtk}\beta_{tk}+\eta_{ijt} \qquad (2)$$

Here, one gets an alternative estimate of α_{jt} using the cross-section regressions for each year. Note that in (1), β_{jk} differs across regions, whereas in (2), β_{tk} differs over time. Every regression in (1) is based on NT observations, whereas, every regression in (2) is based on NJ observations.

For both estimates of α_{jt}, the second stage regression of Bell, et al.(2002) is as follows:

$$\alpha_{jt}=\mu_j+\lambda_t+\beta_1\alpha_{jt-1}+\beta_2 u_{jt}+\sum_{j=2}^{J}(\gamma_j' D_j)t+\nu_{jt} \qquad (3)$$

where u_{jt} is the log of regional unemployment rate in region j at time period t. D_j is the region dummy. The number of observations for this regression is JT. This is a dynamic panel data equation with region specific time trends included to capture systematic trends in region specific wage pressure.

A panel version of this model using individual data is given by:

$$W_{ijt}=\alpha_i+\mu_j+\lambda_t+\beta_1 W_{ijt-1}+\beta_2 u_{jt}+\sum_{j=2}^{J}(\gamma_j' D_j)t+\sum_{k}^{K} X_{ijtk}\beta_k+\nu_{ijt} \qquad (4)$$

with individual effects α_i, region effects μ_j, time effects λ_t, and regional trends as well as lagged wages, unemployment, and other control variables. The fact that u_{jt} does not vary with i implies that the effective number of observations is JT and not NT, see Card (1995). Also, the standard errors have to be corrected for clustering on regions, see Moulton (1986). Bell, et al. (2002) estimate their dynamic model with fixed effects which is subject to the Nickell (1981) bias of order (1/T). In our case, T=25. They argue that β_1 will be typically overstated if factors that vary systematically across regions and over time are not adequately captured. These factors include unobserved labor quality and autonomous wage pressure arising from variations in unionization, rent capture and the extent of product market competition. They emphasize the importance of including region specific trends since one cannot adequately control for these factors.

3 Empirical Results

Prior wage curve results for West Germany were reported by Blanchflower and Oswald (1994a), Wagner (1994), Baltagi and Blien (1998), Buettner (1999), Pannenberg and Schwarze (2000), and Bellmann and Blien (2001) to mention a few. See also Blanchflower and Oswald (2005) for a list of over 40 country studies on the wage curve.

Baltagi and Blien (1998) estimated a -0.07 wage elasticity for all West German workers. The wages of male workers were slightly more responsive than wages of female workers to the local unemployment rate. The wages of younger workers were more responsive to the local unemployment rate than the wages of older workers. Wages of workers with less qualifications were also more responsive to local unemployment than wages of workers with higher qualifications. Baltagi and Blien emphasized that it was important to treat unemployment as endogenous. However, Baltagi and Blien (1998) did not account for wage dynamics.

In this section, we report German wage curve results based on a random sample from the IAB Employment Sample (see the appendix, for details). This random sample consists of 417,426 individuals drawn from the population of employees whose establishments are required to report to the social insurance system. The latter group comprises about 80% of all employment in Germany. Excluded from this group are civil servants and workers with very low income. The total number of observations of our sample is 4,120,839 covering 326 districts over the period 1980-2004. These districts are the administrative units of Western Germany and are the smallest regions for which unemployment rates are available.

Table 1 gives the results for the dynamic German wage curve based on the `first stage panel´ wage equation given in (1), while Table 2 gives the results for the dynamic German wage curve based on the `first stage cross-sectional´ wage equation given in (2). This is done for all workers as well as by type of worker, i.e., male, female, young, old, and low or high level of education. We report the fixed effects estimator assuming the unemployment rate is exogenous, as well as the fixed effects estimator instrumenting for the unemployment rate by its lagged values, see Bell, et al. (2002).

Only the lagged wage coefficient and the short-run and long-run unemployment elasticities are reported in order to save space. The results on the control variables are available upon request from the authors. These include age, age^2, gender, four worker qualification categories, six employment status categories, fourteen occupational categories, thirty one industry categories and nine establishment size categories. For a detailed description of this data set and the variables used, see the data appendix.

The following results are robust to the method of estimation used, whether fixed effects or fixed effects IV, and whether we used the `first stage panel´ wage equation given in (1), or the `first stage cross-sectional´ wage equation given in (2):

1. We find that the lagged wage is significant, i.e., β_1 is significantly different from zero, rejecting the static wage equation in favour of a dynamic wage specification.

2. This estimate of β_1 is so far from unity (a maximum of 0.5 with a very small standard error 0.01) and we reject the unit root hypothesis implied by the pure Phillips curve. This coefficient estimate was slightly smaller when we instrumented for unemployment by its lagged values, but much smaller when our estimate was based on a `first stage cross-sectional´ rather than a `first stage panel´ wage equation (0.3 rather than 0.5).

3. The short-run and long-run elasticities of wages with respect to unemployment are small but significant, about -0.01 in the short-run and double that in the long run -0.02. These elasticities were slightly larger when we instrumented for unemployment by its lagged values, and much smaller when our estimates were based on a `first stage cross-sectional´ rather than a `first stage panel´ wage equation.

Similar results were obtained by Pannenberg and Schwarze (2000) using regional panel data of 74 `Raumordungsregion´ (ROR) of West Germany over the period 1985-1994. They estimated a lagged coefficient on wage of 0.30 and a short-run unemployment elasticity of -0.03 for the years 1990-1994. We conclude that wages exhibit a high degree of auto-regression, both at the regional and individual level, thus favouring a dynamic rather than a static wage equation. Also, that the coefficient estimate of lagged wages is far from unit root and is not in favour of the pure Phillips curve. Montuenga-Gomez and Ramos-Pareno (2005) survey the literature on the wage curve and Phillips curve. Although they find ample evidence supporting one side or the other, they argue that recent successful work in this area take the intermediate position between the static wage curve and the pure Phillips curve and estimate a dynamic specification relating wages and unemployment that nests these two models as extreme cases.

Blanchflower and Oswald (1994a) and Card (1995) suggest the estimation of different wage curves for different population groups (young versus old, men versus women, white versus non-white, etc). One would expect the wage to be more flexible the weaker the bargaining power of the particular group. Blanchflower and Oswald find that younger workers have a significantly higher wage elasticity than older workers for all countries except Australia. For West Germany, the fixed effects estimator of this elasticity is larger for younger workers (below the age of 30) than older workers (above the age of 45), -0.018 as compared to -0.014 in the short-run, and -0.041 as compared to -0.029 in the long-run. This result is reversed when based on the `first stage cross-sectional´ wage equation, but this may be due to the fact that the latter does not control for individual effects.

Blanchflower and Oswald (1994a) and Card (1995) find that for the U.S. data, men's wages are more sensitive to the unemployment rate than women's wages. This is true for West Germany, -0.014 for males as compared to -0.009 for females in the short-run and -0.029 as compared to -0.02 in the long-run. This gap is smaller when we instrument for unemployment, and disappears when our estimates are based on a `first stage cross-sectional´ rather than a `first stage panel´ wage equation. The latter result may be due to the fact that `first stage cross-sectional´ estimates do not control for individual effects.

Blanchflower and Oswald (1994a) find that more educated workers in the U.S. have a significantly lower wage elasticity than that of highly educated workers. This is also true for Canada and one of the U.K. data sets, but not so for Australia. In West Germany, we find that the unemployment elasticity for less qualified workers is -0.011 as compared to -0.009 for highly qualified workers in the short-run, and -0.023 as compared to -0.025 in the long-run. The latter elasticity drops to -0.022 in the long-run, when we instrument for unemployment. The gap is wider when our estimates are based on a `first stage cross-sectional´ rather than a `first stage panel´ wage equation. We find that the unemployment elasticity for less qualified workers is -0.007 as compared to -0.001 for highly qualified workers in the short-run, and -0.011 as compared to -0.001 in the long-run.

Despite the differences in estimation methods and control for type of worker, our results are fairly robust showing a short-run elasticity no larger than -0.02 and a long-run elasticity no larger than -0.042. Although the -0.10 elasticity of wage with respect to unemployment is dubbed an `empirical law´, the meta analysis done by Nijkamp and Poot (2005) find that the elasticity, based on the various studies considered, varied between -0.5 and 0.1. In fact, to claim that this elasticity is the same across countries may be at odds with the theoretical conclusions in Layard, et al. (1991) since it implies the same degree of wage rigidities across countries.

4 Conclusion

This study reconsiders the empirical evidence for or against the existence of a West German wage curve. It uses a random sample from the IAB employment sample over the period 1980-2004. We find support for a dynamic wage curve, i.e., a significant coefficient on lagged wages (0.3 for `first stage cross-sectional´ and 0.5 for `first stage panels´) that is far from unity. This tends to support the story that price and wage rigidities, along with the process of matching, bargaining and rent sharing, result in the partial adjustment of wages to shocks. The wage elasticity with respect to unemployment is small but significant (-0.01) in the short-run and about double or triple (-0.02 to -0.03) in the long-run. This is much smaller than the empirical law prediction of -0.1. However, we hasten to add that Blanchflower and Oswald (1994a) themselves argue that `it would probably be unwise to treat the minus point one rule as more than one of thumb´.

Table 1: Dynamic Regional German Wage Curve By Type of Worker

The IAB Employment Sample: 1980-2004[a]

First Stage Panel

First Stage Panel	Age		Gender		Qualifications		All
	Young	Old	Male	Female	High	Low	Workers
Fixed Effects[b]							
W_{ijt-1}	0.553 (0.010)	0.536 (0.010)	0.518 (0.010)	0.541 (0.010)	0.618 (0.009)	0.506 (0.011)	0.527 (0.010)
Short-Run u_{jt}	-0.018 (0.002)	-0.014 (0.001)	-0.014 (0.001)	-0.009 (0.002)	-0.009 (0.003)	-0.011 (0.002)	-0.012 (0.001)
Long-Run u_{jt}	-0.041 (0.005)	-0.029 (0.003)	-0.029 (0.002)	-0.020 (0.004)	-0.025 (0.009)	-0.023 (0.004)	-0.026 (0.002)
F Test[c]	30.99	36.22	9.64	22.33	8.45	9.06	9.37
Fixed Effects IV[d]							
W_{ijt-1}	0.529 (0.011)	0.498 (0.011)	0.498 (0.011)	0.517 (0.011)	0.557 (0.010)	0.474 (0.011)	0.504 (0.011)
Short-Run u_{jt}	-0.020 (0.003)	-0.015 (0.002)	-0.015 (0.002)	-0.012 (0.003)	-0.009 (0.005)	-0.012 (0.003)	-0.014 (0.001)
Long-Run u_{jt}	-0.042 (0.006)	-0.031 (0.004)	-0.031 (0.003)	-0.025 (0.006)	-0.022 (0.011)	-0.023 (0.005)	-0.029 (0.003)
F Test[C]	23.34	27.72	8.73	7.94	8.83	8.27	8.29

a Other control variables include Age, Age2, Gender, Worker's Qualification (4 categories), 6 employment status categories, 14 occupational categories, 30 industry categories and 9 establishment size categories. The number of observations for the first stage regression is NT and varies from region to region (1995 to 144680 observations). The number of observations for the second stage regression is 7824 based on 326 regions over 24 years. See the data appendix for a detailed description of these variables.

b This includes region dummies, time dummies and regional trends, see Bell et al. (2002).

c This tests for the significance of the region dummies and is distributed under the null as F(325,7148) for FE and F(325,6498) for FE-IV.

d This instruments for unemployment by its lags, see Bell et al. (2002).

Table 2: Dynamic Regional German Wage Curve By Type of Worker The IAB Employment Sample: 1980-2004[a]

First Stage Cross-Section

First Stage Cross-Section	Age		Gender		Qualifications		All
	Young	Old	Male	Female	High	Low	Workers
Fixed Effects[b]							
W_{ijt-1}	0.325 (0.012)	0.477 (0.011)	0.358 (0.011)	0.378 (0.011)	0.301 (0.011)	0.397 (0.011)	0.396 (0.011)
Short-Run u_{jt}	-0.009 (0.003)	-0.012 (0.003)	-0.010 (0.002)	-0.010 (0.003)	-0.001 (0.004)	-0.007 (0.003)	-0.011 (0.001)
Long-Run u_{jt}	-0.014 (0.004)	-0.022 (0.005)	-0.016 (0.002)	-0.016 (0.005)	-0.001 (0.006)	-0.011 (0.005)	-0.018 (0.002)
F Test[c]	3.75	3.35	6.06	4.06	2.85	3.14	5.61
Fixed Effects IV[d]							
W_{ijt-1}	0.311 (0.011)	0.457 (0.011)	0.337 (0.012)	0.356 (0.012)	0.295 (0.011)	0.376 (0.012)	0.376 (0.012)
Short-Run u_{jt}	-0.010 (0.004)	-0.015 (0.004)	-0.011 (0.002)	-0.011 (0.004)	-0.001 (0.006)	-0.008 (0.005)	-0.011 (0.002)
Long-Run u_{jt}	-0.014 (0.006)	-0.028 (0.007)	-0.017 (0.003)	-0.018 (0.006)	-0.001 (0.009)	-0.013 (0.007)	-0.018 (0.003)
F Test[C]	3.26	3.06	5.61	3.72	2.44	2.91	5.09

[a] Other control variables include Age, Age2, Gender, Worker's Qualification (4 categories), 6 employment status categories, 14 occupational categories, 30 industry categories and 9 establishment size categories. The number of observations for the first stage regression is NJ and varies from year to year (151893 to 179141 observations). The number of observations for the second stage regression is 7824 based on 326 regions over 24 years. See the data appendix for a detailed description of these variables.

[b] This includes region dummies, time dummies and regional trends.

[c] This tests for the significance of the region dummies and is distributed under the null as F(325,7148) for FE and F(325,6498) for FE-IV.

[d] This instruments for unemployment by its lags, see Bell et al. (2002).

References

Baltagi, Badi H. and Uwe Blien, 1998, The German wage curve: evidence from the IAB employment sample, *Economics Letters* 61, 135-142.

Bell, Brian, Stephen Nickell and Glenda Quintini, 2002, Wage equations, wage curve and all that, Labour Economics 9, 341-360.

Bellmann, L. and Uwe Blien, 2001, Wage curve analyses of establishment data from Western Germany, Industrial and Labor Relations Review 54, 851-863.

Bender, Stefan, Jürgen Hilzendegen, Gotz Rohwer and Helmut Rudolph, 1996, Die IAB-Beschaftigtenstichprobe 1975-1990. Eine praktische Einführung, BeitrAB 197, Nürnberg.

Blanchflower, David G. and Andrew J. Oswald, 1994a, The wage curve, (Cambridge, MA, MIT Press).

Blanchflower, David G. and Andrew J. Oswald, 1994b, Estimating a wage curve for Britain 1973-90, The Economic Journal 104, 1025-1043.

Blanchflower, David G. and Andrew J. Oswald, 1995, An introduction to the wage curve, Journal of Economic Perspectives 9, 153-167.

Blanchflower, David G. and Andrew J. Oswald, 2005, The wage curve re-loaded, working paper 11338, National Bureau of Economic Research, Cambridge, Massachussets.

Buettner, Thiess, 1999, The effect of unemployment, aggregate wages, and spatial contiguity on local wages: An investigation with German district level data, Papers in Regional Science 78, 47-67.

Card, David, 1995, The wage curve: A review, Journal of Economic Literature 33, 785-799.

Layard, Richard, Stephen Nickell and Richard Jackman, 1991, Unemployment: Macroeconomic performance and the labour market. (Oxford University Press, New York).

Montuenga-Gomez, Victor M. and Jose M. Ramos-Parreno, 2005, Reconciling the wage curve and the Phillips curve, Journal of Economic Surveys 19, 735-765.

Nickell, Stephen, 1981, Biases in dynamic models with fixed effects, *Econometrica* 49, 1417-1426.

Nijkamp, Peter and Jacques Poot, 2005, The last word on the wage curve?, Journal of Economic Surveys 19, 421-450.

Pannenberg, Markus, and Johannes Schwarze, 2000, Wage dynamics and unemployment in Germany: Evidence from Regional Panel Data, Labour 14, 645-656.

Wagner, Joachim, 1994, German wage curves, 1979-1990, *Economics Letters* 44, 307-311.

Data Appendix

The data set used in this study is a one percent random sample of the Employment Statistics which includes the total population of people gainfully employed and included in the social insurance system in Western Germany. This is over 80% of all employment. The observation period is 1980-2004. The 25 waves of this panel include a total of 4,120,839 individual employment spells. Excluded from this data, are the self-employed, civil servants, and workers with a very small income (in 1995 less than 256 Euros a month). The Employment Statistics give continuous information on employment spells, earnings, job and personal characteristics. It is based on microdata delivered by firms about their individual employees. For every employee a new record is generated every year. The same is done if he or she changes an establishment. The duration of a spell is computed not in days worked but in calendar days. The wage variable is measured for calendar days. It is deflated by the consumer price index calculated for Western Germany by the German General Statistical Office. To avoid any contamination with working time effects only people working full time were included.

One of the advantages of the employment statistics is the identification of the region where a specific employee is located. For our study, 326 administrative districts (Landkreise/kreisfreie Städte) are used as regional units. Berlin is excluded because of its special situation as an “island” in Eastern Germany.

Originally, the data of the employment statistics were taken over for administrative purposes of the social security system and were collected by the Federal Employment Agency (Bundesagentur für Arbeit), see Bender, et al. (1996). Since they are used to calculate the pensions of retired people, the income and duration information is very reliable. No problem of recall or reporting is encountered as in population surveys. No wage classifications are needed because the exact individual wage is reported.

One limitation is that the wages reported are censored for groups with high income. For individuals with wages exceeding a defined threshold, the contribution assessment ceiling of the social insurance system, only the value of this threshold is reported. In these cases the exact value of

the wage is unknown. For example, in 1989, this threshold was a monthly income of 3,119 Euro. Tests with cross-sectional data show that the multiple imputation of wages above the threshold leads to very small changes in the results of a Mincer-type earnings function.

Apart from the individual wage, the following variables were used in our regressions:

- *Age*. Age of the individual
- *Sex*. Female=1 and male=0.
- *Employment status*. This variable includes 6 categories: Unskilled blue collar, skilled blue collar, white collar, apprentice, foreman, no classification applicable.
- *Qualification level of an employee*. This variable includes 4 categories: No formal education, vocational qualification, university degree, no classification applicable.
- *Industry classification*. This variable defines the specific industry to which the employing establishment belongs. These include 30 categories: primary sector, energy & mining, chemistry, plastic products, stones & earth, glass products, quarrying & metals, metal construction, motor vehicles, computers & electronic equipment, jewellery & toys, wood, paper, textiles, food products, construction, trade, transport & telecommunication, banking & insurance, hotels & catering, health care, business related services, security services, temporary help services, education, leisure related services, household related services, other social services, public administration, and not applicable.
- *Occupational group*. This variable describes the field of occupational specialization of an employee. These include 14 categories: agricultural, nonqualified blue collar worker, qualified blue collar worker, technician, engineer, simple services, qualified services, semi-professional, professional, simple administrative, qualified administrative, managers, special occupations of the former German Democratic Republic, and no classification applicable.
- *Establishment size*. The size of an establishment measured by the number of employees. This includes 9 categories. 1-4 employees, 5-9 employees, 10-49 employees, 50-99 employees, 100-199 employees, 200-

499 employees, 500-999 employees, 1000-4999 employees, and more than 4999.

- *Regional unemployment:* The districts are the smallest regions for which unemployment figures can be obtained. Unemployment rates were computed by dividing this variable by the sum of regional total employment and unemployment.

The data we use is obtained from the standard IAB Employment Sample (IABS-reg01), which covers 2 % of all employment in the period of 1976 to 2001. For the purposes of our study a 50% sub-sample of the original Employment Sample was used to ease computation. We do not use data from the seventies because the regional information is not consistent with the one of later years.

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Stand: 23.3.2007

Imprint

IABDiscussionPaper
No. 14 / 2007

Editorial address
Institut für Arbeitsmarkt- und Berufsforschung
der Bundesagentur für Arbeit
Weddigenstr. 20-22
D-90478 Nürnberg

Editorial staff
Regina Stoll, Jutta Palm-Nowak

Technical completion
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For further inquiries contact the author:
Uwe Blien, Tel. 0911/179-3035,
or e-mail: uwe.blien@iab.de