

Bauer, Thomas K.; Flake, Regina; Sinning, Mathias G.

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Labor Market Effects of Immigration – Evidence from Neighborhood Data

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Thomas K. Bauer
Regina Flake
Mathias G. Sinning

Labor Market Effects of Immigration

Evidence from Neighborhood Data



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Universität Duisburg-Essen, Department of Economics
Universitätsstr. 12, 45117 Essen, Germany

Rheinisch-Westfälisches Institut für Wirtschaftsforschung (RWI)
Hohenzollernstr. 1-3, 45128 Essen, Germany

Editors

Prof. Dr. Thomas K. Bauer
RUB, Department of Economics, Empirical Economics
Phone: +49 (0) 234/3 22 83 41, e-mail: thomas.bauer@rub.de

Prof. Dr. Wolfgang Leininger
Technische Universität Dortmund, Department of Economic and Social Sciences
Economics – Microeconomics
Phone: +49 (0) 231/7 55-3297, email: W.Leininger@wiso.uni-dortmund.de

Prof. Dr. Volker Clausen
University of Duisburg-Essen, Department of Economics
International Economics
Phone: +49 (0) 201/1 83-3655, e-mail: vclausen@vwl.uni-due.de

Prof. Dr. Christoph M. Schmidt
RWI, Phone: +49 (0) 201/81 49-227, e-mail: christoph.schmidt@rwi-essen.de

Editorial Office

Joachim Schmidt
RWI, Phone: +49 (0) 201/81 49-292, e-mail: joachim.schmidt@rwi-essen.de

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Thomas K. Bauer, Regina Flake, and Mathias G. Sinning¹

Labor Market Effects of Immigration – Evidence from Neighborhood Data

Abstract

This paper combines individual-level data from the German Socio-Economic Panel (SOEP) with economic and demographic postcode-level data from administrative records to analyze the effects of immigration on wages and unemployment probabilities of high- and low-skilled natives. Employing an instrumental variable strategy and utilizing the variation in the population share of foreigners across regions and time, we find no support for the hypothesis of adverse labor market effects of immigration.

JEL Classification: F22, J31, J64, R23

Keywords: International migration; effects of immigration

May 2011

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1 Introduction

The abolition of the restrictions on free labor mobility between the new Eastern European members of the European Union (EU) and Germany in May 2011 raises severe concerns among policy makers and the public about potential negative labor market effects for natives in reaction to an expected increased inflow of workers from these countries. The introduction of sector-specific minimum wages since 1997 is a direct preparative to avoid potential downward pressure on natives' wages when Eastern European workers will eventually take advantage of the new freedom to work in Germany. The public discussion, however, typically disregards the existing empirical evidence on the labor market effects of migration. Although simple theoretical models suggest that an increase in labor supply due to immigration may result in lower wages and/or higher unemployment of natives if they are perfect substitutes to immigrants, empirical studies typically conclude that immigration has economically irrelevant or no effects on wages and employment of natives (Friedberg and Hunt, 1995; LaLonde and Topel, 1996; Borjas, 1999, 2003; Longhi et al., 2005; Zimmermann, 2005).

Within this strand of the literature, studies have used regional variation in the population share of immigrants to estimate the labor market effects of immigration and addressed the problem of non-random location choices of immigrants by using instrumental variables or natural experiments (Bartel, 1989; Card, 1990; Altonji and Card, 1991; Hunt, 1992; Munshi, 2003; Card, 2005). While this literature has focused predominantly on immigration to the U.S., less is known about the consequences of immigration into major European immigration countries. Empirical evidence for the U.S., however, cannot be alienated to European countries, because source countries and policies used to shape the structure of immigration differs considerably between the U.S. and Europe. In addition, labor market conditions in the U.S. are very different from those of many European countries. In particular, it appears likely that employment rather than wage effects of immigration are more important in European labor markets because of relatively stronger unions and more rigid wage

floors.

A few studies have examined the labor market effects of immigration to Germany during the 1980s and 1990s (Bauer et al., 2005). On balance, this literature has found very small or no effects of immigration on natives. Due to data limitations, most of these studies have either considered variations in the foreigner share across industries (DeNew and Zimmermann, 1994a,b; Bauer, 1997; Winter-Ebmer and Zimmermann, 1999) or used data aggregated at the regional level (Hatzius, 1994; Pischke and Velling, 1997; D’Amuri et al., 2010; Glitz, 2011) to estimate the labor market effects of immigration. This paper also utilizes regional variation in the population share of foreigners to estimate individual labor market outcomes taking advantage of a new data source, which allows us to combine individual-level data from the German Socio-Economic Panel (SOEP) with economic and demographic postcode-level data from administrative records for the years 2000 to 2005.

We use the regional share of old buildings at the beginning of the 1960s as an instrument for the regional share of foreigners to avoid potentially biased estimates due to the non-random location choice of migrants. Since many old buildings were destroyed during the Second World War (WWII), especially in industrial regions that have become the home of millions of (so-called) “guest workers” since the 1960s, the share of old buildings constitutes an excellent instrument for the purpose of our analysis. Our empirical findings indicate that immigration to Germany had no adverse effects on labor market outcomes of high- and low-skilled natives during the early 2000s. Specifically, we find no effect of immigration on wages of low-skilled German workers. Although minimum wages or social security levels could have prevented wages of native-born workers from falling, we observe no employment effect of immigration either, indicating that immigrants cannot be considered as substitutes for (high- or low-skilled) native-born workers. These findings are consistent with earlier studies that have analyzed labor market effects of immigration to Germany during the 1980s and 1990s.

2 Data

Our empirical analysis employs a unique confidential dataset, which combines two data sources: longitudinal individual data from the German Socio-Economic Panel (SOEP) and process-generated data from the federal employment office, provided by the research data centre of the federal employment agency at the Institute for Employment Research.¹ The latter is taken from the official employment and unemployment registers and provides aggregate information on the employment status, age, gender, educational level, and nationality of the individuals in a postcode region. Using the administrative data, we calculate the share of foreigners in the labor force at the postcode level for the period from 2000 to 2005, which is the central explanatory variable of interest. In addition, we construct the unemployment rate, the share of untrained workers, the share of workers with a university degree, the respective shares of workers aged 20 to 30 and 50 to 65 years, and the labor force population density, which constitute relevant control variables in our analysis.

The SOEP is a longitudinal study of private households, which started in 1984 and samples more than 20,000 persons each year, including Germans, foreigners and recent immigrants. The study contains information on socioeconomic and demographic characteristics, household composition, labor market biographies, etc. We use this data source to construct our outcome measures and relevant socioeconomic characteristics. Wages and unemployment status constitute the dependent variables of our analysis. Socioeconomic characteristics include the potential labor market experience of the individuals and its square, a dummy variable for the marriage status, dummy variables indicating the educational level (no degree, technical degree, intermediate degree, secondary degree, upper secondary degree, other degree), and a dummy variable indicating part-time employment.

Since access to the administrative records is currently only available for the years

¹The combined “German Neighborhood SOEP” is a joint project of the Research Data Centre (FDZ) at the Institute for Employment Research (IAB), the DIW and the Rheinisch-Westfälisches Institut für Wirtschaftsforschung (RWI) financed by the Leibniz-Gemeinschaft. See Bauer et al. (2011) for a detailed description of the dataset.

2000 to 2005, our analysis is restricted to this period. We further restrict our sample to West Germany (including East and West Berlin) because the share of the immigrant population residing in East Germany outside of Berlin is very small. Our analysis further focuses on native-born men aged 16 to 65 years in the labor force, i.e. regularly full- or part-time employed and currently registered unemployed persons. Our sample does not include self-employed, persons serving in the armed forces, individuals undertaking vocational training and marginally employed. After excluding observations with missing values on one of the relevant variables, the pooled sample includes 12,788 person-year-observations of 3,737 individuals. We use an unbalanced panel and employ survey weights provided by the SOEP to obtain representative results.²

Table 1 shows some descriptive statistics for the total sample used in our empirical analysis. We differentiate between low-skilled and high-skilled individuals based on their school-leaving degrees, with low-skilled being defined as persons who dropped out of school, hold a secondary school degree or a non-specified other degree, and high-skilled being defined as persons holding at least an intermediate school degree, a degree from technical school or an upper secondary school degree. The average age of the individuals in our sample is 42 years. While low-skilled persons have on average 10 years of education, the respective number for high-skilled persons is 14 years. The share of currently registered unemployed persons accounts for 5.3% among high-skilled persons and is almost three times larger among low-skilled persons (14.8%). The hourly wages of workers are on average 16.61 €, 14.85 € for low-skilled workers and 17.87 € for high-skilled workers.

The neighborhood characteristics contain information about the labor force in the postcode region of the residential location. The share of foreigners in the labor force,

²The SOEP data used in this paper were extracted using the Add-On package PanelWhiz v2.0 (Nov 2007) for Stata. PanelWhiz was written by Dr. John Haisken-DeNew (john@panelwhiz. eu). The PanelWhiz generated DO file to retrieve the SOEP data used here and any PanelWhiz Plugins are available upon request. Any data or computational errors in this paper are our own. Haisken-DeNew and Hahn (2006) describe PanelWhiz in detail.

i.e. the share of employed and unemployed foreigners of the working population in the neighborhood, is around 11% for both, low-skilled and high-skilled individuals. The unemployment rates in the respective neighborhoods vary between 8.2% and 8.5% with a tendency of being slightly higher in the neighborhoods of low-skilled persons. The average share of 20 to 30 year old workers is 21% and the share of 50 to 65 year old workers is 23%. There are no differences in the demographic composition of neighborhoods of low- and high-skilled workers, while educational compositions differ. Low-skilled persons live in neighborhoods with a larger share of untrained workers (16.4% compared to 15%) and a lower share of workers with a university degree (7.3% compared to 9%) than high-skilled individuals. Table 1 also reveals that high-skilled individuals live in regions which are on average more densely populated.

3 Identification Strategy

Our empirical analysis departs from a linear regression model that relates the labor market outcome y_{ijt} of individual i ($i = 1, \dots, N$) residing in region j ($j = 1, \dots, J$) at time t ($t = 1, \dots, T$) to a vector of individual-specific characteristics X_{it} (such as educational attainment and potential labor market experience), regional characteristics Z_{jt} (such as the local unemployment rate and the size of the labor force) and a variable I_{jt} measuring the share of foreigners in the labor force of the region:

$$y_{ijt} = \beta_0 + X_{it}\beta_1 + Z_{jt}\beta_2 + \beta_3 I_{jt} + \theta_l + \lambda_t + \varepsilon_{ijt}. \quad (1)$$

The model contains region fixed effects θ_l which capture interregional differentials that do not change over time. Administrative boundaries like postcode, community or county boundaries are not adequate to describe local labor markets. Therefore, we choose local labor markets l ($l = 1, \dots, L$) as defined by Kropp and Schwengler (2008), whose delineation are based on the structure of commuter flows between counties in 2005 using graph theory, as the level of aggregation for these fixed effects. These local labor markets capture actual commuter linkages much better than administrative

boundaries. After imposing the sample restrictions described above and excluding labor markets with 25 or less observations in one of the education groups considered, 89 local labor markets are available for the analysis.³ The model further includes time fixed effects λ_t , which pick up average changes in y over time that do not vary across regions. After including region and time fixed effects, the parameter β_3 captures changes in the outcome variable within regions that are due to changes in the share of foreigners in that region.⁴

We may only obtain an unbiased OLS estimate of the parameter β_3 if $E(\varepsilon_{ijt}|I_{jt}) = 0$, which is unlikely the case, because location choices of immigrants depend on unobserved wage determinants captured by ε . For example, when estimating equation (1) by OLS, we may find an insignificant or positive effect of immigration on natives' wages even if the true effect is negative, because the estimate of β_3 is upward biased due to immigrants migrating predominantly to high-wage regions. We employ an instrumental variable (IV) strategy to obtain unbiased estimates of the labor market effects of immigration, using the following reduced form equation:

$$I_{jt} = \gamma_0 + X_{it}\gamma_1 + Z_{jt}\gamma_2 + \gamma_3 IV_k + \theta_t + \lambda_t + \eta_{ijt}, \quad (2)$$

where IV_k is the 1961 share of old buildings constructed before 1870 in region k ($k = 1, \dots, K$).⁵ The level of aggregation of our instrument are K administrative districts (*Landkreise*).

This identification strategy will deliver consistent estimates of the effect of immigration on labor market outcomes if (i) our instrument is correlated with the share of foreigners in the labor force and (ii) if the only channel through which the instrument affects recent labor market outcomes is its effect on the regional distribution of foreigners. It seems likely that the 1961 share of buildings constructed before

³Using an alternative definition of labor market regions, the so-called "Regionale Raumordnungsregionen" (ROR) defined by the Federal Institute for Research on Building, Urban Affairs and Spatial Development, does not change the empirical results.

⁴This model is comparable to the empirical approaches employed by Card and Krueger (1992) and Friedberg (2001).

⁵Statistisches Bundesamt Wiesbaden, 1961, Gebäudezählung vom 6. Juni 1961, Heft 3, Hauptergebnisse nach Kreisen, Stuttgart and Mainz.

1870 explains the regional distribution of foreigners in Germany. Many old buildings were destroyed during WWII, especially in industrial regions. Immigration to Germany was dominated by (so-called) “guest workers” from Southern Europe during the post-war period until the early 1970s. These workers were actively recruited by the German government to meet a shortage of low-skilled labor in the industry.⁶ Since labor migrants typically moved into regions in which most of the buildings were destroyed during WWII, we expect a strong negative correlation between the regional share of foreigners and the share of old buildings. The large influx of immigrants into industrial regions determined location choices of subsequent immigrant cohorts, even though the ethnic composition of the immigrant population has changed substantially over time (see Bauer et al., 2005).

Figure 1 describes the relationship between our instrument and the share of foreigners in the neighborhood. Since industrial regions exhibit a higher population density than non-industrial regions, it is necessary to weight the observed values accordingly. We use the labor force population density observed in the administrative data to weight our observations. The labor force population density in a region presented in Figure 1 is described by the size of a circle for each postcode region. We find that the share of old buildings is generally higher in regions with low population densities, i.e. the circles are very small for higher values of the instrument. Moreover, since many old buildings were destroyed in industrial regions where most of the guest workers settled down, we observe a negative relationship between the share of foreigners in the labor force and the share of old buildings, in particular for the sample of low-skilled persons.⁷

Although we cannot test our exclusion restriction, it seems unlikely that the share of old buildings had an effect on the determinants of recent labor market outcomes other than the regional distribution of immigrants. A violation of the exclusion restriction would require that local labor market conditions remained relatively con-

⁶See Bauer et al. (2005) for a detailed description of the German guest-worker policy.

⁷The coefficients of the underlying regressions are negative and significant.

stant over time.⁸

When analyzing the effects of aggregate variables on micro units, we have to account for the possibility of a within-group correlation of random disturbances. Since individuals residing in the same postcode region share the same observable characteristics on an aggregate level, they may also share unobservable characteristics that lead to correlated errors. As a result, the standard errors of our parameter estimates may be biased downward. Moulton (1990) provides a detailed description of this problem. In our empirical analysis, we adjust the estimated standard errors to account for possible correlations of error terms within postcode regions.

4 Results

Table 2 presents the estimation results for the basic linear wage and unemployment regression with neighborhood characteristics. Our main variable of interest is the share of foreigners in a neighborhood. The coefficients of the individual socioeconomic characteristics of the wage regression presented in Table 2 have the expected signs. There are positive but decreasing returns to potential labor market experience, married men receive higher wages, and part-time employed persons have significantly lower wages. While having no school degree or any other degree does not significantly affect the wages of employed persons compared to having a secondary school degree, persons with a technical, intermediate or upper secondary degree have significantly higher wages.

Concerning the neighborhood characteristics, the results show that persons living in neighborhoods with a high share of foreigners have on average higher wages. This result indicates that immigrants and natives are complements in production,

⁸Using data of the regional file of the IAB employment sample for the years 1975 to 2004 shows that while the sectoral structure of employment changed in West-German districts, the share of foreigners stayed relatively constant. The average share of persons employed in the industry (service) sector steadily declined (increased) from 65% to 52.3% (30.0% to 43.9%), while the share of foreigners remained constant around 10%. Dietz (1988) reports similar results for the period 1974 to 1986.

suggesting that natives may benefit from immigration. A 1%-point increase of the share of foreigners increases the hourly wages of natives by approximately 0.4%. We may calculate the monetary value for the year 2005 to give an impression of the magnitude of this effect. Specifically, multiplying the average number of hours worked per day with the number of working days and the average gross hourly wage rate yields an average annual wage of 38,249.55 €. According to the Federal Statistical Office, there were 30.8 million labor force participants in West Germany (incl. Berlin). Therefore, a 1%-point increase of the share of foreigners would imply an inflow of 308,000 additional foreigners into the labor force, which in turn would lead to a wage increase of German natives of 153.00 € per year.⁹ The estimates of the wage regression further suggest that a higher unemployment rate decreases the wages of employed persons significantly. This could be a labor supply effect or due to a reduced wage bargaining power of employed persons. Both the share of untrained workers and the share of young workers in the neighborhood have a significantly negative effect on wages.

Table 2 also includes the regression results for the unemployment probabilities. Again, the coefficients of the socioeconomic characteristics have the expected signs. Potential labor market experience, being married and having a school-leaving degree above a secondary school degree decrease the probability of being unemployed significantly. Persons who dropped out of school and those who do not have a school degree have significantly higher unemployment probabilities than persons with a secondary degree. The coefficient of the share of foreigners is not statistically different from zero, indicating that immigration does not have any employment effects. The unemployment rate in the postcode region has also no effect on a person's unemployment probability. The only coefficient of the neighborhood variables that is significantly different from zero is the one of the share of workers between 20 and 30 years, which indicates that a high proportion of young persons in the labor force increases the individual unemployment probability.

⁹For comparison: In 2005, 579,000 foreigners (labor force participants and non-labor force participants) immigrated to East- and West-Germany.

Table 3 reports the results of some alternative specifications to test the robustness of the results presented in Table 2. The estimates of the full sample presented in columns (1) and (4) reveal that the share of foreigners in the neighborhood has a significantly negative effect on wages and a significantly positive effect on unemployment if we do not control for socioeconomic and neighborhood characteristics. The results in Table 3 also show that the former effect is mainly driven by a significant effect of immigration on wages of high-skilled workers, while the latter effect is the result of a strong impact of immigration on unemployment probabilities of low-skilled workers. Controlling for additional socioeconomic characteristics turns the wage effect insignificant for all groups considered, while the estimated effect on the unemployment probability remains basically unchanged. We find a significantly positive effect of immigration on wages if we include neighborhood characteristics as additional control variables. Again, this effect is mainly driven by the immigration effect on wages of high-skilled workers. In contrast, the unemployment effects of immigration are insignificant after controlling for neighborhood characteristics. Overall, the results highlight the importance of controlling for both socioeconomic and neighborhood characteristics when using regional variation to analyze labor market effects of immigration.

There are several possible explanations for the positive effect of immigration on the wages of native-born workers. First, this positive effect may be the result of high-skilled native-born workers and foreigners being complements in the labor market. Second, the positive effect may be a consequence of foreigners' self-selection into booming labor markets. In the latter case, the coefficient of the share of foreigners would be upward biased in the wage regression and downward biased in the unemployment regression. To deal with this potential endogeneity problem, we employ the IV approach described in the previous section, using the share of buildings in 1961 that were built before 1870 as an instrument for the regional share of foreigners.

Table 4 includes the estimates of the first stage regression of the IV model for different specifications. The numbers provide evidence for a significantly negative

effect of the share of old buildings on the share of foreigners in the labor force. The effect of the instrument is remarkably stable across model specifications and the variation in the share of foreigners in the labor force that is explained by the first stage is above 50%, even if we do not control for additional socioeconomic and neighborhood characteristics. The F statistic of the first stage regressions is always above 30 for the sample of low-skilled workers and above 70 for the sample of high-skilled workers, indicating that our IV estimates do not suffer from a weak instrument problem.

Turning to the estimated labor market effects of immigration presented in Table 5, we find that accounting for non-random location choices of migrants results in insignificant labor market effects of immigration. This result is stable across model specifications and holds for both low- and high-skilled workers.

5 Conclusions

This paper analyzes the impact of immigration on individual labor market outcomes of German natives. We allow the impact of immigration to differ between low- and high-skilled natives and identify the impact of immigration using the variation of the share of foreigners between neighborhoods and over time. We further address the issue of endogeneity of the location choice of immigrants by instrumenting the share of foreigners in the neighborhood with the share of old buildings at the beginning of the 1960s.

In the basic OLS regressions, we do not find a significant impact of immigration on natives' unemployment probabilities, whereas we find a positive impact of the share of foreigners on wages of high-skilled natives. However, once controlling for the non-random sorting of foreigners into certain labor markets, this significant impact disappears. Our results are in line with earlier studies for Germany, which found very small or no effects of immigration on labor market outcomes of German natives.

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Figures and Tables

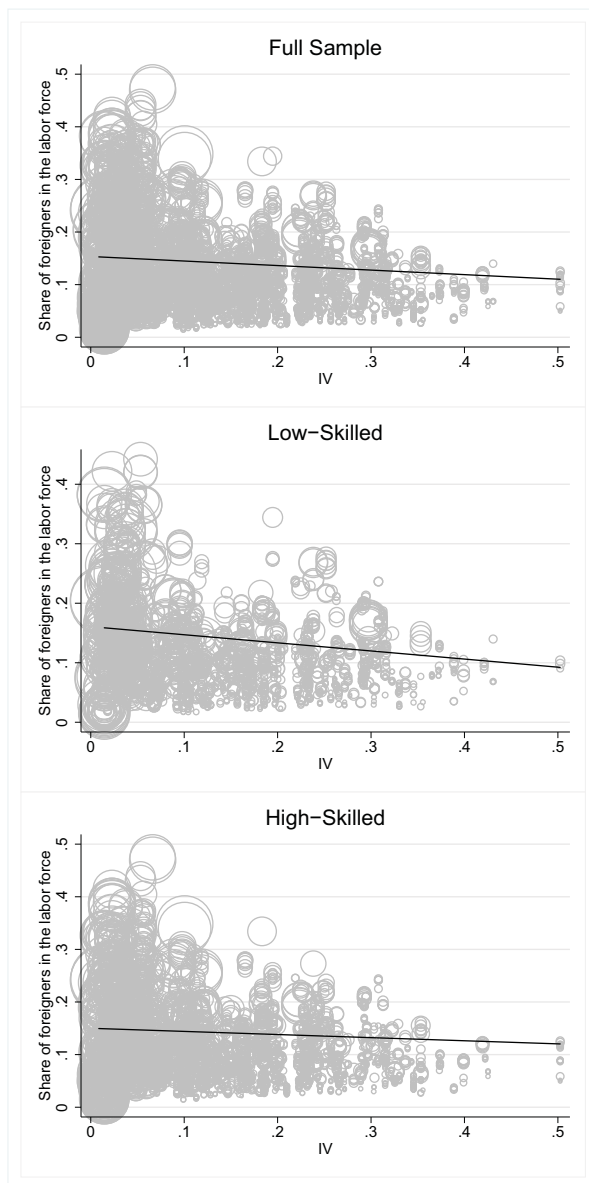


FIGURE 1: Relationship between IV and share of foreigners in the labor force

TABLE 1: SUMMARY STATISTICS

	Full Sample		Low-Skilled		High-Skilled	
	Mean	SD	Mean	SD	Mean	SD
SAMPLE OF EMPLOYED						
Hourly gross wage	16.61	7.05	14.85	5.12	17.87	7.92
Observations	11,770		4,404		7,366	
SAMPLE OF EMPLOYED AND NON-EMPLOYED						
Socioeconomic characteristics						
Age	42.3	10.5	44.4	10.8	40.6	10.0
Married (%)	57.9	49.4	63.3	48.2	53.6	49.9
Length of education in years	12.2	2.6	10.3	0.9	13.7	2.4
Dropout, No School Degree (%)	2.3	14.9	5.1	22.1		
Secondary School Degree (%)	40.9	49.2	92.6	26.2		
Other Degree (%)	1.0	10.0	2.3	15.0		
Technical School Degree (%)	7.6	26.5			13.6	34.2
Intermediate School Degree (%)	28.3	45.0			50.7	50.0
Upper Secondary Degree (%)	20.0	40.0			35.8	47.9
Potential labor market experience in years	24.1	11.0	28.1	10.7	20.9	10.2
Currently registered unemployed (%)	9.5	29.3	14.8	35.5	5.3	22.4
Full-time employed (%)	87.4	33.2	83.7	36.9	90.3	29.6
Part-time employed (%)	3.1	17.4	1.5	12.0	4.4	20.6
Neighborhood characteristics						
Share of foreigners in the labor force (%)	11.0	6.9	11.1	7.0	11.0	6.9
Unemployment rate (%)	8.3	3.8	8.5	3.6	8.2	4.0
Share of untrained workers (%)	15.6	4.6	16.4	4.6	15.0	4.4
Share of workers with university degree (%)	8.2	4.5	7.3	3.9	9.0	4.9
Share of 20 to 30 year old workers (%)	21.3	2.5	21.4	2.3	21.3	2.7
Share of 50 to 65 year old workers (%)	23.0	3.0	23.0	2.6	22.9	3.2
Labor force population density (in 1,000)	893	1,317	769	1,058	991	1,483
Observations	12,788		5,062		7,726	

NOTE.—Weighted number based on weights provided by the SOEP.

TABLE 2: WAGE AND UNEMPLOYMENT REGRESSIONS (OLS)

	DEPENDENT VARIABLE			
	Wage		Unemployment	
	Coef.	SE	Coef.	SE
Socioeconomic characteristics				
Married	0.090***	0.014	-0.056***	0.011
Dropout, no school degree	-0.011	0.048	0.101*	0.055
Other degree	0.060	0.044	-0.004	0.052
Technical school degree	0.172***	0.028	-0.070***	0.015
Intermediate school degree	0.087***	0.017	-0.059***	0.012
Upper secondary degree	0.259***	0.025	-0.107***	0.013
Potential labor market experience	0.033***	0.003	-0.015***	0.002
Potential labor market experience ² × 10 ²	-0.047***	0.005	0.032***	0.005
Part-time employed	-0.133***	0.044		
Neighborhood characteristics				
Share of foreigners in the labor force	0.440**	0.176	0.047	0.158
Unemployment rate	-1.022***	0.344	0.174	0.273
Share of untrained workers	-0.506*	0.288	0.033	0.256
Share of workers with university degree	-0.169	0.251	-0.003	0.174
Share of 20 to 30 year old workers	-1.150***	0.384	1.153***	0.402
Share of 50 to 65 year old workers	-0.240	0.248	0.347	0.308
Labor force population density (in 1,000)	0.007	0.007	-0.004	0.006
Constant	2.638***	0.156	-0.064	0.154
Year and region fixed effects	Yes		Yes	
Occupation fixed effects	Yes		No	
R ²	0.344		0.111	
Observations	11,770		12,788	

NOTE.—Weighted regression based on weights provided by the SOEP. Robust standard errors were adjusted for repeated observations within postcode areas. Secondary school degree is base category.

* p<0.10, ** p<0.05, *** p<0.01

TABLE 3: OLS ESTIMATES

	DEPENDENT VARIABLE					
	Wage			Unemployment		
	(1)	(2)	(3)	(4)	(5)	(6)
FULL SAMPLE						
Share of foreigners in the labor force	-0.366** (0.149)	-0.089 (0.124)	0.440** (0.176)	0.336*** (0.115)	0.257** (0.109)	0.047 (0.158)
Year and region fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Socioeconomic characteristics	No	Yes	Yes	No	Yes	Yes
Neighborhood characteristics	No	No	Yes	No	No	Yes
R ²	0.083	0.329	0.344	0.050	0.104	0.111
Observations	11,770			12,788		
LOW-SKILLED						
Share of foreigners in the labor force	-0.305 (0.221)	-0.103 (0.210)	0.269 (0.280)	0.391** (0.194)	0.396** (0.186)	0.022 (0.264)
Year and region fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Socioeconomic characteristics	No	Yes	Yes	No	Yes	Yes
Neighborhood characteristics	No	No	Yes	No	No	Yes
R ²	0.100	0.246	0.264	0.084	0.136	0.146
Observations	4,404			5,062		
HIGH-SKILLED						
Share of foreigners in the labor force	-0.360* (0.212)	-0.161 (0.172)	0.465* (0.243)	0.135 (0.114)	0.112 (0.113)	0.014 (0.156)
Year and region fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Socioeconomic characteristics	No	Yes	Yes	No	Yes	Yes
Neighborhood characteristics	No	No	Yes	No	No	Yes
R ²	0.097	0.355	0.375	0.042	0.074	0.086
Observations	7,366			7,726		

NOTE.—See note to Table 2.

* p<0.10, ** p<0.05, *** p<0.01

TABLE 4: FIRST STAGE

	MODEL					
	Wage			Unemployment		
	(1)	(2)	(3)	(4)	(5)	(6)
FULL SAMPLE						
Share of old buildings	-0.266*** (<0.001)	-0.268*** (<0.001)	-0.221*** (<0.001)	-0.285*** (<0.001)	-0.286*** (<0.001)	-0.230*** (<0.001)
Year and region fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Socioeconomic characteristics	No	Yes	Yes	No	Yes	Yes
Neighborhood characteristics	No	No	Yes	No	No	Yes
R ²	0.542	0.548	0.789	0.540	0.545	0.786
F	84.15	89.04	100.11	83.73	86.05	95.93
Observations	11,770			12,788		
LOW-SKILLED						
Share of old buildings	-0.246*** (<0.001)	-0.250*** (<0.001)	-0.211*** (<0.001)	-0.275*** (<0.001)	-0.280*** (<0.001)	-0.226*** (<0.001)
Year and region fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Socioeconomic characteristics	No	Yes	Yes	No	Yes	Yes
Neighborhood characteristics	No	No	Yes	No	No	Yes
R ²	0.570	0.577	0.804	0.566	0.568	0.798
F	33.69	36.47	50.30	42.08	43.98	55.64
Observations	4,404			5,062		
HIGH-SKILLED						
Share of old buildings	-0.272*** (<0.001)	-0.274*** (<0.001)	-0.224*** (<0.001)	-0.282*** (<0.001)	-0.281*** (<0.001)	-0.228*** (<0.001)
Year and region fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Socioeconomic characteristics	No	Yes	Yes	No	Yes	Yes
Neighborhood characteristics	No	No	Yes	No	No	Yes
R ²	0.556	0.564	0.795	0.551	0.556	0.791
F	81.12	88.89	103.80	78.54	80.47	96.51
Observations	7,366			7,726		

NOTE.—See note to Table 2.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE 5: LABOR MARKET EFFECTS OF IMMIGRATION

	DEPENDENT VARIABLE					
	Wage			Unemployment		
	(1)	(2)	(3)	(4)	(5)	(6)
FULL SAMPLE						
Share of foreigners in the labor force	-0.215 (0.437)	-0.533 (0.357)	-0.559 (0.450)	0.129 (0.283)	0.012 (0.269)	-0.180 (0.345)
Year and region fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Socioeconomic characteristics	No	Yes	Yes	No	Yes	Yes
Neighborhood characteristics	No	No	Yes	No	No	Yes
R ²	0.082	0.326	0.337	0.049	0.103	0.111
Observations	11,770			12,788		
LOW-SKILLED						
Share of foreigners in the labor force	-0.283 (0.630)	-0.463 (0.583)	-0.488 (0.718)	0.030 (0.539)	0.018 (0.526)	-0.411 (0.682)
Year and region fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Socioeconomic characteristics	No	Yes	Yes	No	Yes	Yes
Neighborhood characteristics	No	No	Yes	No	No	Yes
R ²	0.100	0.244	0.259	0.081	0.134	0.145
Observations	4,404			5,062		
HIGH-SKILLED						
Share of foreigners in the labor force	-0.220 (0.572)	-0.443 (0.491)	-0.499 (0.593)	-0.234 (0.225)	-0.275 (0.227)	-0.401 (0.283)
Year and region fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Socioeconomic characteristics	No	Yes	Yes	No	Yes	Yes
Neighborhood characteristics	No	No	Yes	No	No	Yes
R ²	0.097	0.354	0.368	0.035	0.067	0.082
Observations	7,366			7,726		

NOTE.—See note to Table 2.

* p<0.10, ** p<0.05, *** p<0.01