



# MASARYK UNIVERSITY FACULTY OF ECONOMICS AND ADMINISTRATION

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## Ethnic Diversity and Well-Being

**Alpaslan Akay**

(University of Gothenburg)

**Corrado Guilietti**

(IZA)

**Martin Guzi**

(Masaryk University)

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INVESTMENTS IN EDUCATION DEVELOPMENT

# Motivation

- Does ethnic diversity provides societies with real economic benefits (a “diversity dividend”) particularly at the level of city or regional economies?
- There are verifiable benefits, especially in relation to whether diversity has causal links to productivity, creativity and innovation.
- The benefits of diversity are diminished by certain costs, including less efficient provision of public goods, less trust and an unwillingness to redistribute income
- Relatively little research has been conducted on the specific relationship between the ethnic diversity of immigrants and the well-being of natives.

# Literature

- Diversity of immigrants is a production amenity for a region and generates favorable labor market outcomes i.e. wages and employment (Ottaviano and Peri, 2005; Bellini et al, 2008)
- Given a level of revenues firm employ less labor when the degree of diversity increases. (Blien and Brunow, 2011)
- Betz and Simpson (2013) show that immigrant flows have positive impact on native well-being in Europe (ESS data)
- Akay, Constant, Guilietti (2012) find the positive impact of immigration rates on the overall well-being in Germany
- Longhi (2011) positive impact of diversity on wages but no impact on job satisfaction in the UK.
- What is the effect ethnic diversity generated by immigrants on the well-being of the natives?

# Econometric specification

$$SWB_{it}^* = X_{it}'\alpha + \beta MR_{rt} + \theta L_{rt} + \gamma ED_{rt} + \epsilon_{it}$$

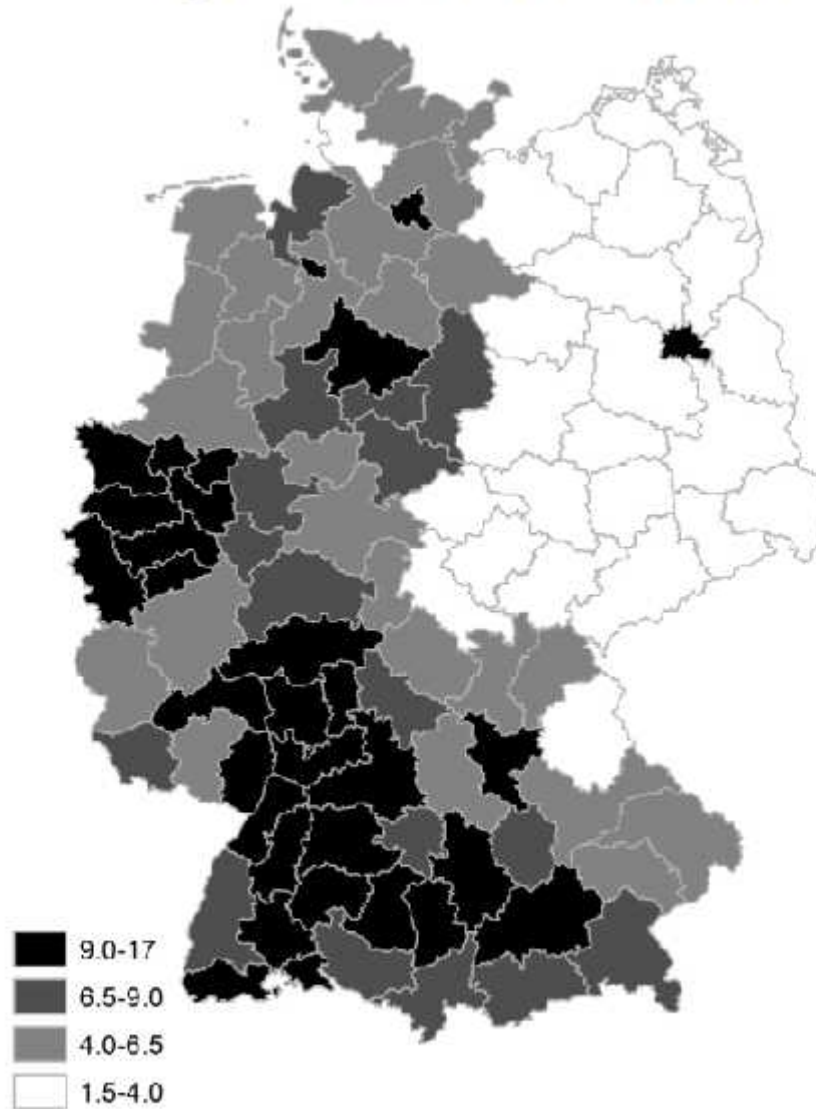
$$\text{with } \epsilon_{it} = \eta_i + \delta_r + \tau_t + \varepsilon_{it}$$

- SWB\* – latent well-being
- X – observed individual characteristics
- MR – migration rate
- L – Local labor market characteristics (U, GDP)
- ED – diversity index
- Composite error term structure

# Data

- German Socio-Economic Dataset (GSOEP)
- Sample of 150,000 individual-year observations between 1998 and 2009 of native Germans
- SWB is obtained using the question "How satisfied are you with your life as a whole, all things considered?" on an 11-point scale
- INKAR database provides local data on migration rate, unemployment rate and GDP for 92 regional policy regions of Germany (ROR)

Figure 1: Immigration rate in the RORs



Source: INKAR 1997-2007. Digital boundaries from Raumordnungsregionen ©BKG/BBSR 2011 (<http://www.bbsr.bund.de>). Immigration rates refer to averages over time.

Source: Akay, Constant, Giulietti (2012)

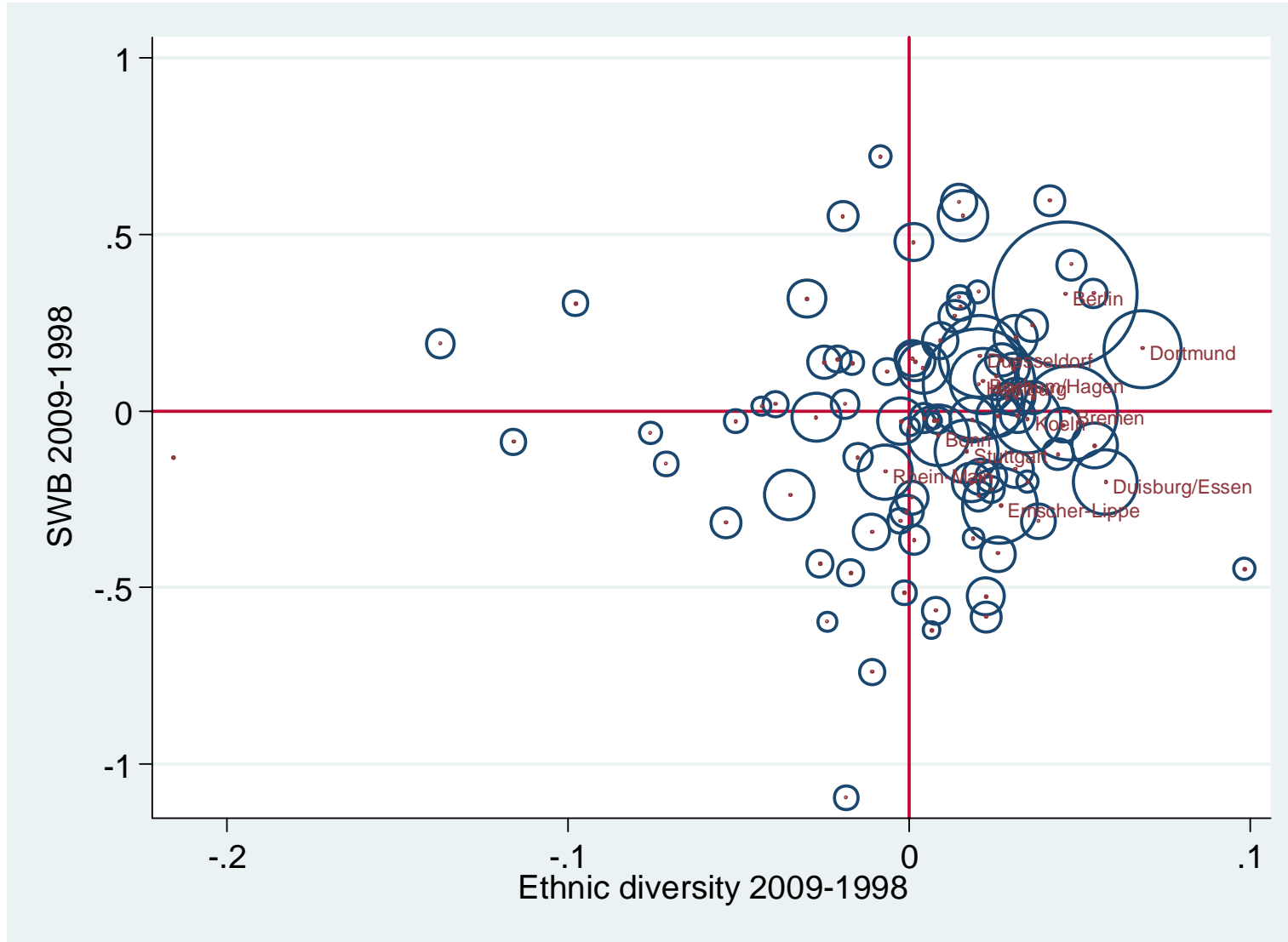
# The measure of ethnic diversity

- From administrative records we obtain exact counts of foreigners by the country of origin in ROR
- We construct ethnic fractionalization index Alesina et al (2013); Brunow et al (2013)

$$ED_{rt} = 1 - \sum_g \left( \frac{m_{grt}}{m_{rt}} \right)^2$$

- Index varies between 0 and 1 and increases with the number of groups and the evenness of the distribution of individuals across groups

# Happiness and diversity





# Baseline estimates

	QFE		QFE		QFE	
	b/se		b/se		b/se	
ED	0.784	**	-3.072			
	(0.309)		(1.901)			
ED sq.			2.732	**		
			(1.331)			
Q2xED					0.139	**
					(0.056)	
Q3xED					0.194	***
					(0.062)	
Q4xED					0.235	***
					(0.075)	
Q5xED					0.226	***
					(0.084)	
R2						
R2-overall	0.268		0.268		0.268	
N	150076		150076		150076	

Source: GSOEP 1998-2009 and INKAR 1998-2009.

Note: Robust standard errors in parentheses. \*\*\* Significant at 1%; \*\* significant at 5%; \* significant at 10%. QFE=Quasi fixed-effects. Observable characteristics include: a quadratic on age; dummies for gender and East Germany; years of education; log of household size; categorical variables for number of children, marital, health and employment status; log wages, log working hours and log income. All specification include total unemployment rate, and log GDP pc in the RORs in addition to ROR fixed effects and year dummies. The QFE specification includes also individual averages over time of age, log household size, years of education, log household income and log working hours.

# Different specifications

	QFE		OLS		OP		RE		FE	
	b/se		b/se		b/se		b/se		b/se	
ED	0.784	**	1.377	***	0.959	***	0.763	**	0.581	*
	(0.309)		(0.299)		(0.202)		(0.309)		(0.337)	
R2			0.271						0.091	
R2-overall	0.268						0.264		0.138	
N	150076		150076		150076		150076		150076	

Source: GSOEP 1998-2009 and INKAR 1998-2009.

Note: OLS=Ordinary least square; OP=Ordered probit; RE=Random-effects; FE=Fixed-effects; QFE=Quasi fixed-effects. Beta coefficient in the OLS specification of ED is 0.061 which is about half in magnitude when compared to the beta coefficient of (log) income of 0.15.

# Estimates by observable characteristics

Female x ED	0.831	***	Age 16-26 x ED	1.183	***
	(0.317)			(0.316)	
Male x ED	0.734	**	Age 25-34 x ED	1.032	***
	(0.320)			(0.312)	
Low education x ED	0.781	**	Age 35-44 x ED	0.748	**
	(0.309)			(0.310)	
High education x ED	0.79	**	Age 45-54 x ED	0.562	*
	(0.310)			(0.310)	
Non-border region x ED	0.614	*	Age 55-64 x ED	0.784	**
	(0.351)			(0.312)	
Border region x ED	1.39	**	Empl x ED	0.784	**
	(0.624)			(0.313)	
West Germany x ED	1.646	***	Self-empl x ED	0.798	**
	(0.438)			(0.388)	
East Germany x ED	-0.098		Unempl x ED	0.78	**
	(0.451)			(0.321)	

# Estimates by ROR characteristics

	MR		SWB		GDP		UR		MUR		PopDen		Turism		Young 16-25y	
	b/se		b/se		b/se		b/se		b/se		b/se		b/se		b/se	
Q1	-0.361		0.224		0.867	***	0.729	**	0.83	***	0.949	**	0.402		0.705	**
	(0.445)		(0.310)		(0.311)		(0.311)		(0.310)		(0.378)		(0.464)		(0.313)	
Q2	1.978	***	0.406		0.853	***	0.771	**	0.839	***	0.807	**	-0.648		0.742	**
	(0.446)		(0.309)		(0.310)		(0.309)		(0.311)		(0.362)		(0.672)		(0.312)	
Q3	1.851	***	0.56	*	0.752	**	0.755	**	0.785	**	0.824	**	1.406		0.766	**
	(0.445)		(0.309)		(0.311)		(0.310)		(0.310)		(0.353)		(1.085)		(0.311)	
Q4	1.885	***	0.673	**	0.693	**	0.774	**	0.775	**	-1.174		1.688	**	0.769	**
	(0.444)		(0.309)		(0.310)		(0.310)		(0.311)		(1.110)		(0.710)		(0.310)	
Q5	1.849	***	0.807	***	0.616	**	0.798	**	0.759	**	1.363	*	3.074	***	0.781	**
	(0.448)		(0.309)		(0.312)		(0.311)		(0.311)		(0.815)		(0.983)		(0.310)	
R2-overall	0.269		0.271		0.269		0.268		0.269		0.269		0.268		0.268	
N	150076		150076		150076		150076		150076		150076		150076		150076	

Note: ROR are split to 5 quintiles in each year and interacted with ED. Characteristics include migration rate, SWB, GDP, total and migrant specific unemployment, population density, tourism per population in ROR (pooled figures for 2006-2009 used), the share of young population (below 25).

# Sensitivity to the attitudes of individuals in ROR.

	Risk		Trust		Polit inclination		Oppeness	
	b/se		b/se		b/se		b/se	
ED x Q1	1.674	**	0.426		-0.577		-0.293	
	(0.715)		(0.474)		(0.576)		(0.599)	
ED x Q2	0.829		-0.561		0.635		-0.248	
	(0.974)		(0.738)		(0.510)		(0.710)	
ED x Q3	-0.323		0.135		0.709		1.285	**
	(0.544)		(0.940)		(0.714)		(0.507)	
ED x Q4	1.257	**	2.191	***	1.19		1.402	*
	(0.525)		(0.741)		(0.974)		(0.814)	
ED x Q5	2.182	**	2.687	***	4.667	***	3.253	***
	(0.974)		(0.777)		(0.913)		(1.113)	
R2-overall	0.269		0.269		0.269		0.269	
N	150076		150076		150076		150076	

Note:

1. Willingness to take a risk
2. Trust in people
3. Political attitudes (Q1 indicates inclination to the left and Q5 to the right)
4. Openness to experience

# Assimilation of immigrants in ROR

	Feel German		Feel origin		German Lang		Speak & write	
	b/se		b/se		b/se		b/se	
ED x Q1	-0.239		1.794	*	1.163		2.903	***
	(0.726)		(1.033)		(1.092)		(0.871)	
ED x Q2	0.781		2.894	***	1.045		2.13	*
	(0.937)		(0.722)		(0.808)		(1.120)	
ED x Q3	2.219	**	1.148		2.121	**	0.259	
	(0.986)		(1.378)		(1.037)		(1.202)	
ED x Q4	2.124	***	0.926		2.661	***	1.96	*
	(0.715)		(0.899)		(0.856)		(1.003)	
ED x Q5	1.792		-0.215		2.528	**	1.568	**
	(1.146)		(0.686)		(1.200)		(0.746)	
R2-overall	0.269		0.269		0.269		0.269	
N	150076		150076		150076		150076	

Note:

1. How German do you feel?
2. Feel country of origin
3. German is spoken by migrant
4. Language skills (self-rated proficiency)

# Skin tone degree (10 groups)



# The measure of ethnic diversity

	Full sample			Limited sample		
	1	3	2	4	5	6
Ethnic diversity	0.784 (0.309)	**		2.01 (0.767)	***	
Ethnic diversity by skin		0.522 (0.275)	*		1.267 (0.481)	***
ED weighted by ethnicity in the country of origin			0.745 (0.547)			0.365 (0.753)
R2-overall	0.268	0.268	0.268	0.264	0.264	0.264
N	150076	150076	150076	88360	88360	88360

## Note:

1. Baseline model
2. ED defined based on skin color of immigrant population (10 groups)
3. ED is defined as weighted average of ethnic fractionalization in the migrant home country (information taken from Alesina et al 2003).
4. In Column 4-6, sample is limited to ROR which distinguish at least 56 nationalities in the statistics.



# Internal migration in Germany

	Native		Migrant					
	b/se		b/se	b/se	b/se		b/se	
ED destination	-0.158		0.001	-0.572	-0.826	*	-0.567	
	(0.104)		(0.105)	(0.429)	(0.422)		(0.461)	
ED origin	-0.02		-0.197	-1.221	-1.029		-1.352	
	(0.271)		(0.273)	(0.982)	(0.953)		(0.969)	
MR destination	0.01	***	0	-0.003				
	(0.002)		(0.004)	(0.008)				
MR origin	0.007		0.012	-0.009				
	(0.012)		(0.013)	(0.043)				
Enclave destination					0.034	***	0.042	***
					(0.008)		(0.010)	
Enclave origin					-0.039	***	-0.047	***
					(0.011)		(0.012)	
Control U, GDP, Pop	No		yes	no	no		yes	
R2-overall	0.044		0.054	0.117	0.14		0.148	
N	12592		12592	1487	1487		1487	

Note: We estimate QFE model with the same control characteristics with year and ROR dummies. Dependent variable is a dummy that equals 1 if individual changes ROR in a given year and we include ED and MR of the origin and destination ROR. Variable *enclave* equals to the share of migrants (relative to population) respective to one's country of origin.

# Satisfaction with other domains of well-being

	SWB		Health		Job		Dwelling		Time		Income	
	b/se		b/se		b/se		b/se		b/se		b/se	
ED	0.784	**	0.682	**	0.096		1.199	***	0.699		0.776	*
	(0.309)		(0.291)		(0.496)		(0.399)		(0.457)		(0.415)	
R2-overall	0.268		0.588		0.165		0.1		0.119		0.286	
N	150076		149813		110032		149181		149467		147799	

# Conclusions

- We find that diversity of migrants is positively related to the subjective well-being of natives in Germany
- The results are robust to numerous specification checks.
- The overall effects of migration on natives are very small;  
only large immigrant flows would affect native well-being significantly.
- The conclusions contribute to the debate on immigration policy and show that immigration likely has a net positive impact on the welfare of natives.